

COURSE INFORMATION

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Course Title: **Information Literacy**
Credit Unit: **2**
Course Status: **Compulsory**
Semester: **1st**
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Course Edition: **First**

COURSE TEAM

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COURSE GUIDE

INTRODUCTION

Welcome to **LIS 101: Information Literacy**. This is a two-credit (2-CR) unit course, which is a Compulsory course for all the undergraduate students in the department. It is designed to equip learners as well as researchers how to use information through the process of identification of need for information, how to access it, evaluate and eventually make use of the information. The usual process of using information is identification, sourcing for the right location of the information, accessing the information, retrieving the information, evaluating the information, ethical consideration of the information and use of the information to finally the dissemination of the information.

The course guide tells you briefly what to expect from reading the accompanying study material. It provides you with information on how to make the best use of the materials so that you can achieve good success. Make sure you read it carefully and pay attention to the instructions and suggestions.

What You Will Learn in this Course.

COURSE AIM

LIS 101 titled Information Literacy has been developed to assist students and researchers have an in-depth understanding the process of using information. The following are the highlights of the basic things that are needed to know for a would be information literate person like you:

Functions and importance of Information Literacy

Characteristics and types of information

Theories, models and practice of information literacy

Methodology of Information Literacy

Development of Information Literacy Programs for Libraries

Communities, Agencies, Business organizations, Education and Other Information Institutions; Information literacy skills

Information needs and wants/desires

Information sources

Information access tools

Search strategies

Information literacy skills

Internet as information provider

Ethical issues in information access and utilisation

Relationship Between Technology and Information Literacy

Application of Information Literacy in Library and Information Centres

Trends in Information Literacy.

LEARNING OUTCOMES

By the end of this course, you should have become an information literate person by being able to apply and discuss the following concepts as it relates to information literacy:

- i. Define information literacy as a concept,
- ii. Explain the development of information literacy,
- iii. State the functions and importance of information literacy,
- iv. Mention the various characteristics of information literacy,
- v. Describe the different types of information literacy,
- vi. State the various methods of information literacy,
- vii. Explain how to set up information literacy programmes in different institutions or organisations,
- viii. List what are information sources, needs/desire and access tools,
- ix. Mention various search strategies,
- x. Describe various information literacy skills,
- xi. Understand the place of internet in information literacy,
- xii. List different types of information technology tools in relation to information literacy tools,
- xiii. Explain the various trends of information literacy and
- xiv. State the ethical use of information
- xv. Explain ethical issues like plagiarism, references and citation.

WORKING THROUGH THIS COURSE

To successfully complete this course, you are required to participate in both the theoretical and practical parts of the course. You are also to read the study units, do all assessments, examine the links and read, participate in discussion forums; read the recommended books and other materials provided, prepare your portfolios, and participate in the online facilitation.

Each study unit has introduction, intended learning outcomes, the main content, summary conclusion, and references/further readings. The introduction opens the door to each unit and gives a glimpse of the expectations in the study unit. Read and note the learning outcomes which outlines what you should be able to do at the completion of each study unit. This will help you evaluate your learning at the end of each unit to ensure you have achieved the designed objectives (outcomes). To achieve the intended learning outcomes, the content of each section is presented in modules and units for ease of reading and assimilation. The unit summaries provide a recapitulation of the essential points in the unit. It's an indispensable brief that garnishes your journey through the unit. The conclusion brings you to the climax of the study and what you should be taking away from the unit.

There are two main forms of assessments – the formative and the summative. The formative assessments will help you monitor your learning. This is presented as in-text questions, discussion forums and Self-Assessment

Exercises. The summative assessments would be used by the university to evaluate your academic performance. This will be given as Computer-Based Test (CBT) which serves as continuous assessment and final examinations. A minimum of three computer-based tests will be given with only one final examination at the end of the semester. You are required to take all the computer base tests and the final examination.

STUDY UNITS

There are 13 study units in this course divided into four modules. The modules and units are presented as follows:

Module one: Definition of Concepts

Unit 1: Characteristics and Types of Information

Unit 2: Functions and Importance of Information Literacy

Module 2: Theories, Models and Practice of Information Literacy

Unit 1: Information Literacy Theory

Unit 2: Information Literacy Models

Unit 3: Methodology of Information Literacy

Unit 4: Development of Information Literacy Programmes for Libraries, Communities, Agencies, Business organisations, Education other Information Centres

Module 3: Information Needs and Access

Unit 1: Information Needs and Search Strategy

Unit 2: Information Sources

Unit 3: Information Reference and Access Tools

Unit 4: Information Literacy Skills

Module 4: Trends and Ethical Issues in Information Literacy

Unit 1: Internet as Information Provider

Unit 2: Relationship between Technology and Information Literacy

Unit 3: Plagiarism, Citation and References

PRESENTATION SCHEDULE

The presentation schedule gives you the important dates for the completion of your computer-based tests, participation in forum discussions and at facilitation. Remember, you are to submit all your assignments at the appropriate time. You should guard against delays and plagiarisms in your work. Plagiarism is a criminal offence in academics and liable to heavy penalty.

ASSESSMENT

There are two main forms of assessment in this course that will be scored. First is the set of Tutor-Marked Assignment (TMAs). You are advised to be sincere in attending to the exercises. The second is TMA. This is the continuous assessment component which is graded. It accounts for 30% of the total scores. You are advised to take this with all seriousness, because it will assist you to

pass the course. The TMAs will be given in accordance to the University calendar. Endeavor to strictly adhere to the slated calendar

FINAL EXAMINATION AND GRADING

At the end of the course, you are required to take an examination which will last for a 2-hour duration. It has a value of 70% of the total course grade. The examination will consist of questions that will reflect the type of self-assessment, practice exercises carefully.

Try to use time between the finishing the last unit and sitting for the examination to revise the entire course. You may find it useful to review your Tutor-Marked Assignment or activities before the examination.

COURSE MARKING SCHEME

The following table lays out how the actual course marking is done

Assessment	30% (Undergraduate) 40% (Postgraduate)
Final Examination	70% (Undergraduate) 60% (Postgraduate)
Total	100% of Course work

COURSE OVERVIEW

How to get the Most from the Course

In Open and Distance Learning (ODL), the study units replace the university lecture. This is one of the advantages of ODL. You can read and work through specially designed study materials at your own pace and at a time and place that is convenient for you. Just as a lecturer may give you classroom exercises, your study units provide exercises for you to do at a particular point in time.

Each of the study units follows a common format. The first item is an introduction to the subject matter of the study unit and how a specific study unit is integrated with the other study and the course as a whole. Following the introduction is the intended learning outcomes which helps you to know what you should be able to do by the time you have completed the study unit. When you are through studying the unit, you should endeavour to go back and check if you have achieved the stated learning outcomes. If you consistently do this, you will improve your chances of passing the course. The main content of the study unit guides you through the required reading from recommended sources.

Tutor-Marked Assignment (TMAs) are found at the end of every study unit. Working through these SAEs will help you to achieve the objectives of the study units and prepare you for the examination.

You should do every SAE as you come to it in the study units. There will also be examples given in the study units. Work through these when you come to them too.

The following is a practical strategy for working through the course. If you encounter any problem, telephone your tutor immediately. Remember, that your

tutor's job is to help you. When you need help, do not hesitate to call and ask your tutor to provide it.

1. The main body of the unit guides you through the required reading and directs you to other sources, if any.
2. Your first assignment in this course is to read this course guide thoroughly.
3. Organize a study schedule: Refer to the course overview for more details. You should note that it is expected of you to devote at least 2 hours per week for studying this course. Note important information such as details of your tutorials, dates for submission of TMAs, exams etc. and write it down in your diary.
4. Once you have created your own study schedule, do everything to stay faithful to it. The major reason that students fail is that they get behind with their course work. If you get into difficulties with your schedule, please let your tutor know before it is too late to help.
5. Turn to Unit 1, and read the introduction and the objectives for unit 1.
6. Assemble the study materials. You will need your references and the unit you are studying at any point in time.
7. As you work through the unit, you will know the sources to consult for further readings.
8. Visit your study centre whenever you need up to date information
9. Well before the relevant due dates (about 4 weeks before the due dates), visit your study centre for your next required assignment. Keep in mind that you will learn a lot by doing the assignment carefully. They have been designed to help you meet the objectives of the course and, therefore, will help you pass the examination. Submit all assignments not later than the due date.
10. Review the objectives for each study unit to confirm that you have achieved them. If you feel unsure about any of the objectives, review the study materials or consult your tutor. When you are confident that you have achieved a unit's objectives, you can start on the next unit. Proceed unit by unit through the course and try to space your study so that you can keep yourself on schedule.
11. When you have submitted an assignment to your tutor for marking, do not wait for its return before starting on the next unit. Keep to your schedule. When the assignment is returned, pay particular attention to your tutor's

comments, both on the tutor-marked assignment form and also the written comments on the ordinary assignments.

12. After completing the last unit, review the course and prepare yourself for the final examination. Check that you have achieved the unit objectives (listed at the beginning of each unit) and the course objectives (listed in the Course Guide).

Facilitation

You will receive online facilitation. The facilitation is learner centred. The mode of facilitation shall be asynchronous and synchronous. For the asynchronous facilitation, your facilitator will:

- ◆ Present the theme for the week;
- ◆ Direct and summarise forum discussions;
- ◆ Coordinate activities in the platform;
- ◆ Score and grade activities when needed;
- ◆ Upload scores into the university recommended platform;
- ◆ Support and help you to learn. In this regard personal mails may be sent;
- ◆ Send videos, audio lectures and podcasts to you.

For the synchronous:

- ◆ There will be eight hours of online real time contacts in the course. This will be through video conferencing in the Learning Management System. The eight hours shall be of one-hour contact for eight times.
- ◆ At the end of each one-hour video conferencing, the video will be uploaded for viewing at your pace.
- ◆ The facilitator will concentrate on main themes that are must know in the course.
- ◆ The facilitator is to present the online real time video facilitation timetable at the beginning of the course.
- ◆ The facilitator will take you through the course guide in the first lecture at the start date of facilitation

Do not hesitate to contact your facilitator. Contact your facilitator if you:

- ◆ do not understand any part of the study units or the assignments.
- ◆ have difficulty with the self-assessment exercises.
- ◆ have any question or problem with an assignment or with your tutor's comments on an assignment.

Also, use the contact provided for technical support.

Read all the comments and notes of your facilitator especially on your assignments; participate in the forums and discussions. This gives you the opportunity to socialise with others in the programme. You can discuss any

problem encountered during your study. To gain the maximum benefit from course facilitation, prepare a list of questions before the discussion session. You will learn a lot from participating actively in the discussions.

Finally, respond to the questionnaire. This will help the university to know your areas of challenges and how to improve on them for the review of the course materials and lectures.

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Unit 4: Development of Information Literacy Programmes for Libraries, Communities, Agencies, Business organisations, Education other Information Centres

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Unit 4: Information Literacy Skills

Module 4: Trends and Ethical Issues in Information Literacy

Unit 1: Internet as Information Provider

Unit 2: Unit Two: Information Literacy Trend, Relationship Between Technology And Information Literacy

Unit 3: Ethical issues, Plagiarism, Citation and References

MODULE ONE: DEFINITION OF CONCEPTS

Unit 1: Characteristics and Types of Information

Unit 2: Functions and Importance of Information Literacy

UNIT 1: CHARACTERISTICS AND TYPES OF INFORMATION

UNIT STRUCTURE

- 1.1 Introduction
- 1.2 objectives
- 1.3 Main Contents
 - 1.3.1 Information: Conceptual Clarification
 - 1.3.2 Characteristics of Information
 - 1.3.3 Types of Information
- 1.4 Summary
- 1.5 Glossary
- 1.6 Reference/Further Reading
- 1.7 Possible answers to self-assessment exercises

1.1 INTRODUCTION

This unit will introduce students to basic concepts about information which is the major theme of information literacy which this course is all about. It is intended to give a background information and knowledge about information. It will also introduce the students to the various characteristics of information and different types of information. This initial information and knowledge is important for the learners to have a holistic and realistic view of the term information before dealing with the other concepts that deals with information literacy which is the core of this course. Information will be appropriately defined in its various dimensions with its different characteristics which will help in identifying what is an information and the various types of information

1.2 OBJECTIVES

It is expected that at the end of this unit, students will be able to:

- Define information in its various forms
- Mention the various characteristics of information
- State the different types of information

1.3 INFORMATION: CONCEPTUAL CLARIFICATIONS

In learning about information literacy which this course is about, it is important to first learn the major concept of the course- this is “information”. This will enable a proper understanding of the information literacy. If information is not defined as a concept, the various meaning that students carry may affect or limit their scope of comprehension of the course. The concept of information needs to be put in right perspective so that it will be easier to understand all other things to be taught and learnt in this course. Information has not been found to be simple to define due to its multi-disciplinary usage or what can be regarded as common use in virtually all walks of life.

To define information appropriately, it more or less content and context based. What the content and context based means is that the environment and situation or system where the word “information is used will determine the meaning to give to it. Also the contextual in the sense of what is packaged together as information and how it will be interpreted. There are as many definitions of information as its usage in various walks of life.

Information is such a word that is very common in usage today in various ways and forms. As there are numerous uses of information so also the definition are divers. The extent to which an individual conceive or understand the term information will determine the usage, application, relevance, skills required to explore it, among other things. According to American Library Association (1987) information is defined as “...all ideas, facts, and imaginative works of the mind which have been communicated, recorded, published and/or distributed formally or informally in any format”. information can be regarded as communication between one or more persons in diverse ways. Information could also be conceived as representation of what is in the mind or has happened with the confines of a person which is brought to the notice of another person.

1.3.1 Definition of Information

Information is defined as data that is assigned meaning by using certain conventions that are basic to content and context. We can therefore say that information is data that has shape or present a meaningful picture as a result of human interpretation. This lay emphasise on the fact that it is human that determines what an information is based on certain basic factors. The shortcoming of this definition is that information exist in systems that are not human based.

Information according to McCreadie and Rice (1999) review of hat information meant to various authors in the last fifty years summarised information as following:

- Information simply represents knowledge or information is stored knowledge. This try to define information as anything that is capable of transferring knowledge or make knowledge that is already discovered known to other people or generations. It can be presented in any media or format. The basic understanding is that knowledge has to be passed before someone can talk of information.
- Information as data representation in an environment that that can give meaning when appropriately interpreted. This means that information is a product of data present within the right context to the right set of people that can understand the presentation of the data to make meaning. Not all information or data presentation can make meaning in some context and in such cases it is not an information because no meaning can be deduced from it. Until something gives meaning it cannot be regarded as information. We can therefore conclude that information is data with meaning.
- Information as a resources that is transmitted from a sender to a receiver. The receiver is usually expected to understand and interpret the message(information) sent from the send to him/her. The receiver can process the information (message) received and add value to it for a better decision. The new or added value to the information can later be passed on to another person as a new or refined information (message). The term information as a resource has also wider application today as it is being considered as on one of the factors of production

and at the same time and at the same time is has become a source of power or strength.

The dictionary definition of information is knowledge, intelligence, a facts, data message or signal which is transmitted by the act or process of communication. These various words can be described as semantics of information. Though some of them are slightly different from what information actually means. All the semantics described by the dictionary has to be communicated in one form or the other such as writing, spoken, electronic, graphical, etc to serve as information.

Another meaning given to information by Prytherch (2005) in Harolds Librarian's Glossary and Reference book was”

“Information is an assemblage of data in a comprehensible form capable of communication. This may range from content in any format – written or printed on paper, stored in electronic databases, collected on the Internet etc. -to the personal knowledge of the staff of an organization.”
– Harrods Librarian's Glossary and Reference Book.

This definition emphasises the putting together of some things which has meaning or make sense to the system. The format of presenting the embodiment of the the information depends largely on the system in which the information is to be used. For example, the stimuli received by the cells of our body is a kind of information for the body especially the central nervous system to process. This is different from the various “bits” that are transmitted on an electronic or computer systems to give meaning to the users. In a more simpler way is if someone write in a language that you do not understand, it is not an information to you because you cannot comprehend it. That does not mean that it is not information.

1.3.2 Definition of information by UNESCO AND IFLA

UNESCO defined information as “information is made up of symbolic words and conveys absolute and technical knowledge no matter the nature and form of presentation of these symbols. Anything can be regarded as information as long as it presentable and conveys knowledge through the understanding of the meaning by the people or system concerned. Information has also been defined as news or knowledge given, shared or received or something told, intelligence or word, Though information is more than word as it can come in other formats. Something told could also be read, seen, perceive or experienced, it depends on the situation of things.

Some of the definitions of information include:

- Anything that increases the state of knowledge of the recipient
- What can be used to reduce uncertainty
- Something that is valuable in decision making
- A physical or obvious representation of knowledge
- Documents available in various formats about a particular subject

Information can be regarded as a process, thing or knowledge. When it is performing the function of informing- which means transmission from one point to another (sender to receiver), it can be regarded as a thing. When information performing the role of reducing uncertainty or increasing or affecting the level of knowledge it can be regarded

as knowledge. Under these two conditions, information is referred to as intangible. Information can be a thing when it can be seen or kept in physical or tangible format whether as hard or soft copy but it can be easily reference at a particular location.

IFLA guideline on Information Literacy and Lifelong Learning affirms that information is anything that is:

- A vital element of creativity
- A basic resource for learning and human thought
- A key resource in creating more knowledgeable citizens
- A factor that enables citizens to achieve better result in their academic lives, with regards to health and at work
- An important resource for national socio-economic development.

1.3.3 Description of information

Information can be best described from the context and/or content of it use. It can be defined as arrangement of relevant sets of data that is organised such that it can make meaning. It is the representation of events and symbols for certain things in such a way that other people can deduce, adduce or inductively give meaning to it. It is an attempt of communicating message to others from one content or context or the other. It is the organisation of data sets in a systematic way such that other subjects, discipline, machine, systems, etc can make meaning and knowledge out of it. The meaning and knowledge can be inform of decision made, improvement on the present situation, a modification of the current information, an innovation, etc with the aim of a better output.

1.3.4 Information as a shared concept

Information can also mean a shared, communicated or transmitted knowledge which is meant for a particular person or purpose. Not every communication is an information. If the communicated message is not making meaning to the other side that is receiving it, then it is not an information for that particular receiver. That does not really change the status or the meaning of the message as an information but because the place or value of meaning to the message to the receiver is missing- this makes it not to be an information.. Every information is expected to trigger more knowledge through the appropriate usage of the information communicated or shared. If this is missing them the message has failed the test of information. Meaning giving or knowledge creation from an information is discipline dependent as different knowledge and thinking is expected to react to different message (information) differently. So what is not an information to someone may be information to another person depending on their levels of thinking, previous knowledge, discipline of study, etc.

1.4 CHARACTERISTICS OF INFORMATION

Since information is difficult to define, a good understanding of what characterise an item to qualify as an information will be a good knowledge in order to be able to identify information. Information has to be quality in order for it to fulfil the purpose for which it was intended. The following are some of the qualities of a good information: Accuracy, completeness, reliability, accessibility, cost, uniqueness, timeliness and value. Each of these is further explained appropriately below.

1.4.1 Accuracy and Precision:

Information has to be exact, it must reflect and represent the data or event presented appropriately. It must not have erroneous substance. The message must be correct and not misleading. Accurate information are basis for quality decision or production. Getting the most accurate information in some situation can be a bit tasking or almost impossible but in some other instances, the issue of accuracy must not be toiled with. Accurate information most of the time depends on the situation or context.

For example accurate information must be provided in health care system both from the patient and health worker as this can go a long way to determine the outcome of the information exchange. In engineering accuracy to a very high degree is usually required in order to produce products of the same value. Other cases where accuracy may be difficult to achieve is when people were asked to declare their income or property, payment of taxes, etc.

1.4.2 Completeness and Comprehensiveness:

Information that is not complete is most times useless or sometimes may even be dangerous. There should be no gap in the data or insufficiency of the situation report. The completeness of the information will determine the correctness of the decision to make. Without a complete or comprehensive information, wrong decision may be taken. A proper analysis of taking information from various sources sometimes could be the solution to having a complete or comprehensive information.

Any defect in information will lead to poor quality or bad product, it will also not allow the right decision to be made. Effort should be made to ascertain that detailed information about a matter has been obtained before acting on it. Sometimes you find some information on the internet with disclaimer meaning that the information provided is at risk due to incompleteness or in-comprehensiveness

1.4.3 Objectivity and Reliability:

This has to do with the degree of truthfulness and dependability of the information. This is usually attached to the source of the information. Where a particular information is coming from in-terms of the author and publisher are two major ways to determine the truthfulness of the information. It is not every information found today that should be regarded as objective and reliable. The level of source of the information in-terms of whether primary, secondary or tertiary can significantly tell whether the information is reliable.

Major trusted sources of information are libraries, archives, media houses, institutions like university, polytechnics, research institutes, colleges of education, government agencies, subscribed online databases among other. Several information out there on the internet are not reliable. Your need to properly assess the information (this will be discussed later in this course) to be sure that it is authentic. Checking certain parameters like author, publisher, year of publication, disclaimer notes, recency will help in determining the reliability of the the information.

1.4.4 Accessibility or Availability:

Though information may be available sometime but accessing it may come with some challenges. The two qualities of availability and accessibility must be met for an information to be of good quality. Institutional or government policy and regulations sometimes pose a clog in the wheel of obtaining quality information. Information that

is available but not accessible is not good nor useful. Institutions today are making efforts to ensure seamless access to some basic information today. The freedom of information bill in Nigeria has not been properly implemented as there are still lots of bottlenecks to obtain certain type of necessary information for use. Some information may need to be reformatted to have them easily accessible today. While internet has liberalised some aspect of information availability and accessibility some organisations, institutions or government are still hoarding information that are supposed to be public.

1.4.5 Cost:

This is what it takes to get access to a particular information, it could be financial, time, emotional or other expenses in order to get access to the information. The value of an information should not be too high compared to the value that will be derived from the information. Information should be such that it can be obtain at a cost advantage. Information should come easily so to say in a way that it is encouraging for users to access it.

1.4.6 Uniqueness and Granularity:

This is the property of information that makes it concise or fit to the situation. The data collected must be such that it is correct for the intended purpose. There should be avoidance of any form of mix-up in the course of getting information so that a wrong decision will not be made. For example if a research target female respondents and the researcher goes ahead to collect data from male respondent, then the information will not be correct. Where certain properties are required in relation to some information, effort must be made to ensure that the determining factors are kept to in accessing the information. This is the granularity of the information. Taylor made information should be provided for the situation at hand and this is the uniqueness.

1.4.7 Timeliness and Recency:

Some information are only very useful within a particular time frame or period of time. Accessing them outside of those time render them useless. Quality information must come to time. At the same time is the recency of information. Information must not be stale, obsolete or outdated. It is not appropriate to be depending on information that is 30 years ago in science and engineering or medicine. The time the information was produced or made available goes a long way to determine the quality. This is one of the reason that newspaper comes out on daily basis and journals are published within a short interval of time like monthly or quarterly. This is to ensure that end users of these information access it on time.

1.4.8 Value or Relevance: Purpose and usefulness are two major drivers of seeking for information. Quality information must have an intrinsic or extrinsic value to be derived from it when access. Information is generally perceived to add value. There is the need for the information to be relevant to the need of the user. Related and relevant information must be made available for access. The users need must be satisfied by the information access to be of good quality. Different information may have different value to different people at different time. An information needed by security agents in arresting some hoodlums may not be needed by the public in order not to foil the effort of the security agents.

1.5 TYPES OF INFORMATION

As diverse as there are disciplines and walks of life, so also information that is available. This has necessitated the need for typology of information for different reasons. As much as information should be available and accessible, it depends to a large extent on the type of information being sought. Usefulness of information is also dependent on the type of information that is available. And information may be of a particular type to someone while it may be of different type to another person. Information have been described in different types based on different criteria some of the criteria are:

- i) The relationship between the issuer (source) and the user (receiver)
- ii) Content types of the information

1.5.1 Classification Based on Relationship between Issuer and Receiver:

This type of classification was done by David B.Hertz and Albert B.Rubenstein. They identified six types of information. These are:

1.5.1.1 Conceptual Information: this is type of information that is rooted in concepts, theories, ideas, hypothesises and more. They are information that were produced based on philosophies, reflection, beliefs, thoughts and preferences. Examples of such conceptual information is various theories of sciences, concepts in different disciplines, original or conceptual art work, etc.

1.5.1.2 Procedural Information this is also known as imperative knowledge. It is the knowledge of knowing how to do something. The step by step or skill capabilities to do a task. It is also the knowledge of the process of carrying out an activity. It is information contained mainly in manuals of how to operate equipment. Examples include how to carry out a research, how to ride bicycle, the process of investigating a crime by police officers.

1.5.1.3 Policy Information: this has to do with information based on rules, laws, regulations, designs, etc. They are information that are used for guiding or working out a system or situation. Examples include periodic table of elements, food pyramid diagram, handbooks (staff, students, etc)

1.5.1.4 Simulatory Information: these are type of information that can provoke thoughts or actions in order people when they are received. Such information makes other people to react or respond to the information provided. Simulatory information may not necessarily be in words or audible. They are kind of activities or events that gives rise or meaning which other people will react to. Examples include fire that is burning, a person walking by (the posture or dressing of the person will elicit some reaction in other people), celebration of wining a champion.

1.5.1.5 Empirical Information: these are information that are based on facts and figures. The information are usually a product of research whether qualitative or quantitative. The facts and figure will be analysed for the right information. It is not based on assumption or feelings but evidences that can be proved. Examples include various scientific findings, research output, statistics figures and facts, etc.

1.5.1.6 Directive Information: this is also known as descriptive information, it is for providing guidance or direction for doing something. It could be like orders and instruction from leader to follower, it could indicate the description of how to do a

particular thing. Examples include living wills, coaching, organisational instruction for a task

1.5.2 Classification Based on Content Type of the Information

These type of information include:

1.5.2.1 Factual Information: these are information of facts, undisputable information, information that has been tested over a long period of time or that has stood the test of time. They are usually not too long but concise and clear in meaning. They are usually found in reference books and almanacs

1.5.2.2 Analytical Information: this is extension of factual information or meaning given to factual information. It is the product of research works through interpretation of factual information. They are mainly found in books and journals.

1.5.2.3 Objective Information: this is information that is presented in a balanced form. It is usually devoid of sentiment from the source. The information is presented from all best available sources and interpretation. Opinions are not parochial or lopsided, it is scientifically or empirically based. Examples includes objective news or dailies, reference books, facts books or databases.

1.5.2.4 Subjective Information: this type of information is biased in its interpretation or presentation. It is information that has been tainted by personal judgement or interest. It is found where objective information is not available.

1.6 SUMMARY

The basic concept of information literacy is information and this unit has helped in demystifying what information is. Information is found in so many facets of life performing diverse purposes. Information is dependent on the content and context on most cases. Humans and systems will continue to unravel information as a concept that keeps evolving.

The unit begins by opening up the different definitions of information which is the major subject to be discussed in this course. Information has as many definitions as context and content in which it is being used. The basic information in this course has to do with relational information among human being. it is about how to communicate and content of communication in its various types. Characteristics of quality information have also been discussed. Information is not useful unless it adds value and that can only be achieved when it fulfills the basic characteristics of a quality information. Information that fails the test of quality of information is not useful and decision should not be based on it or at best not used at all. The understanding of the various types of information will help us in knowing how to deal with various information. It will also help us to identify good quality information based on the source and the type which will make it clear the type of information we have to deal with at hand.

SELF ASSESSMENT EXERCISE

What is the description of IFLA of what can be regarded as information

List the various characteristics of information

Two ways to classify information are:

1.7 GLOSSARY

- ◆ Information: this is representation that carries meaning and can affect decision
- ◆ Characteristics: these are the attributes of a particular thing or distinctive properties that a particular thing possess.

1/8 REFERENCES/FUTHER READING

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1.9 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISE(S) WITHIN THE CONTEXT

1)

- A vital element of creativity
- A basic resource for learning and human thought
- A key resource in creating more knowledgeable citizens
- A factor that enables citizens to achieve better result in their academic lives, with regards to health and at work
- An important resource for national socio-economic development.

2 characteristics of information are:

Accuracy,
Completeness,
Reliability,
Accessibility,
Cost,
Uniqueness,
Timeliness and
Value.

3

- i) The relationship between the issuer (source) and the user (receiver)
- ii) Content types of the information

UNIT TWO: FUNCTIONS AND IMPORTANCE OF INFORMATION LITERACY

UNIT STRUCTURE

- 2.1 Introduction
- 2.2 Objectives
- 2.3 Main Content
 - 2.3.1 Various Definitions of Information Literacy
 - 2.3.2 American Library Association definition of IL
 - 2.3.3 Reasons for information Literacy
 - 2.3.4 Dimension/Scope of Information Literacy
 - 2.3.5 Functions/Importance of Information Literacy
- 2.4 Summary
- 2.5 Glossary
- 2.6 Reference/Further Reading
- 2.7 Possible Answers to Self-Assessment exercises

2.1 INTRODUCTION

This unit will introduce you to the concept of information literacy and its significance. The unit will define information literacy, why do we need to study information literacy, then take a step further to explain to various scope of information literacy and the importance of information literacy

2.2 OBJECTIVES

By the end of this unit, you should be able to:

- Define information literacy
- Identify the various reasons why we study information literacy
- State and explain the various scope of information literacy
- Highlight importance of information literacy

2.3 DEFINITIONS OF INFORMATION LITERACY (IL)

2.3.1 Various definitions of IL

Information literacy definition keeps evolving from time to time as information itself. This cannot be unconnected with the fact that information is dynamic and learning about it needs to be in-tandem with the recent development. Information literacy has become a major subject mainly in librarianship today while other fields sees it as something else or are not even aware of it.

Having got an understanding of what information is in unit one of this module, the term information literacy included a new word “literacy” for us to understand information literacy. Literacy can be defined traditionally as ability to read and write. In the modern day, literacy may mean more than reading and writing to include understanding, interpretation, manipulation or synthesising and evaluating of basic concepts of learning. Having the understanding of new additions to literacy, we can then define

information literacy to mean abilities to recognise information needs, location, and accessing, synthesising or manipulating information to achieve our set objectives. Information literacy was defined by Information Literacy Meeting of Experts, (2003) as encompassing knowledge of one's information concerns and needs, and the ability to identify, locate, evaluate, organize and effectively create, use and communicate information to address issues or problems at hand; it is a prerequisite for participating effectively in the Information Society, and is part of the basic human right of lifelong learning". The definition shows that information literacy is made up of certain abilities that will make someone to be able to utilise information appropriately. These skills has to be achieved over time and there is the need for learning and practicing of it to get use to the skills.

2.3.2 American Library Association definition of IL

According to the American Library Association, information literacy is the ability to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ACRL, 2000, p. 1). this shows that information is not basically about ability to read and write or communicate it but entails other basic skills of recognising when information is needed. Once the need is identify, the way and manner of meeting the needs forms the basis of information needs which are the ability to locate where the needed information could be found, how do I know that the information access is correct and comprehensive. Moreover how do I use the information appropriately to meet my needs is very important.

One widely accepted definition of information literacy is the one given by The American Library Association which states that "information literacy is a set of abilities empowering individuals to recognize when information is needed and to be able to locate it, evaluate it, and use it effectively". Information is definitely needed by all at one point in time or the other. The only thing is that the information needed by one person may be different from what is needed by another person. This first aspect of information literacy is the "need" or "problem" to be addressed that gave birth to information literacy. Being in need of information is a problem to be solved but the way to go about it information literacy which is the ability of an individual to be able to know where to get the information, then ability to locate the information, evaluate, and use it effectively.

2.3.3 Definition of IL by National Commission on Library and Information Science

National Commission on Library and Information Science defines information literacy as "It encompasses knowledge of one's information concerns and needs, and the ability to identify, locate, evaluate, organize and effectively create, use and communicate, information to address issues or problems at hand, it is a prerequisite for participating effectively in the information society, and is part of the basic human right of lifelong learning" (Webb and Powis, 2004). American Association of School Librarians defines information literacy as "Information Literacy accesses information efficiently and effectively evaluates information critically and competently, and uses information accurately and creatively".

Information has been defined by as a new concept in the liberal art that deals with the knowledge of how to use computers, access information, take a critical evaluation of the nature of information based on technical infrastructure, social, cultural and philosophical context and impact (Shapiro and Heghes, 1996). it introduction of computers as a means of accessing information has come to stay due to the ease of

access of information on them. This has required an additional skills set that is needed to use. At the same time other factors and characteristics that come with electronic information resources on the computer need to be properly understood. The era of paper research or access to information is gradually facing out. There is the need to be able to relate the various factors of information like social, cultural, philosophical, technicality of an information together in order to be able to use it.

Information literacy is employing the correct information behaviour towards accessing information irrespective of the format or channel, making use of the information in relation to the needs with the understanding of the ethical use. information within the context of needs. Another way of defining information literacy is the ability to express personal ideas, propose arguments or position that is valid through correct and appropriate information, learning new things, recognising truth and factual evidence.

As the American Library Association Presidential Committee on Information Literacy (1989) explains. "Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand." UNESCO sponsored meeting of Experts on Information Literacy in Prague defined, "Information Literacy encompasses knowledge of one's information concerns and needs, and the ability to identify, locate, evaluate, organize and effectively create, use and communicate information to address issues or problems at hand; it is a prerequisite for participating effectively in the Information society, and is part of the basic human right of lifelong learning". Thus Information Literacy is the ability to find, learn and use the information through the implementation of different skills like communication skills, use of IT skills, learning how to learn etc. Information Literacy empowers the ability to access, evaluate and use information effectively and efficiently. To be information literate, one need to know why, when and how to use all of these tools and think critically about the information they provide.

However, information literacy was also defined as "... all these literacies [basic literacy, scientific literacy, technological literacy, visual literacy, cultural literacy] can be considered as specific competences that belong under the information literacy umbrella. Therefore information literacy should be considered as a container concept, which refers to competences of people to recognize the need for information and to satisfy their information needs for survival, self-actualisation and development" (Boekhorst, 2003a). This definition made it clear that information does not have to do with just reading and writing or audio but encompassing other areas of life and study that also uses information. Exploring information for the best today goes beyond the literacy of letters and figure to understanding other things that are connected with knowledge building and societal development

According to Bundy (2004), information literacy is made up three major element. These elements have their sub-elements that made the information literacy. They are:

1. **Generic Skills:** these are skills that are basic and should be acquired or developed by anyone that one to become information literate:

- i) Problem solving
- ii) Collaboration
- iii). Team work
- iv) Communication
- v) Critical thinking

2. **Information Skills:** these are skill connected with information seeking and accessibility:

- i) Information seeking
- ii) Information use
- iii) Information technology fluency

3. Values and beliefs

- i) Using information wisely and ethically
- ii) Social responsibility & community participation

An information literate person can then be described as someone who is able to:

- Determine when and extent of information that is needed at any point in time for any issue to be solved or decision to be made
- Identify the right place to find the needed information to meet the needs
- Efficiently and effectively access the needed information irrespective of the location or format of presentation of the information
- To synthesise or relate with the identified and selected information appropriate in order to use it to meet the information need.
- Make use of the information accessed in meeting the information need being pursued
- Have adequate knowledge of the economic, leagal and social issues guiding the use of information in diverse settings in an acceptable manner.
- Use information in critical thinking and solve problems

2.4 REASONS WHY WE STUDY INFORMATION LITERACY

Information has been made available in large quantities over time but the 21st century has been described as “information overload” or “information smog” or “information flood” among other several names. This is due to the fact the volume of information being produced today is highly enormous and comes in various format. The users of information today are probably not having problem with availability of information but getting the most trusted and fair information from the clog of the information available. As technology grows also, so the various formats of presenting information is increasing, there is the need for information users to be able to utilise these information in their various forms. With this large quantities comes so other challenges of getting correct and comprehensive information there is the need to know how to navigate the “information world” or the “information bank”

Information literacy is expected to increase our knowledge of need, access, utilisation and benefit derivable from information. There is need to identify some of the reasons why we need to be information literate:

2.4.1 Information keeps increasing exponentially in volume:

Education has become liberalised in many countries and this has created more scholars and knowledge workers than ever before. This has led to production of higher quantity of information than ever before. Day by day information is now being published in different formats compared to many years before where the major formats has to do with prints and usually on paper.

2.4.2 Increase in access to information:

The current age has also allowed users to access information in greater quantity than before. As more information is made available so also the access is increase. This is because the value of information majorly lies in the use. There has been increase in libraries and information centres, technology has really liberalised access to education. This increase in access has resulted in information glut for users, hence the need to know how to handle the information appropriately

2.4.3 Influence of Technology:

Technology in its diverse forms have made information publishing to be highly easy together with access to it. The various expensive machines and devices that are required to produce information several years past are now easily available with the help of technology. With a small computer device, anyone can produce or provide any information with little or no cost. Hence the large information on technology required specific skills to be able to access the information through computer or other related devices. The need for this technological literacy is part of information literacy.

2.4.4 The internet:

This has highly influence information in many ways both quantitatively and qualitatively. Anyone can publish anything online, and anyone can access anything online. There is limit to information censoring again and publishing ethics have highly been relegated to the background. Internet helps both the producers and consumers of information. There is a level of skill required to be able to surf the internet for information.

2.4.5 Authenticity and Validity of Information:

Due to liberalisation of publishing especially online there is the need to verify the veracity of every information. Despite the increase in the volume of information, there are still certain things that delineate the authority, currency and validity of information based on their sources especially online. There is the need to be conversant with the various factors and methods of how to determine whether an information is trustworthy or not.

2.4.6 Various formats of Information:

Newer format of information are evolving from time to time. The old formats familiar with are basically print, and non-print. The advent of technology has increased these various formats to several other types of formats. For example the old common thing is electronic version of information which can come as word process, today there are other

versions of the same electronic information known as HTML, PDF, RIS, etc. The same thing goes for multimedia, visual, etc formats of information. Users must learn how handle information in these various formats as there are differences in some of the operations of the various software that is applicable to these modern formats.

2.4.7 Analysis and synthesising need:

Information today due to various formats and sources required that users should be able to analyse or evaluate the information critically if it will meet the information need. For example what you tell a group of primary school children about malaria will be what you will tell undergraduate or medical doctors. There is the need to analyse the information available if it is suitable for the information need at hand. Also the need to synthesise may include things like ability to combine one or more formats of information in achieving solution to the information needs. Also the large number of information possesses a higher level of dis-organisation of information and there is the need for users to bring out the best of the information that is needed from the vast array of information.

2.5 INFORMATION LITERACY: DIMENSIONS AND FUNCTIONS

2.5.1 INFORMATION LITERACY: DIMENSIONS

Since information literacy has been defined to be more than just reading and writing of information, there is the need to explore what are other areas of information presentation that will be needed to understand. Information comes in diverse channels and formats today, so there is the need to understand how to make use of the information in these various formats and channels and these is what is called the scope of information literacy. Some of the major areas of presentation of information will be treated in this unit. There have been different works on the presentation of information and which has led to the scope of information literacy. Some of the scope of information literacy identified by some authors are: computer literacy, Information technology literacy, library skills, information skill and learning to learn.

The understanding of various scope of information literacy will help us to navigate information from simple to complex formats. It will also enhance or increase our search and access for information as we will be able to access information beyond just a few formats.

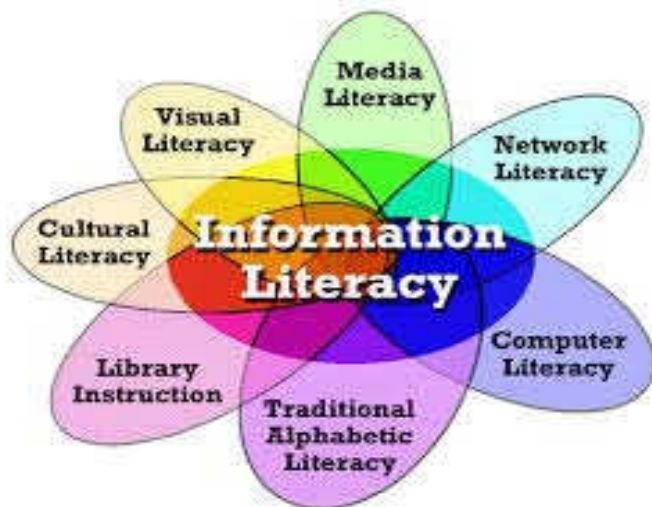


Figure 1: Information Literacy Scope

The following scope shall be discussed in this module

Traditional literacy: this is the ability to read, write and do simple arithmetic

Visual literacy: this literacy has to do with visual presentation and understanding of what message or information be being passed. The information literate must be able to think, learn, construct, interpret and understand information in form of images.

Computer literacy/Information technology literacy: this is most time confused among students at information literacy. It is just one of the literacy that is required to claim that one is information literate. It deals with the ability to operate, navigate, manage and explore computer and related devices for accessing and use of information. This could also be referred to as digital literacy

Media literacy: this could be either visual or audio or both (multimedia). it is the ability of a user to access or produce, analyse or manipulate non-print information resources such as television, radio, ipod, internet, etc. Specific reference is to sound and visual effect of presenting information using diverse devices.

Network literacy: this has to do with access and use of information in a network. It includes things like collaboration to get or provide information, networking with professionals on appropriate medium and use of world wide web.

Library Literacy: this may look somehow, but modern day big libraries go beyond what a person can just get into and get what is needed. There is the need to conversant with the various units/section of a library and especially how to make a search, what the librarians can do for you, what you can do by yourself, etc in order to meet your information needs. There is the need for certain basic skills to search through a library.

Scientific or professional Literacy: this deals with understanding of basic concept within the discipline. Each profession has its own concepts and terminology with rules and regulation guiding the use of them. The understanding of appropriate professional or scientific literacy will help in enhancing the productivity of the society.

Cultural literacy: the world is becoming a global village day by day and there is the need for metropolitan lifestyle which can flourish on the ability of people to understand and tolerate one another's culture. Institutions of higher learning and big organisations today are multi-cultural in demography. Members of such community must be able to understand each other's preferences and meaning to foster an harmonious relationship which will lead to peaceful coexistence which is a requirement for growth and development.

2.5.2 IMPORTANCE/FUNCTIONS OF INFORMATION LITERACY

This 21st century has been described as information explosion age, the amount of information coming out from time to time is enormous, hence there is a need to see to catch up with this volume of information. What was known some twenty years may be relevant some years back but this day what is known two years or even sometimes six month ago are no longer relevant or correct. The internet has enabled newer and more correct information to be disseminated. Hence ability to cope with this trend of high volume and diverse format and channel of information availability place a high premium on ability to navigate the information pathway in the present and the nearest future- which is information literacy. Hence information literacy is important for the following reasons.

- Information literature is important to understand the difficult question of ownership of information and copyright
- Students should learn to respect author's right
- To be an independent lifelong learner it is essential to achieve a high level of information literacy
- Information literacy is to help close the gap between the information poor the information rich
- Information literacy is required to have a critical thinking approach, that has would lead to economic and cultural progress of nation
- A sheer abundance of information in electronic format has made information literacy increasingly important
- To be an independent lifelong learner it is essential to achieve a high level of information literacy
- Information literacy is required to have critical thinking approach that leads to the progress of nation.
- information literacy is required for democracy
- A sheer abundance of information in electronic format has made information literacy increasingly important. Traditional print resources could be subjected to a quality assurance process. Whereas on line e resources in the form of web pages look like.' With the Internet sources, none of the quality assurance mechanisms can be assumed.
- Information literacy is also important to understand the difficult questions of ownership of information and copyright.
- Information literacy is a prerequisite for participatory citizenship, social inclusion, and the creation of new knowledge, personal empowerment and learning for life.

2.6 SUMMARY

Information literacy has been found to be important for lifelong learning since students cannot learn all that they needed for life in their four or five years programme. Also organisations are turning to information literacy because it helps their staff in knowing how to relate with one another, adjust to new positions or offices and learn or unlearn skill which will help in improving their productivity. Information literacy is important in the preparation and production of new knowledge, development and innovation in the current age. Little can be achieved in the age of information flood where information and source of getting them seems overwhelming.

Information literacy has been defined in several ways. Major characteristics of being information literate is ability to recognise information need, how to locate or access the information, ability to evaluate and synthesise the information, have the know-how of usage of the information within acceptable standards. We need to study information literacy due to several factors such as availability and accessibility of large volumes of information, easy of publication on the internet, the proliferation of digital technology, need to verify the veracity and currency of the information and the various skills required to prepare the information in acceptable formats to meet our needs. The various scopes of information literacy was explored to include media, digital, internet, visual, multimedia, scientific, library and cultural literacies. Learning about information literacy also comes with some importance which include ability to be independent learner, being able to think and use information critically, identification of when there is information need, being able to use information acceptably and increasing participatory citizenship among others.

SELF ASSESSMENT EXERCISE

- 1) what are the major elements of information literacy?
- 2) Information literacy is expected to increase our knowledge of _____
- 3) what is needed for lifelong learning

2.7 GLOSSARY.

- ◆ Information Literacy: is a concept encompassing knowledge of one's information concerns and needs, and the ability to identify, locate, evaluate, organize and effectively create, use and communicate information to address issues or problems at hand; it is a prerequisite for participating effectively in the Information Society, and is part of the basic human right of life long learning".
- ◆ Life long learning: it is the process of making students and library users to be able to fit in to any situation and solve their information needs at whatever level.

2.8 REFERENCES/FUTHER READING

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2.9 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISE(S) WITHIN THE CONTEXT

- 1) Generic skills, Information skills, and Value and beliefs.
- 2) Information literacy is expected to increase our knowledge of need, access, utilisation and benefit derivable from information.
- 3) Information literacy

MODULE 2: THEORIES, MODELS AND PRACTICE OF INFORMATION LITERACY

Unit 1: Information Literacy Theory

Unit 2: Information Literacy Models

Unit 3: Methodology of Information Literacy

Unit 4: Development of Information Literacy Programmes for Libraries, Communities, Agencies, Business organisations, Education other Information Centres

UNIT 1 THEORIES OF INFORMATION LITERACY

UNIT STRUCTURE

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Main Content
 - 1.3.1 Phenomenographic Theory
 - 1.3.2 Socio-Cultural Theory of Information Literacy
 - 1.3.3 Discourse Analytic Theory of Information Literacy
 - 1.3.4 Comparison between Phenomenographic, Socio-Cultural and Discourse Analytic Theories
- 1.4 Summary
- 1.5 Glossary
- 1.6 References/Further Reading
- 1.7 Possible Answers to Self-Assessment Exercise

1.1 INTRODUCTION

The view of information seeking as something that is learnt is well in accordance with the view that the appropriation of information literacy may be a goal for learning. However, information literacy can be approached as an object of teaching as well as an object of learning. The interest of this unit is to discuss different theoretical perspectives on information literacy and their implications for educational practices. It is obvious to us that the meaning of the term 'information literacy' varies according to the theoretical lens from which it is approached.

There are many ways for an academic librarian to contribute to the teaching and learning mission of an institution. It raises important questions – what should academic librarians and educators focus time, labor, and resources on, and why should they do so? Why focus on direct classroom instruction, for instance, rather than training the instructor about information literacy or assessing how students are using information in a course?

If an academic librarian cannot answer why they are engaging in one practice over another, then they could be wasting valuable time, labor, and resources on efforts that do not further their goals. The answer, in part, lies in information literacy theory. Theory provides justification and guidance for information literacy educational practices. With an eye towards improving information literacy education educational practice and addressing these fundamental questions, we examine foundational

philosophical commitments of information literacy theory. Gained from examining the philosophical foundations of information literacy theory may contribute to academic librarians' instructional knowledge and may provide new insights on how to approach and execute information literacy instruction. Three theories shall be examined under this unit.

1.2 OBJECTIVES

- At the end of this unit students will be able to explain:
- Phenomenographic theory
- Socio-cultural theory of information literacy
- Discourse analytic theory of information literacy
- Compare and contrast the three major theories

1.3.1. PHENOMENOGRAPHIC THEORY: Focus on Variation

A phenomenographic approach is basically directed at studying variation in people's ways of experiencing different phenomena, for instance information literacy. Phenomenography is grounded in a constructivist view of learning, emphasizing the importance of understanding the learners' perspective; that is learners' ways of understanding the object of teaching/learning, e.g. the notion of source credibility. Learning is viewed as an activity of constructing meaning, not as the transfer of knowledge from teacher to student.

Phenomenography emerged from empirical studies on learning conducted at the University of Gothenburg in the 1970's (Marton & Booth 1997) and has later been developed into variation theory (Marton & Trigwell 2000). Today, the term phenomenography generally refers to the methodological approach of studies adopting variation theory. Common features of a phenomenographic perspective emphasize the significance of subject content, disciplinary area and professional practice for the interpretation and view of information literacy. A basic phenomenographic assumption is that phenomena in the world are experienced in various ways and that it is possible to capture and describe patterns of variation in a limited number of categories that together shape the phenomenon.

The interest of phenomenography to explore patterns of variation of ways of experiencing a phenomenon differs from efforts to describe information literacy as a set of generic skills applicable regardless of situation or context. This is where the generic interest contrasts with the objective of describing variation tied to situation, task, knowledge content and contexts such as school, work-life or everyday life. However, an idea fundamental to phenomenography is that variation appears not only between situations or contexts but also within them. In this way, variation between people's experiences of information seeking and use, linked to the same task or situation, captures different ways of engaging with information, which may in turn be linked to different ways of experiencing meaning in information, and thus has implications for learning from information.

Variation in Experiences of Information Literacy

Phenomenographic studies have explored ways of experiencing information literacy within different groups, such as students in school, undergraduate students, and higher educators within various disciplines, as well as academic librarians and researchers. These studies enable us to compare various views of information literacy from different perspectives, for instance similarities and differences between a teaching and a learning perspective or between teachers and librarians.

Most empirical research adopting a phenomenographic approach has been conducted as interview studies sometimes combined with observations in naturalistic settings. Interviews are semi-structured and concentrate on a limited number of questions aimed at capturing the different ways in which interviewees experience a particular phenomenon, for instance, information literacy. Findings from these studies refer to the collective level, describing variation in experiences of the phenomenon under study. This means that it is not differences between individuals that are the focus of research interest.

Christine Bruce's findings of higher educators' experiences of information literacy (1997) broke new ground through the description of patterns of variation. Her findings present seven faces of information literacy organized in a hierarchical structure, where face 1 is the most limited and face 7 is the most complex. The seven faces focus on 1) IT: being

- 1) able to use IT for seeking and communicating information,
- 2) sources: seeking and finding information sources,
- 3) process: executing an information seeking process,
- 4) control: to organise and control information,
- 5) knowledge construction: building a knowledge base in a new area of interest,
- 6) knowledge extension: working with knowledge and personal perspectives for novel insights, and
- 7) wisdom: using information wisely for the benefit of others (Bruce C. S. 1997, 110).

According to a phenomenographic perspective, the seven faces (or categories) together constitute information literacy. Despite the development of digital media since 1997 these faces still function as a way of conceptualising different aspects of information literacy.

Relevance for Teaching

As mentioned above phenomenography is grounded in constructivist theories of learning. Constructivism views learning as a change in understanding of the phenomenon which is the object of learning, in our case purposeful information seeking and use. The idea of 'purposeful' refers to the values and norms of the particular context or situation where information literacy is to be learnt. From this follows that information literacy can be regarded as a goal for learning linked to a particular task or curriculum, while various aspects of information practices form the objects of learning.

A constructivist view of learning claims that knowledge or abilities cannot be directly transferred from the active teacher to the 'receiving' student. Instead, the theory implies that teaching takes its point of departure in the learners' ways of understanding and

acting on information seeking and use. To this end phenomenographic categories of description are applicable as objects of learning to consciously use in collective interaction in classrooms and libraries in order to enable different views of information practices to diverge and be challenged (cf. Marton, Runesson & Tsui 2004; Marton & Trigwell 2000).

In this vein Andretta (2007) showed how the active use of varied views of information seeking and use afforded students the possibility to develop their abilities to select and evaluate sources, search different databases and use information critically for writing a paper or carrying out a project.

It could be further suggest that phenomenographic categories of description can be used to cross borders between disciplines and professions. They capture how information literacy is experienced by various groups in various situations and contexts and thus enable comparisons of similarities and differences across borders.

1.3.2 SOCIO-CULTURAL THEORY OF INFORMATION LITERACY: Focuses on Communication in Social Practices

Researchers adopting a sociocultural perspective often start from the writings of the Russian researcher Lev Vygotsky (1896-1934) and the significance of people's use of cultural tools when learning is discussed. The sociocultural perspective on learning emphasises the relationship between individuals and various forms of collective practices. For instance, a student is part of a university programme, which in turn forms part of a discipline which is situated in as specific university; a librarian is active in a workplace and is at the same time a member of an occupational group. It is by communicating through cultural tools that we participate in practices of various kinds. Within a practice different ways of communicating evolve that are more or less specific to that practice (Säljö 2000, 207). Moreover these practices exist within a society that is evolving in itself.

The sociocultural perspective further underlines that this is also about being able to use physical artefacts for communication in a way that corresponds with the purpose of the practice. This includes artefacts which enable us to find, work with and use information; for instance, scientific journals, databases and web sites. We regularly devote ourselves to a range of activities in order to maintain social contacts, carry out work tasks or errands in everyday life. We blog, google, tweet, or search for books in library catalogues and databases, etc. It is impossible to imagine these activities without the tools linked to them. The inseparable relation between action, physical as well as linguistic, and tool is central in a sociocultural perspective (Säljö 1999) on information seeking and learning information literacy. Bertram Bruce has put into words the consequences of such a perspective on our way of theorizing literacy from a socio-technical viewpoint:

[...] the technologies of literacy are not optional add-ons, but are part of the definition of every form of literacy. Thus, a theory of literacy in a particular setting or community needs to incorporate an analysis of the relevant technologies, much as we more often include analyses of textual content, pedagogical procedures, personal backgrounds, or institutional agendas. (Bruce, B. C. 1997, 304)

Information is then not viewed dualistically as either placed within an individual or within an artefact; instead information and the meaning of information is seen as shaped through dialogue with artefacts in practices, a view which will be further developed in the next section.

A Sociocultural View of Information Practices

James Wertsch describes how advocates of a sociocultural perspective share an interest in what he calls human action: “In all cases, they are primarily concerned with describing, interpreting, or explaining action, as opposed to some other phenomenon such as behaviour, mental or linguistic structure, or attitudes” (Wertsch 1998, 12). Wertsch talks of mediated *action*, however, it is easy to see how his notion of action can be related to what is here referred to as a practice, i.e. an array of activities (cf. Schatzki 2001). Using the notion of practice emphasizes that information seeking happens through a succession of activities of social character; information seeking is thus seen as embedded and embodied in different social practices (cf. Gee 1990, 42 ff.; Lloyd 2010). Artefacts and activities take on meanings in a certain practice and therefore information literacy research should take these practices as a starting point.

A sociocultural perspective emphasizes that information seeking is carried out for a specific purpose in a specific practice, for instance for writing an academic paper, and with the help of tools such as a library catalogue, a bibliographic database or Google Scholar.

Practices are shaped through interaction between tools and people and, at the same time, the meaning of these tools varies across different practices. While people always act in relation to the tools that are accessible within a practice these tools are reshaped through a practice’s repeated activities

Within a sociocultural perspective people’s activities should be studied in relation to the tools through which the activities take place and based in the social practices where the activities are carried out. Hence, a sociocultural perspective often favours ethnographically oriented research, in which rich qualitative descriptions of people’s activities in their ‘natural’ settings form the basis of analysis.

1.3.3 FOUCAULT DISCOURSE ANALYTIC THEORY OF INFORMATION LITERACY: Focus on Historical Forms of Thought

A discourse analytic perspective on information literacy aims at capturing the socially and culturally shaped ways of understanding information competences and information practices. Rather than analyzing what people do or how people in practice perform specific information tasks, discourse analysts study the *interpretive repertoires* (Talja 1999) through which people give meanings to information competences and practices. The discourse analytic perspective thus focuses on information literacy discourses rather than accepts the nature of information competences as uncontested phenomena. In addition to the studies that focus explicitly on information literacy discourses (e.g. Haider & Bawden 2007; Heok & Luyt 2010; Kapitzke 2003a; 2003b; Pawley 2003; Tuominen, Savolainen & Talja 2005), many other discourse analytic studies in library and information science and other fields are relevant for information literacy research

in that they discuss conceptions of the nature of information, information needs, and information and communication technologies.

Michel Foucault was the first to formulate discourse analysis as a research approach in *The Archaeology of Knowledge* (originally published in 1969). He defined discourses as systems of statements that systematically form the objects of which they speak (Foucault 1972). In defining discourses as ‘systems of statements’, he emphasized that discourses are knowledge formations: sets of interlinked claims, assumptions and meanings. What connects these claims and meanings is that they represent a specific lens. In Foucault’s theory, each discourse provides only a limited and partial perspective for producing knowledge about a topic. A researcher analysing discourses of information literacy tries to identify the specific lens and background assumptions that underpin a specific way of discussing information literacy.

Discourses and Institutionalised Practices

In every field, it is possible to distinguish mutually incompatible, competing and alternative discourses. For instance, the concept of critical thinking has been found to have radically different meanings in different disciplinary discourses (Kautto & Talja 2007; Woolwine 2010). In information literacy standards, critical thinking conventionally means the evaluation of the reliability and credibility of information sources by the authority and (academic or non-academic) status of the creator of their content. Such standards are implicitly based on a division between “informational genres” (scholarly texts, encyclopedias, textbooks) and “noninformational” genres (e.g. unofficial websites, blogs, commercials) (Tuominen, Savolainen & Talja 2005). Both Kapitzke’s (2003a; 2003b) and Pawley’s (2003) discourse analytic studies maintain that positivist assumptions of epistemological neutrality and objectivity express a desire for permanence and canonicity, which is in line with schools’ traditional “hidden curriculum”, but neglects the sociocultural, historical and ideological foundations and processes of knowledge construction and justification. Kapitzke and Pawley propose a sociologically critical discourse synthesis approach as an alternative to the Enlightenment thinking which historically has prevailed in information literacy discourses. The discourse synthesis approach focuses on language use and on the means by which texts, in a broad sense, are crafted to achieve effects, for example, to justify positions, and in how texts contribute to the making, reproduction and transformation of facts and truths.

1.3.4 COMPARISON BETWEEN PHENOMENOGRAPHIC, SOCIO-CULTURAL AND DISCOURSE ANALYTIC THEORIES

The three theories presented in this unit will be compared based on their common features or factors that were used in developing. This does not make one to be better than the other but it is to help students to determine the best theory to use in their research work or to apply in principle while working.

Theoretical Perspective	Phenomenography Theory	Socio-cultural Theory	Discourse Analysis Theory
History	Marton et al. 1970’s	Vygotsky (1896-1934). Translated	Foucault 1969

		into English in 1960's–70's	
Focus	Different patterns of ways of experiencing information literacy	Tool-based information literacy practices within specific contexts and communities	Identify broad historical information literacy discourses
Research Outcomes	Understand variation in people's experiences	Understand people's practices within specific communities	Understand variation in interpretive repertoires
Information Literacy	A pattern of variation of experiences of engaging with information in order to learn	Learning to communicate within a specific practice	Constructed differently in different conversational contexts
Lens on Information and ICT	Constituted through relations between people and what they conceptualise as information. Focus on how learners construct meaning from information	Physical as well as linguistic emphasis on plurality of information forms and tools	Socially and discursively shaped, but also shaping subjects and social orders
Lens on Learning	Qualitative changes in experiences of concepts or phenomena	How people appropriate tools which mediate action	How implicit cultural orders and assumptions guide teaching practices

Table 1. Comparison between the three theoretical perspectives.

1.4 SUMMARY

Every concept in science must be premised on a theory and/or models. Information literacy has been found and grounded on established on theory which has been described above. The teaching of information literacy can be explained by several theories out of which these three popular ones have been explained.

Three major theories have been explained based on their major pillars of constructs which include individual history, focus, Lens of learning, lens on information and ICT, research outcomes, etc.

SELF ASSESSMENT EXERCISE

- 1) Mention the various theories of information literacy
- 2) What is the basis of Phenomenographic theory
- 3) Who is the author of discourse analysis theory

1.5 GLOSSARY

- ◆ Theory: this is statement of fact that has been well tested over time and found to be valid. It is usually a product of research over a long period of time.
- ◆ Concept: this is an idea of idea or thought that has been used as the basis of forming a theory or opinion. It is the basis for a particular theory

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1.7 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISE(S) WITHIN THE CONTEXT

- 1) Phenomenographic theory; Socio-cultural theory; Discourse Analysis theory
- 2) variation in people's ways of experiencing different phenomena.
- 3) Foucault 1969

UNIT TWO: INFORMATION LITERACY MODELS

UNIT STRUCTURE

- 2.1 Introduction
- 2.2 objectives
- 2.3 Main Content
 - 2.3.1 The Big6 Information Literacy Model
 - 2.3.2 Information Search Process or Kuhlthau Literacy Model
 - 2.3.3 The Seven Pillars of Information Literacy Model
 - 2.3.4 The PLUS Model
 - 2.3.5 The Seven Faces of Information Literacy Model
 - 2.3.6 The Pathway to Knowledge
- 2.4 Summary
- 2.5 Glossary
- 2.6 Reference/Further Reading
- 2.7 Possible Answers to Self-Assessment Exercises

2.1 INTRODUCTION

Models are a product of theories, and the basis of anything in science is theory. The models help in relating the theory of information literacy to the reality of information literacy for the users. Models relate to the philosophical basics on which a concept takes place with a view to explaining a phenomenon such as information literacy. It is like the bridge builder that gives meaning or makes it possible for users to connect theory of information literacy to reality of using information literacy. There is the need for librarians to be familiar with the foundations of Information Literacy as they plan to use it and teach it to users. The models will serve as a guide to how librarians can relate Information literacy to the users following an acceptable pattern or format of impacting the users. Hence information literacy models helps in provision of structure and foundation for efficient and effective teaching and learning of information literacy skills.

2.2 OBJECTIVES

At the end of the unit, it is expected that students will be able to:

- Mention the six major information literacy models
- Explain each of the six major information literacy models
- Identify the best information literacy model to adopt for their respective users.
- Compare the various information literacy models.

2.3 MAIN CONTENT

Various information literacy models have been proposed and developed by librarians and information scientists to explain the necessary competencies that are necessary for an individual to be regarded as an information literate person. The models are targeted at making information users to become better with information literacy skills

2.3.1 The Big6 Information Literacy Skills Model

This model was developed by Mike Eisenberg and Bob Berkowitz in 1990 at USA. It is one of the most popular information literacy models that prescribe way in which all categories of people can overcome information literacy problems. It is premised on the combination of information search and use skill with employment of technological tools through a systematic process to achieve information solution through finding, using, applying and evaluation of information (MacDonald and Darrow 2003, 1)

The model's uniqueness is the inclusion of technological skills in the process of acquiring information literacy skills. It is the expression of the way in which individuals gain knowledge of their specific needs and move through the various stages of information literacy to effectively and efficiently provide solutions to their information problems. The model can be applied to virtually all situations: school, personal and work settings, it can also be cross subject and grade levels applied.

The Big6 information literacy model is best learned when integrated with classroom curriculum and activities. It is very popular and widely used in the teaching of information and technological skills all over the world. The Big6 information literacy model is made up of the following six logical steps or stages from where it develops the name Big6:

- **Task Definition:** the information needs at hand must be defined. There should be a basis for why the user is looking for information. Whether as a student or whoever, what does the person want to do with the information is very essential to be understood.
- **Information seeking strategies:** the understanding of the information needs by the user will be a precursor to what and which kind of information source is likely to be appropriate to meet the need. As the user identifies the information need, it is expedient that the user know how to go about the right sources to meet the information needs.
- **Locating and access:** having identified the most probable sources of getting the information needs met. The user must be able to locate and access the information from various formats or specific resources. The formats and resources could include print or non-print, electronic or online resources.
- **Use of information:** after locating the appropriate information resource, there is the need for the individual to make use of the information in the resource. Using the information could include reading, viewing, listening, etc, this will enable the user to access the suitability of the information in the resources to his/her information needs. Specific skills are required to use information, especially in some formats.
- **Synthesis:** this is the ability to bring together all the information gathered from different sources or resources to produce a new information that meets the

information needs. This stage includes restructuring, repackaging, reformatting, etc of the pieces of information gathered together into a whole one.

- **Evaluation:** this is the final stage where the information produced to solve the initial information needs is now assessed, examined and evaluated for correctness, completeness, suitability, etc. This stage is the cap stage to ensure that information produced is of high or good quality that is desired.

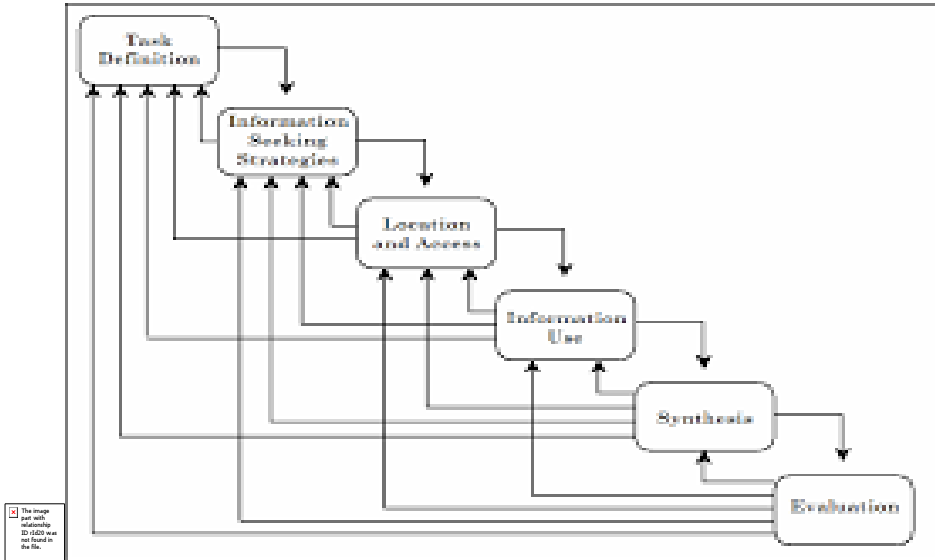
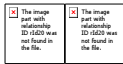


Figure 1: The Big6 as a feedback process (Eisenberg 2008, 42)

Self-Assessment Exercise: identify the strength and weakness of this model

2.3.2 The Information Search Process or Kuhlthau Literacy Model

The information search process (ISP) was developed by Carol Kuhlthau, it was one of the very early models of information literacy that focuses on “instructional team that leads students towards independent learning through skills in the use of a variety of information sources (Kuhlthau, 2007). the model focuses on independent learning, skills acquisition and use of information sources. It is a very good model that gives understanding into the totality of the information-seeking process. It is a constructivist paradigm that address information needs as a complex task that must be overcome over a period of time through information seeking and interpretation. It was construed from the idea that information seeking is a constructive process that address the uncertainty or information needs which decreases as the understanding increases.

Kuhlthau expresses the experience of information seekers as a series of thoughts, actions and feelings. This experience is valid for all information seeker, and has been found to be applicable in individual, group work across diverse disciplines. The model was information user centred and describe the information search process from the thoughts, actions and feelings of the information users. According to Porarinsdottir and

Palsdottir (2015), the model is made up of six stages of: Task initiation or uncertainty, topic selection or optimism, pre-focus exploration or confusion/frustration/doubt, focus formation or clarity, information collection or sense of direction/confidence, and search closure/presentation or satisfaction/disappointment

The first stage is initiation, this is when a user discovered that there is a lack of information or knowledge/understanding about a particular thing. The users identifies that there is an information needs to be met or that is missing. In the process the user may encounter uncertainty of various degree as he/she tries to solve the information problem. There is lack of confidence and competence on how to obtain information to solve the information needs at hand.

Second stage has to do with selection, this is when the user tries to identify and select general related topics to the information needs at hand. This can come with some optimism of just selecting any available information sources. The urge of trying to solve the information need can stir the user up. After this stage comes the third stage which deals with the pre-focus exploration. At this stage the individual tries to select from the selected general sources, trying to streamline the available sources, yet there will be some measures of confusion, uncertainty and doubt. This is because the individual will think whether what he/she is doing will be right or wrong. The individual interact with all accessible and available sources of information to get the best information that will meet their needs.

Next stage is the collection or action stage where the real identification, location and accessing the real and needed information. The stage prepares the individuals for better information to be able to relate with the available information in order to produce another information. The confidence of the information seeker is still very low. The stage of formulation is where the feelings of uncertainty begins to diminish while confidence will increase. This stage is where the individual map out plans and strategies to move forward constructively to solve the information needs problems. The user engages with the topic with the intention to find relevant quality information. This stage is called the turning point

Next stage is the collection or sense of direction stage. The individual can operate effectively and efficiently within the information system to meet his/her needs. A focused search is made out of all the ideas and initial topics and resources generated. If this stage is correctly done, then the last stage will result in satisfaction and if otherwise, the last stage will be disappointment. The outcome of the second to the last stage will produce feelings which can be positive or negative.

Kuhlthau's (2004), explains that three realm of experiences come in to play when meeting information needs, these are:

- The physical (actual actions taken)
- The affective (feelings expressed during the search process)
- The cognitive (thoughts concerning both process and content)

Each of these experiences plays a part in the accomplishment of information literacy. The physical domain has to do with actions and ability to find information.

Cognitive domain deals with intellectual capabilities of the individual to be able to comprehend the information in various formats

The affective domain deals with the ability to comfortable of other wise

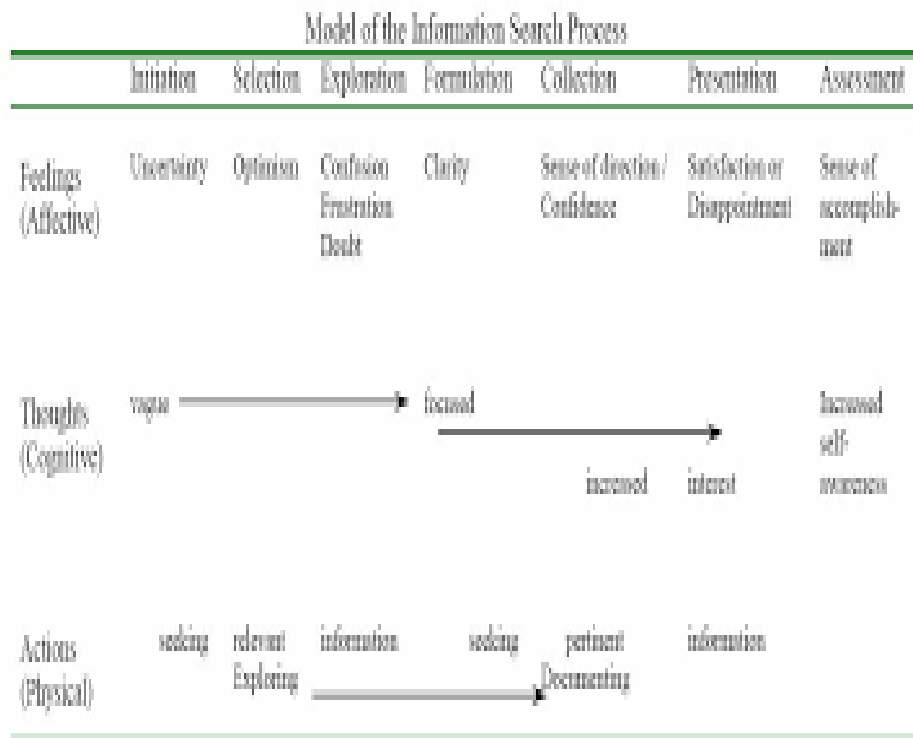


Figure 2: Information Search Process Model

Self-Assessment Exercise: identify the strength and weakness of this model

2.3.3 The Seven Pillars of Information Literacy Model

The seven pillars of information literacy model was propounded and promoted by SCONUL in 1999. It is one widely known models of information literacy. It was revised in 2011 to reflect the new changes in information environment so as to make it relevant in the modern day. This model focuses on the core skills and competence/ability: attitude and behaviour as the main ingredients of information literacy development especially in higher education. The core skills and competencies are: managing, evaluating, presenting, gathering, identifying, planning and scoping information. The main attitudes and behaviours of an information literate person are:

- Understanding the gaps in his/her personal knowledge,
- Developing a learning habit through seeking for new information every time,
- Ability to use different search tools,
- Recognising the disadvantages and advantages of different search tools and
- Understanding the value of controlled vocabularies and taxonomies in searching.

The seven pillars were presented in a circular format to indicate that an individual can become information literate through developing within the seven pillars simultaneously and independently but not in a linear order and can be closely linked together. Each pillar is described by some statements that relates to the set skills and competences and attributes and understanding. The model is very flexible and can fit

in to any environment as it describes each pillars with certain skills and understanding that is suitable to different environment. The various skills and understanding statements can be used as a lens for different attributes within the community that it is being used.

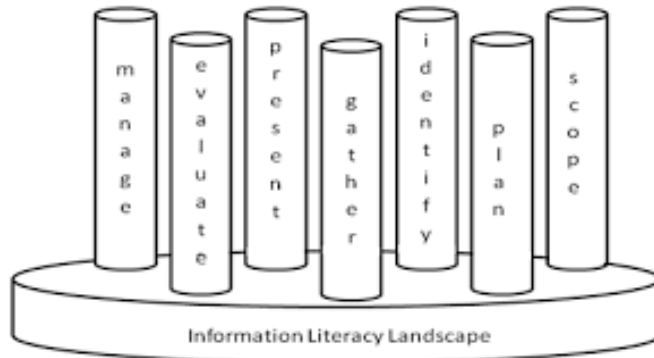


Figure 3: SCONUL seven pillars of information literacy model

This model regarded library and Information Technology skills as very important in information literacy skill. An individual can progress or regress within the seven pillars which now determines his/her level of information literacy. When an individual progresses and keep up with changing information environment, such will be regarded as experts in information literacy while if the opposite happens then, the individual is regarded as novice. Therefore the level of experience of an individual is a factor that affect their progress.

Self-Assessment Exercise: identify the strength and weakness of this model

2.3.4 The Plus Model

James Herring in 1996 was the first person to publish the PLUS information literacy model. The model is based on:

- Encouragement of pupils to identify purpose (eg. Brainstorming and concept mapping)
- Location of relevant sources (eg using print and electronic sources)
- Using ideas and information found effectively (eg. Reading for information, note taking, etc)
- Reflection on personal information skills through self-evaluation (eg evaluation of original plan, range of sources used).

The PLUS information literacy model involves four interrelated steps with distinct range of skills for each step that is required to be possessed by an individual to be able to solve information problem. This is presented as:

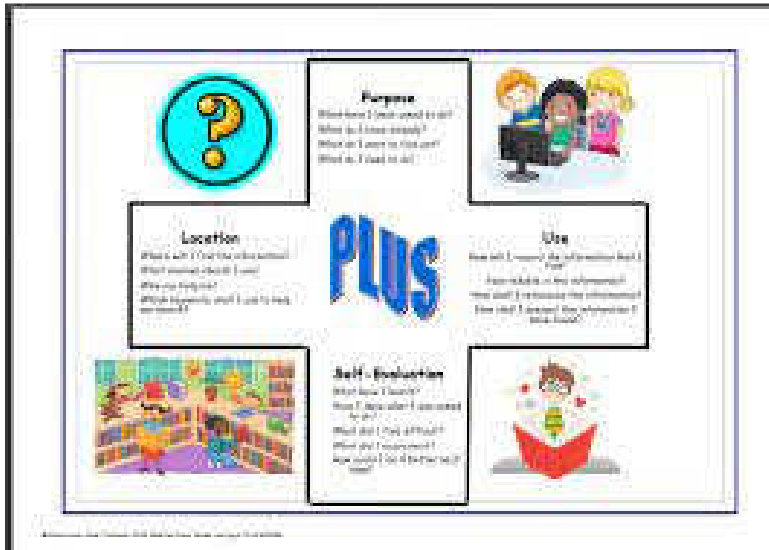


Figure 4: The Herrings PLUS information literacy model

Herrings (2010) describes the four steps with PLUS which can easily be remembered by teacher and students. They four steps are:

- **Purpose:** identification of purpose of a research is the first primary task that needs to be recognised. Identification of purpose includes identification of prior knowledge, development of questions or keywords, brainstorming, reflections about potential sources or a combination of all
- **Location:** here the individual must strive to find information or resources that meet his/her needs. The skills required include: ability to use the libraries, use of internet to source for electronic materials, and human sources such as librarians can also serve as location. Usage of information resources like catalogues, databases, CD-ROMs, search engines, indexes, etc.
- **Use:** this is the centre piece of the entire process, it involves engagements with the resources and sources through reading, viewing and listening. This enables the individuals to understand information and synthesise it with prior knowledge, purposeful selection information evaluation of information for currency, authorship and bias; note taking, sythesising, communicating or presenting in the appropriate format to the user or audience.
- **Self-evaluation:** this is the fourth step of the model; it is the reflection on the performance and achievement with the view of learning from it to improve. It is a step at the end but can also take place at every other stage of the model.

PLUS model has been described as a critical and reflective ability to use information in a changing information environment. It is not just a set of skills or routine process.

Self-Assessment Exercise: identify the strength and weakness of this model

2.3.5 The Seven Faces of Information Literacy Model

In 1997, Christine Bruce developed this model using faces as synonymous with conceptions with the explanation that:

Conceptions of information literacy may be defined as qualitatively different relations between individuals and some aspect of their information

environment which could not be predetermined. Varying conceptions are also often described as different ways of seeing, experiencing or understanding a phenomenon

The seven faces can be referred to as seven ways through which an individual sees and experiences information

- **Information technology conception:** this is the use of information technology. Experience acquired is from individual's ability to access, retrieve and communicate information using information technology
- **Information source conception:** this is ability to find information from identified locations. Information literacy was viewed as knowledge and ability to access and use information resources.
- **Information process Conception:** this focuses on the various strategies used in tackling and executing an information task. Individual that is information literate is expected to know the process of meeting information needs.
- **Information control concept:** this is the ability to store, retrieve, file, or save information either on computer system or physically or in their brain. Being able to manipulate information in its various formats for ready use.
- **Knowledge construction conception:** it is the construction of knowledge of from knowledge through the use of information resources. Knowledge builds upon knowledge through the means of analysing and evaluating information. Information becomes an object of reflection
- **Knowledge extension conception:** it is the application of knowledge and personal perspectives to gain insights while using information. Using information makes the users to gain more insight and intuitions. Information must be used as a tool for solving other problems
- **The wisdom conception:** this is mastery of information literacy process and learning tools with the aim of providing benefits to the society or others. Using information wisely includes social, legal, financial implication of use of such information.

All these faces can be found in the technology. This shows a convergence between information and technology.

Self-Assessment Exercise identify the strength and weakness of this model

2.3.6 Pathways to Knowledge Model

Pathway to Knowledge Model was propounded by Marjorie Pappas and Ann Tepe in 2002. The model was based on constructivism and enquiry based learning for students and adults. It is an information seeking and research process model. It is a process model that covers aspects of information literacy and cultural heritage awareness in the context of lifelong learning (Baker, 2014). It was developed based on the principles of learning, tenets of democracy, content standards, technology and knowledge, and behaviour required (Pappas and Tepe 1995). The model was designed with the intention of making students to explore information consistently with a positive attitude. The model is made up of six steps:

- **Appreciation:** this is exploration of information seeking through sensing, listening, reading, viewing and enjoyment with the purpose of meeting and information needs or answering a topic.

- **Pre-search:** individuals set out with a what they already know and seek to find solution or information to the new topic or need, establishes a focus, explore relationship among the information and develop an overview
- **Search:** the individual find suitable sources of information, plan and implement search strategies), identify information providers, select information resources and tools then seek relevant information.
- **Interpretation:** individuals at this stage access useful information, reflect on research results to develop personal meaning and interpret information
- **Communication:** the information acquired is organised and applied in appropriate format by the individuals.
- **Evaluation:** this stage involves overview, assessment and evaluation of the entire process and product (the information produced). This stage is expected to be carried out at all the other stages for quality information.

Pappas and Tepe (2002) affirmed that appreciation and evaluation stage should transcend all others. Each of the six stages includes a variety of general and specific strategies that an individual can employ to achieve his/her desired information needs. Appreciation stage has to do with curiosity and imagination of information sources and resources which can serve as solution to the information needs. The pre-search allows for exploration, searching, connection between prior knowledge and the new knowledge or topic being sought. The third stage “search” allows individuals to seek and identify appropriate information sources irrespective the format of its existence. This include finding appropriate information providers, resources and tools. This is then backed up with plan and strategy to filter the information needed is developed.

Interpretation stage enables the individuals to understand, analyse, synthesise and evaluate information based on pre-determined factor or purpose of the information. The need to examine the usefulness, recency, authority is paramount here. This allows for reflective and active participation in information world and not just about the skills. Communication is the fifth stage, this covers, organisation, application, presentation of the new knowledge in relation to the information needs. It includes using appropriate formats, language, style to convey the information to the users or society. The last stage which is the evaluation helps in making revisions of some or all the stages and the activities performed to be sure that the desired information is what is obtained. Evaluation is a continuous process throughout the model.

Self-Assessment Exercise: What are other models of information literacy?

2.4. SUMMARY

A proper understanding of the various models of information literacy will help in right application and adoption of the model to adopt in specific environment. Some of the models are environment of user demography specific while some are generic. It is important to know that right adoption of information model will help in getting the best result for the users. Each librarian must study the various models with proper understanding of the major constructs and see how these relate and can be applied in their domain. There is still opportunity to amend these models to make to suit desired purposes where it is needed. There are other information literacy models that have not been discussed in this work due to constraints of time and space.

Six major information literacy models have been described. These are more popular than several others that are still available. Librarians in different locality have tried to modify and contextualise these models or have tried to develop other ones. The popular models discussed have been found to contain certain major construct in all of them. The name of tag for the constructs are just the major difference and also the way or manner of thinking about their sequence of employing them to be information literate. Some constructs seem to be well pronounced in some models than others while some were first placed before others in some models. There is just little difference in them. Also the models that were developed based on certain user groups or within certain environment had some peculiarity which is due to their being specific in focus.

Assignment: read more about other types of information literacy that you can lay your hands on.

SELF-ASSESSMENT EXERCISE

List the six information literacy models

Identify the six stages of information Search Process or Kuhlthau Literacy Model

2.5 GLOSSARY

- ◆ Models: these are diagrammatic representation of theory. It explains the interaction between constructs or variable of a particular concept or practice.
- ◆ Competencies: these are skill that is expected that a user of information must have to be able to use information properly.

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2.7 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISE(S) WITHIN THE CONTEXT

1) The big6 information literacy skill model,
The information search process or Kuhlthau Literacy Model
The seven pillars of information literacy model
The plus model
The seven faces of information literacy model
Pathways to knowledge model

2) Information Search or Kuhlthau Literacy Model consist of six stages which are: Task initiation or uncertainty, topic selection or optimism, pre-focus exploration or confusion/frustration/doubt, focus formation or clarity, information collection or sense of direction/confidence, and search closure/presentation or satisfaction/disappointment

UNIT 3: METHODOLOGY OF INFORMATION LITERACY

UNIT STRUCTURE

- 3.1 Introduction
- 3.2 Objectives
- 3.3 Main Content
 - 3.3.1 Historical development of User Education/Information Literacy Instruction
 - 3.3.2 Information Literacy Instruction methods
- 3.4 Summary
- 3.5 Glossary
- 3.6 Reference/Further Reading
- 3.7 Possible Answers to Self-Assessment Exercises

3.1 INTRODUCTION

Methodologies of information literacy is the way and manner through which users of libraries can get the required information literacy skill to become information literate and lifelong learners. There are various methodologies that have been used in time past. These methodologies are also known as User Education or Information Literacy instruction. It is expected that the methods employed in teaching information literacy should be such that it will prioritise the understanding of the holistic view of library and information profession to the users. This means methods that will help users to become more or less dependent on other people in the course of solving their information needs. The methods must empower the users to identify the seven major construct of information literacy and follow them through to achieve there desired information and become better informed. The methods for information literacy instruction of user education keeps evolving with evolving trends of library and information professional.

3.2 OBJECTIVES

At the end of this unit, it expected that students will be able to:

- Explain the historical development of information literacy instructions methods
- Describe each of the various methods of information literacy instruction methods
- Classify the different types of information literacy instructions methods based on certain criteria.

3.3.1 HISTORICAL DEVELOPMENT OF USER EDUCATION/INFORMATION LITERACY INSTRUCTION BIBLIOGRAPHY

What is known and called information literacy instruction has evolved in the library and information professionals through several names and methods of imparting information literacy. The various names that have been used for information literacy instructions were: bibliographic instruction (BI), user education, library instruction and most recently is information literacy instruction. All these at various times have been

used to describe activities performed by librarians to users to enable them to use the library and its resources better. The changes in the name are a reflection of the progression of the changes in the teaching of library skills to users.

As much as information has been dynamic in many facets, so there have been dynamic changes in the way and manner of relating with information which has given birth to different names and procedure for information literacy instruction. The history of development of information literacy began with the name user education which can be dated back to 1958. The early idea was documented in Bonn's 'Training Laymen in the Use of the Library'. This document covered the survey of the whole field of user education prior to 1958. Mirwis updated this document with introduction of academic instruction in form of bibliography for the period of 1960-1970 in the USA. After this, the concept of user education has evolved and become widely accepted in different libraries across the world.

The origin of the use of user education concept could be traced to Patricia B. Knapp in her report of 1964 which was targeted at exploring various methods of developing a better relationship between library and college teaching then. This project was sponsored by Monteith College of Wayne State University. A similar project and arrangement to promote user education was also carried out by Earlham college. These two projects gave birth to user education as encompassing bibliographic instruction and/or topics related to library instruction as a strategy on its own.

Bibliographic was described to comprise of two major components: the aspects the deals with impartation of knowledge, and the development of library skill for bibliographic. The aspect of development of bibliographic skills consists of the following aspects:

- A) General types of reference works
- II) Indexing and Abstracting of periodicals
- III) Use of Library Catalogue
- IV) Principles of Knowledge Organisation
- V) Search Strategies
- VI) Subject Analysis

Bibliographic as the earliest form of teaching library users about library and its uses was also regarded as library orientation. Jeanne Murdock describes Bibliographic instruction through the decade of its popularity can be described as three generation:

A) First generation: this was in the 1979's, and it was viewed as library orientation. This generation was limited mainly to something similar to library guide and familiarisation with library environment and resources.

B) Second generation: this was in the 1980's, this stage witness the development of ideas and methods of bibliographic instruction with effort geared towards defining bibliographic instruction as a way of educating the users on how to use resources.

C) Third generation: this was in the 1990's, this saw inclusion of various formats of information into what is taught so that library users can use them appropriately.

Bibliographic instruction transformed into information literacy which was teaching of library skills or techniques to users with the intention of using information resources to carry out research of diverse types. Information literacy was also described as a concept that is wider than bibliographic instruction to include opportunities to make students that are information literate. Users that are able to understand the characteristics of information and competence to locate, evaluate and manage information. This was supported by the definition given by Association of College and Research Libraries of information literacy as increasing users abilities to identify information needs, access, locate, evaluate, and cite or use information appropriately.

Information literacy instruction has been described to be more complex than Bibliographic instruction because it involves how to achieve lifelong learning goals. It is the ability to know how information or knowledge is organised, how to find it, how to use it acceptably, dissemination of information and how others can learn from it.

Self-Assessment Exercise: mention the major actors in the development of information literacy instruction

3.3.2 INFORMATION LITERACY INSTRUCTION METHODS

Education is an act of influencing or leading people towards current cultural and social norms, therefore there is no single or better method, but each teacher or leader of a learning process chooses among various methods that is likely most appropriate to the students to arouse their interest and skills in the training or education. One of the purpose of information literacy instruction or user education is to provide students with the basic important knowledge of what they need to learn, carry out work and perform job after graduation to become a more active and productive citizen to the society.

Information literacy is a set of skill that is to be acquired in order to be information literate. According to Licona (2012), “skills are a group of performances (what it is done) and attributes (how it is done) that holistically considers people’s knowledge, abilities and attitudes in a specific environment to solve several problems”. This concept in information literacy means that becoming information literate means the person must have performed some activities- using the various library and information resources and attributes will mean- learning how to use the various library and information resource through knowledge acquired (information literacy instruction: abilities (competence of information literacy) and attitude (understanding the basic rules and guides of information usages) to solve their information needs problem. So there is the need to employ various methods which can assist users in become skilled in the area of information literacy.

Researches have shown that there are as many information literacy instructions as possible. This is due to the fact that users’ demography in library is different, some libraries are specific in nature in several areas such as coverage, users, types of resources, etc. Approaches to learning are different both from the teacher and the learners. All these have given rise to the different methods of passing information literacy skill into users. Some of these methods shall be discussed in this unit. The list is in-exhaustive as library and information profession keeps evolving coupled with information coming in diverse formats. Some of the common methods of information literacy are presented.

The different methods of information literacy skills instruction or user education shall be classified into three major groups as:

a) Group Instruction methods: These are methods that can be used for teaching large number of users at a time. It is very popular in institution or school based library. It can also be employed in public libraries if the new comers are around at the same or they can be batched to attend the training or teaching. Examples of this group teaching methods are: Lecture delivery mode, seminar/tutorial/demonstration mode and guided tour.

b) Group and individual methods: These classes consist of methods that can be used for both group and individual people. They can be very instructive and effective whether as a group or individual users. Examples of the methods in this groups are: film, video tape, tape/slide, audio tape/illustration,

c) Individual instruction: these are methods that are best suited for each or individual users. They are tailored to help people as they come to library individually. It also helps in reducing the stress of the librarians in teaching the same thing over to one different people at different time. They are resources that can be understood by individuals and should be comprehensive enough to help the users become information literate.

A) Lecture

This method has been as old as possible, it is only being modified from institution to institution. It is the process whereby a librarian arranges for formal class with the users and basic lessons on library and information were presented to them. Some lectures can be physical, audio, virtual, or the use of projectors and board. Notes or printed materials on topics of discussion can be given. There can be feedback from the users but little interaction between the teacher and the students.

In some formal lectures in some institutions, course contents were provided which the users are taught. It is usually characterised with little or no practical hands on for some aspects of the library. Certain concept like bibliographic data, using of shelf areas among others may not be properly explain in a lecture mode except there is multimedia to back up the demonstration. Combination of different approaches like use of multimedia, practical hands on in the library, assignment in the library or relevant information on topic taught, demonstration by the teacher are things that can bring out the best of lecture mode delivery. The lecture mode delivery has been described to be more advantageous to mature group.

B) Seminar/Tutorial/Demonstration: this method is used to engage small groups of students or users. It provides a better opportunity for active involvement of users during the learning process because it allows for greater interaction between the facilitator/librarian and the students/users. This method is less formal and more appropriate for interaction, motivation, evaluation and assessment from the facilitator to the students or users. It is also a way of ensuring that participants are carried along with practical sessions or real demonstration. There can be feedback from the students/users to assess their progress. Seminars must be done with necessary teaching or demonstration resources. Seminars are best done within the library environment which will allow for real time involvement, physical contact, demonstration, of how to and what to when in need of information. Demonstration has been found to be a good

way of teaching small groups as it allows real demonstration by the facilitators and some students/users are also involved. Simple instant practice or do later exercises can easily be done. It can also provide opportunity for real experience with library or information centre equipment or facilities.

C) The Guided Tour: This is one of the popular traditional means of imparting information literacy instruction to users. It is as old as the library institution. It is commonly adopted for intending students in tertiary institutions, newly admitted students or short time users of the library. It is a little bit herculean style especially in tertiary institutions with large number of students intake, where the students will have to come in batches and over a period of time. It takes a lot of the time of the library staff, also there is risk of disturbance to users during the process and high tendency library things missing. Coordination of the large number of students is always a great challenge and therefore the motivation may be low on the part of the students.

The process basically is to familiarise the users with the library environment and just a few tips about the operations of the library. Major areas, sections, activities, of the library are treated. The details may not be covered as the time allotted is always very small. Basic library rules and regulations with other services provided in the library can be mentioned and the students will be shown how to go about. Few demonstrations like how to meet reference librarian, circulation purposes and use of catalogues are the major elements of guided tour.

There is also the self-guided tour that is practice by some libraries, where the user will go through the library by himself using the various labels or inscriptions that can be found in the library. This can be a bit difficult if the user has not been familiar with library environment before, there is also the likelihood of having to ask questions which may serve as distraction to users within the library.

Self-Assessment Exercise: what are advantages and disadvantages of guided tour?

D) Audio-visual Methods: this is a collection different similar means of imparting information literacy instructions to users. This includes the use of things like tapes, films, and modern multimedia recordings, animations, cartoons, etc that can be uploaded to the library websites and/or mother institutions websites. Some of the information literacy instructions are best taught with the use of moving images or visual presentation especially when the users cannot access the library. With this method, information about library and lifelong can be sent to users and presented to the users in series or short clips. There are several advantages to this method, this includes: flexibility of usage by different people and number, ability to listen to it over and over, clarity or presentation, combination of learning style- audio and visual, ease of use.

The audio visual method of information literacy has assumed a new dimension today with proliferation of several technologies as hardware and software that can do a lot of things. The internet has also helped in achieving so much. Libraries today have different types of multimedia on their websites. They also make use of different social media to promote and provide information literacy instruction to users that are close or even in distant place or entirely remote users. Common examples of old methods that have been overtaken by this method are video tape, tape/slide, audio tape/illustration, etc.

E) **Printed Books, guide, brochure or information material:** this method is also known as programmed instruction, it usually serve as back-up or reference to the other training a user might have attended or accessed. In some rare cases, this method may be useful for someone that is in a hurry also. The method affords the users opportunity to learn at their own pace, make reference to what they have learned or forgotten, to serve the purpose of reminiscence for some areas in the library. Most libraries print instructions on how to use the library and its resource under different names depending on what is the real content or motive of producing such books. Some libraries provide some of these types of information on their webpages as a way of instilling information literacy instruction in the users.

F) **Practical exercise:** This method of information literacy instruction very useful after one or two initial methods have been employed. At least, methods that has to do with understanding of the basis of library and information usage and acquisition of skills. The method can serve both as a reinforcement and evaluative. It can be targeted at how well has the user understood the information literacy instruction and also to increase their information literacy instruction through practice to become more effective and efficient information users. Exercises or practice should be what has been taught. In some instance, the faculty/lecturer can send the users to library to go and learn certain skills. Especially skills like bibliographic compilation, referencing, abstracting, online search among others can best be mastered by practice.

G) **Reference/Circulation Desk Information Literacy Instruction:** personalised attention on information literacy can be obtained from this two sources. It is usually believed that a personal contact and interaction is the best way to learn. The user is able to ask question about certain issues on the use of the library and other things that are of interest to him/her. It is an active mode of learning for the students/users. One major challenge is that the librarian may not always be available due to other responsibilities and commitment. So the user may not get the attention needed at the time of need as the librarian may be busy with other things. When there is a prior arrangement, it is always better.

H) **Tours:** Tours/signs: this is the old method of knowing about the library. It is usually the use of library labels and tags within the library and on different office of sections/units of the library. The users can locate and move round the library through the use of the labels or tags. Some equipment or facility in the library may could also have instructions on how to use them.

I) **Technology/online Method:** proliferation of different small hardware technology and application with the availability and affordability of internet has changed or push the frontier of information literacy instruction impartation to users. Libraries today engages the use of library or mother institutions website as a platform to educate their users. Social media is also a great tools that is being used to disseminate information literacy instruction. These new technology allowed for use of various or multiple formats of educating the users about the library and information resources usage.

3.4 SUMMARY

The understanding of the development of information literacy will help us to appreciate the changes that have taken place in the library. It also helps in identification the

landmarks of information literacy instruction. Information literacy instruction importance cannot be underestimated as it enables the library to be relevant through appropriate usage of the collection. It also helps in maximising the value for the investment in the library. Libraries must keep evolving different approaches that will make the users to get the best of their desires to meet their information needs. The place of lifelong learning is very important and library must not lose her place of pride in building information literate which will later build information and knowledge society which is a commodity or resource for development.

This unit has helped us to understand the development of information literacy since inception and how it has metamorphosise into the present day information literacy instruction. The changing nature of information has also seen great changes to the way users were educated. The new innovations in Library and Lnformation science today has been integrated into the new information literacy instruction. The various methods of teaching information literacy have also been described. Different methods may suit different types and size of library coupled with the number of users to attend to amidst other things. Each librarian should be able to select the most appropriate method for his/her library to give the best to its users.

SELF-ASSESSMENT EXERCISES

Mention the six development of bibliographic skill

Mention some of the modern methods of accessing or achieving information literacy that is being used by your library.

3.5 GLOSSARY

- ◆ Information literacy: this is the process of learning how to use information.
- ◆ Bibliographic instructions: these are various means of teaching users how to make good use of information sources and resources to meet their information needs.

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3.7 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISE(S) WITHIN THE CONTEXT

1) The development of bibliographic skills consist of the following aspects:

- B) General types of reference works
- II) Indexing and Abstracting of periodicals
- III) Use of Library Catalogue
- IV) Principles of Knowledge Organisation
- V) Search Strategies
- VI) Subject Analysis

2) The following are modern ways of acquiring information literacy

- Audio visual,
- Printed books
- Class lecture
- Video
- Online teaching and/or training
- Provision of reference services.

UNIT 4: DEVELOPMENT OF INFORMATION LITERACY PROGRAMMES FOR LIBRARIES, COMMUNITIES, AGENCIES, BUSINESS ORGANISATIONS, EDUCATION OTHER INFORMATION CENTRES

UNIT STRUCTURE

- 4.1 Introduction
- 4.2 Objectives
- 4.3 Main Content
 - 4.3.1 Characteristics of a Good Information Literacy instruction project
 - 4.3.2 Procedure for Setting up an Acceptable Information Literacy Instruction Project
 - 4.3.3 Application of Information Literacy in Libraries
- 4.4 Summary
- 4.5 Glossary
- 4.6 Reference/Further Reading
- 4.7 Possible Answers to Self-Assessment Exercise

4.1 INTRODUCTION:

The significance of information literacy instruction cannot be overemphasised due to general and specific role it plays in the life of users of library or citizen in general. An information literate people will constitute information literate society and by extension and information literate nation. Information literacy has become a major yardstick in the classification of nations as developed or underdeveloped. Hence there is a major task on the part of librarians in national development. Every sector of the economy must have access to information and this can be achieved by making the staff or people within the sector to be information literate. Whether, academic, business, agencies, communities, organisations, etc should have information centre or project that will make the staff to access information.

Information has been described as a major factor for productivity and a veritable tools in right decision making. The fact remains that no single organisation or society has all the information needed within its domain but by making the populace of such society to be information literate will go a long way in improving the productivity, quality, efficiency and effectiveness of the citizen. Different organisations require different approach to how their information literacy instruction should be set up based on several factor.

4.2 OBJECTIVES:

At the end of this units students will expected to state and/or explain:

- State and explain the characteristics of a good information literacy instruction within a particular setting
- State the procedure or process of setting up an acceptable information literacy instruction within a particular setting.
- Explain the various uses or importance of information literacy in libraries.

4.3.1 CHARACTERISTICS OF A GOOD INFORMATION LITERACY INSTRUCTION WITHIN A PARTICULAR SETTING

In setting up a good information literacy instruction within a particular setting, certain characteristics must be evident. In order to achieve the purpose of good information literacy instruction, it has to be well defined, planned, structure and executed. In order to achieve these, some things must characterise the setting up of the programme. The question of purpose and use of information literacy instruction within an environment (environment here as used in this unit will mean libraries, agencies, information centres, communities, etc) is very important. Failure to identify why a thing is to be done is like setting out to fail.

The librarians must bear in mind from on-set what is targeted to be achieved by setting the information literacy instruction in a particular environment. The question of what is intended to be achieved, how to achieve it. Information literacy instruction that will be set up must be as exemplary as possible. It must be appropriately implemented to achieve the desired objective. The following are seven major characteristics that must be implemented in setting up information literacy instruction in any environment.

- Mission, Goals and Objectives
- Planning
- Administrative and institutional support
- Programme sequencing
- Pedagogy
- Communication and advocacy
- Assessment and evaluation

We shall discuss each of these characteristics one after the other and relate them to relevant or specific environment.

Characteristics one: Mission, Goals and Objectives:

The mission, goals and objectives of the information literacy instruction for the environment must be well spelt out. This will be direction for which the project will be tailored. Efforts, resources and infrastructure for the project will be appropriate directed in this direction. The mission, goals and objectives should include the following:

- A definition of information literacy instruction in the mission statement. The mission statement and definition will be determined by the specific environment. For instance the mission statement for information literacy instruction in business organisation will be different from that of academic or higher institution. The mission statement of a particular environment will be the driving force for the information literacy instruction strategy or methods to be adopted.
- Communication of the importance of the integration of the information literacy instruction across all necessary stakeholders, departments, units, etc with the benefits it will bring to individual and the organisation by making the stakeholders to become information literate. For example, in an higher institution, the faculty and students must be appropriately carried long. The curriculum of different department must also be integrated with information literacy instructions to make it relevant to them, while in a community system, the leaders/king/chiefs have to be carried along with major stakeholders in the

community. The benefits to be stated or derived should include effect on lifelong learning, timely completion of job or decision making, professional development among others.

- Ensure or establish measurable outcomes for evaluation of the project as part of the goals and objective. This should include how the project will influence the users in becoming more information literate. Certain parameters should be enshrined in the mission, goals and objectives which will help the librarian to ascertain that there is improvement in the information literacy level of the users of the library or information centre.
- The mission statement of the information literacy must be in tandem with the overall mission, goals and objectives of the hosting or mother library or institution. The purpose of the library/information centres must be the major factor in fashioning out the information literacy instruction's mission, goals and objective. The specific environment will determine what this will imply.
- Ensure that the contributions of the major stakeholders are clearly reflected. This should include their contributions, involvement, and expected benefits. This is the strategy of carrying them along so that it will not be seen as project for some people or a unit but a collective project for the benefits of all.
- Ensure that the document on information literacy instruction is enshrined in the appropriate institutional document. This is to give a legacy or posterity to the project. This will ensure that changes of leadership or a some little things will not cause a drawback of cancellation of the project. For higher institutions, the management must have it as part of the document for establishing the library, while in an agencies, the director or leader must make sure that it is part of the organisational document that determines the operation of such agencies. For community, the king/leader must ensure that the it is part of the community document of mutual co-existence.

Characteristic two: Administrative and Institutional Support

In planning for information literacy, there is the need for adequate planning. For any project to succeed, there is the need to have appropriate plan of how it will be executed successfully. Sometimes, there is the need for a blue print of how to carry out the project. This will include the step by step process of accomplishing the set out mission, goals and objectives. This include

- Articulate and develop plans and mechanisms to implement and/or adapt the content of information literacy instruction. The specific environment will determine what the content of the information literacy instruction will be coupled with the library or information centre or information resources available are major factors that will determine what the content will be. Another factor to be considered is the demography of the users and what is intended to be achieved by the information literacy instruction.
- Connecting or aligning the plan of information literacy instruction to the library, institutional and information technology resources available within the

limit of available budget. The project must be what the available resources in its various dimensions and size can accommodate. As a new introduction in many places, the librarian must seek for infrastructural and finance support from the leadership of the mother institutions and/or community of agencies.

- Accommodate all the levels of the organisation/department and/or institution or community. The project must take care of the need of all the major stakeholders by considering them in development of the document to ensure that they are properly taken care.
- Provide a timeline for systematic revision: there is the need for a systematic revision since information resources and related system especially information technology keep changing over time. Information literacy instruction has been evolving over time, so there is need for timely or periodic revision to make it be in tandem of the mission, goals and objectives. It will also help in identifying some of the things that is necessary to be improved upon.
- Involve all library staff or stakeholders: the librarians must ensure all librarians, library staff and administrator are properly briefed and carry along. From the onset, there is the need to get the support of other library staff that will partake of the project. Information literacy instruction cannot be done by one simple person, but a joint effort of every member of staff.

The type of library or environment will determine the way that the plan will be executed. The various stakeholders in the environment will be different from one another.

Self-Assessment Exercise: what are some of the things to consider in the development of information literacy instruction for a particular library?

Characteristic Three: Administrative and Institutional Support:

The place of leadership and authority cannot be under estimated in the success of any project. It is expedient that library or information centre leaders are carried along appropriately to achieve the set mission, goals and objectives of information literacy instruction for the environment. This can be achieved through the following ways

- Designation of appropriate person to lead or steer the information literacy instruction within the library. This will serve the purpose of commanding respect among other library stakeholders that will be part of the project and at the same time help in accessing the management of leadership of the library/information centre and the mother institution or community of operation.
- Have a good level of understanding of the responsibilities of an information literacy instruction librarians and/or what all the librarians are to do. This varies based on the type of environment.
- Seek and find appropriate resources and infrastructure for dissemination of the information literacy instruction. The resources should include funding, support

for teaching facilities, current and appropriate technologies, appropriate staffing level, professional development opportunities among other things that may be necessary for specific environment.

- Let there be rewards system for individuals, departments, and units that gave support and achieve and participate appropriately in the information literacy instruction project.
- Let there be appraisal of staff about quality of the programme and their individual contributions together with areas that need improvement. This should be done in contextual manner to reflect the expectation vis-a-vis available resources and set out goals for the programmes

Characteristic Four: Programme Sequencing:

This is the main real content development of the information literacy instruction that is to be taught. There is the need to develop and harmonise what is to be taught by all the librarians to ensure quality. The can be achieved in the following ways:

- Identifies the peculiarity of the need of groups, departments, or units that will be involved in the information literacy instruction. What are their different needs based on their nature of work or study, business, profession or units they belong to. Information literacy instruction must be tailored made to give the best for the users.
- Identify and integrate the current levels of understanding, practices, attitude and disposition of users to the library with the mind of improving on it for a better understanding of information usage.
- Use every available means of making information literacy instruction acceptable to all the users. In academic environment, it has to be integrated into their academic or vocational programmes, while in a community library it may be integrated into club orientation or festive programme as a way of getting many people involved.
- Target events/activities and programmes or courses as the case may be depending on the type of library that can serve as a good platform to teach or implement information literacy instruction.
- Make information literacy to be formalised by ensuring that all would be users of the library will be involved. The type of library will determine the type of formalisation. For higher institution, they may include it in there courses or programme or as a vocation the students have to go through. Information literacy instruction that must be disseminated to all citizen.

Characteristic Five: Pedagogy

This has to do with the methodology to deliver information literacy instruction to different users based on the environment. Efforts must be made by the librarians all facilitators of information literacy instruction to ensure that the content of the project is appropriately communicated in ways that will be best assimilated by the users. The

following are some guide on the appropriate of communicating information literacy instruction:

- An appropriate guide for the environment must be developed or copied if it is available and has been tested to be effective.
- There should be different approaches to the presentation so that learners/users can be appropriately informed. Different people learn with different method of teaching. So the librarians must not be rigid in their teaching styles. Where necessary, suitable and appropriate technology must be used.
- There should be dedication and commitment to see to it that learners get it right.
- The teaching method must promote critical thinking, reflections and recursive learning.
- Contextualise information literacy with what is happening around the users. As much as possible user/learners must see how relevant and applicable information literacy instruction is to there need and probably there future lifelong learning.

Characteristic Six: Communication And Advocacy

Librarians must ensure adequate communication and advocacy for support towards the success of information literacy instruction programme. The project is basically meant for the populace, so there is the need for creation of awareness and adequate communication within the environment of catchment the library or information centre. The following are to be done:

- Reaching out to identified relevant stakeholder and support groups within and outside of the library to ensure the success of the programme.
- Make your communication and advocacy simple, clear and concise. Let it cover the content of the programme and expected benefits learners will get from it.
- Create collaboration among stakeholders depending on the library that you are working with. Let the stakeholders be involved at virtually all the various steps of the implementation of the information literacy instruction.
- Use different communication methods such as formal and informal networks, medial channels. The appropriate method depends to a large extent the type of library. Cross communication method will definitely increase number of informed people and at the same time reinforces hearing or awareness in some people.
- Advance the course of information literacy instruction through sharing of information, methods and plan with other colleagues and stakeholders.

Characteristic Seven: Assessment and Evaluation:

These characteristics will be set up to achieve two major things: assessment of the programme and the learners. It is to know how well the programme has succeeded and how far the learners have also benefited from the project.

Learners Outcome Assessment: This Include

- i. Ascertaining learners' preferences for learning and teaching methods with corresponding outcome. Which type of learning and teaching method is producing the best result
- ii. Develops and make use pre- and post-instruction outcome measures. Activities like needs assessment, pre-test, post-test, oral defense, portfolio assessment, essays, direct observation, anecdotal, quizzes and experience.
- iii. Establishing that learners have master certain skill through testing their performance, disposition appraisal, acquisition of knowledge and knowledge practices.

Programme Outcome Assessment: This Include:

- iv. Design and implement a process for programme planning, evaluation and revision
- v. Measure progress of the programme vis-a-vis how it is able to meet the mission, goals and objectives set out at the beginning.
- vi. Uses appropriate evaluation/assessment methods for relevant purposes. This could be short or long term measure, formative or summative method.

4.3.3 APPLICATION OF INFORMATION LITERACY IN LIBRARIES

Information literacy is increasingly important. Academic libraries have responded by providing instruction in information literacy, described as the ability to locate, manage, critically evaluate and use information for problem solving, research and decision making. Information literacy is important owing to the amount of information that is available in contemporary society. Simply being exposed to a great deal of information will not make people informed citizens; they need to learn how to use this information effectively.

- Information literacy is solution to overflow of information: Data or information overflow or flood or smog refers to the idea that too much information can create a barrier in our lives. Especially students and the society require a special skill to handle this fast increasing information, in order to use their educational and economical purposes more effectively.
- Information literacy endue with necessary skills to recognize when we need information, where to locate it, and how to use it effectively and efficiently.
- Information literacy helps in decision making and productivity which is very important for information users to achieve their information needs.
- Information literacy helps students and the society to locate, evaluate, use, and communicate information.
- Information literacy helps in the use of internet resources. The authenticity, validity, and reliability of this information can be assessed by an information literate individual.

- Information literacy with student centered, inquiry based, problem solving, and critical thinking proactive learning environment will develop deep learners in the school and society.
- Information is a key theme when it comes to lifelong learning. Information literacy is the basis for acquisition of lifelong learning especially from higher institutions. In the twenty-first century, information literacy has assumed the dimensions of various availability of information for use by students and society hence capacity development for lifelong learning.
- Information literacy helps students develop abilities and skills of how to learn, or learning to learn, developing the aspects of reasoning and critical thinking.

4.4 SUMMARY

Setting up information literacy instruction is highly important in any society. A society may not be able to grow beyond the quality or level of information literacy of its citizens. Libraries have always been at the fore-front of development and civilisation, so libraries must keep evolving what is needed to make the users meet their information needs. The challenge of identifying how to source information today is an herculean task as information comes out at a very alarming rate.

Every organisation referred to as environment in this unit is expected to set up information literacy instruction within their domains. ***Each domain is to look inward and develop the necessary methods and characteristics seen best at to help them make their community become information literate. Not clear, please recast***

This unit has tried to elaborate on some characteristics or procedure setting up information literacy instruction. The dynamic nature of different environment was a major barrier why there cannot be one standard of characteristics that must be used in setting up information literacy instruction. Seven steps which cut across types of library have been discussed. These include: Mission, Goals and Objectives, Planning, Administrative and institutional support, Programme sequencing, Pedagogy, Communication and advocacy, Assessment and evaluation, Each of these characteristics have been appropriately elaborated on how it can be applied in different setting whether academic, communities,

SELF-ASSESSMENT EXERCISES

- A) Mention the seven processes of implementing information literacy in any environment
- B) Mention two types of Assessment and Evaluation
- C) Identify the peculiarities of your library and briefly expound the major characteristics that you will apply and why those changes will be made.
- D) What are the various applications of information literacy in the library?

4.5 GLOSSARY

- ◆ Environment: it is the specific organisation or institution that information literacy instruction is to be set up. It could be a library, an information centre, agencies, business organisation.
- ◆ Colleagues: this refers to professionals that are working together with you in achieving your set out mission and objectives.

4.6 REFERENCE/FURTHER READING

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4.7 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISE(S) WITHIN THE CONTEXT

1) The major steps of setting up information literacy instruction in any environment or organisation are:

- Mission, Goals and Objectives
- Planning
- Administrative and institutional support
- Programme sequencing
- Pedagogy
- Communication and advocacy
- Assessment and evaluation

2) The two methods of assessment/evaluation are:

a) Short or Long term measure, OR formative or summative method.

MODULE 3: INFORMATION NEEDS AND ACCESS

Unit 1: Information Needs and Search Strategy

Unit 2: Information Sources

Unit 3: Information Reference and Access Tools

Unit 4: Information Literacy Skills

UNIT 1: INFORMATION NEEDS AND SEARCH STRATEGY

UNIT STRUCTURE

- 1.1 Introduction
- 1.2 objectives
- 1.3 Main Contents
 - 1.3.1 Information Needs
 - 1.3.2 Kinds or Levels of Information
 - 1.3.3 Information Seeking Behaviour
 - 1.3.4 Information Searching Strategies
 - 1.3.5 Information Usage
- 1.4 Summary
- 1.5 Glossary
- 1.6 Reference/Further Reading
- 1.7 Possible Answers to Self-Assessment Exercises

1.1 INTRODUCTION

This unit will explain what is meant by information needs and search strategy. It is like negative and positive, once there is one the second is expected to be. Information needs will always prompt information search strategy. Irrespective of whether a person is information literate or not, there are various ways of how to go about meeting that needs and this is what will lead to the search strategy. Several means of getting answers to a problem can be diverse especially in information world where there are so many information resources and sources exist. The multi sources and availability of several resources makes it necessary to have strategy to employ in order to get the best out of the myriads of information.

There will always be information needs by users due to several factors that may be responsible. Reasons for needing information include professional, business, office, information news desire, decision taking, desire for new things, looking for direction or instruction on how to do or use a particular thing, etc. are different reasons for needing information.

1.2 OBJECTIVES

At the end of this lesson, students should be able to:

- Define information needs
- Kinds and levels of information needs
- Explain what is information seeking behaviour
- Mention and elaborate information seeking strategies
- Describe information usage.

1.3.1 INFORMATION NEEDS

Useful resources will always be needed for diverse purposes. Information being very useful for so many reasons will always be needed to fulfill some functions. When there is a knowledge gap that needs to be filled up by anyone, then we say there is information needs. Information need can be defined as the state of user's consciousness of a knowledge gap that can be filled by obtaining appropriate information. Information need can also be defined as:

- Patterns and paths pursued by an individual in an attempt to resolve a need; or
- A state of lack of desirable requisites(s) or commodities (information)

Information needs is a personal and unconscious conditions. He articulated four levels of information need that an individual passes through before he or she makes formal encounters with an information professionals. These levels are visceral need, conscious need, formalized need and compromised need. Information need is an individual or groups desire to locate and obtain information to satisfy a conscious need or unconscious need.

The concept of information needs is the outcome of the combination of two terms, 'Information' and 'Needs'. The concept of information needs was coined by an American information scientist Robert S. Taylor in his article "The Process of Asking Questions" published in American Documentation. According to ODLIS, a gap in a person's knowledge which, when experienced at the conscious level as a question, gives rise to a search for an answer. If the need is urgent, the search may be pursued with diligence until the desire is fulfilled

Information needs can be viewed, anticipated and understood when there is the need to provide or access appropriate and applicable information for fulfilling a specific purpose. Information needs relate to:

- What information is needed
- What can be done to satisfy the need,
- On what level should information be provided, and
- How much detail should be given or obtained.

Information needs depend on several factors such as:

- Level of education
- The ability to verbalise the request
- Type of work of occupation
- Professional needs
- Societal needs
- Desire to be current (news and current affairs)
- Professional advancement or development
- Religious purposes
- Community services or responsibilities
- Economic issues
- Decision making

Information needs can also be based on personal, general, or others need. Information need is personal when the person wants to satisfy a particular urge or desire that can only be met by obtaining information. Information could be for general if a group of people or community wants to solve an information needs and individual members are expected to obtain relevant or related information to meet such needs. Information can be for the purpose of others when the individual looking for the information intends to use for the benefits of other people. Example of this include things like preparation for seminar, workshop, writing of papers, delivering keynote address, creation of awareness on certain things among others.

1.3.2 Kinds or Levels of Information

The human basis of desire for information is the basis for this classification. There are basic needs of every human being and when the desire for information is from any of these sources of human basic needs, it is regarded as kinds of information needs. This comprises of three major sources:

- **Physiological needs:** this include information that has to with meeting the basic needs of life especially food clothes and shelter. The need for information in this direction could be desire for prices of any of these items, where to get, how to process them, what to do with them for certain purposes or time, etc. This type of information is a recurring one that every individual will always have. Things like quality of these basic needs is a common information to be sought after.
- **Psychological needs:** this type of information needs has to do with security and domination. It is the information we seek to have self-identity, establish authority, etc. Every individual will need information about security of jobs, life and property, investment, etc. Regular dissemination of information along these areas of human life is very paramount.
- **Cognitive needs:** this is information that has to do with use of brain. Individuals from time to time have to take decision of what to do about skill acquisition, job performance and delivery, increasing their work efficiency and effectiveness. These include things like education, training, problem solving, etc. These are things that require information as one problem will lead to another problem and sometimes a solution provided will also lead to another problem. This is the reason why research will forever continue.

Another way of classifying information need is based on expression:

- **Dormant needs manifest:** this is when the individual concern do not realise that he/she has need for information. It is also when individuals are not aware of “new” information available that can be used by them. This problem most times could be solved by exposing such individual to information. Information will always lead to information needs, and when some information is made available it triggers the thinking process of some individual to know that they actually need information.
- **Unexpressed needs manifest:** this is when individuals are conscious of their information need but do not or cannot express the need. The inability to express information needs can be connected with several factors like lack of proper

way of expressing the need, personal factors like timidity, shyness, etc, level of education.

A) **Meeting Information Needs:** the crux of information literacy is making users to become able to meet their information needs. There is the need to solve the problem of information needs which is also known as meeting information needs. Some of the factors that may affect how effectively and efficiently a person can meet his/her information needs are: personality, time, access, lack of resource and excessive cost, and information overload.

i) **Personality Factors:** this has to do with individual willingness and ability to meet information needs at hand. The individual traits and skill can play a factor here, some of the common factors are:

- Thoroughness to search deeply and painstakingly
- Orderliness through systematic searching
- Motivation which will leads to commitment
- Being receptive to new ideas, formats, sources and resources that can be explored
- Persistence to achieve purpose for the information needs.

ii) **Time factors:** this has to do with the time that the person with information needs has to spend on accomplishing the task or the amount of time (deadlines for the information to be meet) he is ready to put in for doing the search (the time that the individual is free or available to invest into solving the information problems

iii) **Access factors:** this has to do with what are the available options of where to get information to meet the needs. This include:

- Knowledge of existence of the right source for information to meet the needs
- Difficulty in obtaining the information after the sources have been identified.
- Distance of barriers to where the information needed is
- Format or language in which the information is available
- The temptation of using what is available and not necessarily what is best or most appropriate

iv) **Lack or expensive source of information:** this has to do with total absence or unavailability of information to meet the needs, in rare cases the cost of obtaining the information may be beyond reach. For example some articles or journal papers are usually prized on the internet even despite the liberality of information. Bureaucracy of obtaining some classical information may contribute to costs.

v) **Information overload/flood:** the advent of internet has really promoted this factor in meeting information needs. There is so much information today that there is the need to evaluate the various information to get the best. Navigating through the information today is also a challenge today and the need to ascertain quality.

1.3.3 INFORMATION SEEKING BEHAVIOUR

Information seeking behavior is a broad term, which involves a set of actions that an individual takes to express information needs, seek information, evaluate and select information, and finally uses this information to satisfy his/her information needs. Various factors may determine the information seeking behavior of an individual or a group of individuals; it is, therefore, desirable to understand the purpose for which information is required, the environment in which the user operates users' skills in

identifying the needed information channels and sources preferred for acquiring information, and barriers to information.

Information seeking behavior has always been an active area of interest among librarians, information scientists, communication scientists, sociologists and psychologists. Information seeking behaviour results from the recognition of some need, perceived by the user, who as a consequence makes demands upon formal systems such as libraries, information centres, on-line services or some other person in order to satisfy the perceived need (Fatima & Ahmad, 2008)

Igwe (2012) describes information seeking behaviour as an individual way and manner of gathering and sourcing for information for personal use, knowledge updating and development. According to the International Encyclopedia of Information and Library Science (1997) defined information seeking behaviour as the complex patterns of actions and interactions which people engage in when seeing information of whatever kind and for whatever purpose.

Information seeking behaviour can be defined as involving personal reasons for seeking information, the types of information that is being sought, and the ways and sources with which information needed is being sought. Information seeking behaviour can be expressed as different attitudes ranging from reading printed materials to research, performing an experiment, users actively seeking current information for diverse purposes from different sources and resources.

Factors Affecting Information Seeking Behaviour

The way and manner of searching for information by users will not be the same and this is due to several factors. Information seeking is a skill or behavioural attitude that is achieved over a period of time. Attitude or behaviour are not just formed overnight, some factors must have influenced it. These factors include:

- Level of education: the level of education in various formats or dimensions will determine how an individual will search for information. A person may be academically educated but if he/she does not have education in the area of information literacy or not computer savvy, he/she may find it difficult to search information especially in the modern age and this will greatly affect their information seeking behaviour.
- Access to library or information sources or resources: the availability of information at close proximity whether by distance or online will go a long way to affect the behaviour of the users. Distance or obstacles to accessing information will definitely affect behaviour.
- Time factor: how long is the user ready to spend or take to achieve the information. Though time factor may be affected also by the information literacy competence, availability of resource or source to find, etc.

1.3.4 INFORMATION SEARCHING STRATEGIES

Information seeking or information searching are closely related, hence there is need to elaborate on information searching strategies. These are the various means and methods through which an individual who is in need of information tries to meet the information needs.

It has been postulated that we live in a universe of knowledge where all the information needed is definitely present somewhere or somehow. This idea is that there is not information need that does not have an answer to it somewhere. Hence the necessity for the individual with information needs to look/search/access information from wherever it could be found. The manner, methods, approaches, systems, etc that are deployed in the process of seeking for information that will meet an information need is called information searching strategies.

Under the universe of knowledge concept, it was idealised that there is the information system, users' life world and information resources. The information system is divided further into two sub-information systems which are: mediator and technology. Mediator represents a human factor that has capacity to assist, support, provide or link up with information that is needed. Mediator could be Librarians or information scientist, professional colleagues, mentors, facilitators at training, authority in a particular field, old people, etc. They are either custodian of the information or link to the information sources or resources. Technology on the other hand is the combination or use of techniques, tools and machines that are employed in searching for information. Custodian of information may be a document or living people.

A) Categories of Information Search Strategies

The following are various ways or means through which information could be sought for:

Information searching that is independent of any information system: this is where the individual in need of information relates directly with colleagues to solve the information problem or relate with a group of people that he/she believes that could be of help to provide the needed information and where the user can interact with the universe of knowledge. Here the individual with information needs does not make use of any other intermediary (mediator) or technology to achieve his/her information needs.

Information searching based on use of information sub-system: this is when the individual with information needs searches for information with the aid of mediators or technologies. The information need individual consult with a librarian, information scientist or other professionals who could be of help to assist him/her in accessing the needed information. The use of computer, online search, catalogues, or any other assisted means to access the information. The use of these sub-system of information depends largely on the level of information literacy of the user.

Mediator based search strategies: this is when the search is to be done entirely by a mediator on behalf of the person that is really in need of the information. The mediator takes the information needs from the person who is in need and the mediator takes the responsibility of searching for him/her. This type of search sometimes can be called document delivery or specialised or full referencing search by the mediator.

Technology based search: this is when there is a network of databases or source of searching for information. The individual with information needs enters his or her information needs into a system/technology and this system now searches other system or databases, research data files, online and electronic resources, etc. Modern example of this is when someone uses search engines like Google, explorer, etc to access needed information. Some library software also could be of help in this dimension and the

current fourth industrial revolution is affecting this where a robots can perform search on behalf of someone whether in the physical library or online databases.

There is no strategy that is complete on its own depending on the level and amount of information that is needed. Most often there may be need to combine two or more strategies to be able to achieve our objective of meeting our information needs. Available resources sometimes may affect or limit the type of search strategies that may be available to a particular person, this is why two people with the same information needs may not get the same information solution to their needs.

The competence of an individual looking for information is also very important as all the strategies require certain amount of skills. One category of information may not be sufficient to access the needed information necessary to meet an information need. It is dependent on the information literacy competence of the individual with information needs to be able to explore a particular category to the fullest. Investigation of any particular category of search strategies will definitely be investigating “information seeking behaviour”. information seeking/searching behaviour will have to do with the manner and approaches employed in the course of accessing information. The way an individual will search for information using a particular category will definitely be different from another vis-a-vis their information literacy skill competence.

1.3.5 INFORMATION USAGE

Using an information depends on so many factors. Information that is also produced was done with some intention in mind. The users also need to know how to make the best of the information that is accessed. The major factor that determines the use of information is the information need; why was the information needed in the first place. Three major class of usage of information will be discussed here, while it is generally accepted that there are many other personal or specific use based on the need at the point in time. Mostly the various needs will fall under one of the three major uses of information. They are:

i) **Planning:** this can be expressed or linked with prior preparation for anything. This is what has to be done or what is to be done. One major ingredients of planning is adequate and appropriate information of what is to be done, how to do it, when it is to be done, etc. Quality planning requires quality preparation, no one can do more than he/she knows. Planning is to provide the necessary background structure for anything. It is not an end in itself, but the quality of the plan will go a long way to determine the final outcome. Planning is the process of constructing sequence of actions that when executed will achieve the desired objectives and aims of the project or organisation.

ii) **Control:** this is monitoring and evaluation of current situation against the steps of pre-defined standards or plan. It is evaluative in nature to ensure that desire objectives will be actualise through the current process. Once this cannot be guaranteed, there is the need to bring back the process to conform with the set standard or defined arrangement in the plan to give the desired objectives.

This control can be operated at different levels of management or of the process depending on the issue at hand. It can be described as the monitoring process to ensure that the plan laid out is achieving the desired objective. Information between the plan

and objectives must be available to guide the entire project to positive conclusion. Control is necessary to avoid unexpected events that may want to affect or change the expected objectives. The information got from the control process will help in ensuring that the desired objectives are achieved.

iii) **Decision Making:** everything in life is a product of decision making. It is the selection or de-selection of one thing against another, one action or inaction, etc. All these are a product of information which will trigger or drive a particular decision. Achieving an objective is a decision to be taken against all odds due to availability of information about the issue. Quality decision are always a product of available information, wrong information will lead to wrong information and this can take place in any sphere of life. Hence the significance of information and its uses.

There are several other uses of information at basic, personal or specific need levels. Today information has become such a huge commodity and it is like the more it is being produced the more it is finding usefulness. Every need can be met at the basic level by provision of adequate, complete and accurate information.

Self-Assessment Exercise: what are specific information uses for specific situation or event. Imagine an individual is standing before you, try to identify some of his/her information needs, for example a student, a professional, a business man.

1.4 SUMMARY

Information needs and search strategies are like Siamese twins that go together. Once a knowledge or information gap is identified, the next thing is to search for the information. Human being will always need information and they will also employ any available means or method to search for such information. The usefulness of information makes it to be so important that once it is needed, the solution just have to be provided. As technology evolves, so also the manner and way of searching for information will evolve.

Librarians in their various offices must rise to the challenge of information literacy instructions to users so as to empower them to be versatile information searchers. The more competent an individual is, the better ability to search for information irrespective of the formats or location of availability. Users must be properly equip especially in this modern age to search for information as information available today is in high quantity.

This unit has elaborated on information needs, some specific information needs among specific groups of users were also given, what is information seeking behaviour, various information seeking strategies were elaborated and what are the things that information can be used for. The definition of information has shown that there is an information or knowledge gap that needs to be filled. This is a process that occurs from time to time as there will always be things to do. Information needs can be of various kinds ranging from physiological or basic to psychological and cognitive needs. Information needs can also be dormant or unexpressed depending on how the individual that is in need of the information presents it. Information search strategies is the way and manner through which an individual tries to access information that is needed. The information universe can be access in diverse ways such as direct access by the individual, or going through

the information sub-system of mediator or technology or using the networks of technology or engaging humans to help out with meeting of the information needs. Information usage are principally classified into three as for control, planning and decision making.

SELF-ASSESSMENT EXERCISE

- 1) What are some of the factors that affects how an individual can effectively and efficiently make use of information?
- 2) What are factors affecting information seeking behaviour?

1.5 GLOSSARY

- ◆ Information needs: this refers to the state an individual that is lacking information about a particular issue. It is the state of trying to find solution to an information desired for different purposes
- ◆ Information seeking strategies: these are various procedure and process through which an individual wishes to get his/her information needs met.

1.6 REFERENCE/FURTHER READING

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1.7 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISE(S) WITHIN THE CONTEXT

- 1) The factors are: personality, time, access, lack of resource and excessive cost and information overload.
- 2)Factors affecting information seeking behaviour are:
Level of education; Access to library and information sources or resources and Time factors

UNIT 2: INFORMATION SOURCES

UNIT STRUCTURE

- 2.1 Introduction
- 2.2 objectives
- 2.3 Main Contents
 - 2.3.1 Definition of Information Sources
 - 2.3.2 Different types of Information Sources
 - 2.3.3 Different Formats of Information Sources
- 2.4 Summary
- 2.5 Glossary
- 2.6 Reference/Further Reading
- 2.7 Possible Answers to Self-Assessment Exercise

2.1 INTRODUCTION

The concept of information sources started way back when “literature” begins to expand and information was growing and coming from different quarters for different purposes. The print age witnessed an increase in the types and content of information from different places for different reasons and this gives birth to specialised and/or general information. With this development, the challenge of where to get information for use came with it. Even though the early libraries collect everything that conveys information and this added to the problem of getting the right information from the right sources. The internet and modern technology age added more to the challenge of getting information especially from a right source as the source of an information go a long way to determine the quality and authority of such information in some occasions. To satisfy an information need on time and satisfactorily, one need relevant, quality, authoritative and accessible/usable information to work with. Hence, the need to know the different sources of information. This unit is expected to deepen your knowledge of information materials, formats and description better than before.

2.2 OBJECTIVES

At the end of this unit, it is expected that learners will be able to:

Define information sources

State clearly the various classification or category of information

Describe specific information material under each types of information

State and explain the different formats of information

2.3.1 DEFINITION OF INFORMATION SOURCES

You should have had reasons to use a library before or you might have some information material with you. These information materials with different content in terms of language, diction, presentation, format of prints, etc are what is regarded as information sources. You might have had reasons to do some assignment of meet information needs and the material you use include things like Maps, dictionary, handbooks, etc. Information sources are the various means by which information is

recorded for use by an individual or an organization. It is the means by which a person is informed about something or knowledge is availed to someone, a group of people or an organization. Information sources can be observations, people, speeches, documents, pictures, organizations. An Information Source is a source of information for somebody, i.e. anything that might inform a person about something or provide knowledge to somebody. Information sources may be observations, people speeches, documents, pictures, organizations etc. The various types of information sources can be divided into two broad categories.

2.3.2 DIFFERENT TYPES OF INFORMATION SOURCES

This is the classification of information sources in two major ways. The categories are:

- Documentary sources
- Non-documentary source

Documentary sources: these are documents that are available as hardcopy, published or print.

Non-documentary sources: these are sources that are not really available in hardcopy, published and not available in any tangible format.

The second way of classification is type of information sources based on: the source from which information comes and the various stages of processing or communication that the information has gone through determines this classification. The same information that is coming out from the source at the moment will be different form after it has been processed to another type or medium to carry it. The processing or packaging with time factor of when and where the information is available are the rudiments for this classification: there are three major sources:

- Primary sources
- Secondary sources
- Tertiary sources.

Primary Sources: Primary sources of information are the first published records of original research and development or description of new application or new interpretation of an old theme or idea. There are original documents representing unfiltered original ideas. These constitute the latest available information. A researcher producing new information can make it available to the particular community through the primary sources. Primary source is a term used in a number of disciplines to describe source material that is closest to the person, information, period or idea being studied. A primary source (also called original source) is an artifact, a document, a recording, or other source of information that was created at the time under study. If created by a human source then a source with direct personal knowledge of the events being described. It serves as an original source of information about the topic. It is difficult to find information from primary sources directly. Examples include periodicals, conference papers, research monographs, research reports, patents, standards, thesis, industrial and trade literature, manuscripts. Other unpublished sources include: memorandum, laboratory notebooks, diaries, company files, portraits, state papers. Other sources are video recordings such as speeches, works of Arts, Architecture, Literature and music. Some of the popular examples shall be discussed below:

Periodicals: A periodical is defined as a publication which is published with definite periodicity or interval e.g., weekly, fortnightly, monthly, or quarterly under the same title, and intended to be brought out indefinitely. Each issue is dated and consecutively numbered. All the issues in a volume have continuous pagination. A periodical consists of collection of articles contributed by different authors. Periodicals are also called journals. The information in periodicals is timely, current and up-to-date than information in books. Periodicals are of many types such as scholarly periodicals, trade and business periodicals, popular periodicals and magazines.

“Serial” is a broader term for publications that come out from time to time. Common types of serials include research periodicals, trade and business periodicals, newsletters, newspapers, popular magazines, almanacs and yearbooks, annual reviews, indexing and abstracting periodicals.

i) **Scholarly periodicals:** Scholarly periodicals are published by learned societies, R&D organizations, universities and some reputed commercial publishers. These are better known as journals which generally publish research findings and are peer reviewed. Because of the rigorous evaluation process, these publications are also referred to as refereed or peer-reviewed journals. Characteristics of scholarly periodical are:

- The purpose of a scholarly journal is to report original and significant research in a particular discipline. These journals are primary source of information and also called primary periodicals.
- These periodicals are the best source of information on new or current topics.
- Articles are written by researchers, professionals or experts in the field. The articles are mostly technical in nature and cannot be understood by readers who lack the subject background.
- These journals are meant for scholarly audience and are called scholarly journals.
- Normally, these journals do not carry any advertisements.
- Each issue is consecutively numbered and all issues in a volume have continuous pagination.
- A scholarly journal article often has an abstract (a descriptive summary of the article) before the main text of the article. □ Each article has the address of the author/s.
- Articles always cite their sources in the form of bibliography or footnotes. These bibliographies contain references to other scholarly writings.

ii) **Trade and Business Periodicals:** Trade and business periodicals are published by trade organizations and commercial publishers. Examples include: The Indian Textile Journal, Chemical week, etc. The characteristics are as follows:

- These periodicals cover articles, news, trends and issues for specific business and industry.
- Authors can be professionals in the field or journalists working for the publisher.
- Articles cover industry trends, new products or techniques. The journal also covers organizational news.
- There are lots of advertisements related to specific industry or trade. Index to the advertisers is also included.
- The periodical is mostly published on glossy paper and has colourful illustrations.
- Though the language of the articles tend to be related to terms specific to industry or trade, the articles are written for general educated audience.

iii) Popular Periodicals: these are devoted to particular subject area and contain articles on that subject written in simple language.

- Popular periodicals are meant for general public who do not have specialized knowledge of a particular subject. □
- These are published to inform, educate and entertain the public
- The purpose of popular periodicals in areas of science and technology is to popularize science.
- These are published by R&D organizations, government departments and commercial publishers.
- Articles are mostly short and sometimes do not contain references.

iv) Magazines: The magazines are published by newspapers and commercial publishers. These magazines entertain, sell products and give practical information and/or promote a view point. Examples include Ovation, This Life, Ebony, etc. Characteristics are:

- Content of the magazines include information on popular personalities, news and general interest articles.
- Authors are journalists and freelance writers.
- Glossy covers and lots of colour illustrations and photographs distinguish these magazines from others.
- Advertising is substantial.
- Language is simple and designed to meet a minimal education level.
- Each issue begins with page number one.

iv) Newspapers: Newspapers publish news of recent happenings on political, social and economic front of a nation, or region. Some of them are local or regional, national or international in coverage. They could also specialise in an aspect such as finance, sports, economic, etc. Examples include The Punch, The Guardian, Nigerian Tribune, The Nation, etc. characteristics include:

- Published daily, weekly or bi-weekly.
- Coverage includes news, current events, advertising and topics of human interest.
- Main purpose is to inform, explain, influence and entertain readers.
- Authors are free-lance writers or journalists, but can also be scholars.
- Articles are generally short. Language is simple and designed to meet a minimum education level.
- Articles are generally illustrated with colourful photographs.
- Advertising can be moderate to heavy.

v) Technical Reports: Technical reports are research reports which are produced after conducting research on a well-defined research area, mostly in the field of science and technology. Such research is usually sponsored by government organizations, industries or other agencies. The researcher who conducts research for sponsoring bodies, write research results in the form of technical report and submit to the sponsoring agency. Technical reports are primary sources of information.

vi) Conference Papers: these are publications that comes out of academic conference meetings. It is usually called proceedings of the conference. The papers presented during the conference are published in it.

vii) **Dissertations and Thesis:** these are document submitted by researcher/students in order to qualify for the award of a higher degree in universities. It is usually masters or PHD programme research report that has been rigorously supervised and examined.

Self-Assessment Exercise: what is the difference between serial and periodical?
Give more examples of each of the types of periodicals.

Secondary Sources: Secondary sources of information are those which are either compiled from or refer to primary sources of information. The original information having been casually modified selected or reorganized so as to serve a definite purpose for group of users. Such sources contain information arranged and organized on the basis of some definite plan. These contain organized repackaged knowledge rather than new knowledge. Secondary sources are more easily and widely available than primary sources. secondary sources are easier to get than primary source, hence it is usually the first source to use which can now lead to specific primary primary sources. Examples of secondary sources are: books, index, abstract, bibliography, review, treatise, monograph, critical tables, etc. Popular ones among them are discussed below:

i) **Indexes:** these are information materials having full bibliography of other primary sources. The items of primary sources like journals, papers, etc are arranged under an agreed or chosen method and presented so that users can easily know where to get certain information. Major fields/entry/access that are captured are: name(s) of the author(s), title of the article, title of the journals, volume number, issue number, year of publication, and the page number.

ii) **Abstract:** this is the summary of some selected primary information together with the bibliographical details of the document. This will help the user to determine whether the information is likely to be useful and location of it. Author and subject indexes are provided in some periodical abstracts.

iii) **Bibliography:** this is systematic list of documents that share interest or focus such as subject, language, period, author, etc. The list may be selective or comprehensive. The list will be arranged in a particular order. The entries provide full bibliographical details of the information resource.

iv) **Books:** book can be described as written or published document of at least 49 pages of text on a subject, thoughts, idea or information. The pages must be glued together; two covers have to be provided (front and back) and joined together. The cover could be of any material ranging from cloth, plastic, leather, cardboard, etc.
Other things that seemly belong to book class are:

Pamphlet: these are unbounded pages of information, thoughts, ideas that are unbounded with minimum of 5 and maximum of 48 pages.

Manuscript: this refers to document written or typed by a machine such as typewriter or computer. It is usually the original version of author(s) work. Manuscript also means any handwritten document from ancient times until the introduction of printing in 1940.

Tertiary Sources: this category is a bit difficult to differentiate from the secondary source. It is the materials in which the information from secondary sources has been digested- reformatted and condensed, to put it into a convenient, easy to read form. It

is the material which index, organize and compile citations to, and show you how to use secondary sources. They may not contain subject knowledge but provide aid to users to find primary and secondary sources of information. Examples of this source of information include Bibliography of bibliographies, Encyclopedia, dictionaries, handbook/manual, directories and yearbooks, guide to literature, list of research in progress

i) **Encyclopedias:** these are books that give information on all branches of knowledge or detailed information about a specific subject it is an ideal book which deals with concepts and is a good for source for background information and specialised interpretation of terms. It is a source for everyday information needs. Countless examples abound among which are: Encyclopedia Americana (1976). New York: Grolier. 30 vols, Britannica, etc.

ii) **Dictionaries:** A dictionary is a book, which deals with words of a language or of some special subjects, authors, etc. Dictionaries could be general or specific in nature. General on nature when it covers many aspects of knowledge eg Websters third new International dictionary of English language, oxford advance learner english language, etc. Specific in nature when it focuses on a single subject or more precisely on specific aspect of a subject such as dictionaries of computer, chemistry, oncology, medicine, etc.

iii) **Handbook:** A handbook is a compilation of miscellaneous information in a compact and handy form. It contains data, procedures, principles, including tables, graphs, diagrams and illustrations. Scientists and technologists use handbooks in their fields rather frequently.

iv) **Manuals:** In common practice, a manual is an instruction book, which instructs how to do something by means of specific and clear directions.

2.3.3 DIFFERENT FORMATS OF INFORMATION SOURCES

Information is found in many formats. The major classes of information formats are: Print, Non-print and Electronic.. The non-print is further classified as Multimedia, Audio, Online, digital and film. as Each format has advantages and disadvantages in terms of access and ease of use. Understanding the characteristics of each type is important because their purposes and functions vary. The ability to determine the appropriateness of a particular source will enable you to select only those most helpful to you.

Print Information Format: this include information that is tangible to hold and. It could be in medium such as wood, metal, paper, stone, etc. It is the second earliest form of information which was popularly used to document the most popular and oldest form of information format. Examples of print information formats include: printed books, periodicals, maps, bibliographies, indexes and abstracts, photographs, government documents, technical reports, etc.

Non-print Information Format: these class other forms of information bearing medium that are not in tangible format and may require the use of a machine to access the information on it. Examples of these class are audio, multimedia, visual, microform, etc.

Audio, Audio-Visual and Multimedia: this group are closely related together as they interweave into one another. The audio has to do with information formats in audible or voice alone. It is usually spoken information or oratory in nature. The audio is the most popular in ancient time and some communities to transmit their cultural heritage. It is also the most trusted source of indigenous knowledge in Africa. It could be recorded in some format like, Audio cassette, Audio CDs, Mp3, etc. The audio-visual most time is usually referred to as the video in most cases. It contains both the audio/oral and the visual or display of images or graphics recorded. It could be recorded in VHS, Video cassette, MP4, Video CD, etc. The multimedia is encompassing of as many formats as possible: print, audio/oral, images/video, etc. It can be recorded on CD, MP4, online, etc.

Microform: this is arrangement of images in reduced forms/sizes on a film. This could be microform or microfiche. Microforms are micro-reproduction of documents on films or paper with the purpose of transmission, storage, reading and printing. Microforms images usually requires the use of devices or equipment to be able to read or accessed the document. It is highly suitable for archival materials as it is stable and economical for storage over an extended period of time. Two major types of microforms are: microfilm and microfiche.

Microfilm: this is a roll of transparent film with approximate length of 100-200 feet in length. It is used to store microscopic images of documents. Documents on microfilms can only be accessed through the use of microfilm reader. It has a storage capacity to last for about 500 years, hence it used for document that fragile or at risk of damage due to frequent use or for posterity of certain classical documents.

Microfiche: this is a small sheet of transparent photographic film usually 4 by 6 inches containing printed information. The printed information on the film is too small to be seen by naked eyes, hence a device is usually needed to access the printed information on it. The microfiche machine magnifies what is printed on the thin sheet of film for the user to read or interpret. It is very good for saving and preserving cultural documents.

2.4 SUMMARY

Getting information can be as simple or difficult as the individual concern is knowledgeable about the right source to use to get the information. The information obtain or sought will meet the need if it is obtained from the right source. An information may be present in the three major classes of information but the user or the audience to use the information will determine which of the sources will be most appropriate to use for meeting the information needs. The language and accessibility to information are major difference of the various sources. Usually users wants to start searching for information from the primary source rather the tertiary source should be contacted first. This will give further information sources to be contacted. Also information in tertiary sources are usually indisputable because it is believed that they have gone through various process of condensation, criticism, packaging and review before coming out. While the primary sources are usually the most current but may not always be the final authority that can stand the test of time.

This unit has discussed the issue of information sources from the definition as anything that can inform an individual or anything that an individual can contact to get access to required information. Information sources were classified in two ways. The first one is based on documentation and it is either information sources are documented or non-documented. Information source was also classified based on the source as primary, secondary and tertiary sources. Examples of each source was given and later elaborated upon. Each source is connected to the other either way: the primary source gives birth to secondary source and secondary source gives birth to tertiary sources which is regarded as the most authoritative. Also the tertiary source is always the best source for where research or meeting information needs should start from as it will give suggested secondary sources that can elaborate more on the subject matter in most cases. The secondary source also can point to primary sources that may need to be contacted.

SELF-ASSESSMENT EXERCISE

- 1) Mention two major sources of information?
- 2) What are the three levels of information records or documents
- 3) What is the difference between serial and periodical?

2.5 GLOSARRY

Information Sources: These are the various means by which information is recorded for use by an individual or an organization.

Information Resources: these are various media or formats that information has been stored and can be retrieved by user to meet information needs.

2.6 REFERENCE/FURTHER READING

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2.7 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISE(S) WITHIN THE CONTEXT

- 1) Major sources of Information are: Documentary and Non-documentary sources
- 2) The three major sources or levels of information are: primary, secondary and tertiary.
- 3) Serials are mainly publications that are not books but are produced from time to time whether regular or irregular while periodicals are publications that are not books but are produced at fixed time interval or periods.

UNIT 3: INFORMATION REFERENCE AND ACCESS TOOLS

UNIT STRUCTURE

- 3.1 Introduction
- 3.2 objectives
- 3.3 Main Contents
 - 3.3.1 Definition of Information Reference
 - 3.3.2 Different types of Information Reference Sources.
 - 3.3.3 Information Access Tools
- 3.4 Summary
- 3.5 Glossary
- 3.6 Reference/Further Reading
- 3.7 Possible Answers to Self-Assessment Exercise

3.1 INTRODUCTION

Libraries have always been engaged in providing services to their users. Maximum utilization of resources is the principle underlying the heart of the very concept of the librarianship which is the collective sharing and use of the records for the benefit of society as a whole and of the individuals making up the society in particular. Reference work is the actual assistance given to the users in need for information. It enables librarians and users to understand where the recorded information exists and helps in searching the needed information. This activity has been designed in the libraries for the convenience of the users. In this Unit, we provide you an overview of reference books/sources, which are very useful for providing information quickly to the users. You will also get an exposure to the requirements and necessity of a reference department consisting of reference collection in a library.

3.2 OBJECTIVES

At the end of the lesson in this unit, students are expected to be able to:

- Define reference sources
- Explain different types of reference sources/materials.
- Mention major reference materials or access tools in the library
- Explain the different types of information access tools

3.3.1 DEFINITION OF INFORMATION REFERENCE SERVICES

The purpose of reference work is to allow information to flow efficiently from information sources to those who are looking for it. In the day to day activities in the libraries, the librarian has to rely on reference books of the library, which you would have seen kept separately in the library and is generally not issued out of the library. All of us are very much familiar with the reference books of which the most popular ones are the dictionaries, and encyclopaedias.

Since the beginning of libraries, the librarians have been extending informal help to individual users in the use of library collection. The underlying rationale for reference service has been based on four aspects, namely, to develop the role of the library as an

educational institution, to assist academic community, to help users select best documents from the vast universe of books and to justify the existence of the library to the persons/people who provide financial support.

Reference work has developed its scope from mere assistance to users to utilization of subject specialists, development of many books and techniques for reference and use of computers to satisfy the information needs of scientists, researchers and others modern day approach to library services has empower users in many cases not to come to library. The reference requests of the users can be satisfied even by sending a messenger to the library or on the telephone or by post if these can be effectively conveyed. Now, this can even be satisfied by electronic mail.

3.3.2 WHAT ARE INFORMATION REFERENCE SOURCES

A basic question arises then when we start discussing reference books, that is what books and other materials a reference library should stock and how they should be organised so as to constitute a reference collection. The reference collection should include three classes of materials:

- Reference books such as, Dictionaries, Encyclopaedias, Bibliographies, Yearbooks, Directories, Biographies;
- Standard works of information such as Gazetteers, Atlases, etc.;
- All such materials that cannot be lent for home reading such as indexing and abstracting periodical, statistical sources.

Reference books are referred to as compilation, specifically designed to provide items of in-formation in a most convenient form. The reference collection of any library should include the best and latest editions. The reference books are many in number. No single library can afford to buy all the available reference sources. More complexity has arisen due to availability of reference books in other media other than the print media. But ultimately, the best reference collection is said to be the one, which is useful for both the reference librarian and the users.

Characteristics of Reference Sources:

- 1) They are authoritative works that can be referred to for specific answers or information
- 2) They are used to define a given topic and can provide background or introductory information on a topic.
- 3) They suggest ways of find material on a topic or provide statistical or tabular data s well as technical instruction
- 4) They are consulted for information and cannot be read from cover to cover eg dictionaries, encyclopedia. These provide factual and detailed information which answer specific queries.
- 5) Reference books cannot be checked out of the library because they are usually referred to for particular pieces of information the writing style used in these works is informative.

Specific Examples of Reference Sources or Tools

Reference sources could be of two types: documentary and non-documentary: we shall discuss the documentary reference sources:

Dictionaries: A Dictionary is a book explaining the words of a language, or the terms of a subject, arranged in some definite order, usually arranged in alphabetical order, with explanation of their meanings and use. Dictionaries differ according to the range of words they define and the kind of information they give about each word. There are four types of dictionaries: abridged, unabridged; bilingual and multi-lingual dictionaries. Dictionaries can also be general in nature or specific. Example include: Oxford Dictionary, Webster's New World of American English, Advanced Learners Dictionary of Current English.

Encyclopedia: An encyclopedia is a systematic summary of the knowledge that is most significant to man-kind. It is a work containing information on all subjects or limited to a special field or subject, arranged in systematic (usually alphabetical) order. Encyclopedia is usually in volume, but rarely as one volume. Encyclopedias are major reference sources, containing so much information that at one time, good encyclopedias were referred to as the backbone of the reference service in the libraries. Encyclopedia tells "what", "when", "how", "where", and "why" of an idea, a person, a place, air event or things. Encyclopedias are major reference sources, containing so much information that at one time, good encyclopedias were referred to as the backbone of the reference service in the libraries. Encyclopedia can be general or specific/subject based in nature. Examples of general Encyclopedia are: Encyclopedia Britannica (15 Vols), Collier's Encyclopedia (24 Vols); Encyclopedia Americana (30 Vols) and Encyclopedia of Religion. Example of subject/specific encyclopedia are McGraw-Hill Encyclopedia of Science and Technology (19 Vols); Encyclopedia of Library and Information Science, (35 Vols).

Bibliographies: A bibliography is defined as a well-organized list of written, printed or otherwise produced record of civilization, e.g., of books, articles in periodicals, etc. It serves the librarians and users in finding documents that they are not aware of (or not sure of existence). Information specialists and librarians frequently consult bibliographies. Their use, therefore, includes selection, identification and verification and eventually location of materials. Bibliographies are available in several forms. They can be universal, trade or national. Another most useful form is the subject bibliography, which is meant for the research workers and for others in specialized areas. Examples are: British National Bibliography, Cumulative Book Index, Forthcoming Books, etc.

Biographical Sources: these are materials on information about people. It is usually collection of personalities that matters on specific or general basis. It can be used to find information about a particular person, important people in a profession, trade, art, religion or any phase of life, specialist in disciplines, social elite, clubs, etc. Example include International Who's Who, Who's Who in America, Who's Who in commerce and Industry, etc.

Geographical Sources: The geographical sources are a category of reference books that help in answering queries related to places. They provide information like

description and location related to countries, states, regions, districts, cities, mountains, rivers, lakes and all places throughout the world. There are four sources under geographical sources, they are: Gazetteers, guidebooks, handbooks, maps and atlases; and a globe.

A gazetteer provides historical, political, cultural, social, industrial, demographic and administrative details about a place. It also provides geographic data and location by providing longitude and latitude.

A guidebook is a handy book for travellers that gives information about a city, a county, a region, a religious place or about a building or a historical monument or hotels, routes, etc.. These are usually meant for tourists and people who want to visit various places.

A map is a graphic presentation of a place normally drawn to scale and it provides location and direction which otherwise is difficult to define by written documents. An atlas is a collection of maps bound up in the form of a book. If the map is a graphic image of earth drawn to scale, on the other hand a globe is a spherical representation of the earth's surface. It is a hollow ball of metal or plastic having the world map drawn on its surface.

Yearbook and Annuals: these are sources issued each year to review developments during the year and to record current information of a descriptive or statistical type. Yearbook cover annual activities internationally nationally of an organisation or a subject. Examples are: statesman's year-Book and Collier's yearbook, ALA yearbook of Library and information Services; A review of Library events.

An Almanac: is a publication usually an annual, containing a variety of useful facts of a miscellaneous nature and statistical information.. It was originally a projection of the coming year by days, months and holidays covering miscellaneous matters such as astronomical events, planetary tables, astrological predictions and anecdotes, etc

Directory: is a document containing lists of names of residents, organisation or business houses in a city, or country in alphabetical order or location in roads or firms in trade. It is classified and arranged in alphabetical order or professional people, manufacturers or trade.

Handbook or Manuals: they serve as ready reference sources for a given field of knowledge. It contains established knowledge and not recent advances or researches. It is usually subject specific, simple but embracing, concise and handy. It is usually written in highly professional language.

Government publication: is issued at government expense or published by the authority of a government body. In all the major countries, any publication in book, serial or non-book form bearing the imprint of a government, whether central, state, local or foreign and of inter-governmental organizations such as UNESCO, etc., is referred to as a government publication. These publications are authoritative, sometimes available free of charge and are of great value to the researchers. Official publication by government include: parliamentary documents, reports, journals,

legislative papers, administrative publications, reports from the central or state governments, hand-books, bodies of law and decisions of Courts of Justice.

Non-Documentary Reference Sources or Tools: these also provide quick and correct answers to queries, they are. They can be obtained formally or informally. Formally is when the sources are from an organised or established sources while informally are the sources we come in contact with through personal contacts, discussion with others, etc. We shall look at the following:

Human Resource: The human resource refers to any individual serving as a source of information. An individual from his/her memory can give a lot of information. Similarly if some people had witnessed some phenomenon, then they become the best sources of information on that phenomenon. In addition to the above, talking, interaction with fellow scientists, experts, specialists, family members gives a lot of insight into the various problems of a re-searcher. Similarly, the extension workers are also an important source of information

Institutional Resource: this is when information that is not presented, published or printed by an institution can be accessed from some people within the institution. Such information could include past records, annual reports or old documents, etc. The specialized information centers, referral centers, clearing houses, trade promotion councils, learned societies and associations, universities, colleges, etc. are examples of institutions as sources of information.

Mass Media: the various communication media for the masses; that is, broadcasting and telecasting or a combination of the two are more effective than any printed document. They not only provide non-stop entertainment to people but also give information and instruction in many new and novel ways. For example, the news prepared by the cable companies are more analytical, critical and thorough and of local nature.

Audio-Visual Media: The commercial and institutional production of visual and audio aids to education has become so substantial that many libraries are going for them. Librarian have extensively made use of the audio and visual form the new technology to their advantage.

Social Media or Internet: the internet has assumed a new dimension to reference services. People turn to search engines to find information today and social media platform has been used greatly to generate information to meet information needs. The challenge with this source is the to evaluate authority of the sources. Diverse formats are even used to present the information.

3.3.4 INFORMATION ACCESS TOOLS

Information access also known as information retrieval tools are instrument used to search for information. It can be regarded as sources or tools for information about information. They are finding aids to information. They are used to lead users to particular types or specific information source that contains the desired information. They usually contain references to information sources.

Categories of information retrieval or access tools are: Abstracts, Indexes, bibliographies, Library catalogues and Web search tools

Abstracts: These sources give summary of different works done in various fields of study in a concise manner. They are usually informative and also contain bibliographic details of the original document. The aim is to aid users to determine whether he or she will need to see the original document or not. Examples include, Annual Abstract of Statistics, Book of Abstract, Pesticide Chemistry, Cowpeas, Physics abstract.

Indexes: these are information retrieval access tools that point a user to the location of a particular information within the documents. It does not provide sought, but indicates where the information could be found. Index is a list of records in a particular subject. Examples include Education index, Humanities index, etc. Indexes are also available online today and they provide more powerful searching capabilities.

Bibliographies: these are listing of books or information sources in a particular area of study. It helps to identify sources on their chosen topic as much as possible. They provide a useful way to locate a very amount of published literature about the information needs and can save the user a lot of time. Bibliography gives information about the author, title, date of publication, publisher, pagination, etc. Example includes bibliography of Science and Technology Literature, Agricultural Development in Nigeria-a Bibliography.

Library Catalogue: this lists the entire library holdings. It provides bibliographic description and the location of every item in the library. They are arranged in alphabetical order according to author, title and subject for easy access. Catalogue can be different types: book/paper catalogue, box catalogue, online catalogue (this is the modern trend and it is usually called Online Public Access Catalogue-OPAC). OPAC allows users to search information materials with many access points such as keywords, author, title, subject, call mark, date of publication, ISBN, etc.

Purpose of Library catalogue are:

- Enable a person to find a book of which either the author, title and the subject is known.
- Show what a library has on a particular subject and author
- To assist in the choice of materials as to their edition and character.
- Locate needed materials without wasting time.

Web Search Tools: these tools help to search for information on the internet effectively using the World Wide Web through a graphical user interface (GUI) such as Microsoft Office Specialist (MOS). Examples Directories, search Engines, Subject Gateways, Specialised Databases, and Specialised search engines. These search tools provide easy access to resources on the internet.

3.4 SUMMARY

Information has been identified to be very important, but accessing it is a great challenge due to large quantity of it. Information is what is used to find information. We can then conclude that information is a cycle. From information needs to information sources and finally to information needed. Once the information needed is obtained, another information is created and this cycle continues. The volume of

information has prompted information professionals to find ways through which users can find their information with ease. Some of the information retrieval tools were created initially as record keeping materials but eventually find usefulness in locating information. The information universe today is so big that it may require the help of someone to guide or some other materials that could assist in quickly updating or accessing the needed information, this is known as reference services. Library and information. The modern technology has built on traditional method of providing library services. The reference service is one particular area that technology has affected, especially the modern day technology that allows for almost live communication. Various types of online reference is available today. Information access has been simplified by computer and internet. All the information access tools have been updated and made available on the internet in one form or the other. The Google search engines with various databases have come to the rescue of users in getting access to information.

The unit has been able to identify common information reference sources both human and non-human sources. The various examples of information reference materials were also presented with their characteristics and uses. The various information access tools were also presented and discussed. Their various characteristics and uses were also discussed.

SELF ASSESSMENT EXERCISE

- 1) What are the three basic classes of reference materials?
- 2) What are characteristics of reference materials?

3.5 GLOSSARY

- ◆ Reference Sources: are authoritative works that can be referred to for specific answers or information or that can assist in meeting information needs through giving of suggested source as information.
- ◆ Information Access Tool: these are materials that are used in locating, identifying or getting needed information from their different sources.

3.6 REFERENCE/FURTHER READING

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3.7 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISES WITHIN THE CONTEXT

- 1) Reference books such as encyclopedia, Standard works such as Gazeeteers and other materials that cannot be borrowed out to users.
- 2) Characteristics of reference materials are:
 - Authoritative
 - Focuses on definition of key words, topics or concepts
 - Suggest ways to find relevant material in a particular area of topic
 - Cannot be read from cover to cover
 - Cannot be borrowed out to users.

UNIT 4: INFORMATION LITERACY SKILLS

UNIT STRUCTURE

- 4.1 Introduction
- 4.2 objectives
- 4.3 Main Contents
 - 4.3.1 Nature and Extent of Information Needed
 - 4.3.2 Effective and Efficient Access of Information
 - 4.3.3 Evaluate and Synthesis Information
 - 4.3.4 Uses Information Effectively to Achieve Purpose(s)
 - 4.3.5 Ethical and Legal Use of Information
- 4.4 Summary
- 4.5 Glossary
- 4.6 Reference/Further Reading
- 4.7 Possible Answers to Self-Assessment Exercise

4.1 INTRODUCTION

The crux of this course is to enable users of library or the citizen in general to be able to use information appropriately. This is what will make an information literate person. The various theories and models coupled with the definition of information literacy have identified certain things that a person must possess before describing such a person as being information literate. The ability to use information appropriately requires certain level of competence in some key of library and information science. Each profession has a way of operating and working around it. For any user to work or make use of information for meeting information needs, it expected that such a person must acquire a minimal level of skill in some aspects of information. Librarians and information professionals have researched and come up with some acceptable minimum standard that must be taught and learn to make users to be information literate.

4.2 OBJECTIVES

It is expected that at the end of this units, students should be able to:

- State the five minimum standards that is expected of someone to be described as being information literate
- Explain the various minimum standards that is expected of an information literate person
- Identify the milestones of indicators of a person that has mastered a particular standard.

4.3.1 NATURE AND EXTENT OF INFORMATION NEEDED

The first basic and most important factor which can be described as the driver for information literacy is the need for information. Every one that will need to acquire information literacy skill must be someone who needs information, preferably on a regular basis. The need for information is the basis for acquiring information literacy

skills. This skill can be measured under the following indicators and the expected outcome will also be presented. The expected outcome are the activities that a student should be able to perform in order to be sure that such a students have posses the required skills.

Performance Indicator One: *The information literate students must be able to determine the nature and extent of the information needed.*

The Expected Outcomes Are:

- a) Confers with instructors and participates in class discussions, peer workgroups, and electronic discussions to identify a research topic, or other information need
- b. Develops a thesis statement and formulates questions based on the information need
- c. Explores general information sources to increase familiarity with the topic
- d. Defines or modifies the information need to achieve a manageable focus
- e. Identifies key concepts and terms that describe the information need
- f. Recognizes that existing information can be combined with original thought, experimentation, and/or analysis to produce new information

Performance Indicator Two: *The information literate student identifies a variety of types and formats of potential sources for information.*

The Expected Outcomes are:

- a. Knows how information is formally and informally produced, organized, and disseminated
- b. Recognizes that knowledge can be organized into disciplines that influence the way information is accessed
- c. Identifies the value and differences of potential resources in a variety of formats (e.g., multimedia, database, website, data set, audio/ visual, book)
- d. Identifies the purpose and audience of potential resources (e.g., popular vs. scholarly, current vs. historical)
- e. Differentiates between primary and secondary sources, recognizing how their use and importance vary with each discipline
- f. Realizes that information may need to be constructed with raw data from primary sources

Performance Indicator Three: *The information literate student considers the costs and benefits of acquiring the needed information.*

The Expected Outcomes are:

- a. Determines the availability of needed information and makes decisions on broadening the information seeking process beyond local resources (e.g., interlibrary loan; using resources at other locations; obtaining images, videos, text, or sound)
- b. Considers the feasibility of acquiring a new language or skill (e.g., foreign or discipline-based) in order to gather needed information and to understand its context
- c. Defines a realistic overall plan and timeline to acquire the needed information

Performance Indicator Four: *The information literate student reevaluates the nature and extent of the information need.*

The Expected Outcomes are:

- a. Reviews the initial information need to clarify, revise, or refine the question
- b. Describes criteria used to make information decisions and choices

4.3.2 EFFECTIVE AND EFFICIENT ACCESS OF INFORMATION

The second important information literacy skills are that students should know how to access needed information effectively and efficiently. Every student according the law of Ranganathan must not waste time in accessing information. Whatever the format of existence of the information, students should be able to access them effectively and efficiently. The information literate student must access needed information effectively and efficiently. The following are important indicators of the this skill.

Performance Indicator One: The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information.

The Expected Outcomes are:

- a. Identifies appropriate investigative methods (e.g., laboratory experiment, simulation, fieldwork)
- b. Investigates benefits and applicability of various investigative methods
- c. Investigates the scope, content, and organization of information retrieval systems
- d. Selects efficient and effective approaches for accessing the information needed from the investigative method or information retrieval system.

Performance Indicator Two: *The information literate student constructs and implements effectively designed search strategies.*

The Expected Outcomes are:

- a. Develops a research plan appropriate to the investigative method
- b. Identifies keywords, synonyms and related terms for the information needed
- c. Selects controlled vocabulary specific to the discipline or information retrieval source
- d. Constructs a search strategy using appropriate commands for the information retrieval system selected (e.g., Boolean operators, truncation, and proximity for search engines; internal organizers such as indexes for books)
- e. Implements the search strategy in various information retrieval systems using different user interfaces and search engines, with different command languages, protocols, and search parameters
- f. Implements the search using investigative protocols appropriate to the discipline

Performance Indicator Three: *The information literate student retrieves information online or in person using a variety of methods*

The Expected Outcomes are:

- a. Uses various search systems to retrieve information in a variety of formats
- b. Uses various classification schemes and other systems (e.g., call number systems or indexes) to locate information resources within the library or to identify specific sites for physical exploration

- c. Uses specialized online or in person services available at the institution to retrieve information needed (e.g., interlibrary loan/document delivery, professional associations, institutional research offices, community resources, experts and practitioners)
- d. Uses surveys, letters, interviews, and other forms of inquiry to retrieve primary information.

Performance Indicator Four: *The information literate student refines the search strategy if necessary*

Expected Outcomes are:

- a. Assesses the quantity, quality, and relevance of the search results to determine whether alternative information retrieval systems or investigative methods should be utilized
- b. Identifies gaps in the information retrieved and determines if the search strategy should be revised
- c. Repeats the search using the revised strategy as necessary

Performance Indicator Five: *The information literate student extracts, records, and manages the information and its sources.*

Expected Outcomes are:

- a. Selects among various technologies the most appropriate one for the task of extracting the needed information (e.g., copy/paste software functions, photocopier, scanner, audio/visual equipment, or exploratory instruments)
- b. Creates a system for organizing the information
- c. Differentiates between the types of sources cited and understands the elements and correct syntax of a citation for a wide range of resources
- d. Records all pertinent citation information for future reference
- e. Uses various technologies to manage the information selected and organized

4.3.3 EVALUATE AND SYNTHESISE INFORMATION

The third information literacy skill is the ability of the student to be able to evaluate information and its sources critically and incorporates selected information into his or her knowledge. An information literate person must know how to assess the information sourced, the source of the information and be able to integrate the selected information into its current knowledge base. Accessing needed information is a function of is the information meeting the need of the students? Is the student sure of what type of information sources should be used to meet his/her information needs? Moreover is the ability to be able to digest, integrate and/or synthesise information obtained with what the students has before. The following are important indicators of the skill.

Performance Indicator One: *The information literate student summarizes the main ideas to be extracted from the information gathered.*

The Expected Outcomes are:

- a. Reads the text and selects main ideas
- b. Restates textual concepts in his/her own words and selects data accurately
- c. Identifies verbatim material that can be then appropriately quoted.

Performance Indicator Two: *The information literate student articulates and applies initial criteria for evaluating both the information and its sources.*

The Expected Outcomes are:

- a. Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias
- b. Analyzes the structure and logic of supporting arguments or methods
- c. Recognizes prejudice, deception, or manipulation
- d. Recognizes the cultural, physical, or other context within which the information was created and understands the impact of context on interpreting the information

Performance Indicator Three: *The information literate student synthesizes main ideas to construct new concepts.*

Expected Outcomes are:

- a. Recognizes interrelationships among concepts and combines them into potentially useful primary statements with supporting evidence
- b. Extends initial synthesis, when possible, at a higher level of abstraction to construct new hypotheses that may require additional information
- c. Utilizes computer and other technologies (e.g. spreadsheets, databases, multimedia, and audio or visual equipment) for studying the interaction of ideas and other phenomena

Performance Indicator Four: *The information literate student compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information.*

Expected Outcomes are:

- a. Determines whether information satisfies the research or other information need
- b. Uses consciously selected criteria to determine whether the information contradicts or verifies information used from other sources
- c. Draws conclusions based upon information gathered
- d. Tests theories with discipline-appropriate techniques (e.g., simulators, experiments)
- e. Determines probable accuracy by questioning the source of the data, the limitations of the information gathering tools or strategies, and the reasonableness of the conclusions
- f. Integrates new information with previous information or knowledge g. Selects information that provides evidence for the topic.

Performance Indicator Five: *The information literate student determines whether the new knowledge has an impact on the individual's value system and takes steps to reconcile differences.*

The Expected Outcomes are:

- a. Investigates differing viewpoints encountered in the literature
- b. Determines whether to incorporate or reject viewpoints encountered

Performance Indicator Six: *The information literate student validates understanding and interpretation of the information through discourse with other individuals, subject-area experts, and/or practitioners.*

Expected Outcomes are:

- a. Participates in classroom and other discussions
- b. Participates in class-sponsored electronic communication forums designed to encourage discourse on the topic (e.g., e-mail, bulletin boards, chat rooms)
- c. Seeks expert opinion through a variety of mechanisms (e.g., interviews, e-mail, listserv)

Performance Indicator Seven: *The information literate student determines whether the initial query should be revised.*

Expected Outcomes are:

- a. Determines if original information need has been satisfied or if additional information is needed
- b. Reviews search strategy and incorporates additional concepts as necessary
- c. Reviews information retrieval sources used and expands to include others as needed

4.3.4 USES INFORMATION EFFECTIVELY TO ACHIEVE PURPOSE(S)

An information literate student is expected to possess the necessary skill to use information effectively either as an individual or as group to accomplish specific purpose(s). Part of information literacy skill is the ability to work individually or as a group in usage of information. Using information effectively should be a priority because it is in the usage that one is able to make the best of the accessed information. The following are important indicators of this skill.

Performance Indicator One: *The information literate student applies new and prior information to the planning and creation of a particular product or performance.*

Expected Outcomes are:

- a. Organizes the content in a manner that supports the purposes and format of the product or performance (e.g. outlines, drafts, storyboards)
- b. Articulates knowledge and skills transferred from prior experiences to planning and creating the product or performance
- c. Integrates the new and prior information, including quotations and paraphrasings, in a manner that supports the purposes of the product or performance
- d. Manipulates digital text, images, and data, as needed, transferring them from their original locations and formats to a new context

Performance Indicator Two: *The information literate student revises the development process for the product or performance.*

Expected Outcomes are:

- a. Maintains a journal or log of activities related to the information seeking, evaluating, and communicating process
- b. Reflects on past successes, failures, and alternative strategies

Performance Indicator Three: *The information literate student communicates the product or performance effectively to others.*

Expected Outcomes are:

- a. Chooses a communication medium and format that best supports the purposes of the product or performance and the intended audience
- b. Uses a range of information technology applications in creating the product or performance
- c. Incorporates principles of design and communication
- d. Communicates clearly and with a style that supports the purposes of the intended audience

4.3.5 ETHICAL AND LEGAL USE OF INFORMATION

The access and usage of Information is shrouded in so many intricacies which a student needs to understand. There is the need for students to understand the economic, legal and social issues that are connected with the use of information. Information usage is guided mainly by copyright issue, which defines the ethical, legal and social issue of use of information. Whether the information is in hardcopy or online, users must adhere to this so as not to incur sanction. The following are important indicators of the skill.

Performance Indicator One: *The information literate student understands many of the ethical, legal and socio-economic issues surrounding information and information technology.*

Expected Outcomes Are:

- a. Identifies and discusses issues related to privacy and security in both the print and electronic environments
- b. Identifies and discusses issues related to free vs. fee-based access to information
- c. Identifies and discusses issues related to censorship and freedom of speech
- d. Demonstrates an understanding of intellectual property, copyright, and fair use of copyrighted material

Performance Indicator Two: *The information literate student follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources.*

Expected Outcomes are:

- a. Participates in electronic discussions following accepted practices (e.g. “Netiquette”)
- b. Uses approved passwords and other forms of ID for access to information resources
- c. Complies with institutional policies on access to information resources
- d. Preserves the integrity of information resources, equipment, systems and facilities
- e. Legally obtains, stores, and disseminates text, data, images, or sounds
- f. Demonstrates an understanding of what constitutes plagiarism and does not represent work attributable to others as his/her own
- g. Demonstrates an understanding of institutional policies related to human subjects research.

Performance Indicator Three: *The information literate student acknowledges the use of information sources in communicating the product or performance.*

Expected Outcomes are:

- a. Selects an appropriate documentation style and uses it consistently to cite sources
- b. Posts permission granted notices, as needed, for copyrighted material

4.4 SUMMARY

Information literacy should be targeted at increasing the information literacy skill of users to make them become independent efficient and effective information users within the appropriate environment. Every user of information must endeavour to keep up with the dynamics of information so as to be able to know how to use information even as information keeps evolving. Everything that has to do with information usage must be mastered by would be person to be described as information literate. With so many information today, there is the need to acquire specific skills that is necessary to explore the information and also engage with the information. Information literacy includes skills that have to do with the processing of the information to get new information or knowledge. As information evolves so are the conditions for usage of it, the students should be well informed about the ethics, legal and social issues surrounding the use of information.

The unit has defined information literacy skills in the light of the modern day evolution of information. It also lists the various information literacy skills that are expected of an information literate student. Five major skills were regarded as important for a student to have before he/she can be regarded as being information literate. The major skills expected of a any student that will be information literate are: ability of the students to able to determine the nature and extent of the information needed, access needed information effectively and efficiently, evaluate information and its sources critically and incorporates selected information into his or her knowledge base and value system. Other important skills are ability to work individually or as a member of a group using information to effectively accomplish specific purposes and understanding the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

SELF-ASSESSMENT EXERISE

- 1) What is the most basic and important factor for becoming information literate?
- 2) An *information literate students must be able to* _____

4.5 GLOSSARY

- ◆ Performance Outcome: this refers to the standard of skills or competence that is expected of someone to be regarded as being information literate
- ◆ Expected Outcome: this is the expected ability that some must be able to display or understand to be considered as information literate.
- ◆ Ethics: this refers to acceptable standard or protocol to use information in a way to is conventionally accepted as fair use.

4.6 REFERENCE/FURTHER READING

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4.7 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISE(S) WITHIN THE CONTEXT

- 1) Need for information.
- 2) determine the nature and extent of the information needed.

MODULE 4: TRENDS AND ETHICAL ISSUES IN INFORMATION LITERACY

Unit 1: Internet as Information Provider

Unit 2: Information Literacy Trend, Relationship Between Technology And Information Literacy

Unit 3: Ethical issues, Plagiarism, Citation and References

UNIT 1: INTERNET AS INFORMATION PROVIDER

UNIT STRUCTURE

- 1.1 Introduction
- 1.2 objectives
- 1.3 Main Contents
 - 1.3.1 Definition and Historical development of internet
 - 1.3.2 Why Students can Use Internet
 - 1.3.3 Types of Information on the Internet
 - 1.3.4 Evaluation of Information on the Internet.
- 1.4 Summary
- 1.5 Glossary
- 1.6 Reference/Further Reading
- 1.7 Possible Answers to Self-Assessment Exercise

1.1 INTRODUCTION

Internet has become more or less a thing that is desired by all and sundry for various purposes. Among students, internet has become like part of the requirements that is necessary for their effective study and learning. This is because the internet contains so many types of information in various formats. It is popularly said among the students that “you just Google it” once any assignment is given. This is because internet is a huge collection of information that keeps increasing and updating every seconds. The volume of information available on the internet is so massive that it is beyond all the information in nearly all the physical libraries of the world put together. Internet has removed so many barriers to information access even though it has lots of setbacks if not properly used. The knowledge of proper use of internet is very important to be able to get the best from it especially as students

1.2 OBJECTIVES

By the end of this unit, students should be able to:

- Define Internet
- Briefly explain the development of internet
- Highlight some reasons why students can use internet
- Mention the various types of information that can be found on the internet
- Describe the various ways by which information on the internet can be appropriately evaluated for the correctness.

1.3.1 DEFINITION AND HISTORICAL DEVELOPMENT OF INTERNET

The Internet is a global network of computer networks utilizing a suite of protocols called the TCP/IP (Transmission Control Protocol/Internet Protocol) that supports interconnection of a number of different computer networks. The Internet covers large, international Wide Area Networks (WAN's) as well as smaller Local Area Networks (LAN's) and individual computers connected to the Internet worldwide. The Internet supports communication and sharing of data, and offers a vast amount of information through a variety of services and tools.

The Internet is a global system of networked computers that allow user-to-user communication and transfer of data files from one computer to another on the network. It is a worldwide system of computer networks - a network of networks in which users at any one computer can, if they have permission, get information from any other computer (and sometimes talk directly to users at other computers) on the network. On the other hand, the World Wide Web (WWW) provides the technology needed to navigate the Internet's vast sea of resources. The WWW is a path-way of accessing information over the Internet via Uniform Resource Locator (URL) or web address.

Historical Development of Internet

Still, the first practical schematics for the internet would not arrive until the early 1960s, when MIT's J.C.R. Licklider popularized the idea of an "Intergalactic Network" of computers. Shortly thereafter, computer scientists developed the concept of "packet switching," a method for effectively transmitting electronic data that would later become one of the major building blocks of the internet.

The first workable prototype of the Internet came in the late 1960s with the creation of ARPANET, or the Advanced Research Projects Agency Network. Originally funded by the U.S. Department of Defense, ARPANET used packet switching to allow multiple computers to communicate on a single network.

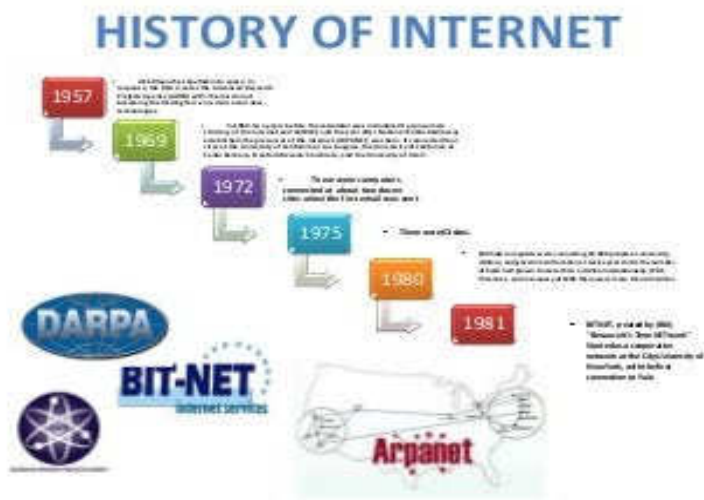
On October 29, 1969, ARPAnet delivered its first message: a "node-to-node" communication from one computer to another. (The first computer was located in a research lab at UCLA and the second was at Stanford; each one was the size of a small house.) The message—"LOGIN"—was short and simple, but it crashed the fledgling ARPA network anyway: The Stanford computer only received the note's first two letters.

The technology continued to grow in the 1970s after scientists Robert Kahn and Vinton Cerf developed Transmission Control Protocol and Internet Protocol, or TCP/IP, a communications model that set standards for how data could be transmitted between multiple networks.

Another catalyst in the formation of the Internet was the heating up of the Cold War. The Soviet Union's launch of the Sputnik satellite spurred the U.S. Defense Department to consider ways information could still be disseminated even after a nuclear attack. This eventually led to the formation of the ARPANET (Advanced Research Projects

Agency Network), the network that ultimately evolved into what we now know as the Internet. ARPANET was a great success but membership was limited to certain academic and research organizations who had contracts with the Defense Department. In response to this, other networks were created to provide information sharing.

January 1, 1983 is considered the official birthday of the Internet. Prior to this, the various computer networks did not have a standard way to communicate with each other. A new communications protocol was established called Transfer Control Protocol/Internetwork Protocol (TCP/IP). This allowed different kinds of computers on different networks to "talk" to each other. ARPANET and the Defense Data Network officially changed to the TCP/IP standard on January 1, 1983, hence the birth of the Internet. All networks could now be connected by a universal language.



1.3.2 WHY STUDENTS CAN USE INTERNET

There has been different school of thoughts on whether students should use internet or not. Diverse positions and opinions have been put forward on this subject which has made more of interest than expected. The recent COVID-19 experience has negated most of the school of thought that students should not use internet as nearly all levels of learning in the world switched to internet as the way out to keep education going. The most important thing is to ensure proper use of the internet for academic or learning purposes.

There are lots of information of various types and sorts in various format on the internet. The internet is described as an uncensored deposit of information, so there is need for crucial care to ensure that the students are able to get the best and authoritative information from the internet.

Relevant Content:

One of the main reasons by which we can say the internet is good for students in education is the internet is full of knowledge and pieces of information. Most relevant and quality content is available on the internet. Students can use the internet for

searching their study relevant materials, assignments, quizzes, presentations all study relevant materials available on the internet. There are thousands of research papers and books available on the internet. teachers and students. They can easily find their study material on the internet.

Connectivity and Communications:

The internet is a very good platform for connectivity and communications between students and lecturers and within the same group. It is a good platform for students and even lecturers to discuss educational issues and topics of interest in their courses or general learning. They can make online groups on social media platforms like Facebook, WhatsApp, etc. which is used by the internet and share the information with each other in the groups. It also for connection with best lecturers and learning resources that makes learning to be easy

Online Education Through the Internet:

students can easily learn from the internet at home. They have no need to go so far for the study from their home. They can easily get it at home. There is a lot of universities and colleges in the world that serve online educations. Students have not to go to their place. They can easily study from home through online classes.

Help in Searching:

Before the internet, it was very difficult for the students to search for information or knowledge. They go to libraries and borrow different kinds of books, read all manners of books in search for their desired information. With the advent of internet it becomes very easy for them. They can easily search for their desired information on the internet and they get it easily. There are thousands of websites and blogs available on the internet which share and publish the best ever quality content with the people to help them in learning.

Online Discussion on Social Media Platforms:

One of the best benefits of the internet for the students is they can make online discussions with the people through the internet and learn from them. There are a lots of groups on social media platforms students can join those groups related to their interest and discuss the things with the people in the group and learn from them. The students also can create groups for studies on their own among themselves or with students from other places. Distance is no longer a barrier to learning.

Faster Update and Latest Information:

The Internet is the best source of the latest information and faster update. The Internet provides you the best ever quality and latest information you want. Also, there are social media sites on the internet through which students can share their points of view, the latest pieces of information and updates with the other students around the world. Information is rapidly disseminated through the internet faster than ever before.

Help in Assignments and Presentations:

Students can also get help from the internet to complete their assignments and homework. Personally, I also used the internet for data collection for completing my assignments and presentations. It helps me a lot in learning actually internet expands the learning for me.

Students can Earn Money from the Internet Online:

There are lots of ways students can earn money from the internet at home such as blogging, digital marketing, freelancing, web designing and development, etc. It has to be legitimate.

Practice on the Internet:

The Internet is the best platform for students to practice their professions. There is a lot of websites available on the internet through which they can practice and learn more. Whatever is the student's profession, there are dedicated sites on the internet that allow him or her to practice or even market him or her skill or profession. A student can acquire or learn new things and practice it on the internet. The internet is like a universal laboratory.

Note: there are several other uses or benefits of internet that are not mentioned here. This is done in line with information and learning process. So many things can still be done with internet.

Question: Can you think of some other uses of internet to students in the course of their study.

1.3.3 TYPES OF INFORMATION ON THE INTERNET

There are diverse types of information on the internet. The information available on the internet are also called online information or electronic information. They can only be accessed by the use of an internet network. This information is found on various sites or location on the internet form world wide web, Universal Resource Locator, Social Media Sites or Social Networking sites, etc. Most publishers have moved with the trend of things and also begins to produce virtually all their publication that were formally in hardcopy now in online domain. The following are common classification of information that are available on the internet:

Primary Sources:**Electronic Conferences**

Electronic conferences, also known as electronic forums, listserves, electronic user group, discussion groups, are important resources for researchers and scholars in every discipline. New scholars in particular get an opportunity to discover what topics are being discussed in their field,

Courseware / Tutorials / Guides / Manuals

These web-based resources provide a higher degree of flexibility, interactivity, learn at your pace opportunities for the users. The coverage, quality and quantities vary across different providers. Some of the materials are provided by renowned universities and institutions of higher learning. They are also available in diverse format from print, audio or multimedia and graphics. Examples of some of these sites are Coursera, Telecampus, etc.

Electronic Journals

These are the online version or publication of journals in online platforms. It is also called electronic journals (e-journals). It covers all the publications that are regarded as periodicals. This makes latest information in research to be easily and timely accessed, unlike before where a subscriber will have to wait for weeks or months before taking delivery of such.

Patents

Patents are specifications concerning the design or manufacture of products and processes that are protected and secured for the exclusive profit of the designer or inventor for a limited number of that varies in different countries from fifteen years to twenty years.

Electronic Preprints and E-prints

Electronic preprints are research articles that are made available for distribution through the network in electronic format before they go through the process of peer reviewing. Ginsparg preprint archive (<http://www.arXiv.org/>) is a leader in this aspect. There are other archives for pre-print information resources which makes the information resources available before the copyright of the publishing house is imposed on them.

Projects (Ongoing and Completed)

Students can have access to several projects that are being sponsored. They can provide useful information for the students on how to go about their projects, give them ideas or inspiration on what are the latest topics or issues in their fields which can guide them on their work.

Software

There are a large number of free software and scripts of all kinds and types available on the Internet. People have freedom to run, copy, distribute, study, change and improve the software under General Public License (GPL).

Technical Reports

A technical report is a scientific paper or an article that provides a detailed account of work done on a particular project. Technical reports are generally prepared by the research workers themselves for submission to their employer, funding agency or to others interested in the work.

Electronic Theses and Dissertations

Theses submitted to the universities as requirement for the award of Ph.D. degree constitute a useful source of information for the new and ongoing research. These documents are undisputedly highly valuable collections especially in digital format that qualify to be an important component of a digital library.

Databases, Data Sets and Collections

These are set of information resources that has been processed. The class comprised of the following:

Abstracting and Indexing Databases (Bibliographic Databases)

Databases are a collection of records pertaining to a specific field of study. An increasing number of bibliographic databases with abstracts of chapters in books, journal articles and conference proceedings are now available on the internet.

Citation Databases

A citation is a reference to an article or part of article identifying the document in which it may be found. It is, therefore, possible to search the databases for articles that cite a known author or work. ISI Citation Databases are multidisciplinary databases of bibliographic information gathered from thousands of scholarly journals. It is indexed so that one can search for specific articles by subject, author, journal and / or author address.

Digital Collections (Images, Audio, Video)

The Internet and web technology is a suitable substrate for multimedia websites including information in the form of text, images, sounds and movies. The web hosts a rich collection of sounds and images, many of which can be used for commercial as well as personal purposes.

Equipment / Product Catalogues

Web-based catalogue is a listing of products along with complete specifications about the product. Equipment / product catalogues are generally searchable. Catalogues are especially helpful for corporates in identifying the recent products available in the market in order to purchase them.

Scientific Data Sets (Numeric, Property, Structural Databases)

Scientific data sets (numeric, property, structural databases) are databases that contain factual data like numeric, property and structural information on the topic indexed. The data collection is critically assessed by individual experts or group of experts, hence are authentic sources of information for researchers.

Library Catalogues (including Union Catalogues)

Librarians, as the earliest inhabitants of the Internet and the web started putting their contents on the web. Not only did the libraries build meta resources for their home pages, they also web-enabled their library catalogues. Several integrated library packages are now moving towards doing all operations using Internet clients.

Museum and Archives

The virtual museum websites facilitate virtual visits of users to a museum and examine the exhibits closely from their desktop. Using various tools and techniques, the user is also able to rotate an object in any direction. Art auction sites are also using similar techniques to promote auction of their art works.

Virtual Libraries

The term "Virtual library" or "library without wall" usually refers to the **meta** resources or subject portals that extend virtual accessibility of digital collections from several diverse sources without the users even knowing where the resources actually resides. A virtual library could potentially be enormous, linking huge collections from all around the globe, or it could be very small, consisting of a few hundred links to digital resources maintained by an individual.

Electronic Books

An e-book is digital reading material that a user can view on a desktop or notebook, personal computer, or on a dedicated, portable device with a large storage. More and more traditional book publishers, as well as those catering to the professional and business communities, are seeing the potential of digital publication of their books. Examples of e-book sites are Project Gutenberg, Questia (<http://www.questia.com/>), Ebrary (<http://www.ebrary.com/>), NetLibrary (<http://www.netlibrary.com/>)

Reference Sources

These refer to different reference resources that are traditionally found in the library but are now available on the internet. Most publishers try to make their information accessible to users in the easiest way. Some of them include:

Dictionaries: Thousands of general-purpose and subject-specific dictionaries are now available on the web. Examples are: Academic Press Dictionary of S&T <http://www.harcourt.com/dictionary/> DictSearch: Search in Online Dictionaries <http://www.foreignword.com/Tools/dictsrch.htm>, Merriam-Webster Online <http://www.merriam-webster.com>

Electronic Encyclopaedia: web versions of these encyclopaedias became available as important reference tools on the web. They did have superior searchability, portability, and an irresistible price. Examples include *Encyclopaedia Britannica* <http://www.britannica.com/>, *Important Encyclopedia* <http://www.encyberuedia.com/cyberlinks/links/index.html>

Biographies Biographical sources provide information about people considered important in various disciplines. The internet serves as an excellent source of information for biographical information whether the information is available in a biographical source or through websites of individuals / organizations. Examples are: *Biography.com* <http://www.bio-rauhv.cc?m/>, *World Biographical Index* http://www.biblio.tu-bs.de/wbi_en/

Thesauri and Subject Headings: A thesaurus may be defined either in terms of its function or its structure. In terms of function, it is a terminological control device used for translating from the natural language of documents into controlled vocabulary. Typical examples of standard subject headings used in libraries are: Library of Congress Subject Headings (LCSH), Medical Subject Headings (MeSH), Subject Headings in Engineering (SHE) and Sears List of Subject Headings.

Handbooks and Manuals

Handbooks are treatises on a special subject containing concise information written primarily for practitioners. A number of handbooks are available on the web in various subject speciality. Examples are: Merck Manual of Diagnosis and Therapy <http://www.merck.com/vubs/mmanual/>, Handbook of Forensic Services <http://www.fbi.gov/hq/lab/handbook/int>

Maps

Maps constitute a special collection in a library consisting of documents that make plane representation of the earth's surface or its part indicating its physical features, political boundaries, etc. Internet contains a large number of sites that provide maps and other geographical information. Examples are: DEH4IS World Map Server <http://www2.dernis.nl/1i1apserver/Ma~per.a>, Map.com <http://www.maps.co-n/explore/atl>, Quick Map of the World <http://www.theodora.com/maos/abc.worldmaps.html>

1.3.4 EVALUATION OF INFORMATION ON THE INTERNET.

There is the need to examine and evaluate the quality of the information found on the internet since it is an uncensored deposit for information. Anyone can put anything on the internet. There is the need for credibility and quality in terms of authority, accuracy, objectivity, currency, etc of information obtained from the internet before making use of them. The following major criteria shall be discussed below:

Authority: in assessing an information resource or source for credibility to qualify as information that can be used for academic purposes, the following should be noted:

- Who is the source of the materials in terms of the author, source, publishers, sponsor?
- What are the credentials of the author(s), organisation, and affiliation? Some of these sources are known with some disciplines of study
- Is there a contact information about the author, publisher, sponsor, etc? The phone numbers, email address, office physical or virtual should be visible
- What does the URL tell you? Is it a government, personal, educational/institutional site? This can be determined by the domain name that ends the URL address such as .gov (government site); .edu (educational site); .org (organisational sites); .net; .com; etc.
- Is the information resource reviewed or not?

Objectivity: this has to do with the presentation of the subject content whether is clear, unbiased, factual and can be subjected to verification. This can be determined by asking:

- What is the purpose of the information? Is it to entertain, persuade, teach, sell or inform, etc? This will go a long way to show whether the content is objective or not.
- Is there clarity of purpose of the author or sponsor?
- Is the information factual, opinion, or propaganda?
- Is the presentation of the content objective or partial? Are there statements that cannot be substantiated or bias?
- Does the content look political, cultural, religious, ideological, institutional or personal bias?
- Do the information resources conform with the laid down format of the type of information resource? Does it really follow the acceptable standard of producing such a material? This will help to determine whether it is a quality resource or not.
- Does the material contain irrelevances like advertisements, product promotions, etc that are probably not related?

Coverage: what is the extent of coverage of the material, the quantity of information provided, correctness of such information among other things. This can be confirmed by asking:

- Where does the information come in-terms of what are the references or other materials consulted in producing the information? It could also be that is there any link between the writer and authorised sources of information on such a subject?
- Who is the intended audience?
- Is the information at an appropriate level? Is it suitable for the class or group or purpose of accessing it?
- Can it compare favourably with other similar information sources on the same subject?
- Is there anything in the information or the site about time, date, extent, period, geographical areas or boundaries, demographic groups, etc that were considered in writing the document.

Accuracy: This has to do with whether the information is correct, reliable, truthful and empirical. This can be determined by asking:

Is the information supported by evidences? What are the facts, figure, presentations, etc that justifies the claim in the work.

- Has the information been reviewed or refereed? This is very important as it indicates that other professionals have adjudged the information as correct.
- Is it possible to verify some of the claims in the work? Can the sources cited or used be confirmed or does your personal knowledge agrees with the content to some level of trust?
- What is the language of presentation? Is it academic in nature, or biased, free or laden with emotions etc?
- What is the level spelling, typographical or grammatical errors? Once there is too much of these errors, then it may not be accurate
- What is the overall purpose of the site from which the information is sourced from? Is it a scholarly site or entertainment, marketing, etc?

Currency: how recent or timely is the information, the age or time of production to the time you are accessing it is very important. Especially in science, technology and medicine information should be as recent as possible to be useful and dependable. The following are some things to consider:

- When was this information published or posted? If it is posted newly, you may have to determine when was the information produced?
- Has the information been revised, reviewed, or updated? If yes, when last was this done, is the date still appropriate for the information need at hand?
- Are there other functional links in the information which can help to navigate and confirms other works.

1.4 SUMMARY

The internet has come to stay as a means for getting information. The initial idea of only sourcing information on the internet as consumer has even given way under the Web 2.0 or internet 2.0 to give rooms for users of internet to also produce or contribute information to the internet. Beyond just accessing information by way of reading or downloading on the internet, it has gone to learning on the internet in diverse ways and manners. Schools, academic materials, lectures notes and deliveries, presentations,

experiments, virtual laboratories and hands-on learning of some things are now possible on the internet. The invisible college is readily here with us through the internet. It has become the first point of call for students to get information. It has actually been a great threat to the library. Though the libraries characteristics and uniqueness that internet cannot fill are there that still made libraries to be relevant.

Internet has become a household name in sourcing and accessing information for students and general public. Diverse types of information are available on internet for all classes of users. The definition of internet has been given with the historical development since the early 1950 through the various stages of ARPANet in 1960, the birth of TCP/IP and formal launching of what is called internet today in 1980. different reasons why students should use internet were given, while the various types of information that could be obtained from internet were also enumerated. Despite the proliferation of information on the internet with the ease of access, there is the need to ensure that students get the correct information for their academic works, hence some checks or factors to be considered in ascertaining the quality or credibility of information from internet were discussed

SELF ASSESSMENT EXAMINATION

- 1) Mention some of the major scientist or inventors that made internet to be possible today.
- 2) A digital reading material that a user can view on a desktop or notebook, personal computer, or on a dedicated, portable device with a large storage.
- 3) A scientific paper or an article that provides a detailed account of work done on a particular project is _____.

1.5 GLOSSARY

Internet: is a global system of networked computers that allow user-to-user communication and transfer of data files from one computer to another on the network.

Software: these are different computer programme that created in order to be able to communicate with the computer and make it to perform certain functions.

Universal Resource Locator: this is the location address for a particular information on the world wide web.

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1.7 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISE(S) WITHIN THE CONTENT

!) Some of the scientist who invented internet are:

Robert Kahn and Vinton Cerf

J. C.R. Licklider

2)An e-book

3) A technical report

UNIT TWO: INFORMATION LITERACY TREND, RELATIONSHIP BETWEEN TECHNOLOGY AND INFORMATION LITERACY

UNIT STRUCTURE

- 2.1 Introduction
- 2.2 objectives
- 2.3 Main Contents
 - 2.3.1 Information Literacy trends
 - 2.3.2 Information Technology
 - 2.3.2 Information Technology and Information Literacy
 - 2.3.3 Technologies that Support Information Literacy
- 2.4 Summary
- 2.5 Glossary
- 2.6 Reference/Further Reading
- 2.7 Possible Answers to Self-Assessment Exercise

2.1 INTRODUCTION

Man cannot be separated from technology; it is only the level of technology inventions that are different. From the Stone Age, man has always find way of survival which can be linked to use of the brain the available resources within Man's reach to survive. Virtually everything that man is today can be linked to technology in one way or the other. Information cannot be an exemption. Even from the initial days of libraries and museum, the preservation of papyrus, clay tablet, writing on stone, rocks, etc were all products of technology at their levels then. So the modern day has also find ways of bringing technology into information such that it looks inseparable today. Whether it is seeking, accessing, synthesising, and dissemination of information today all rest on information. Sometimes people mistake information technology for information resources and this has actually led to the development of information communication technology which is a combination of information technology and communication - where the communication is more of information dissemination in whatever form.

2.2 OBJECTIVES

At the end of this class ii is expected that students should be able to:

- Define Information literacy in relations to technology
- Define information technology Literacy
- Relate information technology with information literacy
- Give and explain specific information technology that has direct bearing with information literacy

2.3.1 INFORMATION LITERACY TREND

Information literacy trends means the various stages of development that information literacy has gone through. It also means the various ways in which information literacy has metamorphosised to become what it is presently. Information literacy has started with different names and concept which in the past is related to the level of technology or information that is available. The major trends of information literacy are:

Guided Tour: this was when library instruction is taken as just familiarising the users with the library and library resources. This is usually done on a day with the users or specific time with newly admitted students.

Instructional Materials: this was when information literacy is packaged as library bulletin, leaflet, handbook, etc. The use of library and its resources are briefly explained in a book which can be used to user to understand the various sections and resources available in the library. It has the benefit of users making reference to it from time to time to increase or improve their skills.

Lecture: this was the use bibliographic instructions in terms of library tours, library class or session, one-on-one lecture, general lecture, introduction to library, academic classes, video or online mode of delivery. It is targeted at equipping the users to be able to explore the library and its resources very well. Most of what is required at this stage is ability to use print resources and some electronic resources.

Modern trends of information literacy includes: computer literacy, digital literacy, media literacy, library literacy and network literacy. These are new areas that information users have to exercise competencies to be regarded as information literate. Computer Literacy refers to the ability to handle computers so as to produce, process, store and retrieve information. This becomes very important with the introduction of computer and its paraphernalia to provision of information services.

Technology Literacy: is broader in scope as it encompasses competencies in handling all Information and Communication Technology (ICT) components in managing information. This include the use of diverse sort of information technology concepts and components in the provision of information. Today ICT is taking over majority of the activities of information service provision industry, hence the need for users to be technology literate.

Media Literacy: is another competency that an individual should possess to handle information competently. Information is available in different media e.g. print, electronic media including T.V., Internet, etc. Media literacy refers to the ability to access, store, organise, search and communicate information in these media.

Network or Social Literacy: is also considered a part of information literacy due to the fact that information does not exist in isolation and all institutions and organisations are interconnected and share information. This trend can be linked to the old concept of library cooperation or collaboration, since no single library has all the needed information. Internet and Intranet are examples of networks that play a crucial role in our lives while using information. It is essential for one to be able to post, access, transmit and use information on a network resulting in one being network literate.

Digital Information: is on the rise today. It has its own advantages of easy transmittal across distances, easy maneuverability, multiple and simultaneous access. A large volume of current information is available in digital form. Print form of information are even being converted into digital form. This demands one to be digitally literate to be able to handle digital information.

2.3.2 INFORMATION TECHNOLOGY AND INFORMATION LITERACY

Information technology is an aspect of technology that is highly related to information in way or the other. Information technology are the various devices that are involved in one or more processes of information. Due to this proliferation of technologies in information, there is the need for users of information to be savvy in the use of this technologies to enable to access or process their information appropriately to get the best of what is wanted. The learning about information technology for use in information literacy has what has given birth to what can be described as information technology literacy. This is an aspect of information literacy and it has been described with various names such as digital literacy, media literacy or multimedia literacy.

Information technology (IT) is the use of any computers, storage, networking and other physical devices, infrastructure and processes to create, process, store, secure and exchange all forms of electronic data. Information technology is purpose-built machine that are to perform certain operation and activities that are directly linked to processes of information literacy or meeting information needs. information technology is aimed for creation of computer-based systems of information by using computer system in an organization (Sarosa & Zowghi, 2003). Sarosa and Zowghi (2003) stated further that s “all the technology that is used by an organization to collect, process, and disseminate information in all its form. Therefore, the component of information technology will include hardware (scanner, printer, computer, etc), software (operating systems, application development language, office application, etc.), and”

Other definitions of Information technology were given by Attaran (2003) “Information technology is defined as capabilities offered to organizations by computers, software applications, and telecommunications to deliver data, information, and knowledge to individuals and processes”. Tan et al (2009) stated Information technology Tan et al. (2009) as application of Information and Communication Technologies tools including computer network, software and hardware required for internet connection

Summarily Information technology can be described devices that cover systems of information, Internet, information and communication related technologies, and their infrastructure including computer software, networks and hardware, which processes or transmit information to enhance the effectiveness of individuals and organizations. However, term information technology also includes any computer application and required packages of hardware, Computer Aided Manufacturing, Computer Aided Design, Electronic Data Interchange and Enterprise Resource planning that positively affects the productivity of cooperation. UNESCO defines Information Technology as "scientific, technological and engineering disciplines and the management techniques used in information handling and processing information, their applications; computers and their interaction with man and machine and associated social, economic and cultural matters". (Stokes, 1985)

Also information technology can be considered from two major basic points which are: 1) The new information technology is seen as involving the formulating, recording and processing and not just transmitting of, information. These are elements in the communication process which can be separated (both analytically and in practice) but in the context of human communication they tend to be intertwined.

2) Modern information technology deals with a wide variety of ways of representing information. It covers not only the textual (i.e., cognitive, propositional and verbalised forms, we often think under the head information), but also numerical, visual, and auditory representations.

Self-Assessment Question: what are the major components of what makes up information technology?

2.3.3 INFORMATION TECHNOLOGY AND INFORMATION LITERACIES

The relationship between information technology and information literacy is the capability to research, collect, manage, transform and exchange information using information technologies such as email, word processing, browsers, spreadsheet, search engines, etc. Success in the modern academic society requires a good level of capability in use of technology to meet information needs. The issue of information technology literacy and information literacy has come to the front burner as an issue to be address in many countries of the world and is a basic requirement for admission and even job in some institutions.

Information is basic necessity of life for many purposes, hence the use of technology to communicate this information on a daily basis is a major task to be overcome. As technology becomes an household equipment in several organisation and institutions, this has created the need to be information technology savvy to a great extent and at the same time it has provided opportunity for increasing collaboration and group problem solving. The importance of technology in problem solving in organisations that are multinational or highly dispersed within a country is so significant as it allows for exchange of information on real-time through the use of email, chat, remote meeting software like zoom, Google meet, Facebook video calls, WhatsApp video calls, etc.

Teaching in use of technology has been reported to have positive impact on the academic achievement. This is so because most of the information available nowadays are on one technology or the other. The generation Z are ready to learn anything available on the computer. Being information literate today goes beyond just able to read and write but ability to use information technology devices. Information literacy includes the use of information technologies like personal computers, e-mails, software programmes, internet, etc. The ethical use of information technology and information on them is another critical aspect of information literacy.

Information technology literacy and information literacy are like Siamese twin in the 21st century as most of the available information today are on technology. Technology has become the residence of information than any other place today, the volume of information available on technology in the last 20 years is many times greater than all the information produced since the seventeenth century that printing has started. The major goal of both information technology literacy and information literacy is to cultivate in people the ability to access, understand, use and create information in whatever formats that is required.

The development of digital technology is a key factor for combining media literacy and information literacy. In the Internet age, it is no longer adequate for librarians to offer a static set of indices and search tools. They need to be able to competently use the

latest information technologies and to adopt a critical approach in handling information in libraries and beyond. Therefore, information literacy experts are aware of the need to reach out to the media world and to pay more attention to the critical analytical skills of media literacy. On the media literacy side, while facing the vast amount of information in the digital age, these practitioners also recognize the importance of utilizing information literacy skills for searching, evaluating, and organizing information.

Both information technology literacy and information literacy are essential for any would be user of information, even though they are distinct but have become closely inter-related with the line of boundaries getting blurred day by day. In an increasingly technological society, the means of authoring, information finding and organization and research, and even information use are increasingly mediated by information technology. And information technology shapes the channels of publication, access and dissemination of information; the influence, and the intrinsic nature of digital documents, raise new issues in the activities and practices of analysis, assessment, evaluation and criticism. And much of today's information technology and supporting infrastructure is intended to enable communication, information finding, information access and information delivery. Teaching of the two sets of literacy skills thus need to be closely coordinated.

Information and Technology Literacy is the ability of an individual, working independently or with others, to use tools, resources, processes, and systems responsibly to access and evaluate information in any medium, and to use that information to solve problems, communicate clearly, make informed decisions, and construct new knowledge, products, or systems. According to American Library Association (2013) office for information technology policy digital literacy task force proposed some qualities of someone who will claim to be digitally literate as being able to:

- possesses the variety of skills— cognitive and technical— required to find, understand, evaluate, create, and communicate digital information in a wide variety of formats;
- is able to use diverse technologies appropriately and effectively to search for and retrieve information, interpret search results, and judge the quality of the information retrieved;
- understands the relationships among technology, lifelong learning, personal privacy, and appropriate stewardship of information;
- uses these skills and the appropriate technologies to communicate and collaborate with peers, colleagues, family, and on occasion the general public;
- uses these skills to participate actively in civic society and contribute to a vibrant, informed, and engaged community."

In another vein, Seattle Central Community College describes a technology literate as a person who demonstrates computer and network competency *by*:

- Using operating systems to manage programs and files
- Logging into and out of computer networks
- Use computers to create reports, presentations, web pages, and other types of documents—*by*

- Selecting the appropriate application (word processing, spreadsheet, graphics, presentation, html editor) to produce a product
- Creating, formatting, saving, editing, and printing documents
- Access and navigate the World Wide Web—*by*
- Configuring and using a web browser
- Using a variety of tools to search the Internet
- Use a computer to communicate—*by*
- Using e-mail to send, receive, open, reply, create, delete, and attach documents
- Participating in online discussions, chat rooms, and other online applications
- Develop problem-solving techniques—*by*
- Using Help files and previous experience to troubleshoot problems.
- Drawing on past experience to learn new programs

Maintain security and privacy in an online environment—*by*

- Installing and configuring anti-virus software and firewalls
- Identifying security status before supplying personal information

Self-Assessment Exercises: 1) State the attributes of a digitally literate person according to ALA Task force
2) State the attributes of a digitally literate person according to Seattle Central Community College.

2.3.4 TECHNOLOGIES THAT SUPPORT INFORMATION LITERACY

Let us consider some of the applications of technology to library works as components of technology that finds usefulness in the library. Some examples are:

1. **Software technology:** this has to do with the development of computer programs that could aid library operations. Software used in library operations include: Microsoft packages, Tinlib, Alice for Windows etc.
2. **Media usage and development:** this has to do with managing information resources available in digital formats such as CDs, projectors, microfiches etc.
3. **Artificial intelligence:** this entails the development of machines to emulate human qualities such as learning, reasoning and teaching.
4. **Microchips:** these are technologies that contain silicon and other electronic components. They are usually used to protect and secure library materials from been stolen.
5. **Workstations:** these are specialized computers that help to distribute large amounts of data from a central source known as a server to other computers within the same network.
6. **Emails and hypertext:** e-mails (electronic mails) are messages sent over the Internet. They are usually used for current awareness and selective dissemination of

information. Hypertext on the other hand is links which serve as pathways to other sources of information.

7. **Library Management:** Library management includes the following activities which will certainly be geared up by the use of these fast IT developments: Classification, Cataloguing, Indexing, Database creation, Database Indexing.

8. **Library Automation:** Library automation is the concept of reducing the human intervention in all the library services so that any user can receive the desired information with the maximum comfort and at the lowest cost. Major areas of the automation can be classified into two -organization of all library databases and all housekeeping operations of library.

9. **Library Networking:** Library networking means a group of libraries and information centres are interconnected for some common pattern or design for information exchange and communication with a view to improve efficiency.

10. **Audio-Video Technology:** It includes photography, microfilms, microfiches, audio and tapes, printing, optical disk etc.

11. **Technical Communication:** Technical Communication consisting of technical writing, editing, publishing, DTP systems etc. 1

The technologies that support information literacy will look at those technologies that helps students in meeting their information needs or technologies that carries information thereby making it easier for students to use information more effectively. In another dimension, these can be regarded as educational technology devices that helps students reading, learning and comprehension skills. Some examples are:

a) **Document delivery services:** The Document Delivery Service (DDS) delivers copies of journal articles and book chapters from participating Libraries. Fees apply for most Document Delivery Services. To fulfill the information needs of the end user through information/document supply is a document delivery service. This service is provided on No Profit - No Loss Basis and Expected to be prompt.

b) **Interlibrary loan:** Inter library loan means a cooperative arrangement among libraries by which one library may borrow material from another library. In other words a loan of library materials by one library to another library.

c) **Indexing and abstracting services:** a method which is used to retrieve information from a table in memory or a file on a direct access store or the art of compiling an index. The preparation of abstracts, usually in a limited field, by an individual, an industrial organization or a restricted use or a commercial organization: the abstracts being published and supplied regularly to subscribers. Also the organization producing the abstracts. Such services may be either comprehensive or selective.

d) **Chat services:** Online chat may refer to any kind of communication over the Internet, that offers an instantaneous transmission of text-based messages from sender to receiver, hence the delay for visual access to the sent message shall not hamper the flow of communications in any of the directions. Online chat may address as well point-

to-point communications as well as multicast communications from one sender to many receivers.

e) **CAS:** The purpose of a current-awareness service is to inform the users about new acquisitions in their libraries. Public libraries in particular have used display boards and shelves to draw attention to recent additions, and many libraries produce complete or selective lists for circulation to patrons. Some libraries have adopted a practice of selective dissemination of information.

f) **SDI:** Selective dissemination of information ("SDI") was originally a phrase related to library and information science. SDI refers to tools and resources used to keep a user informed of new resources on specified topics.

g) **Scanned copies:** A scanning service for material not available electronically, which is held by the Library. This includes articles from journals and chapters from books. Users of the service should be aware that we operate within the restrictions of the Copyright Act.

h) **Bulletin board services:** A Bulletin Board System, or BBS, is a computer system running software that allows users to connect and log in to the system using a terminal. Once logged in, a user can perform functions such as uploading and downloading software and data, reading news and bulletins, and exchanging messages with other users, either through electronic mail or in public message boards.

i) **Electronic services and e- resources:** The important fact is convincing many libraries to move towards digital e-resources, which are found to be less expensive and more useful for easy access. This is especially helpful to distant learners who have limited time to access the libraries from outside by internet access to commonly available electronic resources, mainly CD-ROM, OPACs, E-Journals, E-Books, ETD and Internet, which are replacing the print media.

j) **Digital library:** A digital library is a library in which collections are stored in digital formats and accessible by computers. The digital content may be stored locally, or accessed remotely via computer networks. A digital library is a type of information retrieval system

2.4 SUMMARY

Technology and information have become like Siamese twins as both have been highly overlapped each other. Greater percentage of information comes as new technology based resources today. Experts are already thinking of producing all information in electronic format which is an aspect of the technology. Information bearing formats and library services produced and provided are more in relation with technology. Users of information have come to agree that information is better provided in technology format unlike the old times preparation, production and dissemination of information. So many advantages can be derived from use of technology in information and this necessitate the need of information technology literacy. Information literacy today is no longer the understanding of alphabets but the salient ability to explore, express and expand information boundaries in various formats. Hence the need for information technology literacy.

This unit has been able to elaborate on what is technology and what information technology is about. It provides information on some of the things that can be regarded as component of information technology in the library. It also draws on the relationship between information technology and information literacy in the library. Also the various ways through which information technology has affected library and by extension information literacy were also enumerated. Various services of the library that are provided via technology were also enumerated which will inform would be users of the library on other various ways through which they can enjoy library services through technology.

SELF-ASSESSMENT EXERCISE

- 1) Information technology can be described as consisting of _____
- 2) What is the full meaning of CAS _____
- 3) What is document delivery service (DDS)? delivers copies of journal articles and book chapters from participating Libraries.

2.5 GLOSSARY

- ◆ Information technology (IT): is the use of any computers, storage, networking and other physical devices, [infrastructure](#) and processes to create, process, store, secure and exchange all forms of electronic data.
- ◆ Information literacy: is the capability to research, collect, manage, transform and exchange information using information technologies such as email, word processing, browsers, spreadsheet, search engines, etc

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2.7 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISE(S) WITHIN THE CONTENT

1) Information technology consist of:

Systems of information

Internet, information and communication related technologies

Computer software,

Computer networks and

Computer hardware

2) Current Awareness Services

3) Document Delivery Service (DDS)? delivers copies of journal articles and book chapters from participating Libraries.

UNIT 3: ETHICAL ISSUES, PLAGIARISM, CITATION AND REFERENCES

UNIT STRUCTURE

- 3.1 Introduction
- 3.2 Objectives
- 3.0 Main Contents
 - 3.3.1 Definition of Plagiarism,
 - 3.3.2 What Constitute Plagiarism
 - 3.3.2.1 How to Avoid Plagiarism
 - 3.3.3 Academic Integrity in terms of Citation and Referencing.
 - 3.3.4 Citation Styles.
- 3.4 Summary
- 3.5 Glossary
- 3.6 Reference/Further Reading
- 3.7 Possible Answers to Self-examination Exercise

3.1 INTRODUCTION

The university means a place of universal knowledge but there is the need for sincerity in the presentation of knowledge. It a fact that no one owns the entire knowledge and at the same time nobody brings any knowledge from the sky with having some foundations or basis from where such knowledge were developed from. Hence there is the need to state the truth of sources of knowledge when making or writing any presentation. It is a mandatory requirement in any tertiary institution that all write ups or presentation must do it with the spirit of fairness and integrity by respecting or acknowledging the source(s) from the information produced have come from. What is called academic integrity is standing on three legs which is avoidance of plagiarism, proper citation of authors or sources consulted in the course of developing the material and complete and correct referencing of all authors or sources used in the content of the work to give respect to them.

3.2 OBJECTIVES

At the end of the lesson in this unit, it is expected that students will be able to:

- Define plagiarism
- Explain what is meant by ethical issues in information usage
- Explain what constitute plagiarism and how to avoid it.
- Define what is academic integrity in terms of citation and referencing.
- State the reasons for citation and referencing.
- Explain with vivid examples the various referencing style.

3.3 ETHICAL ISSUES

There are certain boundaries, laws rules and conditions that regulate the use of information that have to be kept in order to use information rightly. There is what is known as acceptable level of use of information. Information being a commodity must

be used in a way that the creator can benefit from it. This is what gave birth to the ethical use of information. The benefits to be derived from creation or production of information can include financial reward, intellectual property rights, social or professional recognition, copy right ownership and a sense of accomplishment and fulfillment.

3.3.1 Copyrights

The copyright law was enacted to protect the following intellectual work from abuse

- Literary works
- Musical works
- Artistic works
- Cinematograph films
- Sound recording

The copyright law is governed by the Copyright Act, Chapter 68 of the laws of the Federal Republic of Nigeria of 1990 which was amended by the Copyright Decree of No. 47 of 1998. There is the international aspect of the copyright law that enables the author or creator to protect his/her work throughout the world. Two treaties known as Berne Convention that was revised on 24th July, 1971 but amended on 2nd of October, 1979, and the Universal Copyright Convention UCC revised on 24th of July, 1971. These two treaties have member nations that are signatory to it. The signatory nations must protect authors and creators of intellectual properties materials their country.

Copyright does not however, mean that an intellectual work cannot be used but it has to be within certain acceptable limits. Fair use permissions include:

- Use of work for academic purposes alone without any financial benefits
- Scholarship or research works such as criticisms, comments, news, reporting, etc.
- Purpose of teaching in a class by a lecturer with limited number of pages used.
- One time distribution of limited number of pages (depending on the total number of pages of the whole work), if more than 10% of the total number of pages of the work, a written permission must be sought from the author or publisher of the work.

The following are some of the ways in which users of intellectual or information works can violate copyright law:

Reprography: this is when other people apart from the author or publisher produces the work in an illegal manner to make profit or to deprive the author of the financial benefits he/she should make. Such common method is making of photocopies, scanning of intellectual materials on phone or digital devices, online stealing by downloading, saving, etc.

Piracy: this is when other people reproduce the original intellectual work and sell to make profit without get approval from the author. It is also known as undue commercialisation of other people's work.

Counterfeits, poor quality or fake production: this is similar to piracy, this is when others produces a particular intellectual work with low quality in order to make profit on the work that does not belong to them.

3.3.2 DEFINITION OF PLAGIARISM

Plagiarism: this is known as academic robbery, it is when users of intellectual works fails to acknowledge the sources of information that were consulted in the course of developing their own works. The moral benefit of works consulted must be indicated through referencing and citation of sources of consulted in the process of developing the works.

Northwestern “Principles Regarding Academic Integrity” defined plagiarism as writing academic work that is not purely one’s own work without attributing portions that are not personal to their right correct source. Plagiarism is also known as intellectual theft. Plagiarism is the use of another author’s research, information, knowledge, ideas, or language without proper attribution to the original author or source. Students should not be found guilty of plagiarism as the offences are not overlooked in academics. The punishment for students can range from repeating the assignment, losing credit for the course or even repeating the whole semester depending on the gravity of the plagiarism.

Plagiarism has been described as multifaceted and ethically complex problem. In an institutional setting, plagiarism occurs when a writer or presenter deliberately uses someone’s else language, ideas, or other original material without acknowledging its source. A situation where the student fails to cite or reference the source of information correctly will not be taken as plagiarism, but as avoidable mistakes.

Another way to define plagiarism is when an author draws ideas or language of writing from another without adequately crediting the other author source. To take credit for another person’s work of knowledge whether intentionally or by accident is regarded as academic stealing.

Succinctly put, according to Nova Southern University, Plagiarism can be defined as:

- Being dishonest.
- Lying.
- Stealing someone’s idea.
- Cheating.
- Disrespecting yourself and the academic community.
- Copyright infringement.

Most of the time, it is always easy to find the material to use for a writing work but keeping track of them and avoiding plagiarism is a major issue.

3.3.2.1 WHAT CONSTITUTE PLAGIARISM

Plagiarism could be intentional or unintentional but in whatever forms, a student is expected to avoid it in totality. There are different types of plagiarism. These are explained below:

Verbatim or Complete plagiarism: this is when a student takes in whole or part of another person’s work as his/her own personal work with the intention of getting credit for it (getting credit could mean score/mark, applause, commercialisation, benefits of any kind, etc. It could mean stealing idea, work, publication, information of another author word for word. It is not enough to cite or reference such as a way to avoid plagiarism. There is a limited number of words that are permissible to be put in paraphrase or indented. Anything beyond this is complete or verbatim plagiarism.

Mosaic or Near-complete plagiarism: this is when a student copy and paste works of other authors by making just little changes in the words here and there. In this type of plagiarism, the idea of the other author dominates the work while the student has little input which cannot really be pointed or identified. The paraphrasing done by the student still reflect more of the other author. Citing or referencing the other author is not a way to avoid this. The student must ensure that his/her own ideas are well written and presented appropriately and clearly different from that of the original author.

Inadequate Paraphrasing or Patched Plagiarism: for a written work to be free of plagiarism, the student must ensure that the idea of the original author is presented in a new way entirely from the way it was stated by the author. The student must ensure the authors ideas were properly distilled and reframe in another way totally different from the author. The student while doing this must ensure that the content of the author is not close by to allow him/her to come up with a new way or presenting the idea without using the authors words, language and sentences. It using the authors language, words or sentences are not avoidable, then the student must quote and cite appropriately and this must be within the acceptable limit of the institution.

Uncited Paraphrase: this is presenting another author's idea in your own word. The only difference is that you do not use the same word, but the idea presented are the same. You need to cite the source of the idea, if not you have plagiarised because the idea or knowledge does not emanate from you. It belongs to someone else and what you have succeeded in doing is to present the authors idea in your work, so you must cite and reference appropriately.

Uncited Quotation: This is when a student has actually quoted another author's work and put it in parenthesis, or indented to show that the work belongs to another author but failed at the end of the work to provide citation and/or reference. The student should give a track of the source of their quoted works. The citation is expected to go immediately after the quotation.

Self-Plagiarism: this is when a student have used an essay or information (whether in whole or large part) created by him to meet one academic requirement and decide to use it again in a similar or another course or programme to obtain credit again. Using a work to obtain credit in more than source without adequately informing the lecturer in charge or doing the needful by citing appropriately, it will be regarded as plagiarism. One work should not be used to satisfy requirement of two courses. That is why a paper published by an author in a conference cannot be published the same way and content in another journal, there must be serious review if at all it will be published by another journal.

3.3.2.2 HOW TO AVOID PLAGIARISM:

Does it mean that students cannot be free from plagiarism, No. There are some things a student needs to do in order to avoid plagiarism. It is important that students and writer of diverse sorts try as much as possible to keep the following steps in mind to so as to avoid plagiarism:

1. **Paraphrase** - So you have found information that is perfect for your research paper. Read it and put it into your own words. Make sure that you do not copy

verbatim more than two words in a row from the text you have found. If you do use more than two words together, you will have to use quotation marks. We will get into quoting properly soon.

2. **Cite** - Citing is one of the effective ways to avoid plagiarism. Follow the document formatting guidelines (i.e. APA, MLA, Chicago, etc.) used by your educational institution or the institution that issued the research request. This usually entails the addition of the author(s) and the date of the publication or similar information. Citing is really that simple. Not citing properly can constitute plagiarism.
3. **Quoting** - When quoting a source, use the quote exactly the way it appears. No one wants to be misquoted. Most institutions of higher learning frown on “block quotes” or quotes of 40 words or more. A scholar should be able to effectively paraphrase most material. This process takes time, but the effort pays off! Quoting must be done correctly to avoid plagiarism allegations.
4. **Citing Quotes** - Citing a quote can be different than citing paraphrased material. This practice usually involves the addition of a page number, or a paragraph number in the case of web content.
5. **Citing Your Own Material** - If some of the material you are using for your research paper was used by you in your current class, a previous one, or anywhere else you must cite yourself. Treat the text the same as you would if someone else wrote it. It may sound odd, but using material you have used before is called self-plagiarism, and it is not acceptable.
6. **Referencing** - One of the most important ways to avoid plagiarism is including a reference page or page of works cited at the end of your research paper. Again, this page must meet the document formatting guidelines used by your educational institution. This information is very specific and includes the author(s), date of publication, title, and source. Follow the directions for this page carefully. You will want to get the references right.

The following are some additional guides or principles that can help students and scholars to avoid plagiarism;

- Keep track of your sources, especially if they are print sources, ensure they are well kept and arranged where they can be easily retrieved.
- Keep sources in correct context, try to understand the presentation and perspective if it fits in to your writing and how you will integrate it appropriately
- Plan ahead, never do your assignment at last minute or in a hurry. Create ample time to read, take note, confirm your sources and compare notes.
- Do not do cut and paste, file and label your sources.
- Keep your writing and your sources separate: this will help you to avoid using the same word with the author.
- Keep your notes and draft separate
- Paraphrase carefully in your notes, make sure that correct acknowledgement is given to every source paraphrased.
- Do not save your citation for later: let your citation be part of your work as you are writing, if not you will forget or not able to trace or locate the source.
- Quote your sources properly: there is the need to quote the sources used correctly, ensure the correctness of the information provided in your citation and references.

3.4 ACADEMIC INTEGRITY IN TERMS OF REFERENCING AND CITATION.

Referencing are two terms that means nearly the same thing or perform the same function with little difference in their formats and content that has to be provided.

Referencing is the process of providing further detailed information about source(s) of work that has been used in an academic writing that has been properly recognised and cited. References are expansion of citation to include more bibliographic details about a cited author. References helps us to trace the source of information, idea, or knowledge that has been used in the work so that other people can take a look at it. Academic writings are built one upon another, so it is good to indicate what are the various sources of base upon the production of the present work.

Why References

- To avoid being guilty of plagiarism
- To avoid breach of copyright law and permission
- Show the scope and breadth of your research;
- Acknowledge the source of an argument or idea
- Enable the reader to locate the sources you have used;
- Help support your arguments and provide your work with credibility.

Citation: this is another very important activities in academic writing. It is the identification of the rightful owner of a particular work, idea, information, knowledge or invention. A citation provides information to enable the reader to locate the source document. The current user of such information must cite the authors consulted and used during the development of his/her own writing works now. This is usually done with the sentence representing the idea of the author. It can be regarded as short reference to the author of an idea which will enable the readers to appreciate the growth of knowledge over time.

Why do we Need to Cite sources used in an academic work?: To:

- protect you from charges of plagiarism and copyright infringements
- allow your readers to find and benefit from the exact sources you used
- give credit to the authors or creators of those sources or ideas
- let your lectures know how you arrived at your conclusions

Components of a standard citation

In citation, there are basic elements or information that has to be provided to make it citation. Wrong or incomplete details of citing a work is not allowed in academics.. correct citation of different sources of materials are made up of different elements as presented below:

Books: Author (or editor), (Year) Title, Publisher, Place of publication

Journal Articles: Author, Year, Article Title, Journal Title, Volume No., Issue No., Pages

Web sites: Author (or Company or Organisation), web page Title, URL, Date (posted or revisited) Date retrieved

Images: Artist name, Title of the work, Date it was created, repository (or museum or

owner) City or country of origin, Dimensions of the work, Material or Medium (such as oil on canvas, marble, found objects)

- If the image is in a book you will need full book citation with the page for the image,
- If its online, you will need the web citation in addition to the image number or other identifier.

3..5 CITATION STYLES

APA Citation Style Basic Examples: This is the citation style invented by the American Psychological Association.

Journal article, one to two authors

Johnson, M. K. (2013). Investigating the relationship of nutrition- and exercise-compromising health impairments with Autism Spectrum Disorders among children with special health care needs. *American Journal of Health Education*, 44(4), 221-8

Journal article, three to 20 authors

Grady, J. S., Her, M., Moreno, G., Perez, C., & Yelinek, J. (2019). Emotions in storybooks: A comparison of storybooks that represent ethnic and racial groups in the United States. *Psychology of Popular Media Culture*, 8(3), 207–217.

An article with no author or editor named

HIV treatment reduced risk for malaria recurrence in children. (2012). *Infectious Disease News* 25(12), 41-43.

Book In 7th ed., place of publication is no longer used.

LeFever Kee, J., Hayes, E. R., & McCuistion, L. E. (2015). *Pharmacology: A patient-centered nursing process approach*. Elsevier/Saunders.

Chapter in an edited book

LeFever Kee, J., Hayes, E. R., & McCuistion, L. E. (2015). A nurse's perspective of pharmacology. In J. Jones (Ed.) *Pharmacology: A patient-centered nursing process approach* (pp. 105-133). Elsevier/Saunders.

Magazine article

Anderson, M. (2018). Getting consistent with consequences. *Educational Leadership*, 76(1), 26- 33.

Newspaper with no author

The complicated calibration of love, especially in adoption. (2018, November 28). *Chicago Tribune*, p. 6.

Newspaper with author

Reddy, S. (2014, June 17). Effort to reduce ear surgeries for small children. *The Wall Street Journal*, pp. D1-D3.

Electronic Resources With DOI:

Grady, J. S., Her, M., Moreno, G., Perez, C., & Yelinek, J. (2019). Emotions in storybooks: A comparison of storybooks that represent ethnic and racial groups in the United States. *Psychology of Popular Media Culture*, 8(3), 207–217. <https://doi.org/10.1037/ppm0000185>

Electronic Resources without DOI

Stein, M. B., & Taylor, C. T. (2019). Approach to treating social anxiety disorder in adults. UpToDate. Retrieved September 13, 2019, from <https://www.uptodate.com/contents/approach-to-treating-social-anxiety-disorder-inadults>

Corporate author: Spell out the full name of a group or corporate author. If the publisher and the author are the same, omit the publisher reference to avoid confusion.

American Psychiatric Association. (2002). *Practical guidelines for the treatment of patients with eating disorders* (2nd ed.). Washington, DC.

MLA Citation Style.

The MLA citation style refers to the rules and conventions established by the Modern Languages Association for acknowledging sources used in a research paper.

Journal article, one to two authors

Carter, Nancy Carol. "The Special Case of Alaska: Native Law and Research." *Legal Reference Services Quarterly* 22.4 (2003): 11-46. Print.

Books with one author

Fukuyama, Francis. *Our Posthuman Future: Consequences of the Biotechnology Revolution*. New York: Farrar, 2002. Print.

Books, Journals by Two or More Authors

If the book has two or three authors, list all of the authors. If the book has more than three authors, list the first one, followed by et al. The same rule applies when listing editors of a book.

Block, Holly, et al. *Art Cuba: The New Generation*. New York: Abrams, 2001. Print.

Salzman, Jack, David Lionel Smith, and Cornel West, eds. *Encyclopedia of African-American Culture and History*. 5 vols. New York: Macmillan, 1996. Print.

Chapter in an edited book

Walker, Timothy. "Sign of the Times." *The Transcendentalists: an Anthology*. Ed. Perry Miller. Cambridge, MA: Harvard University Press, 1950. 560-563. Print.

Journal Article from a library database or online

Cummings, Scott T. "Interactive Shakespeare." *Theatre Topics* 8.1 (1998): 93-112. *Project Muse*. Web. 14 Aug. 2003. <<http://www.press.jhu.edu>>.

Magazine and Newspaper article

For most magazine articles, you only need to cite the magazine's date of publication (no volume or issue number).

Goodell, Jeff. "The Plunder of Wyoming." *Rolling Stone* 21 Aug. 2003: 64-69. Print.

Danto, Arthur C. "Paint It Black." *Nation* 18-25 Aug. 2003: 46-48. *Academic Search Premier*. Web. 14 Aug. 2003. <<http://www.ebsco.com>>.

Newspaper with author

Gladstone, Valerie. "Shiva Meets Martha Graham, at a Very High Speed." *New York Times* 10 Aug. 2003, New England ed., sec. 2: 3. Print.

Web pages without author

"Argonne Researchers Create Powerful Stem Cells From Blood." Argonne National Laboratory, 24 Feb. 2003. Web. 10 Jan. 2004. <http://www.anl.gov/Media_Center/News/2003/news030224.htm>.

Web pages with author

Bromwich, Michael R. "Criminal Calls: A Review of the Bureau of Prisons' Management of Inmate Telephone Privileges." United States Department of Justice, Aug. 1999. Web. 10 Jan. 2004. <<http://www.usdoj.gov/oig/special/9908/exec.htm>>.

Article (from a publisher website with a Digital Object Identifier (DOI)) with two authors:

Lykken, David and Auke Tellegen. "Happiness is a Stochastic Phenomenon." *Psychological Science*, vol. 7, no. 3, May 1996: 186-189. *SAGE Journals*, doi:10.1111/j.1467-9280.1996.tb00355.x.

Images: Image from an online source with a creator listed:

Gelman, Andrew. *Average Happiness as a Function of Age, from General Social Survey*. 26 Dec. 2010, andrewgelman.com/2010/12/26/age_and_happine/.

Harvard Style The MLA citation style refers to the rules and conventions established by Harvard University for acknowledging sources used in a research paper.

Journal article, one to two authors

Maier, H, Baron, J & McLaughlan, R 2007, 'Using online roleplay simulations for teaching sustainability principles to engineering students', *International Journal of Engineering Education*, vol. 23, no. 6, pp. 1162-1171.

Journal article from web, freely available from an e-journal's website

Ticker, CS 2017, 'Music and the mind: music's healing powers', *Musical Offerings*, vol. 8, no. 1, article 1, viewed 21 May 2017.

Journal article with DOI (Digital Object Identifier)

Jeeyoo, L, Ji-Eun, L, Yuri, K, Lee, J, Lee, J-E & Kim, Y 2017, 'Relationship between coffee consumption and stroke risk in Korean population: the Health Examinees (HEXA) study', *Nutrition Journal*, vol. 16, pp. 1-8, DOI:10.1186/s12937-017-0232-y.

Journal article with four or more authors

Grosso, G, Stepaniak, U, Micek, A, Stefler, D, Bobak, M & Pajak, A 2017, 'Coffee consumption and mortality in three Eastern European countries: results from the HAPIEE (Health, Alcohol and Psychosocial factors In Eastern Europe) study', *Public Health Nutrition*, vol. 20, no. 1, pp. 82-91.

Book Print

Connell, R 2009, *Gender*, Polity Press, Cambridge

Book with four or more authors

Henkin, RE, Bova, D, Dillehay, GL, Halama, JR, Karesh, SM, Wagner, RH & Zimmer, MZ 2006, *Nuclear medicine*, 2nd edn, Mosby Elsevier, Philadelphia.

E-book from web

de Grosbois, T 2015, *Mass influence: the habits of the highly influential*, Wildfire Workshops, viewed 21 May 2017, <http://www.massinfluencethebook.com>

Book chapter in compiled book (each chapter written by a different author)

Warner, R 2010, 'Giving feedback on assignment writing to international students - the integration of voice and writing tools', in WM Chan, KN Chin, M Nagami & T Suthiwan (eds), *Media in foreign language teaching and learning*, De Gruyter, Boston, pp. 355-382.

Conference paper published in book of proceedings

Goldfinch, M 2005, 'A pilot discussion board for questions about referencing: what do students say and do?' in G Grigg & C Bond (eds), *Supporting learning in the 21st century*, proceedings of the 2005 Annual International Conference of the Association of Tertiary Learning Advisors Aotearoa/New Zealand (ATLAANZ), Dunedin, New Zealand, pp. 179-191.

Conference paper – online edited proceedings

Crisp, G, Hillier, M & Joarder, S 2010, 'Assessing students in Second Life – some options', in CH Steel, MJ Keppell, P Gerbic, & S Housego (eds), *Curriculum, technology & transformation for an unknown future*. Proceedings of the 27th Annual ASCILITE Conference: Curriculum, technology and transformation for an unknown future, Sydney, pp. 256–261, viewed 15 July 2011.

Newspaper or magazine article

Robertson, D & Kyriacou, K 2010, 'Skating on thin ice', *Advertiser*, 20 November, p. 9.

Newspaper or magazine article viewed online

Banks, D 2010, 'Tweeting in court: Why reporters must be given guidelines', *The Guardian*, 15 December, viewed 25 November 2015.

Newspaper or magazine article with no author

Evening Express 2014, 'Firearms officer drove at 60mph on wrong side of road in Aberdeen', Evening Express, 22 May, p. 12, viewed 18 April 2017.

Webpage

World Health Organization 2014, WHO recommendations for routine immunization – summary tables, World Health Organization, viewed 1 May 2014.

3.6 SUMMARY

Academic integrity is a major concern in a university system. Knowledge are created from time to time in a university system, information and knowledge is always built on previous information and knowledge. The university will like to know the contribution of each creator of information and knowledge and give credit to information that has been produced before. It behooves every information and knowledge creator to give credit to the various sources of information and knowledge that has been consulted in the course of creating the information and knowledge. Information and knowledge is a commodity and the use of it must

The various major issues around academic integrity which are usually very important have been discussed in this unit. The issue of plagiarism which is regarded as academic theft cannot be overlooked. It is a serious issue among the academia, it is usually not taken as unintentional as people have exploited other people in the name of being unintentional. Students must pay detailed attention to it. The other two very important concepts are references and citation, these has to do with appropriate acknowledgement of sources and authority used or consulted in the course of writing the material. Right use of it is the anti-dote for falling victim of plagiarism. The commonest type of referencing styles have been discussed. These are American Psychological Association, Modern Language Association and Harvard. Specific examples of each of the various sources that can be consulted were given which were to serve as template in referencing other materials of similar sources.

SELF-ASSESSMENT EXERCISE

- 1) Mention some common citation style?
- 2) What is the full meaning of each of the following?
- 3) Why do we need to cite?

3.7 GLOSSARY

- ◆ Ethics: this is the standard or acceptable norms in doing something.
- ◆ Citation: It is the identification of the rightful owner of a particular work, idea, information, knowledge or invention.
- ◆ Plagiarism: is the act of failing to acknowledge the rightful owner of intellectual work that someone has used in his/her work.

3.8 REFERENCE/FURTHER READING

- Brown University Library. (2012) "What is plagiarism?"
<https://www.brown.edu/academics/college/degree/sites/brown.edu/academics/college/degree/files/uploads/Academic-Code.pdf>
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<http://cmsw.mit.edu/writing-and-communication-center/avoiding-plagiarism/>
- Concordia University (2015). Academic code of conduct: the "2015 Academic Code of Conduct".
<http://www.concordia.ca/content/dam/concordia/offices/provost/docs/Academic-Code-Conduct-2015.pdf>
- Curtin University (2015). Academic integrity at Curtin, student guidelines for avoiding plagiarism <http://academicintegrity.curtin.edu.au/global/studentbook.cfm>
- Debnath, J. (2016). Plagiarism: A silent epidemic in scientific writing- Reasons, recognition and remedies. *Medical Journal of Armed Forces India*, 72(2), 164-167.
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- Emory: Oxford College. (2012). "Student Honor Code".
http://oxford.emory.edu/audiences/current_students/Academic/academic-success/student-honor-code/
- Habibzadeh F. (2008) On stealing words and ideas. *Hepatitis Monthly*, 8, 171-172.
- Harvard (2017). What constitutes plagiarism. A publication of the Harvard College Writing programme. <https://usingsources.fas.harvard.edu/>
- Juyal D., Thawani V. and Thaledi S. (2015). Plagiarism: an egregious form of misconduct. *Northern American Journal of Medical Science*, 7(2), 77-80.
- McKenzie, J. (2017). Avoiding plagiarism. <http://www.lib.sfu.ca/help/academic-integrity/plagiarism>
- Mohammed R. A. A., Shaaban O. M. and Mahran D. G. (2015). Plagiarism in medical scientific research. *Journal of Taibah University Medical Science*, 10(1), 6-11.
- Princeton University. (2012). "Defining and Avoiding Plagiarism: The WPA Statement on Best Practices".
- Shashok, K. (2011). Authors, editors, and the signs, symptoms and causes of plagiarism. *Saudi Journal of Anaesthesia*, 5(3), 303-307.
- Stanford University. (2012). "What is Plagiarism".
<https://studentaffairs.stanford.edu/judicialaffairs/integrity/plagiarism>

Steen, R. G. (2011). Retractions in the scientific literature: Do authors deliberately commit research fraud? *Journal of Medical Ethics*. 37,113–117.

The University of Rhode Island (2022). Citing correctly and avoiding plagiarism. <https://uri.libguides.com/cite/mla8th> Ely Library at Westfield State University (2022). Citation Guides: MLA Style 8th edition: Describes and demonstrates MLA style citations and formatting. <https://lib.westfield.ma.edu/c.php?g=354010&p=2388441>

University of Leicester (2009). Student Learning Development. www.le.ac.uk.succeedinyourstudies

Using APA Style (7th edition 2020). https://millikin.edu/sites/default/files/2020/documents/apa7th_edstyleguides2020_0.pdf

USNA Statements on Plagiarism - Avoiding Plagiarism US Naval Academy. <http://libguides.usna.edu/c.php?g=410493&p=2795948>

Vega García, S.A. (2012). Understanding plagiarism: Information literacy guide. Iowa State University. <http://instr.iastate.libguides.com/content.php?pid=10314>.

3.9 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISE(S) WITHIN THE CONTENT

1 Common citation styles are: APA, MLA and Harvard

2) APA: American Psychological Association

MLA: Modern Language Association

Harvard: Harvard University

3) The following are some reasons for citing in writing

- protect you from charges of plagiarism and copyright infringements
- allow your readers to find and benefit from the exact sources you used
- give credit to the authors or creators of those sources or ideas
- let your lectures know how you arrived at your conclusions.