**COURSE GUIDE**

# LIS403
# INFORMATION-SEEKING BEHAVIOUR

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Ice Breaker
Upload your passport and introduce yourself by stating your names, what
you do for a living, your hobbies, your expectation in this course and the name you would prefer to be called during this course.

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## Introduction

Welcome to LIS403: Information-seeking Behaviour. This is a two-credit (2-CR) unit course that is compulsory for all the undergraduate students in the department. The course is designed to enable you to broaden your understanding of information-seeking behaviour as it applies to library and information science. This will facilitate an excellent successful academic journey and enhance your personal development and increase your knowledge base in the area of library and information science especially as you proceed in your training towards becoming competent professional librarians and information scientists who will provide excellent services to your library users.

## Course Objectives

By the end of this course you will be able to:

i. Define some Related Concepts
ii. Know about information sources/resources and information retrieval
iii. Consider the Information User
iv. Consider Information User Studies
v. Examine Information behaviour Models
vi. Examine some Information-Seeking Models Relevant to Library and Information Science
vii. Examine the Information Behaviour of Users in Various Contexts.

## Working Through this Course

This course consists of both theoretical and practical parts. To complete this course successfully, you are required to go through the modules and carefully read the study units, do all practical exercises and assessments and also explore the references provided for more in-depth knowledge of the course. Some recommended books and other materials that you are to read are available to you. Ensure that you read them and also attend the practical sessions of this course. Always participate in the online facilitations going on in your study centre. Each unit of study has an introduction, objectives you should achieve at the end of the study, and a summary and conclusion informing you in a nutshell of what you studied in the unit. Above all, there is the Self-Assignment Exercise (SAE) to evaluate what you have learnt. You can download the courseware into your device so that you can study it whenever you are offline.

Each study unit has an 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 intended learning outcomes (ILOs) which outline 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 desired objectives (outcomes).

## Study Units

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

**Module 1 Definition of Concepts**

Unit 1 Concept of Information

Unit 2 Concept of Information Behaviour

Unit 3 Concept of Information Need

Unit 4 Concept of Information-seeking Behaviour

**Module 2 Information Sources/Resources and Information Retrieval**

Unit 1 Information Sources/Resources

Unit 2 Information Retrieval in Digital Libraries

Unit 3 Information Retrieval in Libraries

**Module 3 The Information User**

Unit 1 Definition of Information User

Unit 2 Library User Studies

**Module 4 Theoretical/Conceptual Models of Information Behaviour**

Unit 1 Concept of Information Behaviour Model in Library and Information Science

Unit 2 Concept of Information-Seeking Behaviour Model in Library and Information Science

**Module 5 Information Behaviour in Different Contexts**

Unit 1 Information Behaviour of User Groups in the University Context

Unit 2 Information Behaviour of Users in Organisational Context

Unit 3 Information Behaviour of Users on the Web

## Presentation Schedule

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

## Assessment

There are two main forms of assessments in this course that will be scored: the continuous assessment and the final examination. The continuous assessment shall be in three-folds. **There will be two Computer-Based Assessments. The computer-based assessments will be given in accordance with the University academic calendar. The timing must be strictly adhered to.** The Computer-Based Assessments shall be scored a maximum of 10% each, while your participation in discussion forums and your portfolio presentation shall be scored a maximum of 10% if you meet 75% participation. Therefore, the maximum score for continuous assessment shall be 30% which shall form part of the final grade. The final examination for LIS 403 will be a maximum of two hours and it takes 70 per cent of the total course grade. The examination will consist of 70 multiple choice questions that reflect cognitive reasoning.

Note: You will earn a 10% score if you meet the minimum of 75% participation in the course forum discussions and in your portfolios otherwise you will lose 10% of your total score. You will be required to upload your portfolio using Google Docs. What are you expected to do in your portfolio? Your portfolio should be notes or jottings you made on each study unit and activity.

## How to Get the Most from the Course

To get the most in this course, you need a functional laptop and access to the Internet. This will make studying and learning easy and the course materials accessible anywhere and anytime. Use the Learning Outcomes to guide your self-study in the course. At the end of every unit, examine yourself with learning outcomes and see if you have achieved the outcomes.

Carefully work through each unit and make your notes. Join the online real-time facilitation as scheduled. Where you miss a schedule for online real-time facilitation, go through the recorded facilitation session at your convenience. Each real-time facilitation will be video recorded and posted on the platform. In addition to the real-time facilitation, watch the video

and audio-recorded summary in each unit. The video/audio summaries are directed to the salient points in each unit. You can access the audio and videos by clicking on the links in the text or through the course page.

Work through all self-assessment exercises. Finally, obey the rules in the class.

## 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 of the week;
- Direct and summarise forum discussions;
- Coordinate activities on 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 contact 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 the main themes that you must know in 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 questions or problems with an assignment or with your tutor’s comments on your 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.

**Module 1 Definition of Concepts**

Unit 1: Concept of Information

Unit 2 Concepts of Behaviour and Information Behaviour

Unit 3 Concept of Information Need

Unit 4 Concept of Information-Seeking Behaviour

**Module 2 Information Sources/Resources and Information Retrieval**

Unit 1 Information Sources/Resources

Unit 2 Information Retrieval in Digital Libraries

Unit 3 Information Retrieval in Libraries

**Module 3 The Information User**

Unit 1 Definition of Information User

Unit 2 Library User Studies

**Module 4 Theoretical/Conceptual Models of Information Behaviour**

Unit 1: Concept of Information Behaviour Model in Library and Information Science

Unit 2: Concept of Information-Seeking Behaviour Model in Library and Information Science

**Module 5 Information Behaviour in Different Contexts**

Unit 1 Information Behaviour of User Groups in the University Context

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*The future is yours, so embrace it. You may not know what the road ahead has to offer, but you can prepare yourself to achieve. Remember to carefully and thoughtfully take it step by step. Reaching your goals can be challenging. You may encounter several twists and turns. But in the end, you will have succeeded.*

*Ford, Knight & McDonald-Littleton*

**MAIN COURSE**

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# MODULE 1 DEFINITION OF CONCEPTS



## Unit 1 Definition of Information

**Unit Structure**



### 1.1 Introduction

Information is important for success in life. If you are to succeed in your academics, you need information. If you are to help or serve people better as an information professional, you need information. This is why information is considered a basic human requirement. To that extent, society and the people and institutions in them require information for efficient and effective functioning.

Information is necessary for guidance and decision-making. Without information, you will be ignorant and it will be difficult for you to follow the trend of events. This is true irrespective of what field or walk of life one belongs to in society. For example, the market woman needs information about the prices of goods and where to get her supplies at cheaper prices. This information is important for buying and selling goods. The government requires information about the citizens in order to know how policies affect them and what can be done to improve their standard of living. With the correct information, the government can plan better.

As students, you require information to understand how the university system works to avoid breaking the rules and regulations. You also

require information to become more effective in your learning experience and to have the desired outcomes. In the same vein, your lecturers require information to be more effective and understand students' needs. They also need information on advances in their teaching areas to keep their students current on trends in their field, teach and conduct meaningful research.

Generally, everyone needs information for negotiations in our daily life among other uses. However, if the information is to help you achieve the intended outcome, you must be able to properly analyse your information needs and understand how you can go about locating and accessing the most relevant information you need as well as be able to evaluate and use the information to meet your needs. As librarians, you need to understand your users' information needs and seeking behaviours to serve them better because information is important for everyone. At the end of the day, possession of the correct information is what will determine the extent of one's success.

As librarians in training, if you are careful and diligent to follow the discussions and other requirements of this course such as the exercises, and the self-assessment tests outlined in this course, you will stand a good chance of not only understanding the conceptual models related to information behaviour, your own information needs, and the methods to adopt in seeking and meeting your information needs, but will also know how to assist other people especially, your library users to understand their information needs and locate the most relevant information to meet their needs.

## 1. 2 Intended Learning Outcomes

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

- discuss the various definitions and meanings of information
- discuss the attributes and types of information.

## 1.3 Definition of Information

Before we delve into the discussion on information-seeking behaviour, it is important to understand what information is. That will form the basis for understanding why people seek information, and the methods they adopt in seeking information.

Often we hear the phrase "we live in the information age." This phrase is used to emphasise that information is a much-needed commodity in the present age. The term information also crops up quite frequently in our daily discussions. However, finding a universally acceptable definition of the term has been a major concern.

This is so because while some researchers are of the view that there is no need to seek a definition and rather opt to describe the term, others are of the view that a definition of the term is necessary for clearer understanding. This dilemma is further amplified by the explosion in telecommunications and computer sciences that tend to enshroud the concept with scientific prestige which makes it almost unnecessary to seek any other meaning outside the two fields of telecommunications and computer science (Lombardi, 2004).

To that extent, there is no one definition of the term information because it means different things to different people and its meaning can also depend on the context of use. This is why different individuals in different professional fields or walks of life often define the term from the perspective of their professional field or leaning.

The apparent difficulty in defining information has resulted in information scientists being reluctant to propose definitions of information, preferring to rather discuss concepts. The preference for discussion of concepts rather than definitions according to Belkin cited in Madden (2000) is because while a definition seeks to say what the phenomenon being defined is, a concept on the other hand presents a way of looking at or interpreting the phenomenon. Be that as it may, we will attempt to present some definitions as postulated by some researchers.

One of the most common ways of defining the term is to describe it. Information is one or more statements or facts that are received by a human and that have some form of worth to the recipient (Losee, 1997). From this definition, we can deduce that information is not just casual discussions. It is rather a discussion that is laced with facts. Information is received by a human element and the value that is assigned to the information received is dependent on how relevant or useful it is perceived by the recipient.

From this simple definition of the term, it is apparent that the layperson views information as an item of information or intelligence; a fact or circumstance of which one is told (OED cited in Madden, 2000).

In their review of definitions of the term information as gleaned from research conducted over the last fifty years, McCreadie and Rice cited in Madden (2000) summarise the different approaches that information has been rendered as given below.

- **Information as a representation of knowledge**

As a representation of knowledge, information is conceived as stored knowledge as we have it traditionally stored in books. Increasingly, however, information is being stored in electronic media. Therefore, besides books, information and communication technologies all contain

information. In libraries today, both books and information and communication technologies are media that all contain information.

- **Information as data in the environment**

Information seen from this perspective means that it is not only what is contained in books or electronic resources or media that should be called information rather, information can also be obtained from a range of environmental stimuli and phenomena. Understandably, information obtained from some sources do not immediately convey a message however; the information can be informative when appropriately examined and interpreted.

- **Information as part of the communication process**

Information as part of the communication process implies that meanings are in people rather than in words or data. In essence, the meaning that people attach to phenomena is what it is rather than the words or data. For instance, we name a thing and we attach meaning to it such that when that name is mentioned, it conjures up a certain picture. Today, new phenomena have emerged which were not there many years ago. Those things did not exist in the past and so had no meanings attached to them. To that extent, it is valid to say that timing and social factors play a significant role in the processing and interpretation of information. In essence, information is believed to be socially constructed.

- **Information as a resource or commodity**

Information is transmitted in a message from sender to receiver. The receiver interprets the message as intended by the sender. There may be added value as the information is disseminated or exchanged. Therefore, if the message sent by the sender is distorted, it will affect the receiver's interpretations.

Furthermore, in the attempt to define the term, a distinction has been made between two words that people tend to use interchangeably: information and data. Information is defined as "processed, organised and structured data. It [Information] provides context for data and enables decision-making processes" while "data are individual facts, statistics or items of information, often numeric" (Wikipedia, 2022).

In the sense of the distinction above, data or pieces of data contain some value which results in information when it is processed, organised and structured. Therefore, it is only when data is processed, organised and structured and given a meaning that it results in information that enable decision-making. An example can be drawn from the circulation statistics that are kept in the library. To an outsider, the data would not make sense unless it is processed, organised and structured in terms of how many books were consulted, in what subject fields and at what

time by users, and within what given period etc. This series of data can be written up as a report which invariably helps library management to make decisions about library usage that can in turn affect policy decisions.

In that sense, when data is put in context and processed, organised and structured, it produces information which in turn gives rise to knowledge that is used for decision making by management. Knowledge itself is organised body of information or the comprehension and understanding that is gained as a result of one having acquired an organised body of facts.

This means that information produces knowledge. Information makes for insight. However, this view of data-information-knowledge is obviously hierarchical and may be mostly associated with information systems (IS) because that is not how human beings store or communicate. Human beings do not first produce data which is further processed, organised and structured before it makes sense.

Webler (2022) defines information as the resolution of uncertainty that manifests itself as patterns; it answers the question of "What an entity is" and thus defines both its essence and the nature of its characteristics. Therefore, information when received is supposed to help in resolving uncertainty. One should be better equipped to function once information is received.

The view above is in contrast with the data-information-knowledge view but in agreement with another view of information known as the knowledge-in-action view of information which does not see information as a prerequisite for knowledge, but rather as a specific subset of knowledge in the sense that it is only what is understood by an individual that can become information to him/her. It, therefore, implies if something further confuses us, we cannot say that we have information. This is because it has done nothing to satisfy our need for it and as such does not present any advantage to us. It is also important to note that individuals decide what information is to them depending on the time and context. One may get a certain piece of information which at the material time is either outdated and therefore not useful or is coming too early for its use. In that case, while the information is valid by every standard, it is not used because it is not meant for the time or it is not applicable in the context we are at the material time.

Another definition says that information is the product of different human activities and events. People and organisations engage or undertake activities as they pursue certain objectives and from such events, information is produced. Clearly, events are things that happen, occur or take place as a result of the activities of men and in line with

their objectives (Egyankosh, n.d.). To that extent, it is human beings that generate information through the activities that they perform either individually or organisationally following events that have taken place. In essence, information is not self-generated or produced without purpose. In libraries for instance, statistics are generated on days that the library doors are open. No activities take place on public holidays; therefore, no statistics are generated or recorded on such days.

Some other authors are of the view that the term information is all encompassing, not limited in nature. The implication is that we cannot be discriminatory in our use of the term by associating it with only a certain form. It is therefore, a misconception to limit the term information to only word of mouth or printed words (Nasreen, 2006). Nasreen is of the view that colours also constitute information in the same way that artwork, body movements, gestures and facial expressions constitute information. Information can also be a fact such as a name, class, job timings as also a quantifiable physical quantity such as speed, sound waves, temperature and pressure (p.36).

Information about any entity means representation of an entity and so information has a life of its own. The implication is that everything that can be felt, observed, detected, perceived and anticipated by an agent is information (Isazadeh, 2014; Gershenson, 2010).

## Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

1. In the hierarchical order, which one out of the following is correct?

a. Knowledge -Information- Data
b. Information -Knowledge- Data
c. Data -Knowledge- Information
d. Data- Information- Knowledge

2. Information is processed, organised and structured data.

True False

### 1.3.1 Attributes of Information

Having looked at some definitions of the term information, and making some distinction between it and data, often wrongly conceived to mean information, it is important to look at some attributes of information. This will provide a basis for further

understanding of what we should look out for when we talk about information.

An attribute is a quality or feature regarded as a characteristic or inherent part of someone or something. So, when we talk about attributes of information, we are referring to the quality or characteristics of information. We shall be looking at five attributes of information: accuracy, completeness, reliability, relevance, and timeliness.

- **Accuracy**

Accuracy is concerned with how correct or reliable is the information? Is that information a true reflection of the data upon which it is based? Is the information error free and without mistakes and biases? These are important questions to ask and answer given that information forms the basis for decision making. If the information is not accurate, it follows that any decision that is based on it will be flawed. In essence, as an information professional, it is paramount that the information that you provide to your users is accurate to enable them to make more informed decisions and apply it appropriately.

- **Completeness**

Completeness is about the comprehensiveness of information. Incomplete information might be unusable as it will have gaps. The completeness of information will determine the quality of the decision that it is based on. It, therefore, means that all the aspects that are needed to make the information complete must be available. Take, for instance, a report to management on user registration which is not accompanied by such data as the year of registration. That is not complete because it does not situate the information. Salient aspects of that information must be present to make it usable.

- **Reliability**

Reliability of information means that the information should not be contradictory to information in a different source or system within the organisation. Contradictory information is not trustworthy. Any decision that is based on unreliable or contradictory information can be costly in financial and other terms and consequently, can hinder effectiveness and efficiency. Let us assume for instance that a library uses both manual and electronic system such as an Integrated Library Management System (ILMS) in its book acquisitions recording. It is expected that the information that is contained in these two systems should be the same. If the manual system of recording in an accession

register for instance gives a certain figure as the total holdings, it is expected that the same information is contained in the Integrated Library Management System (ILMS). Where this is not so, the information becomes not only contradictory but also unreliable.

- **Relevance**

The relevance of information is concerned with it being able to meet the intended need because people and organisations do not collect information just for the fun of it rather, it is meant to meet a need. Relevant information should answer the questions: what, why, where, when, who, and how for the recipient. If this is not the case, the information is wasteful in terms of time, energy and possibly funds committed to it. However, the relevance of information is relative as what may be considered irrelevant by one individual or organisation might be relevant to another and vice-versa.

- **Timeliness**

Timeliness of information refers to the up to datedness of the information. Information may be factual but if it has been superseded by more recent information, then it ceases to be timely and may be useless for decision making or for problem-solving.

**Self-Assessment Exercise 3**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

1. What is the effect of accurate information?
   a. Informed decision making
   b. Untimely decision making
   c. Biased decision making
   d. Data manipulation

## 1.3.2 Types of Information

In the foregoing, it was clearly stated that information has no universally accepted definition. We also looked at some attributes of information. Here, we will be looking at types of information. It is important to understand that just as it is difficult to clearly pin down only one definition of the term information, it is equally difficult to classify or group the types of information that are in existence.

Albeit, an understanding of types of information is important because it helps in assisting one in making a choice of information source(s). With this in mind, information can be categorised as factual, analytical,

subjective and objective information (Tri-Country Technical College, n.d.).

### i. Factual Information

Factual information deals solely with facts. Factual information is short and non-explanatory and can be found in reference books such as encyclopedias and almanacs. Statistics found in government publications are also factual information. An example of factual information is "who was the first president of Nigeria?" If you choose to ask someone, the person will simply supply the name if he/she knows it and that ends the discussion.

### ii. Analytical Information

This is information that arises from the interpretation of factual information. Researchers generate this kind of information in their studies. They are mostly found in books and journals. For example, based on statistical information from factual information, a researcher can conclude about a phenomenon and this can be the basis for policy implementation by government agencies.

### iii. Subjective information

Subjective information is information that is presented from only one viewpoint. Included in this is information based on the opinion of the writer. Subjective information covers a wide range of sources in books, newspapers, websites, journals and book reviews among others. One should be careful about making a decision simply based on subjective information. This is where information literacy skills come in useful to enable the information user to evaluate the information based on certain criteria.

### iv. Objective Information

Objective information is subjected to and understood from varying viewpoints, and the information presents all sides of an argument. Objective information gives room for evaluation and analysis because it is not limited in its presentation. Objective information can be collected from reference books and also from newspapers that present balanced and fair reporting.

## Self-Assessment Exercise 4

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Subjective information can be relied on for policy decisions.

True False

## 1.4 Summary

In this unit, you were taken through the meaning of information. It was stated that information has no universally accepted definition as people tend to ascribe meaning to it based on their perception, context of use, professional field and experience. Be that as it may, information enables one to make informed decisions and to that extent, it is a basic human requirement.

This unit also highlighted and discussed some attributes of information and information types.

## 1.5 Glossary

1. **Analytical**: Of a thing relating to or using analysis or logical reasoning
2. **Data**: Facts and statistics that have be collected for reference purposes or for analysis.
3. **Information**: Processed data that has meaning in some context for its receiver.

## 1.6 References/Further Readings/Web Resources

Gershenson, C. (2021). Complexity at large. https://onlinelibrary.wiley.com/doi/10.1002/cplx.2142.

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## 1.7 Possible Answers to Self-Assessment Exercise

| |
|---|
| SAE 1: D. Data-information-knowledge |
| SAE2: True |
| SAE 3: A. Informed decision-making |
| SAE 4 False |

# Unit 2 Concept of Behaviour and Information Behaviour

**Unit Structure**



## 2.1 Introduction

In the previous unit, you were taken through the definitions of information need, attributes of information, types of information and sources of information as the foundation for preparing you for the subject of information-seeking behaviour. However, there cannot be any talk about information-seeking behaviour without us first of all examining the concept of information behaviour because information-seeking is action oriented and speaks more about behaviour.

As information professionals, the goal of librarians is to make information not only available but also easy to retrieve by library users. To that extent librarians need to study and measure information behaviours of their users to be able to understand how to manage information to facilitate use and make the retrieval process easy to encourage continuing use.

## 2.2 Intended Learning Outcomes

By the end of the unit, you will be able to:

- define behaviour
- discuss the concept of information behaviour.

## 2.3 Concept of Human Behaviour

Before we delve into the subject of information behaviour and/or information seeking behaviour, it is pertinent to first of all understand what is meant by human behaviour. Simply put, human behaviour is the way a person or a group acts including everything and anything that a person or group does. It is the way that a person or group behaves in response to a particular situation or stimulus.

Wikipedia (2022) defines human behaviour as “the potential and expressed capacity (mentally, physically, and socially) of human

individuals or groups to respond to internal and external stimuli throughout their life."

It is not possible to take away the role of behaviour in survival including in short- and long-term health, mental and physical well-being. While human beings some action instinctively, there are others that are based on conscious and deliberate decisions. Behaviours, which include emotional and physical acts and reactions, are the outcome of a complex interaction between genetics and environment. There are some behaviours that are learned and they differ from culture to culture. Some behaviours involve social interactions with other people. Variables such as individual's age, education, social status, and circumstance can change behaviour (National Library of Medicine, 2007).

Like other people-oriented professionals, the question of human behaviour in the library or other professional contexts is also important. However, as information professionals who have to meet and interact with different types of users especially in the context of the library and library resources, librarians are interested in understanding human beings in the library and as they interact with information sources and resources, be it in the physical library or in the electronic environment.

The basis of studying information behaviour in libraries is that armed with knowledge from such research, libraries can focus on improving information systems or, if it includes information need, can also focus on why the user behaves the way they do (Wikipedia, 2022). Equipped with this knowledge, libraries will be better positioned to serve their users.

### 2.3.1 Information Behaviour

Given the issues raised by researchers around the aptness or otherwise of using information-seeking behaviour as against information behaviour to describe the processes that are involved when people go about seeking information, efforts have been made to explain the concept of information behaviour to show how it is a more encompassing term than information-seeking behaviour.

The originator of the term information behaviour, T.D. Wilson explains that information behaviour is an individual's action (or inaction) when faced with an information need. In essence, it is not only concerned with seeking information but the totality of the individual's behaviour in relation to information. Does he/she take the step necessary to find it or does he/she ignore it? What other behaviours does he/she exhibit in relation to information? How does he/she search for information or use information? This is why Wilson includes in the range of activities of information behaviour the following.

- deciding that information is needed,
- searching for information when desired information is not present,
- sharing or suppressing information once discovered,
- avoiding information,
- storing information, and myriad other possible behaviours that affect and ultimately shape how individuals manage information (Wilson, 2002).

Other researchers have also attempted to give their understanding of this term. Information behaviour is a field of information science research that seeks to understand the way people search for and use information in various contexts (Fairer-Wessel, 1990). But while information behaviour can include information-seeking and information retrieval, the author notes that the aim of information behaviour is to understand why people seek information and how they use it. This definition is therefore more concerned about the why and how behaviour of people in relation to information.

On the other hand, the concept of information behaviour has been unbundled by Doraswamy (2017) and is perceived as a study that includes the following elements

I. Information behaviour - the totality of human behaviour in relation to sources and channels of information
II. Information-seeking behaviour - the purposive seeking for information as a consequence of a need to complete some goal
III. Information search behaviour - the micro-level behaviour employed by the information searcher in interacting with information systems of all kinds, and
IV. Information use behaviour- comprises of mental and physical acts involved in incorporating information to existing knowledge base of a person.

INFORMATION NEED

Is an individual or a group's desire to locate and obtain information to satisfy a conscious or unconscious need. Information need refers to individual user needs regarding information needed by each person. Information need is understood as evolving vague awareness of something from missing and as culminating in locating the information that contributes for understanding and meaning. (Doraswamy, 2017)
Information behaviour is the study that includes.

i) Information Behaviour: Totality of human behaviour in relation to sources and channels of information.
ii) Information Seeking Behaviour: Information seeking behaviour is the purposive seeking for information as a consequence of a need to complete some goal.

iii) Information Search Behaviour: The micro-level behaviour employed by the information searcher in interacting with information system of all kind.
iv) Information Use Behaviour; this is comprises of mental and physical acts involved in incorporating information to existing knowledge base of a person.

From the explanations above, the researchers view information behaviour as the umbrella term that has within its scope information need, information-seeking behaviour, information search behaviour and information use behaviour. This is depicted in the diagram below that shows information behaviour and its various components.

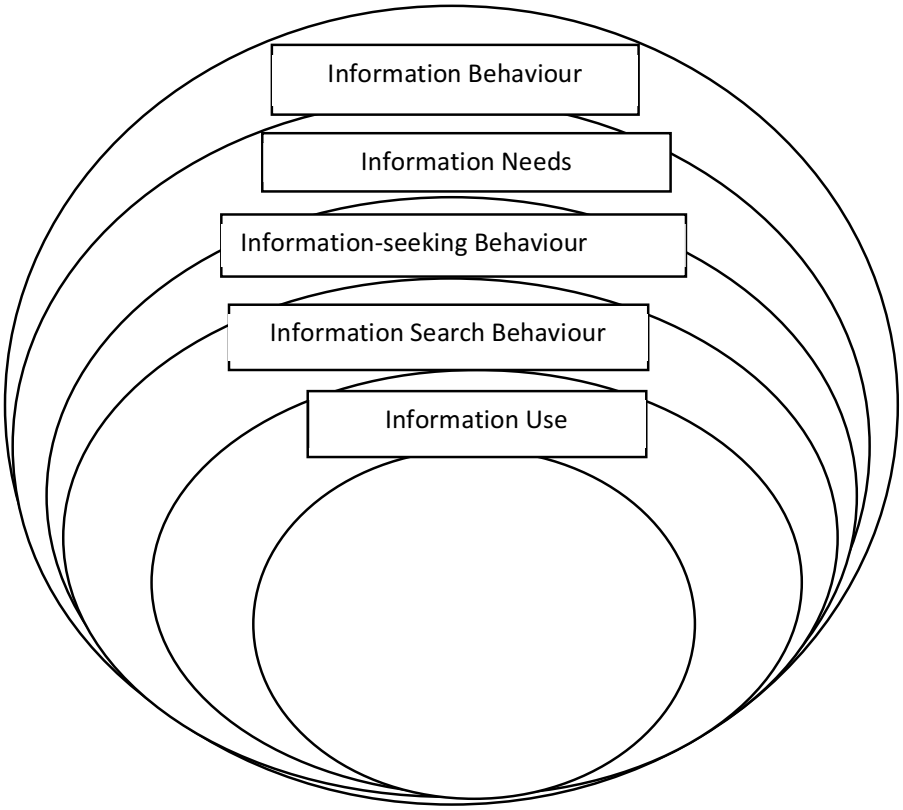


Fig. 1 showing differences in the components of information behaviour (adopted from Reddy, Krishnamurti and Asundi, 2018**)**

The best way to visualise this is to imagine a large box with other similar but graduated smaller boxes inside it. You open the largest which is information behaviour, followed by the next largest which is information needs, next is information-seeking behaviour, followed by information search behaviour and finally, information use. One process leads to the next.

### Self-Assessment Exercise

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

1. ----- is credited with coining the term information behaviour?

2. Which of these statement best describes information-seeking?

   a. Searching for information when desired information is not present,
   b. Sharing or suppressing information once discovered,
   c. Avoiding information
   d. All of the above.

## 2.4 Summary

In this unit, the concept of information behaviour was explained. It was made clear that information science is a broader term as it comprises of information-seeking behaviour, information search behaviour and information use in addition to other behaviours that information seekers exhibit in relation to information.

It is hoped that with this information, you will be better positioned to understand how to organise your library system in such a way that information is not just available, but that all necessary efforts are made to make the retrieval system seamless for the users.

## 2.5 Glossary

1. **Behaviour**: How a person or group acts or conducts themselves in response to internal or external stimuli.

2. **Stimuli**: Something that spurs on or encourages activity or vigour in someone or something.

## 2.6 References/Further Readings/Web Resources

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## 2.7 Possible Answers to Self-Assessment Exercise

SAE: 1: T.D. Wilson

SAE 2: a. searching for information when desired information is not present,

# Unit 3 Concept of Information Needs

## Unit Structure



## 3.1 Introduction

People seek information because they feel a need or experience a gap in knowledge and seek to satisfy it. When there is a felt but unsatisfied need, it results in a state of disequilibrium and keeps the individual continuing with the search for it. The only way that equilibrium can be restored is for that need to be met or satisfied.

Therefore, it is important to understand what is meant by information need before we dive into information-seeking behaviour given that information need is what triggers information-seeking. It is only common sense to say that nobody goes seeking for information he\she has no need for, except the purpose of the search is to help someone else satisfy their own information need. However, a need for information may be conscious or unconscious. It is a conscious need when you are fully aware of your need for it and set out purposively to satisfy it. It is an unconscious need when you do not fully realise at the time or plan or purposively/intentionally set out to acquire it but when you chance upon it, you immediately realise that this is information that is valuable. Take for instance, you go on the Web for specific information but as you are browsing, something else pops up and you suddenly realise that you need to know more about it. You read and acquire that information too.

By way of an introduction, information need is often understood as an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need. (Wikipedia, 2022). So, an individual or a group may need information and have to take the trouble to access it. Information need is closely related to the concept of relevance in the sense that when an individual or group needs information for a specific task or reason, the information that helps to accomplish that task is the one considered relevant (Hjørland, 1997). Therefore, people seek information based on how relevant it is in meeting their needs.

It is important that you understand what information need(s) is because it is on the basis of it that you will analyse not only your information needs but also that of library clientele. It is also on the basis of that that you will attempt to meet their needs.

Moreover, the identification of information needs is essential for the design of information systems in general and for the provision of effective information services in particular, such as libraries and other information-providing centres (Devadson, 1996).

## 3.2 Intended Learning Outcomes

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

- explain the concept of information needs
- explain types of information needs
- explain the reasons for information needs and the factors affecting information needs.

## 3.3 Definition of Information Needs

The subject of information needs is one that is at the centre of what librarians and libraries do. This is why information need is viewed as fundamental to library and information science because a central aim of the field is concerned with the retrieval of information relevant to the user's information need *(*Borlund & Pharo, 2019; *Savolainen, 2017).* This being the case, the concept is rarely defined or discussed and to that extent, the *concept is still vague.*

Attempts have been made by different authors to either define or describe the concept. The term information need, a common term in information science is often understood as an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need (Wikipedia, 2022).

IGI Global (2022) gives several definitions of the term as gathered from a number of other sources:

- The perception of a lack of information that provokes one to develop a need for it.
- An individual's condition when he/she wants to improve (enlarge and/or correct) his/her knowledge
- The amount of information a user requires to fulfil the search intent.
- The start state for information search, seeking and human information behaviour. A gap in knowledge of the information user.

- A need associated with a level of uncertainty. Information is required to reduce uncertainty.
- An individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need. In simple words, information need is the amount of information a user requires to fulfil the search intent.
- Information need is an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need. The 'information' and 'need' in 'information need' are an inseparable interconnection. Needs and interests call forth information.
- The perception of a lack of information that provokes one to develop a need for it
- A need for information arises…when the present level of knowledge is too limited to deal with situations pertaining to the tasks associated with one or more work roles.

The definitions above all point to the fact that information need is a state of mind in which an individual perceives a lack of information to meet an information gap. It also arises because the store of information which the individual presently possesses is inadequate at the time to meet his/her need to complete some tasks, activities or functions in a role.

It has been described as a discontinuity in knowledge, which is felt by a person at a conscious level and comes in the form of a question which in turn results in the search for an answer. Furthermore, the satisfaction of the need could be immediate where it is not complex or last longer if the intensity of the information need is high. That will determine the length of time that a search lasts until it is fulfilled (Singh, Kumar & Khanchandan, cited in Anmol, Khan and Mohammed, 2021). Put in another way, a need is specific and generally time-bound either immediate or deferred (Devadason & Lingam, 1996).

If it is to be put on need ranking, the more needed information is sought first and the less needed one later. The more complex the information needed is, the more time is spent on searching for it. The search process takes as long as the need lasts. Once it is fulfilled, the individual has closure and moves on to other things. But we must not think that the individual stops functioning until the need is satisfied. You actually continue to function but you are aware that you still need the information and as a result, you may need to extend your search parameters or seek other sources.

Satija & Singh (2006) uses Masow's hierarchy of needs theory of motivation to explain information needs. According to the authors, information needs arise out of a desire to meet one or other of three basic human needs i.e., physiological needs (need for food, shelter, etc.), psychological needs (need for domination, security, etc) and cognitive

needs (need to plan, learn a skill, etc.). Basically, the author is saying that an information need arises when there is a felt need in any of these three areas of human life and functioning.

## Self-Assessment Exercise 1

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

A lack of information can result in an internal disequilibrium

True False

### 3.3.1 Types of Information Needs

The types of information needs that individuals have is something that librarians and other people who are involved in information provision often seek to know. This may not be unconnected with the reasoning that understanding the types of information needs of user populations will make it possible to not only provide a kind of structure to the process of information provision but also will help in designing a more informed and functional information system and/or providing information resources that will meet user needs.

Based on user-librarian dialogue in a public library, Ingwerson cited in Borlund and Pharo (2019) identified three types of information needs: the verificative information need, the conscious topical information need, and the muddled topical information need explained below:

- **Verificative Information Need**

In their explanation, the verificative information need is need that seeks to verify information objects that have identified non-topical (structured) data. This non-topical data includes author names, client address, cited authors, journal name, and facts. A characteristic of verificative information needs is that it is well-defined and stable. For instance, an author's name is just what it is, so also is a client's address and so on. It is therefore very precise in nature.

- **Conscious Topical Information Need**

The conscious topical information need is the type of need where a library user wants to clarify, review or pursue information in a known subject matter and domain. In this case, the known subject matter signifies topical (unstructured) data about contents, such as terms, concepts, and image representation. A major characteristic of a conscious topical information

need is that it is not only well-defined, but also, it is of a more variable nature.

- **Muddled Topical Information Need**

When an information need is of the muddled topical information, it implies that the information need is characterised by being poorly defined in the user's consciousness. The inability to define it properly results in high cognitive uncertainty. A user with a muddled topical information need is engaged in the exploration of new concepts and relations outside known subject matter or domain. In essence, the individual does not have a total grip on the subject of his focus.

Therefore, while the information seeker is not exactly a novice as per the topic, it is not exactly well defined in his consciousness enough for him to have the information need satisfied. The conscious topical information need, and the muddled topical information need share the topical focus of the information needs.

The fact that an individual already has prior knowledge of the topic in question helps. Both conscious topical need and muddled topical information need also share the nature of explorative search being initiated for the satisfaction of the information needs. That means that the search method employed is explorative as it widens as the individual goes on with the process.

Another identification of types of information needs classifies them as: a) Current Information Need, b) Exhaustive Information Need, c) Everyday Information Need, and d) Catching-up or Brushing-up Information Need (Library, n.d).

- **Current Information Need:** This is an information need that belongs to the present time or that is being used now. For example, a student may want to know from another student whether a scheduled examination has started. When library users need information to keep themselves up-to-date with latest developments in their areas of interest on a regular basis, the need is known as current information need.
- **Exhaustive Information Need**: An exhaustive information need is fully comprehensive and includes or considers all elements or aspects of the information needed. In other words, the seeker of information wants to have information on a topic that is thorough and complete. Exhaustive information that takes place in the library is when user wants to have information on a particular topic as exhaustively as possible, the need is known as exhaustive information need. The researchers mainly have this type of information need when they start their research work.

- **Everyday Information Need**: This is the need for a specific piece of information which users require, generally in their day-to-day activities. The need is generally for factual information. The librarian usually depends on the standard reference books to meet the information seeker's everyday information need.
- **Explorative Information Need**: This need arises when a user, who is not conversant with a particular subject field, requires an account of overall development of that subject in a short and compact form.

## Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Which of these is among the types of information needs outlined by Ingwerson?

a. Every day information need

b. Conscious topical information need

c. Current information need

### 3.3.2 Reasons for Information Needs

There are attempts to understand the reasons why people seek information. This is a particularly important quest for librarians since it is believed that understanding the reasons that make people seek information will make it easier to meet their information need.

However, it is acknowledged that while there may be some general reasons why people may want information for instance as may happen when there is a directional question that seeks to know where the rest rooms or conveniences are specifically located, people have various reasons for their information needs. That is why information needs can be said to be highly personal. For instance, two persons may need the same kind of information but for different reasons.

Let us take, for instance, academic library users. While students may visit the library for information that will help them carry out their assignments, pass their examination, prepared course work or for recreational and independent study, lecturers may need the same information but for entirely different reasons including preparation of their lesson notes, research and teaching. All these are legitimate information needs that the library has to personalise and provide to the different categories of users. That is why

information needs are said to be highly personal and specific (Kuruppu & Kurrupu, 1999).

However, some general reasons for which people need information have been observed While not exclusive or exhaustive, the list helps us to understand that information needs differ to the extent that people differ. They include:

- Work activity: What role is the person in currently?
- Discipline/ Field/Area of interest: Is he/she a researcher, student, expert etc.?
- Availability of facilities: What type of information facilities are available?
- Hierarchical position of individuals: Is the individual a top, middle or lower manager or just a normal employee without managerial responsibilities?
- Motivation factors for information needs: Is the information for entertainment or for research?
- Need to take a decision: Could be a health decision or policy decision etc.
- Need to seek new ideas: Update already possessed ideas.
- Need to validate the correct ones: There are other information that the individual already possesses which the individual may not be sure about.
- Need to make professional contributions: What is your audience? Say for instance that you are presenting a paper to a conference of professionals or laymen.
- Need to establish priority for discovery etc. (Crawford, cited in Devadson & Lingam, 1998).

Some of the information needs 21st century library users identified by Echezonam (2011) include:

1. **Personal self-development**: People need information to enrich themselves and remain relevant to their society, career, organisation etc.

2. **Health**: Library users need information on how to stay healthy and how to understand medical conditions that they or their families have.

3. **Government**: People seek information to know what is going on in their government and in their country. They want to keep abreast with government policies and plans, and know how it affects them.

4. **How-to-do-it**: People require knowledge or information in order to know what to do at any point in time. Every problem at hand, requires information as the solution.

5. **Work/occupation/career**: Every professional requires up-to-date knowledge in his chosen profession, information relating to better jobs etc. Students (whose occupation is schooling) need information to do assignments, pass their exams, and write projects.

On the whole, every information seeker has a specific information need determined by his/her reasons for seeking it.

## Self-Assessment Exercise 3

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

A need for adventure is a legitimate information need

True False

### 3.3.3 Factors Affecting Information Needs

A person's information needs are not static, rather, they are subject to a number of different reasons as noted above. What is incontrovertible is that an individual may need a piece of information in a certain depth or form today to meet a need whereas the same information ceases to be useful to him tomorrow. That is why a user's information needs, including the type, coverage and depth may differ considerably depending upon his/her activities at the material time. For instance, when an individual is entering a new field of research, his/her information needs differ as compared to when the individual is seeking a solution to a specific problem in a field in which he/she is already familiar (Kurruppu & Kuruppu, 1999).

In essence, information needs are affected by different factors. Kuruppu & Kuruppu further outline some of the factors that affect information needs including the level of education of the user, the ability to express their requests accurately, the willingness to learn, and what is most important, as well as the predisposition to use the information.

On his part, Paisley cited in Devadson & Lingam (1998) lists the following as some of the factors that affect information need and use:

- The range of information sources available;
- The uses to which the information will be put;
- The background, motivation, professional orientation and other individual characteristics of the user;
- The social, political, economic, legal and regulatory systems surrounding the user; and
- The consequences of information use (Paisley cited in Devadson & Lingam, 1998).

The list above shows that the ability of the information seeker to effectively meet his/her information need is affected by some factors. We will attempt to explain the factors affecting the use of information to meet needs.

1. **Range of Information Sources Available**: In unit 1, we learned that there are different information sources ranging from people, organisations, print, electronic etc. The type of information source that any given person will go to will depend on what is available to them. For instance, people who live in rural areas where there are no libraries and information centres or internet services are likely to depend more on relatives and friends as their primary source of information.
2. **The uses to which the Information will be Put:** A student who is reading for an examination is more likely to go for reliable sources of information such as a library than if he was reading for pleasure. For the latter, he/she may decide to read a magazine.
3. **The background, motivation, professional orientation and other individual characteristics of the user**: An educated man is more likely to look for authoritative, reliable, accurate, complete and timely information than an illiterate. On the other hand, the illiterate will be satisfied with hearsay information and so is more likely to use unverified or untested sources of information than the former.
4. **The social, political, economic, legal and regulatory systems surrounding the user**: The manner in which information availability and access is treated in a given country for instance, will determine the source of information that a user will use. People in a capitalist and democratic country such as the United States of America where there is freedom of information are more likely to be daring in the sources that they go to for information than their counterparts in a closed up socialist country like North Korea where information is controlled by the government.

5. **The consequences of information use**: If punishment is attached to the use of information emanating from certain sources, those who do not wish to be punished will be selective in the type of

source that they go to for information. Also, if there is a consequence attached to the use of certain kinds of information, people are less likely to want to use such information.

### Self-Assessment Exercise 4

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Which of these is a factor affecting the satisfaction of information needs?

a. Ability to express or verbalise requests
b. Willingness to learn
c. Predisposition to use information
d. Information content
e. All of the above

## 3.4 Summary

In this unit, you were taken through the concept of information needs. The definitions of the concept as adduced by several authors were presented. While there is no universally accepted definition, it is clear that the origin of information needs lies in the individual who at some point feels an information gap. This feeling in turn propels him/her into action to seek the information that will enable him/her to feel the gap. The individual moves in the direction of the source that is most likely to meet his needs as there are different types of needs. Several reasons have been adduced for the information needs in the first place. We learnt that information need is personal and specific and so what one considers a need may not appear so to another person. The choice of source also depends on some variables. There are also some factors that affect the choice of a source(s) over another. A grasp of what is contained in this unit will enable you to understand the concept of information and put you in a position to meet your needs as well as that of others.

## 3.5 Glossary

**1. Time-bound:** Time frame

## 3.6 References/Further Reading/Web Resources

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## 3.7 Possible Answers to Self-Assessment Questions

| |
|---|
| SAE 1 True |
| SAE 2 Conscious topical information need |
| SAE 3 True |
| SAE 4 All of the above |

# UNIT 4 CONCEPT OF INFORMATION-SEEKING BEHAVIOUR

**Unit Structure**



## 4.1 Introduction

In the previous unit, you were taken through the definition of information behaviour, attributes of information, types of information and sources of information as the foundation for preparing you for the subject of information-seeking behaviour.

We have established that people need information for various uses. We have also established that there are different sources of information from which individuals can meet their information needs. Because that people need different kinds of information at different times, and different sources of information are needed to meet a particular desired need, it means that a person who needs information has to devise means of locating and accessing the needed information. Information-seeking behaviour is concerned with the process that people undertake to locate and use the information to meet their needs.

## 4.2 Intended Learning Outcomes

By the end of the unit, you will be able to:

- examine the definitions of the concept of information-seeking behaviour
- discuss types of information-seeking behaviour
- examine the scope of information-seeking behaviour and information-seeking processes
- highlight the behaviours that are concerned with information-seeking, especially how information can be located to meet one's needs.

## 4.3 Definition of Information-Seeking Behaviour

The term information behaviour was coined by Thomas D. Wilson in 1981, and at the time it was introduced, it sparked a controversy as there

were questions regarding the validity of the term. However, in 2000, Wilson defined information behaviour as "the totality of human behaviour in relation to sources and channels of information." Since then, the term has been accepted in the information behaviour literature (Wikipedia, 2000).

INFORMATION NEED

Is an individual or a group's desire to locate and obtain information to satisfy a conscious or unconscious need. Information need refers to individual user needs regarding information needed by each person. Information need is understood as evolving vague awareness of something from missing and as culminating in locating the information that contributes for understanding and meaning. (Doraswamy, 2017) Information behaviour is the study that includes.

i) Information Behaviour: Totality of human behaviour in relation to sources and channels of information.
ii) Information Seeking Behaviour: Information seeking behaviour is the purposive seeking for information as a consequence of a need to complete some goal.
iii) Information Search Behaviour: The micro-level behaviour employed by the information searcher in interacting with information system of all kind.
iv) Information Use Behaviour; this is comprises of mental and physical acts involved in incorporating information to existing knowledge base of a person.

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iv) Information Use Behaviour; this is comprises of mental and physical acts involved in incorporating information to existing knowledge base of a person.

Marchionini (1995) defines information-seeking as a process in which humans purposefully engage to change their state of knowledge. The operative word here is "purposefully." In other words, it is not a random or haphazard venture rather it involves a decision to undertake some activities that will result in acquisition of information to change one's state of knowledge.

Along the same line, Case (2002) sees information-seeking as a conscious effort to acquire information in response to a need or gap in your knowledge. Furthermore, information-seeking is a conscious and constructive effort to derive the benefit of undistorted meaning from information for knowledge acquisition and extension (Kuhlthau, 1991, p. 61). This definition also highlights and includes in it, the purpose for seeking information.

Additionally, Kuhlthau (1991) perceives information-seeking as a user's constructive effort to derive appropriate meaning from information for clarity and extension of knowledge on a particular issue or topic.

It is those activities a person engages in when identifying his or her own need for information, searching for such information in any way and using or transferring of information (Mostafa, 2013).

The common thread that runs through the definitions of information-seeking outlined above is that the process of information-seeking is initiated by a felt information need or a feeling of information gap that needs to be met or filled. In essence, the need sets off some kind of

reaction that causes the individual to set out in search of that information. It also implies that the process is a purposeful one as it is directed by a desire to meet that need so the steps that are taken are conscious and goal oriented.

Kingrey (2002) conceives information-seeking as involving the search, retrieval, recognition, and application of meaningful content.

Kuhlthau argues that even though there is a desire to meet an information need, this can only be met or satisfied if the information seeker has a set of cognitive skills that will enable him to make sense of the process to satisfy his/her need. Cognitive abilities or skills are the skills that are based on the brain and everyone needs them for acquiring information. Information literacy skills are cognitive skills.

The implication, therefore, is that it is not just enough that information needed is available, it is futile to seek information if the skills known as information literacy skills are lacking as the individual will not be able to benefit maximally from the process.

The term information-seeking behaviour is defined by Sultana (2016) as a set of actions such as information need, seeking information, evaluating and selecting information and finally using the information. In this sense, information-seeking-behaviour is a process that involves the need for information, seeking information from different sources, evaluating the information gathered using criteria that the information seeker considers important and then using the information to meet one's need. This is also the view that is expressed by Wilson (2000) who sees information-seeking behaviour as the purposive seeking of information as a consequence of a need to satisfy some goal. To Wilson, the need comes before the seeking however, the seeking is done to satisfy the need.

Kaushik (2016) conceives information-seeking behaviour as a process that humans engage in to change their state of knowledge. That means a transition from a state of lack of knowledge to that of possession of knowledge. Fairer-Wessel (1990) says information-seeking behaviour is a field of information science research that seeks to understand the way people search for and use information—This definition looks at information-seeking behaviour more from the academic standpoint of it being a study rather than a process but it highlights the fact that the intended purpose of seeking information is use of the information.

Utkarsh (2015) sees information-seeking behaviour as a more specific concept of information behaviour that specifically focuses on searching, finding, and retrieving information. In this sense, information use is not part of it.

However, there are assertaion that the term information-seeking is rather limited in its definition as it does not take into consideration the other dimensions in which people relate to and interact with information (Bates, 2010). It is in consideration of this argument that with time, the term information behaviour has become the preferred term, employed to encompass all types of research on people's interaction with information

**Self-Assessment Exercise 1**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Information-seeking behaviour is the purposive seeking of information as a consequence of a need

True False

### 4.3.1 Information Search Behaviour

Necessarily, what follows when an individual set out to seek information is a search for that information. It is important to make this point because like information-seeking, information search behaviour which also happens to be a subset of information behaviour is both action and goal oriented.

Once an individual makes up his/her mind that there is a need for information, he moves in the direction that will take him to the source where he can get the information. When he gets to the source, he/she does not stand around, he/she takes further action, as he/she searches the source for that information.

Let us take for example, an information seeker comes to the library. When he/she enters, he /she takes a number of actions to search for that information including searching the catalogue, asking the librarians on duty, and/or going directly to the shelves to browse. He or she also decides what unit or section of the library contains the information that is needed and if sure, goes directly to that section or unit.

From this analogy, information search behaviour as defined by Wilson (2000) is the 'micro-level' of behaviour employed by the searcher in interacting with information systems [e.g. library] of all kinds. It consists of

- all the interactions with the system, whether at the level of human computer interaction (for example, use of the mouse and clicks on

links) or at the intellectual level (for example, adopting a Boolean search strategy or

- determining the criteria for deciding which of two books selected from adjacent places on a library shelf is most useful). To determine that, the individual will also engage in some mental acts that will assist him/her in judging the relevance of data or information retrieved from any source because information will be used if it is found to be relevant.

To distinguish information-seeking behaviour from information search behaviour, information-seeking behaviour is viewed as the act of actively seeking information in order to answer a specific query. On the other hand, information-s*earching* behaviour is the behaviour which stems from the searcher interacting with the system in question. In other words, while the purpose of information-seeking behaviour is to take those steps that are necessary to getting to a source to find information that will assist in answering a specific query, information search happens when the information user gets to the source and interacts with the system (Wikipedia, 2022). For instance, one decides to seek information from a database. The person must interact with the system to get the specific information that is required for a particular purpose.

## Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Information search is action-oriented

True False

## 4.3.2 Information Use

Logically, one internally realises a lack of information to meet a need and decides to seek for that information. The individual takes the steps to locate a source that will provide the needed information. When the individual goes to the source, there must be an interaction with the system that will result in the individual selecting the most relevant source(s) to meet the need.

Therefore, information search begins as he/she uses the information system in place and begins to search through it. As soon as he/she finds the information that is most relevant in meeting his/her needs, he/she gathers them and finally uses the information or forwards it to another

person that he/she feels might use it or leave it for some other persons to use.

This shows us that the whole cycle of information behaviour which begins with information need ends with information use, thus affirming that people look for information that they need and will use to accomplish a goal. It is also important to mention that the factors that affect information listed earlier will play a big role in information use because different people look for information from different sources and also use information in different ways or for different purposes.

To that extent, it is unrealistic to suggest that people deliberately go out seeking information that they have no intention of using. But it could be said that an information seeker may gather information which he/she thinks are relevant to his/her needs at the material time but which he/she may end up not using because he/she did not properly understand what was needed from the outset due to failure to properly express his/her needs. In this instance, during the analysis and evaluation of the gathered information, a process of relevant ranking will determine what is actually needed versus what is not. That results in the elimination of those information found not to be so relevant.

However, in terms of definition, information search like information need, information-seeking behaviour, and information search, does not lend itself to one universally accepted definition. This seemingly difficult to *capture* information use has led to the term often being vaguely defined even in research studies, or it is not defined at all ( Larsen; Savolainen cited in Kari (2010).

But in an attempt to conceptualise information use, Kari (2010) gathered the various definitions of the term in the literature. Information use is:

- how people approach sources of information and adopt information available in them;
- reading, thinking about the acquired information, comparing different sources; analysing and evaluating information; doing syntheses and creating meaning from information;
- receiving and internalizing information;
- sending and receiving information;
- decoding and coding stimuli in a symbolic system;
- interpreting the value of information sources more generally, and directing action;
- the resolution of a process of becoming informed (to get to know a matter), or applying information;

- evaluating, adopting and applying new information;
- the reception and interpretation of information, and on the other hand, the functional utilization of the information;
- applying specific social scientific research programs, making decisions to influence matters, consuming and actively adopting information;
- information search and retrieval, the applications of information to different purposes, as well as the creation and storage of information;
- applying information in some specific action or in satisfying a more general need, as well as sharing the information with other interested individuals, or some activity of *information management.*

It is also seen as an activity that is composed of 3 processes: 1) fetching information, 2) processing information, and 3) applying information (Rich, 1997). This also highlights that before information can be used, it must be retrieved, then processed in the form that will make it useable and then applied. Application is therefore, the end point of fetching and processing information.

The view above is also captured by Julien (2019) who notes that information use is concerned with understanding what information sources people choose and the ways in which people apply information to make sense of their lives and situations. Going further, the author notes that the use that an individual puts information can be either instrumental or affective.

An example of instrumental information use is when financial data [information] is used by a decision-maker to inform a budget decision. On the other hand, the data [information] is affective, when it influences how people feel. For example, an individual may use information that he gathered during a conversation with a friend to feel more motivated or better satisfied with a career choice.

In the two cases, the individuals have their specific information needs. The source(s) they will go to for information is dictated by the reason for the information and the use they put the information is also dictated by their purpose for it.

Wilson (1999) is of the view that information use includes people's physical and mental acts to incorporate information into their existing base of knowledge. In other words, the mental part has to do with the recognition of a gap and a desire to address it while the physical aspect has to do with the seeking i.e. taking the necessary action of going to

various sources to get the information which at the end of day, if found and used increases one's knowledge base. There is no way one can go without the other.

That is why information use as the final stage of a process that begins with recognition of an information need. Once the need has been identified, people search for information to meet that need, and then they apply or use the information that is found. This process is iterative [repetitive] and complex, and it is influenced by a number of factors (Julien, 2019).

On the process that takes place during a search, Ellis cited in Saleh, (2020) initially identified six activities namely: 1) starting, 2) chaining, 3) browsing, 4) differentiating, 5) monitoring and 6) extracting. The author later added two more activities: verifying and final search.

- Starting — This is the commencement of the information search,
- Chaining — This is a backward or forwards activity as you follow references in initial information sources.
- Browsing – This is a semi-directed search when the user simply looks at the sources to determine what it contains
- Differentiating — This involves the filtering and selection of sources based on judgments of quality and relevance
- Monitoring — at this point you maintain awareness of developments/trends
- Extracting — Involves systematic extraction of information from sources.
- Verifying: Involves checking for accuracy and ending

- Final search: This involves checking all materials covered.

The concept of information behaviour which includes information needs, information-seeking, information search and information use are succinctly captured in the diagram below:

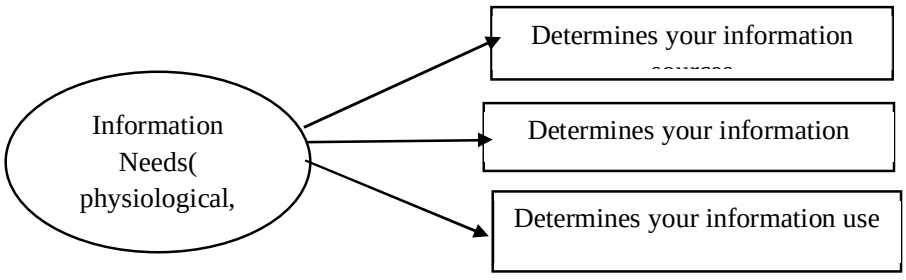


Fig. 2: Concepts of Information Needs and Information Use (Source: Saleh, 2020).

## Self-Assessment Exercise 3-4

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

3.Information use is the final stage of a process that begins with recognition of an information need

True False

4.According to Rick (1997) information use is composed of -------- number of processes

a. 4

b. 5

c. 3

d. 6

5.Which of these researchers has differentiating as a part of information-seeking behaviour?

a.Wilson

b. Rick

c. Eliss

d. None of the above

## 4.4 Summary

In this unit, you were taken through information-seeking behaviour, information search behaviour and information use. Although there is no generally accepted definition of the terms, you were exposed to some of the arguments and definitions. You learnt that to some researchers, there should be no talk about information-seeking behaviour without first talking about information behaviour as it is an encompassing term that has within its scope information-seeking behaviour, information search behaviour and information use behaviour. You also learned that

information use is the logical ending to the process that started first with information need.

INFORMATION NEED
Is an individual or a group's desire to locate and obtain information to satisfy a conscious or unconscious need. Information need refers to individual user needs regarding information needed by each person.

Information need is understood as evolving vague awareness of something from missing and as culminating in locating the information that contributes for understanding and meaning. (Doraswamy, 2017)
Information behaviour is the study that includes.

i) Information Behaviour: Totality of human behaviour in relation to sources and channels of information.
ii) Information Seeking Behaviour: Information seeking behaviour is the purposive seeking for information as a consequence of a need to complete some goal.
iii) Information Search Behaviour: The micro-level behaviour employed by the information searcher in interacting with information system of all kind.
iv) Information Use Behaviour; this is comprises of mental and physical acts involved in incorporating information to existing knowledge base of a person.

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iv) Information Use Behaviour; this is comprises of mental and physical acts involved in incorporating information to existing knowledge base of a person

## 4.5 Glossary

1. **Physiological**: Related to the way in which a living organism or bodily part of a living organism functions.

2. **Cognitive**: Relating to, arising from, or influencing feelings or emotion

3. **Affective**: Relating to, being, or involving conscious intellectual activity

## 4.6 References/Further Reading/Web Resources

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## 4.7 Possible Answers to Self-Assessment Exercises

SAE 1 True

SAE 2 True

SAE 3 True

SAE 4 3

SAE 5 Eliss

# MODULE 2 INFORMATION SOURCES/RESOURCES AND INFORMATION RETRIEVAL



## Unit 1 Information Sources/Resources

**Unit Structure**



## 1.1 Introduction

We have determined that information need is something that is part of human beings because people need information from time to time to meet the particular need they have for it. If people need information, it means that information has to be sought for from different places. It also means that information will have to be put in different formats according to the type of information. An information source can be a person, thing or place that information is obtained. An information resource is format of information and in a library information resources are in both print and electronic formats and includes textbooks, journals, encyclopaedia, newspapers, magazines, reports, abstracts, indexes, CD-ROM databases, Internet, tapes, diskettes, computers, microforms etc.

An information source can also be an information resource or contain information resources. For instance, an individual is both an information source and an information resource because information can be obtained from the person and that information is a resource. Also, a library is an information source that contains information resources such as textbooks, journals etc. In essence, you go to the library (source/place) and consult the resources (things).

## 1.2 Intended Learning Outcomes

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

- define information source/resources
- discuss various information sources
- discuss the formats of information.

## 1.3 Definition of Information Source/Resources

Information sources could mean different things in different contexts. Generally, however, an information source is a source that informs someone about something. It is a thing, a person or a place from which information is obtained.

In library and information science, an information source is defined by LISBDNETWORK (2018) as "a source of information for somebody, i.e. anything that might inform a person about something or provides knowledge to somebody." In other words, when someone needs information, he/she identifies a source that can provide that information because that information can be obtained from that source. So, an information source also informs. LISBDNETWORK (2018) further says that information sources may be observations, people's speeches, documents, pictures, organizations etc. The important thing is that information is obtained from these various sources. It also means that information sources are diverse and also contain diverse types of information.

On the other hand, information resource(s) as used in libraries mean "an infrastructure or material that provides content and information services for the user" (IGI Global, 2022).

### 1.3.1 Sources of Information

When we talk about an information source, we are talking about where people get their information from. It is the various means by which information is recorded for use by an individual or an organisation. "It is how a person is informed about something or knowledge is availed to someone, a group of people or an organization" (Module, n.d.).

What this definition suggests is that there are different sources of information, and different types of information are got from different sources. Therefore, an information source is a source from which information emanates.

Information is generated and can be obtained from people, books, websites, journals, newspapers, encyclopaedias, institutions and so on. The type of information source that you choose to use is a function of the type of information that you need. The type of information obtained from

a source is also a function of the type of information that it contains. Let us assume that you need historical information. You can get such information from sources that carry such historical information. You cannot get it from a source that provides only science information. So, even though a science source is a legitimate source, it is not right for the purpose.

Knowledge of the source of information is essential to enable you to obtain accurate, complete, reliable, relevant and timely information for your academic work and for assisting your library users.

Information sources can be broadly categorised into two: documentary and non-documentary sources.

## 1. Documentary Sources of Information

Documentary sources are generally published or recorded documents of knowledge and they may further be categorised as primary, secondary and tertiary sources of information. Libraries depend mostly on documentary sources of information to serve their patrons.

### a. Primary Information Source:

Primary sources are first hand or original contemporary accounts of events created by individuals during that period or several years later. They may be in the form of documents, images or artefacts. The distinguishing factor is that primary information sources provide first-hand testimony or direct evidence concerning a historical topic under research investigation (Furman University Libraries, 2021; UNSW Library, 2022). Because the information that primary sources provide is first-hand or original, primary information sources are considered to be authoritative. For instance, an eyewitness account is an original information. Records of accounts in diaries or individual memoirs are original and therefore regarded as a primary information source. We can place in this category memoirs and diaries of notable colonialists such as Lord Lugard or a former slave like Bishop Ajayi Crowther in addition to other memoirs and diaries. Such memoirs and diaries help us to understand the context and period in which they were written. So, they are very rich sources of historical information.

Another distinction between a primary information source and other types of information sources is that they are often created at the time the event occurred, and they often share new information. However, the information can be shared later even though they were created at the time that the event occurred. Therefore, if one needs original thinking or raw and first-hand evidence, one should go for a primary information source.

The following are some examples of primary information resources:

- diaries, correspondence, ships' logs
- original documents e.g. birth certificates, trial transcripts
- biographies, autobiographies, manuscripts
- interviews, speeches, oral histories
- case law, legislation, regulations, constitutions
- government documents, statistical data, research reports
- a journal article reporting NEW research or findings
- creative artworks, literature
- newspaper advertisements and reportage and editorial/opinion pieces (UNSW Library, 2022).

**b. Secondary Information Source:**

While the primary sources provide raw, first hand and original information, secondary sources offer an analysis, interpretation or a restatement of primary sources and are considered to be persuasive. They often involve generalisation, synthesis, interpretation, commentary or evaluation in an attempt to convince the reader of the creator's argument. The information contained in them is drawn from the primary source and so they often attempt to describe or explain primary sources (UNSW Library, 2022). In essence, the information that secondary sources provide is second-hand information and commentary from other researchers or based on primary sources.

Someone may decide to write a book on the life and times of Chief Nnamdi Azikiwe. He will have to depend on primary sources such as his memoirs, diaries, newspaper articles published at the time, photographs etc. The book is a synthesis of the primary sources so it is a secondary source.

Some examples of secondary information sources include:

- some journal articles that comment on or analyse research (they do not present new research findings, rather they comment or analyse primary research done by other researchers). They are generally classified as reviews.
- textbooks
- dictionaries and encyclopaedias
- books that interpret, analyse
- political commentary
- biographies
- dissertations
- newspaper editorial/opinion pieces
- criticism of literature, artworks or music (UNSW, 2022).

As students, you are expected to use both primary and secondary sources in your academic work such as assignments and project writing because even though you can obtain valuable information from primary sources, the secondary sources also help to enrich your work.

### c. Tertiary sources

This source(s) presents summaries or condensed versions of materials, usually with references that take you back to the primary and/or secondary sources. In other words, the tertiary information sources derive their information from the primary/and or secondary sources. Most often, tertiary sources are not credited to a particular author.

For instance, a publishing company may compile an index of journal articles written on a particular area of study in a given year. It will provide all the bibliographic information that an individual who is doing systematic research needs to locate the articles that he wishes to use to continue his work. In themselves, tertiary sources do not give you all the content but aid you to locate the actual source.

Another tertiary source an abstract provides all the information that an index provides in addition to giving you a summary of the article being described. Sometimes, you may have enough information from the abstract and decide not to look for the full text. At other times, the information in the abstract motivates you to look for the original text.

As students, in the course of your project writing, you may have a need to use a tertiary source in addition to both primary and secondary sources. Therefore, tertiary sources are also important.

Some examples of tertiary sources are:

- indexes
- bibliographies
- abstracts
- directories

## 2. Non-Documentary Sources of Information:

In contrast to documentary sources, non-documentary sources of information are sources of information that are not documented but from which information can be collected. Note that the fact that non-documentary sources are not recorded does not detract from the fact that they constitute a substantial part of communication. They are especially useful for researchers in science and technology.

Non-documentary sources of information are further categorised under formal and informal sources of information. When you are carrying out a

research on a particular topic, you may need to use both formal and informal sources for information.

**a. Formal Sources of Information:**

Formal sources of non-documentary information from where you can obtain information include

- Libraries
- Government and non-governmental agencies
- Data centres
- Hospitals
- Technological institutions
- Research institutes
- Information centres
- Societies
- Referral centres
- Museums
- Industries, etc.

**b. Informal Sources of Information**

Informal Sources of Information are live sources and they include

- Librarians
- Professional colleagues
- Personal websites
- Blogs
- Vlogs
- Podcasts, etc.

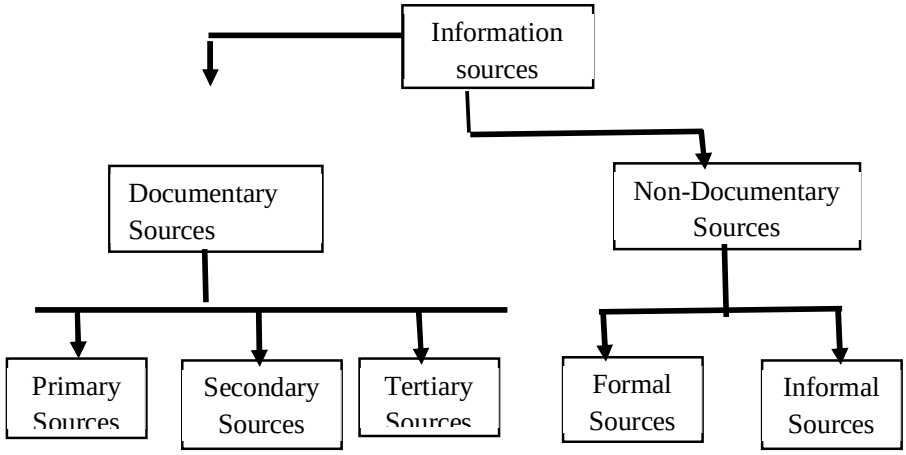


Fig. 3: Sources of information

**Self-Assessment Exercise 1**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Case law, legislations, regulations, constitutions are examples of

a. Tertiary information sources

b. Primary information sources

c. Secondary information sources

d. None of the above

### 1.3.4 Formats of Information

Information comes in varying formats. In libraries, when we talk about formats of information, we mean the medium in which information is contained, the shape, size, and general make-up of that medium. Formats of information also constitute sources of information.

The choice of format should be made before you begin your information search. However, in your consideration of what format of information you should use, there are some basic things to bear in mind.

- Intended audience of the information
- Length of the information
- Organisation of the information, and
- Supporting evidence (McKillop Library, 2022).

Formats of information as found in libraries in line with the categorisation and presentation of the McKillop Library will be explored here. Note that there are other formats of information in other information centres such as museums.

1. Websites
2. Government Publications
3. Grey Literature
4. Books
5. Periodicals
6. Audiovisual Sources

- **Websites:**

Websites are collections of web resources that can include multimedia content as well as individual web pages. Virtually any information that you find in a Google search comes from a website. Websites can also provide links to other resources or websites. Care must be taken in using websites because while a reasonable number of them provide worthwhile information, there are those that provide information that is not credible due to the fact that anybody can upload information online.

You can identify websites by their domain names that includes identifiers that may end with .com (commercial sites), .edu (education sites), .gov (government sites), .org (organisation sites), and .mil (military sites). Websites from .edu and .gov domains are typically considered as being more credible or reliable. However, do not rely exclusively on the domain name when you are using resources from websites. It is still important to evaluate the specific author, purpose, and evidence provided for any website you use for research. Organisations' websites (.org) are also sometimes seen as being more reliable, depending on the credibility of the organisation (McKillop Library, 2022).

For instance, http://www.who.org is a reliable source of information on global health related topics/subjects than a website that is .com because a .com website is presenting their information from a commercial point of view. This is not to say that they are totally unreliable but if you have a choice between using.org, .net. or .edu website and .com website for authoritative information, you should prefer the other ones to .com websites.

- **Government Publications:**

Government documents emanate from local, state, and national levels of the government. They can include a variety of current and historical information including international treaties, presidential papers, congressional records, court documents, statutes, reports, and statistics. Government documents are authoritative and credible sources of information to use in research.

- **Grey Literature:**

Grey literature are documents that are written by experts or researchers. Grey literature can be in either print or electronic format but they are not published by a commercial publisher (i.e. a publisher that identifies publishing as its primary activity). These documents are collected and preserved by libraries and institutional repositories. They are termed grey literature because they are undefined and uncategorised in nature and so cannot neatly be put under categories such as scholarly, trade, or popular sources. Additionally, some pieces of grey literature may be primary sources of information while others are secondary sources. For instance, data sets and clinical trials are primary sources whereas others like

dissertations and conference presentations, are secondary sources (McKillop Library, 2022).

The aim of grey literature is to inform or influence opinions on a given topic. The sources of grey literature include different levels of government, academia, advocacy groups, research labs, businesses, and industries. Grey literature can include conference materials (presentations, proceedings, etc.), theses and dissertations, department newsletters, reports (including white papers and working papers), clinical trials, blog postings from experts, and data sets (McKillop Library, 2022).

- **Book:**

This is a medium for recording information in the form of writing or images. Traditionally, books are composed of many pages and can be made of papyrus, parchment, vellum, or paper. These pages bound together and protected by a cover. The technical term for this physical arrangement is *codex* (plural, *codices*) (Wikipedia, 2022).

Books have varying lengths and subject matter and different audiences. The intellectual content in a physical book does not have to be a composition, nor even be called a book. You can have books that consist only of drawings, engravings or photographs, crossword puzzles e.t.c. With the emergence of information and communication technology, books also appear in electronic forms such as ebooks or other formats such as audiobooks, braille etc. (Wikipedia, 2022).

- **Periodicals:**

Periodicals are publications that contain multiple articles and come in parts. They are intended to continue at regular intervals (daily, weekly, monthly, bi-monthly, quarterly, and annually). Periodicals are published more quickly than books and some contain more current information. There are different types of periodicals: scholarly, popular, trade e.t.c. Journals produced by professional associations are examples of scholarly periodicals while newspapers and magazines are examples of popular periodicals. There are also trade journals that are specifically created for members of a particular profession. They may also feature advertisements targeted at that profession.

It is preferable to use scholarly peer-reviewed periodicals for academic work. This is not to say that you cannot obtain good information from newspapers and magazines or other types of periodical.

- **Audiovisual sources:**

Audio-visuals are sources of information that are not in print format as we have in physical books but they contain useful information for instructional purposes. Audiovisuals command the attention of more than one sense organ i.e. you need both the eyes and ears to use them. One may

require special equipment to operate audiovisual resources. They are the product of advanced technology, some of which usually require special equipment to operate. Audiovidual resources include television, computer and films among others.

## 1.4 Summary

This unit focused on information resources/resources. The unit highlighted the importance of information sources and sources in libraries. Information sources are the persons, places and things that information is obtained from. Different kinds of information can be obtained from different sources and the information user needs to know what sources will most meet his/her information needs. Information resources in libraries are the materials and infrastructure which contain information. They are both in print and electronic formats.

## 1.5 Glossary

1. **Format**: How something is arranged or set out.
2. **Resource**: Stock, supply of money, materials, staff and other essential assets needed to function well.
3. **Source**: Place, person or thing from which something emanates or can be obtained.

## 1.6 References/Further Readings/Web Resources

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## 1.7 **Possible Answers to Self-Assessment Exercise**

| |
|---|
| SAE 1 primary source of information |

# Unit 2 Information Retrieval in Digital Libraries

## Unit Structure



## 2.1 Introduction

In the last unit, the discussion focused on information sources/resources in libraries. Libraries contain both print and non-print resources. In addition to the traditional or manual library system, there is also the electronic or digital library. Digital libraries possess vast types and nature of resources and digital or electronic resources in form of databases and they keep grow at an exponential rate. To that extent, when people visit the digital library, they expect to be able to utilise the resources that are contained therein within the shortest time possible. The ability to navigate the system and retrieve needed information is important in the satisfaction of users' information needs as well as satisfaction with the digital library system. In essence, irrespective of the wealth of resources that any given digital library possesses, if the navigation of the system hinders information access and retrieval, it is failing in one of its cardinal responsibilities.

This is the reason that electronic information centres go to great lengths to design their Information Retrieval (IR) systems. An efficiently and effectively organised system will ensure that users retrieve information easily and also motivate them to continue using the system. On the other hand, an inefficiently and ineffectively organised IR system will make the process of information-seeking and satisfaction cumbersome and demotivating. This will definitely affect the users' information-seeking behaviour.

## 2.1 Intended Learning Outcomes

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

- explain the concept of Information retrieval
- examine the functions of Information retrieval
- examine some information retrieval models.

## 2.3 Concept of Digital Information Retrieval

The concept of information retrieval (IR) is heavily influenced by computer and information science. For instance, Britannica, T. Editors of Encyclopaedia (2021) defines information retrieval as recovery of information, especially in a database stored in a computer. Siddhi2420 (2022) defines the concept as "a software program that deals with the organization, storage, retrieval, and evaluation of information from document repositories, particularly textual information." The author specifically mentions that information retrieval is that activity that is concerned with obtaining material usually in textual to satisfy an information need from within a large collection that is stored on computers. Limbd (2020) says that online information retrieval is "technique that helps the users to retrieve their desired information from different machine-readable online databases."

In the same vein, referring to it as online information retrieval, Merriam Webster Dictionary (2022) defines it as the techniques of storing and recovering and often disseminating recorded data especially through the use of a computerized system."

Online information retrieval "is a method by which a user search information machine-readable database and retrieve their desired information very rapidly and easily" (LISBDNETWORK**, 2015**).

While the definitions of the concept given so far are valid in themselves, there is no doubt that their emphasis is on computers and computer. However, information retrieval can also take place outside electronic or digital environments as we shall see later.

This assertion is premised on the fact that long before computers became widely acceptable and applicable, traditional libraries have always engaged in the organisation, storage, retrieval and evaluation of information from print and audio-visual resources. To that extent, the concept of information retrieval will be examined from the standpoint of both electronic and non-electronic contexts.

### 2.3.1 Functions of a Digital Information Retrieval System

An information retrieval system is concerned with two things: the sources of information that it contains and users' requirements. Based on that Gupta (2022) identifies the following as the functions of an information retrieval system:

1. **To identify the sources of information relevant to the areas of interest of the target user community**: Every information system provides to the need of a target community. To that extent, the information sources that it contains/stores and provide access to must meet the needs of that target community.

2. **To analyse the contents of the sources**: It is not just enough to assemble and store resources. The system must be able to analyse the contents of the sources so as to provide search terms that will facilitate retrieval.
3. **To make the search statement with the stored database:** Search terms or user queries or keywords that describe the contents of the sources must be provided.

4. **To retrieve information those are relevant**: The system must make it possible for relevant information to be retrieved. This is however conditional as the terms that the used by the information user should match what the system assigns as much as possible.

The keywords should be such that they will be able to improve precision ie it should be such that makes it possible for significant proportion that are retrieved are relevant to the user. It should also improve recall by ensuring that a significant amount of relevant items are retrieved by the user (Introduction, n.d.).

5. **To make necessary adjustments in the system based on feedback from the users**: The system should be flexible enough to make adjustments based on feedback from the users.

### 2.3.2 Merits and Demerits of Information Storage and Retrieval System

It should be borne in mind that the overriding aim of any information retrieval system is to ensure that information is organised and stored in a manner that will facilitate retrieval in the most effective and efficient manner so as to satisfy the information needs of the users of the system.

An information storage and retrieval system also aims to ease the retrieval process given that the volumes of information created, generated and stored are immense. As a result, without a good retrieval system in place, the retrieval process for an information user would be cumbersome and frustrating (Onwuchekwa & Jegede, 2011).

Writing specifically about online information retrieval system, Limbd (2020) outlines some merits and demerits. The merits include:

- To save the time of the readers when they search for their necessary information.
- The searching process is easy to understand.
- Current information is available in the storage database.
- Users can access multi-database to use multiple keywords/concepts at the same time.
- To serve multi-users at the same time.
- There have no geographical barriers to search for information from anywhere in the world.
- Easy to store all of our search results.
- To retrieve information, form our query as several formats i.e. books, journals, PDFs, documents, format, etc.
- Searching cost is less than manual searching.
- It has a resource sharing service section.
- To prove users' friendly search logic.

According to Limbd (2020), the demerits of online information retrieval system include:

- High establishment cost.
- Maximum library users and staff have not enough IT knowledge to run this system.
- Lack of training facility.
- Electricity supply problem.
- Lack of networking and internet facility.
- Slow speeds of the internet delay the retrieval system.

What the above highlight is that libraries, whether manual or electronic should pay serious attention to ensuring that the information retrieval system in place meet the needs for efficiency and effectiveness so as to serve the information user in his/her quest for information to satisfy a given information need(s).

### 2.3.3 Digital Information Retrieval System

An information retrieval system supports three basic processes: the representation of the content of the documents, the representation of the user's information need, and the comparison of the two representations (Hiemstra, n.d.). In other words, the system is designed in such a way that

interactiveness can be achieved. When the user queries the system, there is a comparison between the representation of the content of the documents and the users need and based on that, results are produced.

The collections in a digital library are diverse ranging from text, sound, maps, photos, maps, videos, etc. including a working environment, technology and services. A digital library exists to satisfy the needs of its users. This entails that the databases in a digital library have to have a high retrieval method. If the quality of the retrieval method is low, then it will be difficult to make effective use of the system (Naik & Rao, 2011).

On the other hand, the online information retrieval systems are designed in such as way that they provide access to databases that are not owned by any library. They serve the purpose of providing access to remote databases and are open to a variety of users. Online databases are mostly available on commercial basis and often marketed by vendors e.g. Research4Life. Libraries pay subscriptions to access online databases for their digital libraries.

Some important concepts in information retrieval system are 1) browsing features, 2) searching features, 3) quality of search results and 4) recall and precision (Naik & Rao, 2011). These browsing features are used in document retrieval. In other words, if any is not used, information users will not be able to browse using it. The characteristics of the two features as outlined by the authors are as follows

**1. Browsing Features:**

The browsing features enables people to go through a digital library and discover things that they did not know about. If a digital library is to be effective, users should be able to browse the digital objects by using metadata such as:

i. Author / Creator / Contributor
ii. Title of the document / article / book
iii. Issue Date / Date of Publication
iv. Collection
v. Communities
vi. Subject browsing
vii. Publisher wise browsing
viii. Table of contents browsing
ix. Multi-dimensional browsing

2. **Searching Features**: A digital library is useless without searching features. One of the considerations is what type of search features are supported by the software in use. According to Naik and Rao (2011), “while, evaluating the software, it is necessary to do functional testing of

the software, i.e., determining the extent to which a digital library, in whole or in part, is able to perform desired operations." The following searching features can be used in information retrieval:

i. Full text searching:
ii. Boolean (AND, OR, NOT) searching
iii. Basic Search
iv. Advanced search
v. Truncation/Wild card searching
vi. Exact words/phrases searching
vii. Proximity searching
viii. Stemming search
ix. Fuzzy search
x. Phonetic search
xi. Case sensitive
xii. Case insensitive
xiii. Boosting the term
xiv. Range searching
xv. Expand search
xvi. Lateral search
xvii. Multilingual search
xviii. Refine search

### 3. Quality of Results

When a user queries the information retrieval system, it is not often that he/she uses the exact terms used in document indexing. Therefore, the IR have to cope with the vaguely described information need of the user. To do this results are ranked by relevance. What happens is that the IR system evaluates the precision of the answer through a process known as information retrieval evaluation. The evaluation is done by querying a standardized reference collection. The reference collections are made of a set of documents, a set of example information needs, and corresponding sets of relevant documents (Naik & Rao, 2011). Let us see it in the sense of an expert indexer who has to index a set of documents. He/she has a set of examples of peoples' likely information needs. The set of documents are now matched against a set of example information needs and the documents that correspond with this needs are more or less assigned. The documents retrieved are then compared to the set of relevant documents as determined by experts. The similarity between the document retrieved and the set of relevant document is quantified by the test collectors' evaluation measure and leads to the goodness of the tested retrieval strategy (Naik & Rao, 2011). The quality of the result is determined by how much similarity there is between the document retrieved and the set of relevant document as quantified by the test collectors' evaluation measure.

## 4. Recall and Precision

Recall and precision are called basic evaluation measures or parameters. Recall is concerned with the total number of documents that are retrieved that are relevant compared with the total number of relevant documents in the database. An information user makes a request and some results are generated from the information retrieval system from among relevant documents in the system. How much of the retrieved documents are relevant compared to all the relevant documents that the database has?

Precision is about the total number of documents retrieved that are relevant compared with total number of documents that are retrieved. Remember that when a user makes a query, a whole lot of results are produced. The user now studies the results to determine how much of the documents that are relevant compared with the total of the documents that has been retrieved.

Hiemstra (n.d.) presents the processes that take place in preparing an information retrieval system: the representation of the content of the documents, the representation of the user's information need, and the comparison of the two representations presented grammatically in the figure below.

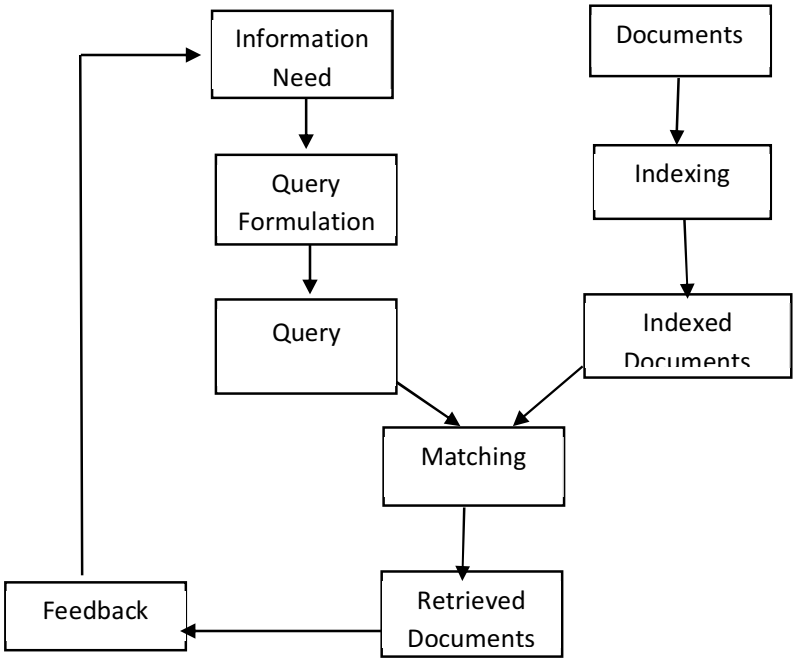


Fig. 4: Information Retrieval Processes. Source: Hiemestra (n.d.).

In the diagram above, the documents in the information system are subjected to indexing. The indexed terms which represent the documents are fed into the information retrieval system. A user comes into the system with his/her information needs. To retrieve information, he/she has to formulate search queries. The queries are then used to search the information system. If the information user's queries match the indexed documents, document retrieval takes place. The user studies the retrieved documents. A further search may be conducted based on the feedback.

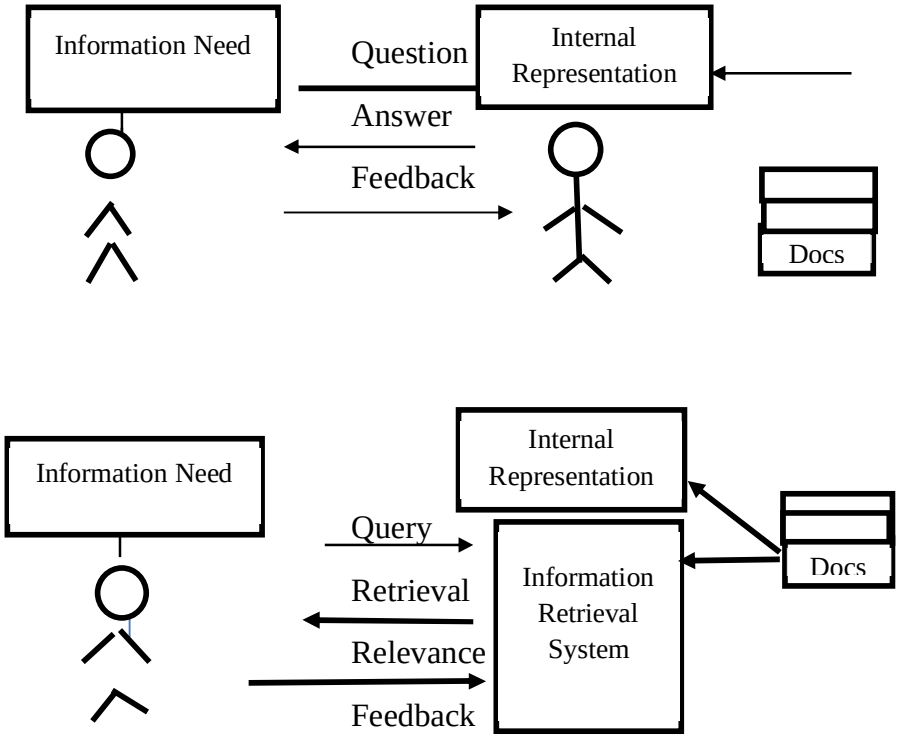


Fig. 5: Conversational loop, after (Source: Guti cited in Naik & Rao, 2011)

**Self-Assessment Exercise 1-2**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

1. One of the following is not a searching feature

a. Proximity search

b. Table of Contents search

c. Fuzzy search

d. Stemming search

2. Author / Creator / Contributor are examples of

1. Metadata

2. Classification terms

3. Search engines

## 2.4 Summary

This unit discussed the concept of information retrieval, functions of an information storage and retrieval system, merits and demerits of information retrieval system and digital information retrieval systems The whole purpose of existence of an information system is to ensure that the diverse collections are stored and organised so that information users can retrieve information from them to meet their information needs.

## 2.5 Glossary

1. Metadata: a set of data that describes and gives information about other data

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## 2.7 Possible Answers to Self-Assessment Exercises

SAE 1 Table of contents search

SAE 2 Metadata

# Unit 3 Information Retrieval in Libraries

## Unit Structure



## 3.1 Introduction

Information retrieval was discussed in the previous unit. The unit explained that the overriding reason for acquisition, organisation, storage and preservation of library resources is to provide users with avenues to meet their information needs. The different types of sources and resources in a library were highlighted. This includes print and non-print sources/resources. It was also highlighted that to make effective use of the resources in the library or any information centre for that matter, there has to be in place a system that allows for not only information search but also information retrieval. This is true of both the traditional as well as the digital libraries. While the concept of information retrieval is more related to electronic information systems, it nonetheless has some similarities with what happens in more traditional systems. Given the vast amount of collections and their diverse nature, it will be practically impossible to retrieve information if there is no system in place that attempts to match the user's query with the collections that are in the information retrieval system. Thus, in the cause of information-seeking, the ultimate aim is that a user should be able to not only locate the needed information but also retrieve the relevant documents. If this is not possible, the library or information centre will be failing in its duty and would definitely be underutilised.

In our environment, most libraries are largely operating the manual system even though in most cases, there is what is designated as "digital or electronic libraries" in such spaces. However, a close examination

of the concept of digital or electronic libraries definitely show that such "digital libraries" are not exactly what they are claimed to be. To this extent, it is important that you understand information retrieval in libraries.

## 3.2 Intended Learning Outcomes

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

1. Understand the Concept of information retrieval in libraries
2. Understand Information retrieval in Libraries
3. Know about Information retrieval methods in libraries

## 3.3 Concept of Information Retrieval

In their definition of the concept, Rashid (2020) says that it is the activity that is concerned with obtaining the right information, to the right user at the right time and is mostly related to the representation, storage, organisation and access to information. In the same vein, Chimah, Unagha and Nwokocha (2010) see it as a process that involves extracting information from a collection or database in response to an information problem.

Furthermore, Edom (2012) sees the concept as a mechanism or apparatus that aids library users to locate, obtain and utilise needed documents, information or books from a library collection while Manning, Raghavan & Schutze (2009) are of the view that information retrieval concerns the gamut of activities that are related to the organisation of, processing of and access to information in all forms and formats. The whole essence is to ensure that people are able to communicate with an information service so as to locate information that may be in the form of texts, graphic images and sound recordings or video in line with their specific information needs.

Another definition also incorporates the types of items that are stored in an information retrieval system and says that information retrieval is concerned with the representation, storage, organization of, and access to information items; these information items could be references to real documents, documents themselves, or even single paragraphs, as well as Web pages, spoken documents, images, pictures, music, video, etc (Savoy & Gaussier, 2010).

From the definitions we can deduce that the central focus in designing an information retrieval system is the user. We can also deduce that its objective is to facilitate the organisation and storage of information in varying forms/formats so as to enable the information user to not only

have access but also obtain or retrieve the information that it contains in the most efficient manner possible, to meet his/her information needs.

It is however important to mention that unlike the traditional or manual system that makes possible the retrieval of resources in the form of books, journals, reference materials, audio-visual materials, etc. and in which it is the information user has to be able to manually search and get the required information, electronic or online information has the capability to take the information seeker to the precise information (e.g. paragraph) required using precise or appropriate search terms.

### 3.3.1 Information Retrieval in Libraries

In a manual or traditional library, the cataloguers index the contents of the books using the subject heading list or any other tools. With the subject heading list, search terms that match the contents of the document are assigned and which are believed to be as close as possible to how information users will use them in searching for information as well as the bibliographic details of the books are used. The subject heading lists have been prepared with so much carefulness as to match the information needs of the users as much as possible. When catalogue cards are prepared and filed and displayed, users can use that to search for information in the system. Based on their needs, users search the catalogues and if they use the correct search terms or queries, they come up with results by way of the documents that they retrieve. Resources such as journals and newspapers are also indexed for easy retrieval. This is why Echem and Udo-Anyanwu (2018) post that "the effectiveness of a library as an instrument of learning is determined by the success with which it is able to provide the users with the necessary tools capable of accessing and retrieving the information they seek."

However, the aim of an information retrieval system is not to inform or change the knowledge of the information user on the subject of his/her enquiry rather, it informs him that a document either exists or does not exist in the system. Where the document exists, it directs him/her to where it can be found. In this way, an information retrieval system serves as a bridge between the world of the creators of the system or generation of information and users of the system (Onwuchekwa & Jegede, 2011).

There are two broad categories of information retrieval systems in a hybrid library: in-house retrieval system and online retrieval system.

In-house retrieval system is specific to any library in that they are set up by any library or information centre bearing in mind the contents of their library. In other words, they are tailor made to meet the needs of users of the specific library and are based on the information resources that are

owned by the library. An example of an in-house information retrieval system is the card catalogue which describes and points users to the resources in the particular library. No library includes resources that it does not possess in its collection. There is also the Online Public Access Catalogue (OPAC) which enables users to conduct online catalogue searches after which they check whether the item required exists in the library.

Some of the information retrieval tools used in libraries include reading list, index, abstract, library catalogue, shelf guides and bibliographies. Also, where the system is hybrid, retrieval tools will include search engines, OPAC, and web-based information retrieval systems (Nnadozie, 2007).

### 3.3.2 Methods for Information Retrieval in Libraries

Ever since libraries began to emphasise access over storage, the issue of information access and retrieval has taken a central position in library services. This was largely informed by the need to ensure that information users are able to retrieve information from the system as information materials increased at an exponential level. Some of these tools are explained below

**1. Cataloguing:** Melvil Dewey systematic developed a systematic system of library classification that was soon to become a unique tool for organising library resources on the shelve to facilitate access. Soon after in the same year, Charles A. Cutter came up with rules for a dictionary catalogue that made it possible for librarians to record systematically, the library holdings in the form of catalogue entries that users could easily consult (Onwuchekwa & Jegede, 2011). Cataloguing is carried out by professional librarians also called cataloguers.

Some essential objectives of a catalogue include to enable a person find a book by

- Author
- Title
- Subject to show what the library has:
- By a given author
- On a given subject
- In a given literature to assist in the choice of a book
- By edition
- By character

IFLA cited in Onwuchekwa & Jegede (2011) reformulated the objectives of catalogue in 1999 to accommodate/suit the automated online

- To find entities that corresponds to the user's search criteria
- To identify an entity
- To select an entity that is appropriate to the user's needs
- To enquire or obtain access to the entity described.

**2. Classification:** Classification is the process of grouping library materials as closely as possible so that like contents are brought together as much as possible on the shelf. A classification scheme is used to classify these resources to give a kind of uniformity. We must remember that libraries acquire and store vast amounts of information resources. Without a classification system in place, like subjects will be scattered all over and this will hinder access and retrieval. In his definition, Nnadozie (2007) sees "classification scheme as a system created for the division into categories of the universe of human knowledge into broad subjects and narrow topics." The overriding objective of classification schemes is to assist "librarians map the universe of knowledge such that documents can be put aside for future consideration into specific locations for easy identification and retrieval."

3. **Indexing:** Manual indexes were in use in libraries long before scientific publication began to appear online. In the library setting, index is "a list of articles or other publications within a discipline or topic." What an index does is to provide bibliographic details of the material in terms of author(s), tittle and imprint. With these information, a library user can trace the resource and can help the individual to decide whether or not the information or document can be further explored.in Nigerian libraries today, librarians still prepare indexed on newspaper, students' projects and theses and with this, users can decide on whether to further explore the topic. It should be noted, however, that an index itself does not assist the user to obtain the full content of full-text. It merely gives information that can help the user to further his/her search (Fidel, 2012).

**4. Abstracting:** Abstracting is another tool for information retrieval in libraries. Unlike indexing that mostly provide the bibliographic details of document to enable a user trace the full text, an abstract "is a condensed version of a larger piece of writing. An abstract is concise

and clear and includes the major points, purpose, methods and scope of the original work" (Everret Library, 2022).

Basically, there are two types of abstracts: descriptive abstract and informative abstract.

1. **Descriptive abstracts:** Descriptive abstracts provides the readers with information on the contents of the report, article or paper. They do not provide users with results, conclusions or recommendation. They also do not make judgements of the report, article or paper i.e., they do not critique it and descriptive abstracts are usually very short, could be less than 100 words but often not exceeding 100 words.

**2. Informative abstracts:** Informative abstracts communicate specific information from the report, article or paper. This can include the purpose, methods, and scope of the report, article or paper. They also provide the conclusions and recommendations of the report, article or paper, including the findings from the analysis, research, and investigations. Informative abstracts also include a brief summary of the report, article or paper's conclusion. They are short and range from one to two pages. The majority of abstracts are informative (Everett Library, 2022).

**3. Shelf Guides**

These are record kept on cards or papers and posted on shelves to show library users what books are shelved on each shelf in the library. Ideally, when a user comes into a library, he may decide to use the catalogues to look up what the library has on his/her subject of interest. Once this is ascertained, the user proceeds to the shelf with the information and promptly uses the shelf guide to determine the particular one that the document is shelved. Also, a user may decide to browse the shelf when he/she is not sure of what he/she wants. The shelf guide also helps him/her to locate the exact shelf to go to. In both of these cases, the user may end up retrieving a document.

## 3.4 Summary

Traditional or manual system libraries are very much in existence in our environment. Traditionally, libraries, whether digital or manual contain vast amounts of information in diverse formats. Without an information retrieval system in place, it will be a herculean task for users to retrieve information or make effective use of the facility. This unit considered information retrieval in libraries. The concept of

information retrieval in libraries and different information retrieval tools or methods were highlighted.

**Self-Assessment Exercises**

1. What is classification?
2. Define indexing.

## 3.5 Glossary

1. **Information retrieval:** The act of tracing and recovery of specific information from stored data. Also, the act of tracing and recovery of specific document such as books, journals, etc. from library holdings.
2. **Search engine(s):** This is a software that is accessed on the internet. A search engine enables the internet to search a database of information in a database according to the search query specified by the information user.

## 3.6 References/Further Reading/Web Resources

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## 3.7 Possible Answers to Self-Assessment Exercise

1. Classification is the process of grouping library materials as closely as possible so that like contents are brought together as much as possible on the shelf.
2. In the library setting, index is "a list of articles or other publications within a discipline or topic

# Module 3 The Information User

Unit 1 Definition of Information User
Unit 2 Library User Studies

**Units structure**



## Unit I Definition of Information User

## 1.1 Introduction

Our focus in this module is the library information user or library user. The library user is indeed the raison d'etre of libraries. The implication is that without the library user, the library and its resources will not be relevant. Without the user, there will be no use. Use is the key point while the`User' is the key and dynamic component of every library and information system (Kishor, n.d.).

The importance of the library users can be deduced from the fact that they are borne in mind in the design of the library information system, including the functional units and information retrieval system. The overall aim is to make sure that users find the library environment convenient and conducive with easily retrievable resources.

## 1.2 Intended Learning Outcomes

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

- examine the concept of library user
- examine the types of people who use the library and their characteristics.

## 1.3 Definition of Information User

The central focus in any library's discussion on information behaviour or information-seeking behaviour is the information user. However, there is no one definition of the term information user as the term has different meanings across various disciplines. Some definitions will be examined here.

An information user is an individual who actively exercises his/her right to access different information sources. The individual is differentiated from potential information users who are identified as those who do not currently exercise these rights, but are potential information users (IGI Global, 2022).

The term can also be defined in two senses: 1) "a person who, either alone or jointly or in common with other persons, controls the collection, holding, processing or use of the information" and 2) "a person who only has the right to access information about an account and the services related to that account, but has no owner- ship rights in the account or to the funds held in the account, and cannot conduct transactions on or initiate, change, add, close or terminate an account or service" (The Law Insider, 2022).

It is clear that while the first definition of the information user conveys on the individual rights that go beyond use of information to include controlling the collection and holding and processing the information in which case the individual is a stakeholder by way of ownership in the process, the second definition conveys only limited right to access information as it concerns a particular aspect of the process to the information user.

An example of the first scenario is what happens in the library while the second scenario can be experienced in the financial sector such as the banking industry where account officers are assigned to different accounts. They can only use information on the aspect of that account that is assigned to them, but they are not the owners of the information nor can they control it or make a change or anything else on a customer's finances. Reddy, Krishnamurti & Asundi (2018) simply defines information user as one who makes use of things. Essentially, the person simply has the right to use the thing.

In library and information science, the term user is often used to mean one who uses the library and by implication the information resources contained therein. The individual by virtue of being a member of a parent organisation, user community or a registered member of a library has rights and privileges to not only visit the library, but to also make use of the resources. The user is anybody who visits the library with the aim of

exploiting its resources to satisfy his/her information needs (Nwalo, 2003).

It is important to emphasise that the phrase 'visits the library' should not be taken literarily in the 21st century where information and communication technology makes physical visits to the library optional. Therefore, the library today has gone beyond a physical location or space, and as such, when users remotely access the library's online electronic resources or electronic resources in offline servers, they are visiting the library.

User in library parlance includes all those who avail themselves of the services offered by a library, and is often used synonymously with clientele, client, patron, member, customer or reader (Aina, 2004).

### 1.3.1 Types of Information Users in Libraries:

There is no one way of categorising information users however, categorisation of library users can be done on the basis of sets of objective criteria such as socio-professional category, specialist field, nature of the activity for seeking the information, the reason for using the information, reason for using the information system and social and psychological criteria such as the user's attitudes and values as it relates to information in general and in his relations with information unit in particular (Guinchat cited in Dhiman, n.d.). A few categorisations will be made here.

On the basis of their approach to information in libraries, Kunz (1977) have categorised information users as follows

(i) Potential user: This a person who needs information which can be provided by specific services but they may not be able to express their information needs properly.
(ii) The expected user: This type of users has the intention of using certain information services.
(iii) Actual user: One who has actually used an information service regardless of whether he derived advantages from it or not.
(iv) The beneficiary user: One who derives a measurable advantage from using an information service.

Whittaker (1993) categorises library information users on the basis of the library service that they make use of

- General readers are those readers who concentrate on the reading of light reading materials owned by the library.
- Subject readers This type of users is interested in subject materials and so concentrate their use of library materials on subject field of interest that they are working on or specialise in.

- ❖ Special readers have special information needs and so need some special library service. In this group are users with special needs such as the visually impaired and hearing impaired and other disabilities such as physical disabilities.
- ❖ Non-Readers Users These are made up of sub groups who make use of library materials, but not reading materials. A user coming into the library just to borrow a video or audio cassette is the best example of non-reading user.

Library users can also be categorised on the basis of the type of library they use, for instance;

- ❖ Public library users: Every member of the community is allowed to use the library including school children, professionals and non-professionals etc.
- ❖ Academic library user: Members of an academic community who could be students, academic staff and non-academic staff users.
- ❖ Special library users: Members of research institutes, organisations etc. The library is established to meet their special or unique needs.

Ranganathan (1961) has divided user community on the basis of various types of services enunciated by him. They may be: the freshman, ordinary inquirer and specialist inquirer.

- Freshman is the new member of the library.
- Ordinary inquirer is ordinary reader, and
- Specialist inquirer is one who specializes in narrow field where as general readers are the associated groups.

Another categorisation is by Bernal, cited in Egyankosh (2022) who classifies library users on the basis of the kind of information services required by them.

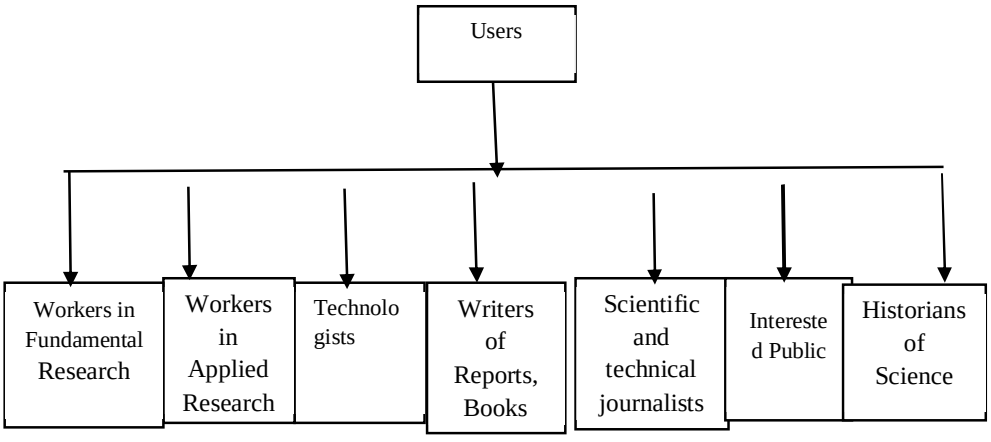


**Fig. 6: Functional categories of users (Bernal cited in Egyankosh, n.d.)**

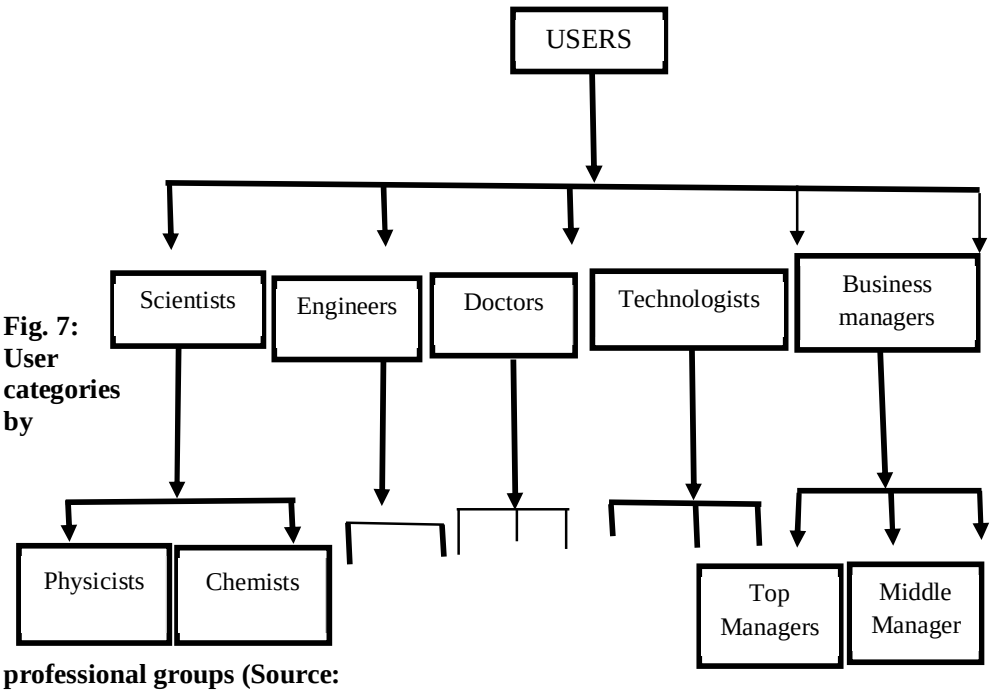


**Fig. 7: User categories by professional groups (Source: Bernal cited in Egyankosh, (n.d.)**

**Self-Assessment Exercise 1**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.1

1. ------- categorised information users into: potential user, expected user, actual user and beneficiary user

a. Kunz

b. Whittaker

c. Ranganathan

None of the above

2. A potential user is one who has actually used an information service.

True False

## 1.3.2 Characteristics of Information Users in Libraries:

One of the most important activities done in libraries is user study. This exercise is important to understand the people the library is serving so that the information resources and system can be made to meet their needs.

The ability of any library to meet the needs of users is important for its continuing use and survival.
This is particularly important today because unlike in the past when information seekers had very limited choices for meeting their information needs and depended on libraries to a large extent, today's information seeker has so many options including other information providing centres and the internet.

To know how to design the information system, the characteristics of the user groups that the library is serving is very important. So, libraries require user characteristics to collect information that will help in the design, provision and evaluation of specific information products or services geared to specific users (Kishor, n.d.). It is also on the basis of that that user studies are conducted.

User characteristics may be studied under the following groups as categorised by Egyankosh (n.d.).
i) individual characteristics,
ii) stages in the information diffusion,
iii) environmental or social characteristics, and
iv) communication characteristics.

**i. Individual Characteristics:**

In this category, the library is interested in specific individual attributes such as name, age, gender, job or occupation, educational level etc. Because individual characteristics are specific to each user, by analyzing them, it is possible to have some insight into how individual users perceive and define a problem that they meet in the course of searching for information and the very specific ways that they will most likely use information as well as their ability to use a particular type of information. For instance, an undergraduate and a secondary school student will have different individual characteristics such as age and educational level. If both are given the same questionnaire and asked to supply specific instruction about what information they retrieve in a library and how they perceive the information retrieval system, their individual characteristics will provide information that when analysed will enable the library to know what challenges they face in the retrieval process including how they use information.

ii. **Stages in the Information Diffusion:**

Different people are at various stages in the information diffusion. Information diffusion is concerned with how new knowledge is spread in the society. This characteristic is about determining the amount of information that an individual or a group of users possess about a specific

idea or innovation, products or practices that influence the individual. Information needs at various stages are different and therefore information products and services have to be tailored for each stage." There is no way that the library can provide certain information services if they do not know the stages that their users or user groups are in the information diffusion. Assuming a library is located in a rural community where people are still struggling to read, making that library a digital library is not going to be successful as they are not at that stage of innovation in their information diffusion. The library system designers have to bear that in mind in creating an information system for them.

**iii. Environmental or Social Characteristics:**

Every environment or society is different in one way or another. Environmental characteristics relate to the factors that are present in a particular social system that influence the way that an individual will behave and communicate. Such environmental or social characteristics include norms, situation, reference groups, socioeconomic and cultural factors etc. Norms are the things that are typical, standard or usual about an environment or society that serves to guide, control or regulate what is considered proper and acceptable behaviour. Situation relates to the prevailing circumstances or state of affairs of the environment while reference groups relates to a group that an individual or another group compares to.

All this should be taken into consideration when designing an information system. The library will need this information to match their system to the precise information needs of the user. For example, the way that a rural library is designed and the kind of information services that are provided are tailored to the environmental or social characteristics of the community. It cannot be the same as a library in an urban environment for the fact that the environmental and social factors are different. Also, a library that will serve people with disabilities will take that into consideration in the design of not only the structure but even their information retrieval system.

**iv. Communication Characteristics:**

The elements related to the use and diffusion of information constitutes what are known as communication characteristics. Some of these include information sources, information structures, communication channels and information systems. These aspects need to be correlated with other characteristics. A proper and systematic user study aims at collecting all the pertinent data concerning the users with the objective of building an efficient information system. Such data enables establishment of close relationship between users and the information system designers.

Invariably, if the communication characteristics do not march individual characteristics, environmental or social characteristics, stages of the information diffusion of the intended user group, it will not be useful. Let us take for instance designing an information system for an academic community. It will be a mere exercise in futility if that system does not take into consideration all the characteristics that match that user group. Assuming a school library is designed for them, including the resources, it will not be used because it was not matched with characteristics that correlate with that user group.

Beyond demographics, Lehman cited in Kumar & Phil (2009) also outlines eight (8) characteristics of library users that if properly evaluated by librarians can help them to assist and satisfy the information needs of their users.

i) Functional reading level.
ii) Visual level.
iii) Personality level.
iv) Capacity level.
v) Satisfaction level.
vi) Interest level.
vii) Variability level and
viii) Vocational level.

**Self-Assessment Exercise 3**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

1. Information sources, information structures, communication channels and information systems are examples of what type of ------- characteristics

a. Environmental
b. Economic
c. Intellectual
d. Communication

## 1.4 Summary

While the physical building and the information resources owned by any library remain important, the library user is the reason for the establishment of any library. The success of any library depends on its ability to meet the information needs of its patrons. That is why in libraries, the cliché “the customer is king” is very much true because as already mentioned, the system is built and designed with the information user or library user as the focal point. That is the basis of the organisation and arrangement of library materials as well as the functional organisation of the system itself. The whole essence is to make access to/and retrieval

of information and information resources as seamless as possible and to also encourage continuing use of the facility. That much is affirmed by Egyankosh (n.d.) that observes that "libraries and information systems are designed and built with the primary objective of meeting the information needs of a group of people who constitute their clientele." The author further notes that although in the past, information systems and services were developed based more on 'literary warrant' today the emphasis is on 'users warrant.

In this unit, you were taken through the subject of the library user. The importance of the user as well as the characteristics of users were highlighted. Essentially, the librarian must ensure that the information resources and design of the information system are such that the user can make maximum benefit and be encouraged to continue to use the library. Every library is different so there is no one-size-fits all approach to providing library services. The focus remains the users and their characteristics.

## 1.5 Glossary

**1. Demographics:** This relates to the statistical characteristics of human populations (such as age, sex, educational status, etc.

## 1.6 References/Further Reading/Web Resources

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## 1.7 Possible Answers to Self-Assessment Exercises

| |
|---|
| SAE 1 Kunz |
| SAE 2 False |
| SAE 3 Communication |

## Unit 2 User Studies in Libraries

### Structure Unit



## 1.1 Introduction

As mentioned in the last unit, the relevance and quality of the services and products offered by any library will determine the use of such libraries. What this means is that if the library does not meet the needs of its user groups, client, clientele, users, readers, members etc., it is practically a waste of resources irrespective of the elegance of the building or the stock therein.

This is even more so now that there are other sources that information seekers can go to for their information needs. This includes the internet. Since the success of any library depends on the 'use' and the 'user' where "use" is the reason that libraries do what they do, and "user" is the main element of the system, it follows that libraries must have a way of not only knowing who these users are, but also what are their characteristics, what are their information needs and how can their information needs be met? This is the very essence of library user studies.

The characteristics of library users listed in unit 2 above: individual characteristics, stages in the information diffusion, environmental and social characteristics and communication characteristics etc. are essential elements in user studies. It is important to note however, that all this differ from place to place and time to time. Whatever elements that are included will also depend on the purpose for the user study.

## 2.2 Intended Learning Outcomes

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

- explain the meaning of user studies
- trace the origins of user studies in libraries
- explain the importance of library user studies
- examine various types of user studies, methods/techniques of library user studies
- explain the barriers to library user studies
- explain some strategies for effective user studies in libraries.

## 2.3 Definition of User Studies

It must be mentioned here that user studies are not unique to libraries alone. Practically, every organisation that is product and/or service oriented, and that has a customer base engages in one form of user studies or another from time to time. Therefore, the use and meaning of the term may differ according to the context of use.

The origins of user studies in Library and Information Science, and the earliest reference to user study in the literature of library and information science goes back to the study conducted by L. R. Wilson in the late 1930s. However, the study was in an attempt to investigate the distribution and status of libraries in the USA and was not aimed at obtaining information relating to library use or users (Egyankosh, n.d.). Today, however, Emerald Publishing (n.d.) notes that user study is one of the "most researched and significant topics in library and information studies, but it also remains one of the most elusive as there is no convenient definition available to help researchers get a handle on it." We will explore some of the definitions of the term within and outside library and information science contexts.

User studies and research are explorative and discovery-based methods that help libraries gather insightful and actionable information from their users. User studies help libraries to understand the needs, pain areas, short term and long-term goals, constraints, habits, and wish lists of their users (Texavi Innovative Solutions (2015). This means that user studies are investigative in nature as it wants to find out and address some of the issues that are related to one's user community.

Assuming there is a service that is either unused or that is used, a user study can be carried out to investigate users' awareness or perception of that service. Analysis of collected data will help the library to improve the acceptability and use of the service. A user study may also not be about a service. It could simply be about investigating the user community to

understand their characteristics so as to build a system that is tailored to meeting their needs.

Therefore, user studies are serious minded investigative exercise that seek to dig beyond the surface level of the subject of interest. They are discovery-based and are usually expected to reveal important areas of the subject of the study.

IGI Global (2022) gives a number of dictionary meanings of user studies. They are:

1. Any evaluation that gets users involved directly, in the lab or in the users' natural environments: A user study is environment based, especially in the user's natural environment or in the laboratory where it is a science related study. It is not a user study if the real users are not directly involved in it.

2. Evaluations that are conducted to assess the performance of a system with real end users, generally conducted in usability laboratories under controlled settings: There is a purpose to user study. Here it is done to find out how a system performs from the perspective of the real end users of it. This definition also points out that the study has to be conducted in an environment that is controlled. While we can see the library as a laboratory of some sort, the question is can we say this about the user studies that are carried out in the library? If not, does that make the result faulty?

Preferring the term 'user research' over user study, the Interaction Design Foundation (n.d.) defines the term as "the methodic study of target users—including their needs and pain points—so designers have the sharpest possible insights to work with to make the best designs." Pain points refer to the specific problems that current or prospective users of a product or service face in the course of using it, and this may include any problems that they encounter along the way.

In the context of libraries, user study is "any study relating to library use, in any or all of its aspects; specifically, studies aimed at

- determining the overall pattern of interaction with the user community, without reference to any particular mode of information reception by users; secondly,

- studies to assess the use of a given information source, such as books and periodical publications - generally known as use studies; and
- studies to determine the information flow pattern in the system of communicating knowledge (Rocio, Libria & Ivan (1987).

Another library definition says user study is "a systematic collection of data concerning a library, its activities, operations, staff, use and users, at a given time" (Line cited in Devika, 2017). This definition gives the spectrum of areas that user studies can cover in libraries.

The definitions above, whether library related or not, point to the fact that user studies are purpose driven and aim at deriving information from evidence-based studies with the aim of making the library more informed about how to make the information system user-centred. Rather than decide by themselves about what the users need, and how to make the design of the information system as efficient as possible, the library staff involve the users in the process, and thus, use the outcome of their feedback to make the library more attuned to the users.

### 2.3.1 Importance of Library User Studies

From the foregoing, it is clear that the overall purpose of library user studies is to improve the existing conditions in any library so that whatever the library management decides to do is evidence based.
Rocio, Libia and Ivan (n.d.) have specifically noted the following as the importance of library user studies.

- User studies provide a substantial body of specific knowledge, facts and conclusions that are of great value for the development of new facilities.
- User studies yield conclusions that can be used in improving the administrative process since they can be converted into indicators of successes and shortcomings in the planning and development of services.
- User studies show the different channels employed by users in the information acquisition process and also the different types of information sources and the frequency with which they are used.
- User studies clearly reveal that the flow of information is not a simple process and that a whole range of factors help to determine the nature of the individual information collection process.
- User studies are also a way of identifying user needs and behaviour, which leads to greater efficiency in the information transfer process.

Texavi Innovation Solutions (2015) also concede that user studies are conducted to understand user's need, often not known or expressed by the users. User studies are important for unravelling the following aspects

- Users' key needs and drivers
- Constraints, challenges and pain areas
- Goals and tasks
- Usage scenarios and key tasks
- Breakdown areas
- Workarounds used
- Wish list and user preferences.

In summary, library user studies help to discover characteristics, behaviour, information needs, attitude and opinion about the system and services (Kishor, n.d.).

Ultimately, user studies are important because there is no way that any library can function successfully without use/user studies. User studies are necessary for "designing/examining a library system or library services, and so must be carried periodically by any library that takes its users and its job seriously.

### 2.3.2 Categories of User Studies

Although user studies can be undertaken in libraries for any number of reasons, they are mostly conducted to determine the strengths and weaknesses of a system to ensure that it continues to meet user needs.
However, Banwell and Coulson cited by Dhiman (n.d.) categorised user studies into four major groups according to the focus of the user study in question:

- ❖ User focused studies: The aim of this type of user study is to investigate users' wants, needs, contexts, motivation, expectations and tasks e.g., "Library users' satisfaction with law library services."
- ❖ Use focused study: These ones aim to investigate what one or more specific information sources, are used for, and what the barriers to information access and use are e.g., "The use of electronic resources by undergraduate students."
- ❖ Information system focused Studies: The aim is to investigate the characteristics of a specific information system or service with reference to its technology, design and evaluation, and
- ❖ Organisation focused studies: They aim to investigate the organisational setting, management procedures and strategies including internal and external factors that have an impact on the organisation.

On the other hand, Prabha also cited in Dhiman (n.d.) has categorised user studies into four types, viz:

1. User studies that sets out to investigate the overall pattern of interaction of the user community with the communication system, without reference to any specific information receiving event.
2. User studies conducted to find out the use of any communication medium like primary periodical, etc.
3. Includes studies conducted to find out the pattern of flow of information in the science communication system as a whole.
4. Studies/surveys done within the limited context of a library or information centre, mainly to find out the extent of use of the services and facilities offered by an agency with the ultimate objective of improving the system or services.

**Self-Assessment Exercise 1**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

1. Which of these is among the classifications of user studies as outlined by Banwell & Coulson?

a. User focused

b. Use focused

c. Information system focused

d. Organisational focused

e. All the above

## 2.3.3 Methods/Techniques of User Studies

Several methods/techniques can be applied in user studies and depending on the need, a user study can be descriptive or prescriptive.

- a descriptive method gathers data from users to know their perception and experience with the information system. The information derived from it will give the library management idea on whether the system is being used, whether it is performing well or meeting the standards.
- With a prescriptive study, solutions or new ideas are also recommended based on the information derived.

If conducted on a system, the descriptive method gathers data to ascertain the conditions as it is without manipulating the variables of the study. This can be used to identify success or performance or outcomes. On the other hand, beyond identifying success or performance or outcomes, prescriptive method recommends solutions or new ideas based on the analysis of data or the information that is derived from the study.

Other methods/techniques advanced for user studies are general or conventional methods, indirect methods, and special and unconventional methods (Guha, cited in Kishor, n.d.).

- General or conventional methods include the use of techniques such as questionnaire, interview, diary and observations.
- Indirect methods include library records analysis and citation analysis.
- Special and unconventional methods include computer feedback and, it can be further extended by studying internet browsing pattern of the users and internet behaviour of the users (Kishor, n.d.).

The methods/techniques above have been further outlined and explained by Kishor (n.d.): 1) questionnaire, 2) Interview, 3) diary records, 4) observation, 5) analysis of library records, 6) computer feedback, 7) citation analysis, 8) analysis of computer records, and 9) internet browsing records (Kishor, n.d.). These are explained below:

1. **Questionnaire:** The questionnaire is a good technique for collecting primary data of a survey nature, especially if it is structured well. It is useful for collecting data from large numbers of people. Data collected with questionnaire can be analysed descriptively or quantitatively. It is also cost effective. The questions are uniform and standardised. Both open and closed questions are asked.
   Ackryod & Stephen (1981) have identified three types of surveys that can be conducted with a questionnaire:

- Factual survey: used to collect descriptive information, such as characteristics of library users.
- Attitude survey - i.e. users opinion about the library, including the services, performance, satisfaction levels etc.
- Explanatory survey - test theories/hypotheses and/or to produce new theory for instance, information seeking behaviour of library users. What are their needs? How do they go about seeking information? What is their search behaviour and how do they use information?

However, the questionnaire method has its drawbacks. If not administered properly, the response rate can be low and therefore yield little information. The respondents may not be completely honest with their responses especially if the respondents do not have a good knowledge of the subject of research and when it comes to outcome, while it may be able to study trends or attitudes, it is ineffective in explaining the underlying reasons for the outcome.

Libraries use questionnaires to collect information on users' perception and awareness of library services among others. Results from questionnaire survey are usually generalised.

2. **Interview:** Interviews are the best method for collecting data from a small group of subjects on a broad range of topics. Interviews can either be structured or unstructured. If structured, all the respondents are asked the same questions and in the same order similar to what is done with the questionnaire. The structure of an interview can take the form of multiple-choice answers. The objective of a structured interview is to maintain some uniformity and also to guide the interviewer to elicit relevant responses.

On the other hand, with unstructured interviews, the questions can differ by subject. The interview follows up on his questioning based on the answer supplied. So, the answer that each respondent gives will likely differ.

Interviews can be formal or informal, face-to-face or by telephone. It can just be an on the spot personal meeting and conversation with the interviewee, (who are in this case, library users), to obtain personal information or insight about the library service or services.

However, it requires an experienced interviewer to get the best from an interview-based study. The data may also be difficult to analyse since they are mostly qualitative.

3. **Diary records:** In this method, the library can ask users to keep a daily, either weekly or monthly diary recording of their activities and experiences while using the library. Usually, the library supplies the diaries to the library users. This method can be used to collect details such as facts, opinions and problems that the users experience with library services. It can also be used for collection development purposes. The same method can also be applied in online mode. The diary method may help in exploring the following:

- To determine existing usage behaviours and mind-sets of users.
- To find out the current engagement paths of users.
- To know the reading interest of users.
- To discover the regular habits of the users.
- To elicit surface frustrations of users.
- To determine the inherent obstacles and barriers faced by users.
- To find out the unmet needs and desires of users.

4. **Observation:** With this method, the research gathers data by watching behaviour of users, events around a library service or note the physical characteristics of users in the library setting. Observations can be overt in which case everyone knows they are being observed or covert in which the observer is not visible and no one knows they are being observed.
   Observation is appropriate in the following conditions:

- When there is a need for direct information.
- When there is a need to understand behaviour, process, situation or event.
- When there is a need to examine physical evidence, products or outcomes.
- When other research methods seem inappropriate to elicit the required information.

5. **Analysis of library records:** This method uses the internal records such as statistics that are kept in the library. The advantage lies in the fact that with this method, users are not interfered with and there is no interrupting of their activities in the library. Statistics on borrowing and returning of library materials, rate of use of different sections or units of the library, computer usage etc. can be analysed to get information.

It is a most economical method as it does not require any other personnel except library staff to perform the analysis. The data is collected on a daily or regular basis.

**6.** **Computer feedback:** With this method, information about use of the products and services offered by the library are collected through the computer.

Five types of computer feedback, which can be utilised to collect users' responses according to Mandernach cited in Kishor (n.d.) are

- No-feedback: Through this method users' response can be obtained without addressing any individual questions;
- Knowledge-of-response feedback: Through these users' responses can be obtained about correct/incorrect status of each question, but it does not, inform students about the correct answer;
- Knowledge-of-correct-response: Through this, users' responses can be obtained about correct/incorrect status of each question, but provides the correct answer.
- Topic-contingent feedback: Through these users' responses can be obtained about correct/incorrect status of each question along with paragraph of information from where the correct answer can be found;

- Response-contingent feedback: This addresses the correct/incorrect status of each question along with an explanation of the selected response and the correct response. The above methods can be adopted to have users' responses about their experience of the library, problems faced, any new requirement, and any new service.

7. **Citation analysis:** Citation analysis is the examination of the frequency, patterns, and graphs of citations in documents. Using the directed graph of citations i.e. links from one document to another document, this method reveals properties of the documents. For instance, the library can use citation analysis to identify the most important documents in a collection (Wikipedia, 2022).

Citation analysis provides information about the author of the particular book, article and publication referred to, earlier studies while writing a particular book, and the document that has been appended with references and bibliographies. This pattern reveals different and important facts. According to Kishor (n.d.) an analysis of these patterns of communication discloses information about

- Types of document that is used
- Preferred document
- Age of document
- Frequency of use of document
- Ranking of journals
- Ranking of author
- Ranking of article
- Ranking of books
- Ranking of organisations
- Ranking of countries

This method is useful for collection development because it gives information about what is being used most and also for determining the impact factor of authors and the impact factor of library resources in research and reading materials.

8. **Analysis of computer records:** Unlike in the past when the information resources of libraries consisted of print formats and the manual method was used in library operations, libraries today have involved information technologies in their daily operations and computers are the norm rather than the exception.
   Integrated Library Management Systems are now deployed in circulation services and other aspects of library operations. It is

now possible to derive from this system information such as personal details of the library users, status of the users, subject interest, circulation records, reference queries, information search behaviour of users, interlibrary loan records, use of reading materials, use of services/equipment, acquisition behaviour among others.

9. **Internet browsing records:** Use information can also be collected through internet browsing records. The internet browsing record can ascertain how satisfied the users are with the library internet facilities, whether the internet facility is meeting the expected needs and whether the users are aware of the electronic resources on the internet, electronic resources in the library among other characteristics that are internet related. This study can be conducted online or offline, or can be conducted using the logging pattern of users; using pattern and time the users spend on internet or simply by checking the server logging reports.

### 2.3.4 Limitations of Library User Studies

While there is a recognition of the place of user studies in library services, there are also some limitations and criticisms that are levelled against it. Eyankosh (n.d.) has identified some areas of limitations of user studies to include

1. N**ature of user needs:** Although user studies have been conducted in the past among scientists, engineers and technologists such as the one by T.D. Wilson, to assess their information needs, there is criticism that their information needs were complex and varied and so inadequate for proving the precise nature of information needs of users.

As a result, the investigations are criticised for being in a way, based on theoretical deductions rather than empirical observation.

2. **Methods and techniques of user studies:** There are criticisms over the methods and techniques used in user studies. It is argued that the issue of sampling size in user studies should be taken with a pinch of salt. This stems from the fact that the sample of such studies have not taken into account, refined techniques of random sampling. Moreover, the sample populations may comprise of individuals who are not particularly interested in filling or returning the questionnaires or diaries in cases where these

methods are applied. It is also not particularly easy to control or eliminate errors that arise from participant bias.

3. **Environmental differences among samples:** Past research that have formed the basis of user studies especially consisted of individuals from seven different environments: i) academic institutions, ii) research organisations, iii) industry, iv) government, v) professional associations, vi) trade unions and political parties, vii) the press and broadcasting. Additionally, the library users were categorised according to functions: i) research, ii) teaching and training, iii) management, iv) social work and administration, v) the press and broadcasting, vi) politics, vii) business and commerce, viii) study and learning. These environmental differences are likely to influence a person's information needs and behaviour. Given all this, it is difficult for the findings of the studies to be valid or widely applicable.

### 2.3.5 Strategies to Improve Library User Studies

Given the limitations or barriers, user studies can be improved in the following ways

1. **Define the Purpose of User Study**: It is important that the information which a library needs from its user study is clearly defined from the outset. This can be done by stating the precise purpose of the study. Stating the purpose precisely will serve as a guide on what information to ask of users, the size of the study and the associated costs. To that extent, the questions to be asked must be subjected to the purpose of the study and how the information is to be used and where it does not align with the purpose and use criteria, such questions should be dropped. A clear statement of purpose makes data collection less cumbersome for the staff conducting the study by making the responses more easily obtainable.

2. **Use Concise Methods/Techniques:** Following from the above point, it is important that concise methods/techniques are used to gather information. Assuming that the preferred method/technique is questionnaire, efforts should be made to keep it as concise and not long as that can task the respondents' patience. A questionnaire

of not more than two pages or in the case of interview not longer than ten minutes is recommended. This will improve on return rate and response.

3. **Concrete and Immediate Questioning:** When a questionnaire or interview is used to gather information, the nature of the questions should be both concrete and immediate. Martins (1976) advices that rather than ask a question such as "How often do you use the library?" it is better to ask "When was your last visit to the library before today?"; also not "What do you use the library for?" but "What are you seeking on this visit?" According to him, the tendency of such questions being answered more accurately and honestly is higher because it does not give much room for people to misrepresent or colour what they are doing in full view. Another benefit of specific and immediate questioning is that although it may draw data that is based on non-typical visits of a few users, it makes up on the fact that hard facts rather than vague hopes are got from the users. This is more beneficial for library planning.

### Self-Assessment Exercise 2

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

Which of these methods/techniques of user studies provides information about types of document, author ranking, journal ranking, age of document etc.?

a. Questionnaire
b. Interview
c. Computer feedback
d. Citation analysis

## 2.4 Summary

This unit has examined the term of user studies with special focus on user studies conducted in libraries. While user study is not an exclusive activity in the library, it is an activity that is carried out to know among other things, users experience about the library, including the service provided. Among other reasons, libraries conduct user studies to be able to serve their patrons using evidence-based method.

The methods and techniques for user studies were also examined. It was clearly stated that for user studies to be effective and result oriented, the special circumstances of the users should be the overriding interest given

that users differ from library to library just as their characteristics also differ.

The limitations/criticism of past user studies including those that have to do with the nature of user studies, methods/techniques adopted and problem of sampling techniques were also discussed. Some useful strategies that can improve user studies were also suggested.

## 2.5 Glossary

1. **Descriptive:** Describing or classifying something objectively as it is without any attempt to be judgemental.
2. **Feedback:** Information about people especially users' reactions to a product or a service on the basis of which improvement is made.

## 2.6 References/Further Reading/Web Resources

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Texavi Innovative Solutions (2015). What are User Studies and Research? https://www.texavi.co.uk/consulting/user-experience-innovation/user-studies-and-research

## 2.7 Possible Answers to Self-Assessment Exercises

| |
|---|
| SAE 1 All of the above |
| SAE 2 Citation analysis |

## Module 4 Theoretical/Conceptual Models of Information Behaviour

Unit 1: Concept of Information Behaviour Model in Library and Information Science
Unit 2: Concept of Information-Seeking Behaviour Model in Library and Information Science

## Unit 1 Concept of Information Behaviour Model in Library and Information Science

## Unit Structure



## 1.0 Introduction

It has been established in our last module that information-seeking behaviour is an essential component of information behaviour including also information search behaviour and information use behaviour. In the last module, attempts were made to examine library user and user studies. Information-seeking behaviour is based upon some information behaviour models.

Therefore, before we delve into the models of information-seeking behavior, it is proper that we again examine the concept of information behaviour because “any analysis of the literature of information-seeking behaviour must be based upon some information behavior models, of which information-seeking and information-seeking behaviour are two parts” (Kundu, 2017).

By information behaviour, we are talking about the gamut of activities that an individual engages in as he/she tries to identify his/her own information

needs, seek and search for the information in whatever way and use or transfer that information. On the other hand, information-seeking behaviour simply refers to the ways that people search for and utilise information. The implication is that information-seeking behaviour is a component of information behaviour and the models of information behaviour invariably capture information-seeking behaviour.

While information behaviour is the totality of the activities that covers information-seeking behaviour, information search and information use, information-seeking behaviour is concerned with the actual process or activity of an individual who is trying to obtain information. Information-seeking behaviour includes the process or activity of trying to get information both in the human and technological contexts and it is worth exploring.

## 1.2 Intended Learning Outcomes

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

- discuss the concept of information model
- examine some information behaviour models that form the basis for user studies in library and information science.

## 1.3 Definition of Information Behaviour Model in Library and Information Science

Practically, all types of human activities are accompanied by the creation and application of models. However, like some other constructs that we have come across in other parts of this course material, there is no accepted uniform definition of the term model because the concept means different things to different researchers in different disciplinary fields.

For instance, to a scientist, a model is viewed as a physical, mathematical, mental, or other representation of a set of concepts, events, or processes. By utilising scientific models, scientists try to identify and understand patterns in the outside environment. The ultimate goal is to provide explanations that will enable predictions to be made based on the observed patterns. A scientific model serves to define variables, shape crucial experiments, and predict results and it is important that there is consistency between facts, inferences and current interpretations (Victoria State Government, 2020; Brooks, 1989).

To an architect, a model, described as scale model, is a physical representation of an object such as a building. It is a prototype of an object created to examine various aspects of an architectural design or to convey design concepts. Therefore, a model can be both mental/abstract as well as physical.

A model in library and information science is a mental framework for the experimental manipulation of library and information variables, their measurement and evaluation, and the production of knowledge about libraries (Brooks, 1989).

The definition suggests that a library and information science model is a mental construct and as such is not physical that it can be touched like an architectural model, rather, it is a representation of a phenomena or process as created in the mind of the creator. However, it has an experimental value for manipulating library and information science variables. Models make it possible to measure, evaluate and produce knowledge about libraries.

Rather & Ganaie (2018) see a model "as a structure for thinking about a perceived problem and may evolve into a statement of the relationships among theoretical propositions." Simply put, a model in librarianship is an attempt to use the methods of scientific enquiry to investigate library and information science problems with a view to generating a result. Models help to show the relationships between variables in a phenomena that is under investigation. However, when the phenomena is on human behaviour, the results can only be predicted based on the variables and conditions of the experiment.

Bates (2005) posits that models are most useful at the description and prediction phases of understanding a process.

Wilson (1999) who has carried out ground-breaking research in information behaviour describes rather than defines a model as a "framework for thinking about a problem and may evolve into a statement of the relationships among theoretical propositions." Wilson further notes that the majority of information behavior models take the form of assertions, frequently in the form of diagrams, that aim to depict information-seeking activity, the causes and consequences of that activity, or the relationships among phases in information-seeking behavior. Such models are typically at the pre-theoretical level and do not identify relationships among theoretical ideas; however, they may suggest relationships that are interesting to investigate or test.

In essence, unlike the natural sciences, there is no consistency in information behaviour models rather, each researcher attempts to explain the phenomena under investigate from his/her own particular perspective. There is also no attempt to show a relationship among all the models proposed by individual researchers.

**Self-Assessment Exercises 1-3**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

1. A model in library and information science is mostly a mental construct

True False

2. Information behaviour models identify relationships among theoretical propositions

True False

3. One of these is not a usefulness of models in library and information science

a. Measure knowledge about libraries
b. Plan knowledge about libraries
c. Evaluate knowledge about libraries
d. Produce knowledge about libraries

## 1.3.1 Importance of Theoretical or Conceptual Framework in Research

The question may be asked: what is the importance, purpose or usefulness of theoretical or conceptual models if they are mental/subject or mainly theoretical or conceptual rather than objective constructs?

Adom, Hussein & Joe (2018) in their work has done a good job of assembling some importance of a theoretical model from literature. They also represent the importance of information models in library and information science.

Theoretical framework:

- ❖ It provides the structure in showing how a researcher defines his/her
- ❖ study philosophically, epistemologically, methodolog y an d
- ❖ analytically (Grant & Osanloo, 2014).

- Provides the structure in showing how a researcher defines his/her study philosophically, epistemologically, methodologically and analytically (Grant & Osanloo, 2014).
- guides the kind of data to be accrued for a
- particular study (Lester, 2005
- Guides the kind of data to be accrued for a particular study (Lester, 2005).
- Makes research findings more meaningful and generalizable (Akintoye, 2015).
- guides and should resonate with every
- aspect of the research process from the definition of the problem,
- literature survey, methodology, presentation and discussion of the findings as well as the conclusions that are drawn.
- Guides and should resonate with every aspect of the research process from the definition of the problem, literature survey, methodology, presentation and discussion of the findings as well as the conclusions that are drawn (Adom, Hussein & Joe, 2018).
- Helps the researcher in considering alternative theories that might challenge his or her perspective, thereby enriching the strengths of the study.
- Deepen the essence of the study (Simon & Goes, 2011; Maxwell, 2004).
- convinces them that the study is not based on the personal instincts of
- the researcher but rather is firmly rooted in an established theory
- selected via credible studies (Akintoye, 2015)
- Convinces both researchers and readers in the field that the study is not based on the personal instincts of the researcher but rather is firmly rooted in an established theory selected via credible studies (Akintoye, 2015)

In the same vein, Adom Hussein & Joe lists the importance of conceptual framework as collected from literature as:

- it assists the researcher in identifying and constructing
- his/her worldview on the phenomenon to be investigated (Grant & Osanloo, 2014).
- Assists the researcher in identifying and constructing his/her worldview on the phenomenon to be investigated (Grant & Osanloo, 2014).
- simplest way through which a researcher
- presents his/her asserted remedies to the problem s/he has defined
- (Liehr & Smith, 1999; Akintoye, 2015). It accentuates the reasons why

- a research topic is worth studying, the assumptions of a researcher, the
- scholars s/he agrees with and disagrees with and how s/he conceptually
- grounds his/her approach (Evans, 2007). Akintoye (2015) posits that
- the conceptual framework is mostly used by researchers when existing
- theories are not applicable or sufficient in creating a firm structure for
- the study
- Simplest way through which a researcher presents his/her asserted remedies to the problem he/she has defined (Liehr & Smith, 1999; Akintoye, 2015).
- Accentuates the reasons why a research topic is worth studying, the assumptions of a researcher, the scholars he/she agrees with and disagrees with, and how he/she conceptually grounds his/her approach (Evans, 2007).
- Mostly used by researchers when existing theories are not applicable or sufficient in creating a firm structure for the study (Akintoye, 2015).

Going by the explanations given on theoretical and conceptual frameworks, it is clear that information behaviour models are mostly conceptual.

### 1.3.2 Information Behaviour Model(s)

Wilson (1999) notes that there are more models in information-seeking behaviour than there are in information behaviour even though information-seeking behaviour is one component of information behaviour. As a result, we will look at Wilson's information behaviour model. This model also explains the information-seeking process. Wilson's information behaviour went through several revisions in an attempt to answer some of the critcisms that were made over his model initial model.

- **Wilson's Information Behaviour Model**

You should remember that Wilson defined information behaviour as "the totality of human behavior in relation to sources and channels of information, including both active and passive information-seeking, and information use.

Thus, information behaviour includes face-to-face communication with others, as well as the passive reception of information such as occurs when one is watching TV advertisements even though there may be no intention to act on the information given.

T. D. Wilson's conceptual framework on information behaviour is built of this definition.
Wilson came up with his first model in 1981.

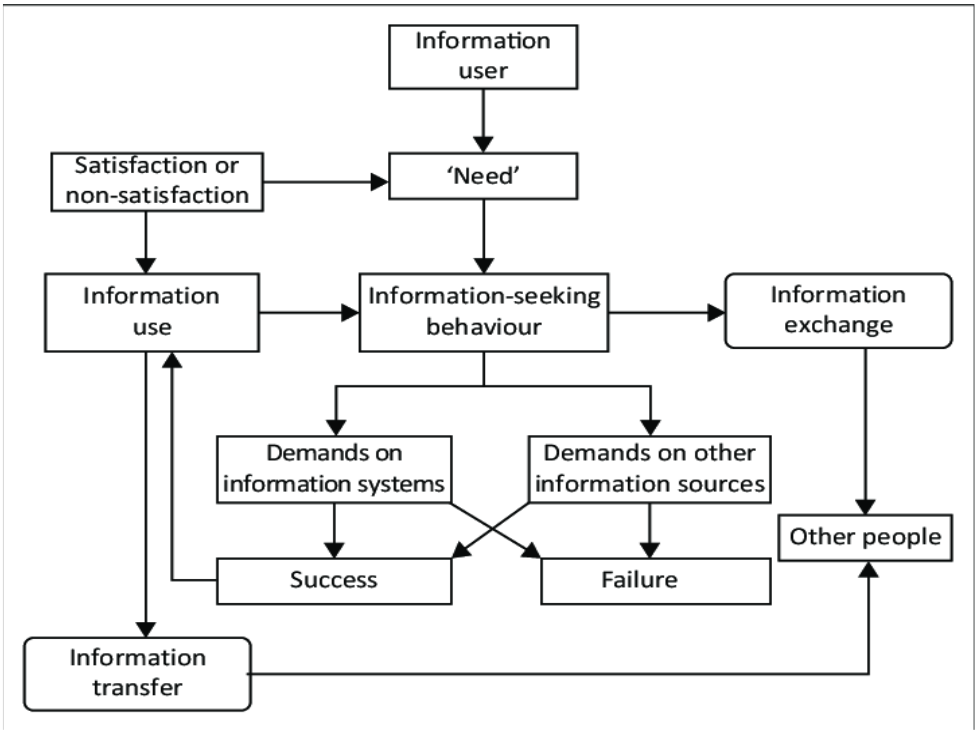


Fig. 8: Wilson's 1986 Information Model (Source: researchgate.net)
The model above presents the full sequence of activities which lead to obtaining and using information. Wilson's first model is a three-way interwoven framework comprising the user, the information system and the information resource.

The process begins when the information user recognises, identifies and/or verbalises an information need. To satisfy his/her needs, demands will be made on both formal and informal information systems such as the library, the Web or internet as the case may be. The informal sources are friends, family and colleagues with who he/she may engage in information. Both formal and informal sources provide unique types of information. In the course of seeking to meet the information needs, some sources may fail to satisfy while other sources may satisfy. When the user is satisfied with the

information from a source, he/she uses the ones that are relevant to him/her. He/she may also transfer some of the information to other people who use it. The user may also use a combination of sources in the search process and only stops searching when his information need is met. But where it is not met, the information user continues the search and may expand it by using other sources.

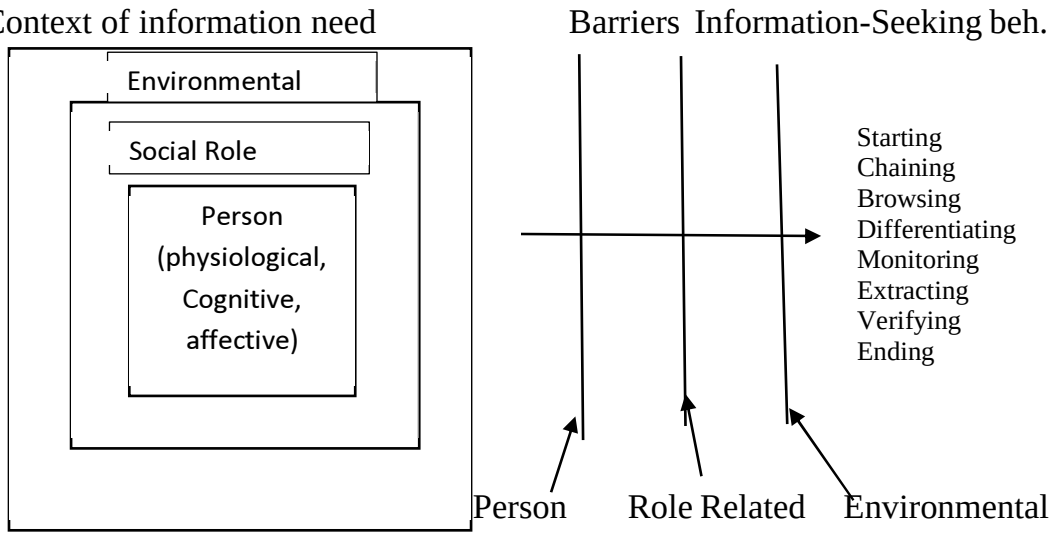


Fig. 9: Wilson's 1994 Information-Seeking behaviour model

Wilson updated his first model in 1994. The version included the physiological, social role and environmental context in which information need is created. The updated model also incorporated Ellis' steps of information-seeking—starting, browsing, differentiating, monitoring, extracting, verifying, and ending in the search process. The updated model acknowledged that a person's desire for information is a result of a prior need rather than a need in and of itself.

The factors or variables that motivate information needs can result from the interaction of a person's (physiological, cognitive and affective needs), political, economic, and technical variables/factors (Environment) and the social role of the individual (Wikipedia, 2020). While these variables motivate information needs, they can also serve as a limitation or barrier to an individuals search for information (Wikipedia, 2020).

Because of some criticism that the earlier models did not make a significant contribution in understanding information behaviour as it offers no testable hypotheses, Wilson came up with a third and more general model in 1997. This model is depicted below

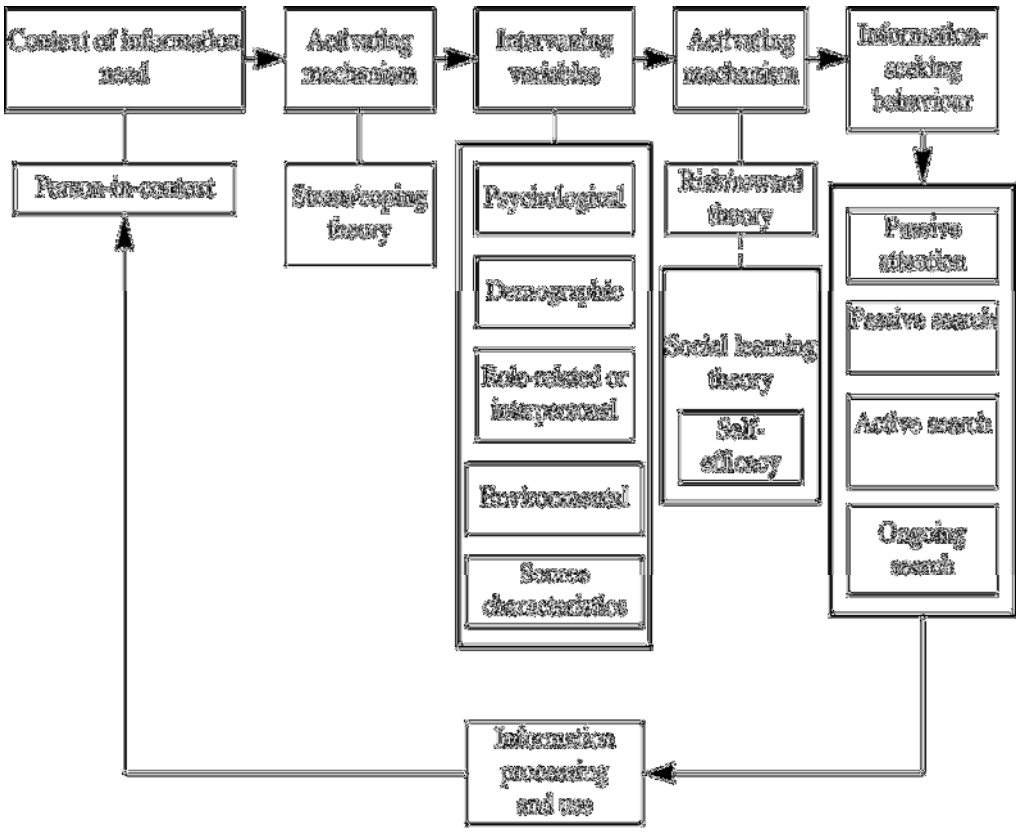


Fig. 10: Wilson's 1997 Information Behavior Model. Source: researchgate.net).

In Wilson's general model of information behaviour above, an individual information needs are as a result of some intervening variables which are related to psychological, demographic, role related or interpersonal factors, environmental factors of the information seeker/user, and source characteristics. These variables can be supportive or barriers to information seeking.

In turn, the activating mechanisms ('stress/coping theory', 'risk/reward theory' and 'social learning theory) prompts the individual to seek information. The search process could receive a passive attention, it could be a passive search, an active search or an ongoing search depending on the information needed and how long it takes to satisfy the need.

The intensity of the search depends on the value that the information user attaches to a source while his/her self-efficacy or belief in his/her capacity to take the actions that will produce the desired result will determine how much time is spent on meeting his/her needs as the information user will go to various sources to satisfy his/her needs.

He/she may use more sources than the others. But at whatever point in the process, the user will find information that he/she may or may not use. The information he/she does not use will be used by another person.

According to Case cited in LISWiki (2015), three aspects of information-seeking are explained by Wilson's 1996 model: 1) why information-seeking is more likely to occur in response to some needs more than others; (2) why some information sources get more used than others; (3) why people's perceptions of their own efficacy influences their success in meeting an information goal.

In the model, information processing and use is an essential part of the feedback loop as demonstrated at the bottom of the diagram. What this means is that the information user should be able to process the collected information into the form that will be useful to him/her.

Other elements that were included in this model was "an intermediate stage between when an information need is acknowledged and the initiation of action including a redefining of the barriers as intervening variables to show the factors can be supportive or limiting (Wikipedia, 2022).

**Self-Assessment Exercise 4**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.
What factor acts as mechanism for social learning according to Wilson?
a. Demographic factors
b. Self-efficacy
c. Active search
d. None of the above

## 1.4 Summary

Definitions of model as it relates to library and information science were presented in this module. The importance of models in conducting information behaviour studies were also given. This module looked very closely at T.D. Wilson's information behaviour model which included the first one and the later version.

The relationship between information behaviour and its various components including information needs. Information-seeking behaviour, information search behaviour information use behaviour were explained.

## 1.5 Glossary

1. **Conceptual Framework**: Conceptual framework illustrates/explains the expected relationship between the variables in a research**.**
2. **Theoretical Framework:** Defines the key concepts in a research. It goes ahead to suggest the relationships between the concepts, and discusses the theories that are relevant to study based on the literature review.

## 1.6 References/Further Readings/Web Resources

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## 1.7 Possible Answers to Self-Assessment Exercises

SAE 1 True
SAE 2 True
SAE 3 b. Plan knowledge about libraries
SAE 4 b. Self-efficacy

# Unit 2 Information-Seeking Behaviour Model in Library and Information Science

**Unit Structure**



## 2.1 Introduction

In the last module, we looked at the concept of information model, mostly examining whether information behaviour can be considered a model. It was highlighted that models do not always have the be objects. Some are theoretical or conceptual, and information-seeking behaviour falls within the categories of conceptual frameworks. Some definitions of information behaviour models in library and information science were also presented as well as its importance.

You were also taken through the concept of information behaviour with particular emphasis on T.D. Wilson's information behaviour model. It was necessary to lay that foundation as it is important for further exploration of the concept of information-seeking behaviour given that information-seeking behaviour is a component of information behaviour.

While information behaviour is the totality of the activities that covers information-seeking behaviour, information search and information use, information-seeking behaviour is concerned with the actual process or activity of an individual who is trying to obtain information. Information-seeking behaviour includes the process or activity of trying to get information both in the human and technological contexts.
Some information-seeking models and their implications will be discussed.

## 2.2 Intended Learning Outcomes

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

- state some definitions of information-seeking model
- discuss information-seeking models in both human and on the web interfaces
- discuss some applications/reviews of Information-Seeking Models

It is hoped that by the end of this unit, you will be able to understand more clearly, what information-seeking means in the context of not only helping a library user get the satisfy his information needs but more particularly understanding how to plan the library information system design in such a way that it will not hinder the user in his/her quest to seek information.

## 2.3 Definition of Information-Seeking Model

Most information behaviour models are generally statements that often take the form of diagrams. The diagrams attempt to explain information-seeking activity highlighting the causes and consequences of that activity or the relationships that exist among stages in information-seeking behaviour. In this process, information search which is a sub-set of information-seeking behaviour, also takes place. Information search is particularly concerned with the "interactions between an information user (with or without an intermediary) and [human or] computer-based information systems (Rather & Ganaie, 2018).

Robson and Robinson (2015) reveal that Model presents practical vision into the information seeking behavior of users and the factors that influence them Robson and Robinson also cited in Rather & Gainaie (2018) posit that information-seeking model is a representation of practical vision into the information-seeking behavior of users and the factors that influence them.

Bates (2005) reveals that Models are most useful at the description and prediction phases of understand-ing a process.

To that extent, information-seeking models aim to describe the process that a user follows to satisfy his information need and while fulfilling that need, he goes to both formal and informal information sources or available services which he searches and depending on his/her self-efficacy, finally results in success or failure to retrieve desired information (Rather & Ganaie, 2018).

### 2.3.1 Information-Seeking Behaviour Models

Most models of information behavior are generally the statements, often in the form of diagrams that attempt to explicate an information-seeking activity, the causes and consequences of that activity, or the relations among stages in information-seeking behavior. Behavior may be defined as the more general field of investigation with information-seeking Behavior being seen as a sub-set of the field, particularly concerned with the variety of methods people employ to discover, and gain access to information resources, and information searching Behavior being defined as a sub-set of information-seeking, particularly concerned with the interactions between information user (with or without an intermediary) and computer-based information systems.

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As explained, information behaviour models are general statements that often take the form of diagrams and attempts to explain information-seeking activity highlighting the causes and consequences of that activity or the relationships that exist among stages in information-seeking behaviour. In this process, information search, which is a sub-set of information-seeking behaviour, also takes place. Information search is particularly concerned with the "interactions between an information user (with or without an intermediary) and [human or] computer-based information systems (Rather & Ganaie, 2018).

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Over the years, researchers have come out with various models describing the information-seeking behaviour process. In library and information science, some human-centred models of information-seeking behaviour have been proposed by a number of researchers. Most of these models are applicable in both physical and electronic environments. Some of these models will be examined here. It is important to examine some of these models because they form the framework underpinning the concept of information-seeking behaviour.

Some of the models that are relevant in library and information science include: 1) Kuhlthau's Model, 2) McKenzie's Model, 3). Leckie et al General Model of Information Behaviour and 4). Marchionini's Model.

## 1. Caroline Kuhlthau's Information Search Process Model

The model of information-seeking behaviour propounded by Carol Kuhlthau in 1991 is known as the Information Search Model (ISP). Kuhlthau's Model is a six-stage process of information-seeking in library and information centres. The Model wass influenced by Kelly's Personal Construct Theory
The six-stage process are 1) task initiation, (2) topic selection, (3) exploration, (4) focus formulation, (5) information collection, and (6) search closure.

- **Task Initiation**: The information seeker first becomes aware of a lack of knowledge or understanding and goes to search for information. At this stage, feelings of uncertainty and apprehension are common.
- **Topic Selection:** At this stage, the person identifies a general area, topic, or problem. Given this, the initial uncertainty the person had often gives way to a brief sense of optimism and a readiness to begin the search.
- **Exploration:** As the search progresses, the individual encounters inconsistent, incompatible information and the feelings of uncertainty, confusion, and doubt frequently increase. The individual's confidence may dip at this stage.
- **Focus Formulation:** At this stage, the individual forms a focused perspective, uncertainty diminishes and confidence begins to increase.

- **Collection:** This is when information pertinent to the focused perspective is gathered and uncertainty subsides as interest and involvement deepens.
- **Presentation:** At this stage, the search is completed and the individual has a new understanding that enables him/her to explain his or her learning to others or in some way put the learning to use (p. 5).

According to Kuhlthau, the six-stage model of the ISP incorporates three realms of experience: the affective (feelings) the cognitive (thoughts) and the physical (actions) common to each stage. In essence, the affective, cognitive and physical are all incorporated throughout the six-stages of information-seeking behaviour.

Thoughts that begin as uncertain, vague, and ambiguous become clearer, more focused, and specific as the search process progresses. Feelings of anxiety and doubt diminishes and the information seeker becomes more confident and certain.

Through their actions, people seek information relevant to the general topic in the beginning stages of the search process and pertinent to the focused topic toward closure. Formulation of a focus or a personal perspective of the topic is a pivotal point in the search process. At that point, feelings shift from uncertain to confident, thoughts change from vague to clearer and interest increases (Kuhlthau, 1993).

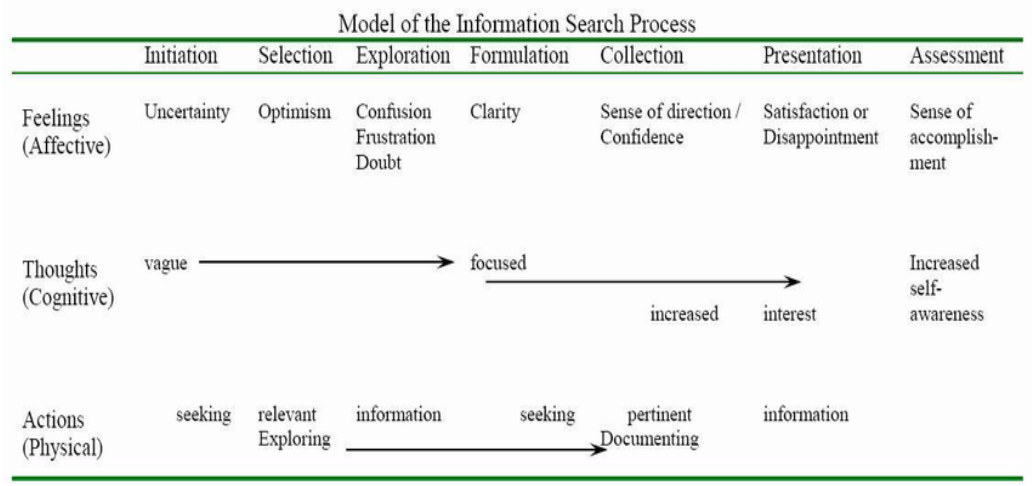


Fig. 11: Kuhlthau's Model of Information Search Process (Source: researchgate.net).

To illustrate this, the initiation stage is when a seeker of information becomes aware of an information need, where anxiety and uncertainty is felt because of the information needs prompting the individual to go to a library or information centre.

The selection process is when a library user comes to the library and begins to identify and select the general topic to be investigated, maybe by using an encyclopedia.

At first, there is also a feeling of uncertainty but when he begins to get information that are related to his/her need, there is a feeling of optimism and readiness to begin the search.

The third stage, exploration there is also a feeling of anxiety, confusion and doubt as the user attempts to investigate the topic and understand it and form his/her point of view. At this point, if the user is not able to state his/her precisely, a feeling of frustration may arise. This is why this stage is considered the most difficult stage in the information search process.
If the user successfully navigates the exploration stage, he/she comes to the formulation stage, and at this stage, the user uncertainty diminishes and he/she begins to feel more confident as he/she form a focus from the information he/she has discovered.

The collection stage is the most functional stage between the user and the library because it is at this stage that he focuses more on the information that are most useful to this topic. It is at this point that he/she weeds out the information that are not so relevant as he begins to make detailed notes from the relevant. At this stage, the user is able to interact more with the information system and intermediaries such as librarians and ask more focused questions that are more precise. The user's confidence increases and his uncertainty further diminishes.The last stage is the presentation stage and that is the culmination of the search. At this stage, there is a feeling of relief and satisfaction if the process was successful or dissatisfaction if it was a failure.

**2. Dervin's Sense-Making Model of Information-Seeking Behaviour**

Devin's information-seeking behaviour model propounded in 1983 is called Sense-Making-Theory. However, while this theory focused primarily on information-seeking, and use, it is also applied to other fields. Dervin "indicates this theory as a set of assumptions, a theoretic perspective, a methodological approach, a set of research methods, and a practice' designed to cope with information perceived as a human tool designed for making sense of a reality assumed to be both chaotic and orderly" (Cited in Ge, 2017).Dervin was of the view that information does not have a behaviour separate from human behaviour.

According to Foreman-Wernet cited in Agarwal (2012), Dervin's Sense-Making Theory has three major significant reasons:

- Sense-Making offers a thorough critique of and an alternative to the widely-prevalent transmission model of communication
- Sense-Making examines in an ongoing manner, philosophical assumptions about the nature of reality, the nature of human beings and the nature of observing upon which communication theories and practices are built.
- Sense-Making pays explicit attention to the "hows" of communicating that occur at every level of society that helps us not only to understand how we communicate but to intervene, change and improve these practices. "Sense-Making is proposed as a generalizable approach to thinking about and studying human sense making and sense unmaking in its variant forms." (Dervin, 2005, p.26).

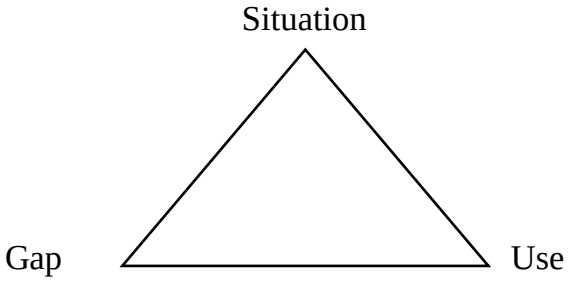


Fig. 12: Dervin's Sense-Making Triangle (source: Patel & Oza, 2014)

In a nutshell, the model reveals that human beings experience gaps as the progress through life and the individual has to make sense of the situation as he/she meets them to be able to move on physically or cognitively across the gap.

So looking at the diagram above, the context that the user is in is the situation, the gap is the need that prevents the individual's movement (information need that must be satisfied for the user to continue his movement) or to continue his/her normal functioning and the use is the application of the sense that the user constructed from gathered information.

The significance of Dervin's theory lies in the fact that the focus is the individual not the information system, and the sense that the individual makes in his/her effort to cross the gap.

### 3. McKenzie's Two-Dimensional Theory

McKenzie's came about her model from a research on the information seeking behaviour of 19 Canadian women pregnant with twins. The two-dimensional model of everyday life of information-seeking of these women was created in an attempt to 'reflect the idiosyncracies of multiple pregnancy

as an information-seeking context and to identify the patterns and concepts that might translate to other contexts' (McKenzie 2001).

McKenzie's model proposes that everyday life of information-seeking occurs on a continuum of information practices that starts from actively seeking out a known source to being given un-asked for advice (McKenzie cited in Wikipedia, 2022).

What McKenzie is saying here is that information-seeking does not have stages rather, the everyday information-seeking practices usually starts with the individual actively seeking information first from sources that are known to him/her. In everyday life, information also comes as unsolicited advice from people.

McKenzie's two-dimensional model includes four modes of information practices (active seeking, active scanning, non-directed monitoring, by proxy and two phases of the information process (connecting and interacting) (Wikipedia, 2022).

The activities that go on in the 2 phases of four modes of information practices (active seeking, active scanning, non-directed monitoring and by proxy are presented in the model below

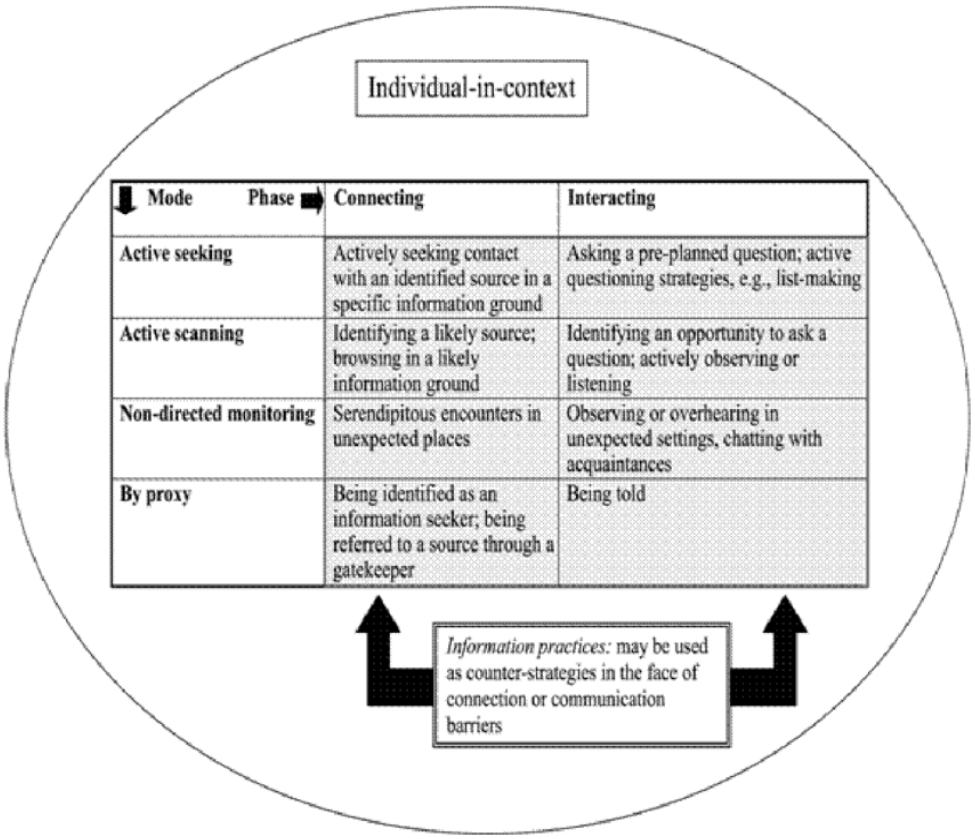


Fig. 13: McKenzie's Two-Dimensional Information Practices Model (Source: https://www.researchgate.net/

1. Active seeking: Here, the individual seeks information from a known source and the information seeker carries out a systematic known-item search for or asked a planned question etc.
2. Active scanning: In active scanning, the individual identifies a particular source as a potentially helpful or a particular location eg the library as a potential information ground (Pettigrew cited in Yeoman, 2010).
3. Non-directed monitoring: Participants serendipitously encountered a source in an unlikely place or whilst monitoring information sources such as newspapers.
4. By proxy: Participants encountered sources through the initiative of another agent, i.e. unsolicited advice or information from other people (Yeoman, 2010).

Mckenzie posited what when people are seeking information, "the modes may appear in varying order, depending on the information need at hand and the situational factors. The modes can take place in two phases: first, at times of connecting information sources; and, second, interacting with them" (Savolainen, 2010). In the second phase of information-seeking practice, the individuals use the information sources to which they have been connected.

So, unlike some of the previous models which looked at information as happening according to defined stages, Mckenzie is of the view that the situation (modes) will determine what sources the user goes to and how he/she interacts with it to obtain information.

## 4. Leckie et al General Model of Information Behaviour

This model also known as Information-Seeking of Professionals Model was developed by Gloria J. Leckie, Karen E. Pettigrew and Christian Sylvain in 1996. The researchers conceived this model as a general model that can be applied to all professional fields.

According to them, the model "was developed through careful analysis and interpretation of empirical studies on the information habits and practices of three groups: engineers, healthcare professionals, and lawyers." However, it has also been used to examine the information-seeking behaviours of librarians, academics, researchers, doctors and nurses etc

The general model has six major components: (1) work roles, (2) associated tasks, (3) characteristics of information needs and three factors affecting information seeking: (4) awareness, (5) sources, and (6) outcomes.
The focus of the model is on how the work roles and associated tasks of the professional influence their information behaviour and how their information behaviour influenced their information needs and how information needs in turn initiate or trigger information searching.

To illustrate this, professionals have work roles and their work roles have some associated tasks. If you are a cataloguer and you are in charge of the Technical Services Section of the library, there are tasks that are associated with that work role. Your information behaviour which consists of your information needs, information-seeking behaviour, information search and use at work will be influenced by your work role. This will influence your information need as it concerns your job. Your information need will in turn influence your information-seeking behaviour including how you search for and use information.

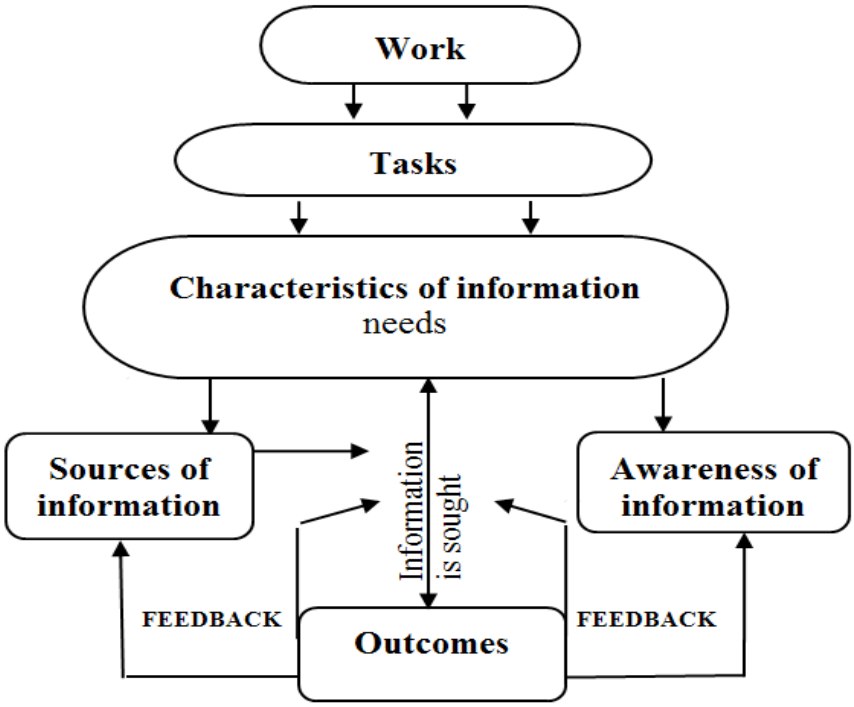


**Fig. 14: Leckie's General Model of Information-Seeking Behaviour (Source: https://www.researchgate.net/figure/)**

The illustration above shows the relationship between the different components in the model. Work role is associated with related tasks. Tasks influence information need. When there is an information need, the awareness of that need will cause the professional to look for sources to satisfy the need.

The professional seeks for the information from several sources. The outcome may be successful or unsuccessful as indicated by the feedback arrow that connects charateristics of the need and outcome. If the outcome is not successful, there is a continuing search**.** In information seeking continues as shown by the arrows pointing towards information sought

### 2.3.2 Practical Reviews of the Information-seeking Models (Kuhlthau, Dervin, and Mckenzie)

**1. Kulhthau's Model in Application**

Fainburg (2009) in her paper sought to explain how the users' information need could be compared with a learning, knowledge and research need where the purpose of information seeking is to find relevant information in fulfilment of a specific goal and information need arising from a desire to be information literate.

To achieve the purpose of the study, the researcher used theoretical considerations and studies of research literature to analyse and compare Kuhlthau's ISP model and Dewey's problem-solving model.
The findings revealed that both Kuhlthau and Dewey focused on the close relationship between thinking and action where information seeking and problem solving were considered a learning process. Also, the findings revealed that with both Kuhlthau and Dewey studies, information seeking was easier when the problem was more focused or the hypothesis more verified. However, while feelings of doubt and uncertainty took place during the ISP in the case of Kuhlthau model, in Dewey's, problem-solving initiated uncertainty and perplexity.

The paper may provide guidelines for academic libraries interested in developing their information literacy programme.

## 2. Dervin's Model in Application

Sualman and Jaafar (2011) study was aimed at studying communication as information seeking efforts. One of the study's objective was to look at the factors influencing the needs and usage of health communication among the public.

The theoretical approach used in the study was Dervin's sense-making model. In general, the research indicated significant relationships between situational factors and efforts toward fulfilling information needs and information seeking.

Both theoretical sampling and purpose sampling were used to select the study sample. The criteria for selection of the sample included length of work experience (30 or more years) and ethnicity (Malays, Chinese and Indian).

From focus group discussions, data on the health situations of participants, barriers and psychological factors influencing health information seeking were collected.

The research findings differed from the traditional communication research approached mostly focused on the effect of information on individuals. This

research strongly indicated that individuals who face a health situation will actively seek relevant information to overcome their health predicaments.

## 3. McKenzie's Model in Application

Yeoman (2010) explored the information practices of perimenopausal women. The researcher used the results of his study to test the transferability of McKenzie's model of information practices in everyday life.
The study method included thirty-five in-depth semi-structured interviews and relevant findings from a questionnaire-based menopause clinic service-audit.

Thematic data analysis was conducted using NVIVO computer software package which is used for qualitative data.

Results showed that the participants exhibited a range of information practice which could mostly be integrated into the model. However, this study provided a richer interpretation because of the different context in which it was conducted, thus pointing to a more generic model of everyday information practices.

The researcher concluded that although testing of models is a challenging study, the valid process contributed to the generation of library and information science theory**.**

**Self-Assessment Exercise 1-2**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes

1. Which of these is the 3rd stage in Kulthau's Information Search Process Model?

a. Task initiation
b. Topic selection
c. Focus Formulation
d. Exploration

2. Which of these is not among the three realms of experience according to ISP model?

a. Affective
b. Cognitive
c. Physical
d. Elemental

3. Match this model correctly: sense-making model

a. Mckenzie
b. Leckie
c. Kuhlthau
d. Dervin

## 2.4 Summary

Definitions of model as it relates to library and information science were presented in this module. The importance of models in conducting information behaviour studies were also given.

The relationship between information behaviour and its various components including information needs, Information-seeking behaviour, information search behaviour information use behaviour were explained.
Information-seeking behaviour of users is a critical aspect of the activities carried out in libraries. The aim is to ensure that the services and information system are tailored to meet the needs of the users and that the users are able to navigate the system comfortably. This is true of both the physical library system and the electronic environment. To achieve this objective, it is important that the users are involved in any study that want to investigate their information-seeking behaviour.

The importance of satisfying users as they seek information has resulted in the study of how individuals go about seeking information. This in turn has led to the creation of models by many researchers that will enable the conduct of evidence-based user studies. The overall aim is to ensure that information system designs are human-centred.

If library and information centres are to satisfy their user groups, they need to understand who these users are, their information needs, information-seeking behaviours, information search behaviour and their information search behaviour.

## 2.5 Glossary

1. **Iterate**: Repeat
2. **Serendipitous**: Happening or found by chance.

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## 2.7 Possible Answers to Self-Assessment Exercises

| |
|---|
| SAE 1 d. Exploration |
| SAE 2 d. Elemental |
| SAE 3 d. Dervin |

# Module 5 Information Behaviour in Different Contexts



## Unit 1 Information Behaviour of User Groups in the University Environment

### Unit Structure



### 1.1 Introduction

In the last module you were taken through some information-seeking behaviour models that form the theoretical/conceptual frameworks for information-seeking behaviour.

However, when it comes to information behaviour, research suggests there is no one-size fits all. This includes information needs, information-seeking, information search and information use. These varies across different contexts.

To that extent it is important to look at the information behaviour of users in the academic context. This is particularly important because as librarians, you will be working in different types of libraries including academic libraries. You should understand the information behaviour of users in the academic environment.

An understanding of the information needs, information-seeking, information search and use of information users in academic environment will help to reinforce your understanding of information behaviour.

## 1.2 Intended Learning Outcomes

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

1. Examine information behaviour in university context.
2. Examine the characteristics of information users in university environments.
3. Determine the information needs, seeking behaviour, search and information use of people in university environments.

## 1.3 Information Behaviour in University Context

The term 'university' is defined severally in the literature. It is "an institution of higher education, usually comprising a college of liberal arts and sciences and graduate and professional schools and having the authority to confer degrees in various fields of study";
"an institution of higher (or tertiary) education and research which awards academic degrees in several academic disciplines [and which] typically offers both undergraduate and postgraduate programs" (Britannica, 2022; Wikipedia, 2022).

In an attempt to differentiate between a university and a college, Britannica (2022) further says that a university "is usually larger, has a broader curriculum, and offers graduate and professional degrees in addition to undergraduate degrees." However, care must be taken over the matter of semantics given that in the United States of America, college is the same thing as university.

The Merriam-Webster Dictionary (2022) defines university as "an institution of higher learning providing facilities for teaching and research and authorized to grant academic degrees." They go on to say that a university is specifically "made up of an undergraduate division which confers bachelor's degrees and a graduate division which comprises a graduate school and professional schools each of which may confer master's degrees and doctorates."

IGI-Global (2022) presents at the least, twenty-four different renderings of the definition of university including "it is an institution of higher education and research, which grants academic degrees in a variety of subjects… and provides both undergraduate education and postgraduate education."

Furthermore, YourDictionary (2022) defines the term university as "an institution for higher learning with teaching and research facilities typically

including a graduate school and professional schools that award master's degrees and doctorates and an undergraduate division that awards bachelor's degrees; the body of students and faculty of such an institution, and the buildings and grounds of such an institution." The definition by YourDictionary also brings into its definitions, the physical environment of a university.

Finally, Collins Dictionary (2022) defines the term university simply as " an institution where students study for degrees and where academic research is done."

From all the definitions given so far, we can glean some facts: 1). a university is a tertiary or higher education institution, 2). a university has the responsibility to provide teaching and research facilities that is for teaching, learning and research, 3). a university is authorised to award both undergraduate and higher degrees in variety of subject disciplines, 4). a university is made up of students and personnel such as academic and non-academic staff, and a university has a location (physical and or online).
From the constitution/make up of a university, including the presence of human beings, the activities and responsibilities as well as the unique environment, we can deduce that the university is a place that deals with information. Students need information for learning to successfully complete their academic pursuit. Academic staff need information for teaching and for research. Non-academic staff also need information to perform their jobs effectively and efficiently.

The university library is charged with the task of providing information resources that meets the needs of the different classes of people in a university environment. With these, we will now examine the types/categories of information users in a university library. While we use the phrase 'university library', you are to note that it is being applied generically.

Also, note that university libraries are also academic libraries and the terms are sometimes used interchangeably.

### 1.3.1 User Groups in University Libraries

The large proportion of information users in university libraries are the students and the academic/research staff. However, the university library also attends to the needs of other members of the university community including administrative and technical staff.

Some attempts have been made in the literature to group the users of university libraries.

Ranganathan (1961) grouped library users in academic libraries into 4 groups according to the services they require in the library: freshman, ordinary inquirer/ordinary reader and specialist enquirer.

- **Freshman**: This is a new member of the library.
- **Ordinary inquire**r: Simply, an ordinary reader, and
- **Specialist inquirer:** A specialist in narrow field, and
- **General readers:** They are the associated group

Mason (2022) divided academic library users into two broad categories: primary user groups and other user groups.

- **Primary User Group:** This includes faculty members, undergraduate students, and graduate students. These also includes mature students with families and part time jobs, who have returned to university to expand their employment opportunities in a very competitive workforce. Also included in the primary user group are students with special needs.
- **Other User Groups**: This group uses academic libraries occasionally, and they include business people doing database searches; visiting faculty; members of industries checking government documents; and members of the community, researching a multitude of subjects that depend upon the collection parameter.

Academic library users are also grouped by types as follows

- **On the basis of library experience**: Experienced and inexperienced users.
- **On the basis of activities**: Student, researcher, faculty members and others.
- **On the basis of their work**s: Businessmen, managers and workers, etc. Besides, a user may be male or female and regular or irregular users based on the usage of libraries Dhiman, n.d.).

Much like Mason (2022), the American Library Association (2022) also notes the "university and college libraries serve a diverse patron population that includes students, faculty, staff, and increasingly, special groups that do not fit tidily into any one of these categories." In that sense, university library users can be grouped as follows:

- Students
- Faculty

- Staff, and
- Special groups

Singh & Emmelhainz (2019) grouped academic library user into affiliated and unaffiliated users, where affiliated users are all current students, staff or faculty and unaffiliated users are all users who are not current students, staff or faculty.

For types of undergraduate library users, based on the profile of library use, knowledge and perceptions were identified by Karunanayake & Nagata (2014)

- ineffective library users,
- effective library users,
- ineffective but positive users, and
- self-sufficient users.

Having identified these various groups of users of academic libraries as categorised by the various researchers, the next logical thing is to find out what the literature identifies as their information needs and information seeking behaviour.

**Self-Assessment Exercises**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.

1. One of these is not among the groups of library users as categorised by Ranganathan

a. Freshman
b. Ordinary inquirer:
c. Objective inquirer
d. General readers

2. -------- is not among the primary user group of a university library

a. Non-academic staff
b. Visiting faculty
c. Students
d. Academic staff

## 1.4 Summary

University environments are made up of different categories of people including academic staff, students, non-academic staff and other groups. The

university library exists to meet the information needs of these different categories of individuals.

Through investigating the information needs and information-seeking behaviours of these user groups, it is possible to not only meet their unique information needs for teaching, research, and learning and for other uses but also understand how they go about seeking information, searching and using information.

In this unit, you were taken through the information behaviour of user groups in the university context. The different groups were identified and also some empirical studies on the information needs and information-seeking behaviours of the different categories of users were highlighted.

## 1.5 Glossary

1. **Freshman:** A first year student or a student newly admitted.

2. **Visiting faculty:** Not a permanent member of staff of a university. But they may b members of a faculty of another university who become members of faculty of the university where they are visiting faculty on the basis of them holding a temporary postion.

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## 1.7 Possible Answers to Self-Assignment Exercises

| |
|---|
| SAE 1 C. Objective inquirer<br><br>SAE 2. B. Visiting faculty |

# Unit 2 Information Behaviour in the Organisational Context

## Unit Structure



## 2.1 Introduction

All organisations, whether governmental or non-governmental, profit or non-profit are established for a particular purpose. The success of the organisation is determined by how much it is able to meet the objectives for its establishment.

It is also true that organisations cannot survive without a workforce, a good one at that. On the other hand, the workforce must be people who not only understand the aims and objectives of the organisation, but are also willing to work to meet the those aims and objectives. In the same vein, the workforce must be competent and competence comes from knowledge.
Knowledge comes from information. Information about the role of the organisation in the society including their responsibility to the people that they deal with and what they need to do to satisfy those needs is important for success.

Information about the policies of government and how they affect the operations of the organisation are also important for their survival. All this conveys the thought that people in organisations need information.

Libraries cut across all types of organisations. You may be employed in one organisation or another. It is important that you understand the information needs and seeking behaviour of people in organisations to serve them effectively.

## 2.2 Intended Learning Outcomes

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

- discuss organisations and groups that work in organisations
- state the characteristics of organisations
- explain the importance of information in organisations
- explain the information needs and information seeking behaviour of people that work in organisations.

## 2.3 Definition of Concept of Organisation

The term organisation is defined differently across disciplines from economics to industrial or organisational psychology to organisational behaviour and so on. In this discussion, we will concentrate the general definition as well as its definition in industrial/organisational psychology and organisational behaviour.

An organisation is "an entity—such as a company, an institution, or an association—comprising one or more people and having a particular purpose" (Wikipedia, 2022).

Greenwald (2008) defines it as "a body of individuals working under a defined system of rules, assignments, procedures, and relationships designed to achieve identifiable objectives and goals."

It is "a social unit of people, systematically structured and managed to meet a need or to pursue collective goals on a continuing basis. All organisations have a management structure that determines relationships between functions and positions, and subdivides and delegates roles, responsibilities, and authority to carry out defined tasks. Organisations are open systems in that they affect and are affected by the environment beyond their boundaries" (Business Dictionary, 2022).

The definitions above imply that an organisation possesses separate and distinct legal rights much like an individual or a corporate entity. It has a separate identity of its own. We also learn that individuals work in an organisation and they are guided by certain rules, assignments and procedures etc, and they have to achieve identifiable objectives. Also, organisations are structured and managed to meet a need. In essence, every

component of an organisation are meant to work together towards meeting the need for its establishment.

It therefore means that the human resources in organisations are charged with certain responsibility and the aggregate of these responsibilities, when completed, should all contribute to the meeting of objectives.

To accomplish their objectives, individuals in organisation need information. The information that is needed by an individual or a work team and their information seeking behaviour will mostly likely be determined by the work they do and also their status in the hierarchy. This is why IBM (2021) notes "that organisations commonly group their employees based on certain criteria. Depending on the requirements of the organisation, these criteria might include the department the employees work in, the clients they are assigned to, the job functions they perform, or the job level they have attained. By making these logical classifications, organisations can manage their employees more easily and efficiently."

**Self-Assessment Exercise 1**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.
-------- is an entity comprising one or more people and having a particular purpose?

a. Organisation
b. Governmental agency
c. Church
d. All of the above

## 2.3.1 Characteristics of Organisations

Following from the above, organisations have the following major characteristics

- **Specialisation and division of work**. Organisations are charaterised by division of labour. That is why they are divided into unit, sections, departments etc. They are usually organised in such a way that each individuals or groups in the organisations have specific tasks or organisation that they are responsible for in the overall interest of the organisation.
- **Orientation towards goals**. Every organisation is unique and have their specific objectives and goals. Though individually different,

through the organising process, employees are harmonized towards the achievement of the same goal.

- **Composition of individuals and groups.** Individuals form a group and the groups forms an organisation. Thus, organisation is the composition of individuals and groups. Individuals are grouped into departments and their work is coordinated and directed towards organisational goals
- **Continuity**. An organisation is a group of people with a defined relationship in which they work together to achieve the goals of that organisation. This relationship does not come to an end after completing each task. Organisation is a never-ending process.
- **Flexibility.** The organising process should be flexible so that any change can be incorporated easily. It ensures the ability to adapt and adjust the activities in response to the change taking place in the external environment. The programmes, policies and strategies can be changed as and when required if the provision for flexibility is made in the organising process (Wikipedia, 2022).

**Self-Assessment Exercise 2**

Attempt these questions to measure what you have learnt so far. This should not take you more than five minutes.

------ is not a characteristic of an organisation
a. Continuity
b. Comprehensiveness
c. Flexibility
d. Specialisation

## 2.3.2 Importance of Information in Organisations

Every organisation whether profit or not-for-profit needs information for their day to day operations. Information is often described as the life-blood of an organisation because of its importance in the survival of any organisation. But beyond having information, the emphasis is on having quality and relevant information that will help drive the organisation towards attaining its objectives. This is why organisations spend a lot of resources in acquiring timely, quality, reliable and comprehensive information. In a nutshell, information is important in organisations for the following reasons

- Decision-making
- Co-ordination
- Awareness of competition
- Keeping abreast of happenings

- Communication
- Enhanced efficiency
- Strategic planning, etc.

### 2.3.3 Information Behaviour of Users in Organisations

That organisations need information is incontrovertible but what information is needed by individuals in any organisation is totally up to them. The way they seek information is also entirely up to them. However, it is important to examine the information needs and seeking behaviour of people in organisational contexts because "understanding the information needs and information seeking behaviour of workers in an organisation is the basis for designing and developing information systems and services to adequately satisfy their needs (Kuruppu, 1999).

Kuruppu (1999) further notes that the information needs of individuals in an organisation may differ depending on

- Their respective functions and tasks,
- The level of their knowledge and experience (in the specific field of specialization and in the use of information systems and services),
- Their particular interest and need to satisfy which they seek information,
- On the breadth and depth of their interest profiles, and
- On the nature of the subject or field of specialization or interest.

Information search in an organisation is also not a random and haphazard exercise or an end in itself rather, it is a part of the process of decision making, problem solving, planning, resource allocation, etc. In other words, it is one aspect of the overall process of system management (Rouse, 1984). Given this, Kuruppu (1999) counsels that information seeking has to be studied within an organisational context or a particular process. He further notes that the methods of seeking information, the criteria for selection, and the information itself all tend to vary with the time and context, and therefore make it a complex process.

Vyas, Vyas, & Kundan (2014) outlines the types of information in organisations diagrammatically, thus:

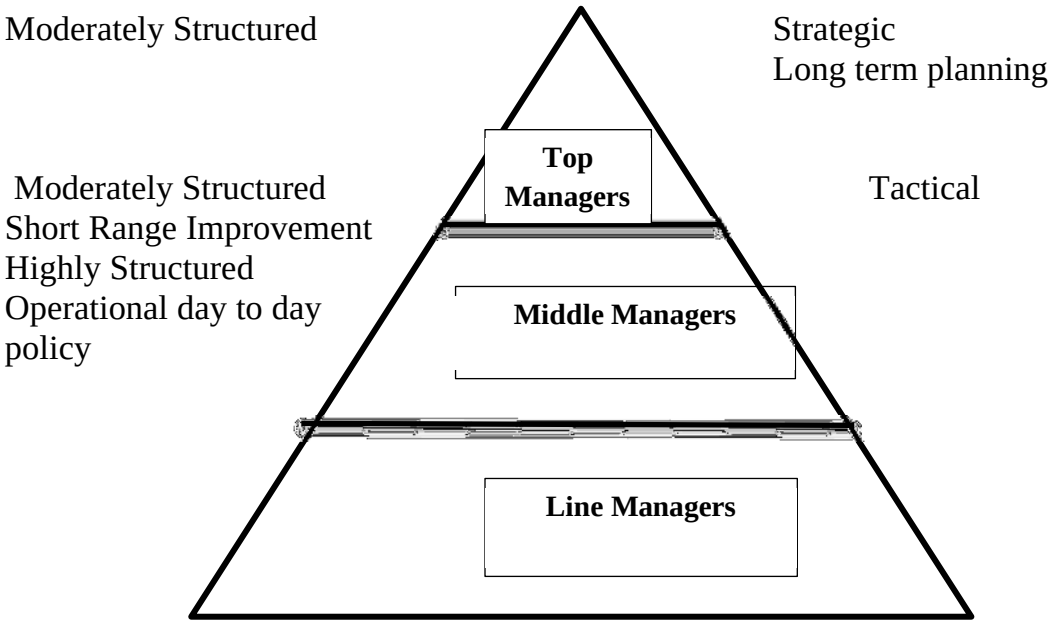


Fig. 15: Types of information in an organisation (Soure: Kuruppu, 1999)

Furthermore, Leckie found in the study that focused on the information needs of engineers that information needs arise when a person who is assigned a specific task that has one or more work roles associated with it. The study found that the determinants of information needs of the engineer is characterised by context, frequency, predictability, importance, and complexity, age, profession, specialisation, career stage, and geographic location.

## Self-Assessment Exercise 3

Attempt these questions to measure what you have learnt so far. This should not take you more than five minutes.
According to Kuruppu, the information needs of individuals in an organisation may differ depending on------

a. Their specialisation
b. The level of their knowledge and experience
c. Their functions and tasks
d. All of the above

## 2.4 Summary

In this unit, you were taken through the information behaviour of users in organisations. Some definitions were given as well as the characteristics of organisations, importance of information in organisations, information behaviour of users in organisations and empirical studies on information need and information-seeking of users in organisations were also discussed.

## 2.5 Glossary

1. **Organisational Structure:** Within an organisation, the structure is the system that outlines reporting relationships and the way that certain activities are directed so as to achieve the goals of an organisation.

## 2.6 References/Further Readings/Web Resources

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## 2.7 Possible Answers to Self-Assessment Exercises

| |
|---|
| SAE 1: c. Objective inquirer<br>SAE 2: b. Visiting faculty<br>SAE 3: d. All of the above |

# Unit 3 Information Behaviour on the Web

## Unit Structure



## 3.1 Introduction

In the past, information was location specific entailing that users of information had to go to physical locations like a library building to satisfy their information need. The situation is different today as the information user is not duty bound to visit any library building to seek for information or meet his information need.

This change in information-seeking pattern has been facilitated by the advances of information and communication technology especially, the internet and world wide web. The implication is that at the touch of a button, an information user is opened to a world of information on the internet in the form of online and offline electronic databases, blogs, vlogs, podcasts etc. It is therefore possible to stay in a different part of the globe and access information from another part of the globe without being physically there.

This was considered unthinkable in the not so distant past.
The advantages of the internet including speed of searching and accessing information, the unquantifiable amount of information in different forms and different sources and the elimination of physical boundaries among other advantages makes the internet a most desired source of information for the average user that today the information seeking behaviour patterns of users are leaning mostly towards that platform.

Libraries are in addition to physical location providing electronic information and most modern libraries are equipped with internet connectivity and

information technology tools such as computers to enable their users benefit from the online information space.

This makes the internet a legitimate source of information deserving of investigation. As librarians in training, it is important that you understand the information needs and information-seeking behaviour of web information seekers to understand how to provide electronic services to your users. This is particularly important because users of Web resources are heterogenous. It is important to understand therefore how the individual differences that exist within specific groups of users (may influence the ways in which users understand, use this information retrieval medium and adapt to its unique characteristics (Martzoukou, 2005).

**Self-Assessment Exercise**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.
The heterogenous nature of Web information users means that they have the same information needs

True False

## 3.2 Intended Learning Outcomes

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

- mention some definitions of Web-based Information
- explain the different modes of information-seeking (seekers) on the web
- explain the different kinds or groups of information users on the web
- discuss information needs and information behaviour of users on the web
- examine some Web information-seeking behaviour models
- discuss some modes of Information-Seeking (Seekers) on the Web.

## 3.3 Definition of Web-Based Information)

Oftentimes, the terms World Wide Web (WWW or Web) and internet are used interchangeably. But they are not exactly the same thing. While the Web is software that allows individuals use other people's content or contribute their own content online, the internet is a network of billions of computers that are interconnected that enables us to access the information on the Web. So, the Web runs on the internet as other applications.

Wikipedia (2022) further explains that the Internet protocol suite (TCP/IP) is used to communicate between networks and devices. The Internet carries a vast range of information resources and services, such as the inter-linked hypertext documents and applications of the World Wide Web (WWW), electronic mail, telephony, and file sharing. However, the terms Web and Internet will be used interchangeably in this discussion.

Online information seeking behaviour is the active process of obtaining data from the Internet (Esew, Markarfi, Goshie, & Jimada, 2014). Law Insider (2022) defines it as "any information services we may make available online, including news, stock exchange quotations, and information about events or third parties."

### 3.3.1 Modes of Information-Seeking (Seekers) on the Web

Four distinct modes of information-seeking behaviours and by implication information seekers are outlined by Spencer (2006) as follows: 1) known-item seekers, 2) exploratory seekers, 3) seekers who don't know what they need to know and 4) seekers who want to re-find.

1. **Known-item seekers:** This category of users knows what they need and they also know the words to use to appropriately describe what they need. The users in this category also have a fair understanding of where to start looking for information.
2. **Exploratory seekers:** Exploratory information seekers have some idea of what their information needs even if they may not know how to accurately articulate their needs in words. Also, they may not know what point to start looking for information but they are able to recognize when what they need when they find it but are usually not sure whether what they have found is enough.
3. **Seekers who don't know what they need to know:** These are information seekers who are actually not sure about what their needs are. Usually, they think that they need one thing but in reality, they actually need another. In this group also are individuals who may visit a website without any specific goal in mind as a result, they start out requiring simple and concise answers to meet their initial need and as they continue with the process, more detailed information may be sought for.
4. **Seekers who want to re-find:** Seekers who want to re-find are information seekers that are looking for something that they have already found or seen but who may or may not remember where they saw the information. These seekers may find that the information is useful and so may wish to retain their search.

### 3.3.2 User Information Behaviour on the Web

Today, the internet is increasingly used to gain knowledge and understanding of topics. Often, one comes upon this knowledge unplanned or accidentally as one is browsing. Most times however, the knowledge is acquired as a result of an intentional search for information (Liu, 2020).

In acknowledgment of the wealth of information on the Web, Choo, Detlor & Turnbull (1998) posit that "the Web is a laissez faire information marketplace offering a huge diversity of sources presenting information through a wide range of perspectives." Moreover, the ubiquitous nature of the internet is in such a way that information appears and accessible on the Web more quickly than the traditional print channels.

Given the rapid advancement in Web technology, Liu (2020) further notes that since 1997, there are at least three major web-related changes that will likely influence how people use the internet.

1. Many more people access the internet today than in 1997.
2. Today, people access the web on a variety of devices — mobile phones and tablets being among the most notable.
3. There are many more services available on the internet today than in 1997.

The implication is that access to information by anybody, from anywhere and at any time is possible. However, in spite of the vast array of information on the Web, an information user must possess internet search skills to benefit from the experience. The increasing preference for the online communication channel in relation to seeking information has resulted in researchers focusing attention on how user information behaviour on the Web. Gaining this information is not only necessary for provision of better services to users but also for design of information systems (Ntando, Ocholla & Jacobs, 2015).

However, some reservations have been expressed over investigating information seeking behaviour on the Web despite the increasing use and popularity of the Web as an information source. Among others, one reason is the difficulty in collecting complete sets of data to describe Web browsing session (Choo, Detlor & Thurnbull, 2000). As a result, although Web information searching studies can offer an informative insight into Web searching activity they do not allow for a more in-depth investigation of individual users (Martzoukou, 2005).

However, knowledge about information-seeking of users on the Web is of importance to researchers and has resulted in creation of models to explain what happens in the process as discussed below.

## Self-Assessment Exercise 2

The internet is a preferred source of information today because it contains only authoritative and relevant information more than libraries
a. True b. False

### 3.3.3 Web Information-Seeking Behaviours Models

**1. Marchionini's Model**

The information-seeking model by Gary Marchionini (1995) is one of the models that is used to investigate information-seeking in electronic environments.

Marchionini's model focuses on the process of information seeking rather than the behaviours of independent users while seeking information. Marchionini posits that information-seeking involves a number of personal, and environmental factors and processes.

Marchionini centres his model on the human-centred information process in which it is the information seeker that defines the tasks and controls the interaction with the search system. The individual examines and extracts information that he/she considers relevant and assesses the progress and also determines when the information seeking process is complete. Obviously, each information seeker possesses their own unique mental models, experience, abilities and preferences that come to bear in the information seeking process.

Ordinarily, in the course of extracting information, an information seeker puts into use such skills as reading, scanning, listening, classifying, copying and storing information. The information once extracted is manipulated and integrated into the existing knowledge base of the information seeker. That process can be likened to what happens on the Web In browsing, Marchionini identifies three general types of activities: directed browsing, semi-directed browsing and undirected browsing.

- **Directed browsing**: In directed browsing, the search is systematic, focused and directed because the seeker has a specific target. Example: scanning a list for known items and verifying information (for example, dates or attributes).

- **Semi-directed browsing**: In this kind of browsing, the search is predictive or generally purposeful. However, the target or information needed is not as definite as you have with directed browsing. Consequently, the browsing is less systematic. For instance, you entre a search term in the search bar in a database and it retrieves so many results. You may then proceed to casually examine the retrieved results.

- **Undirected browsing**: Here, the browsing is predictive and generally purposeful. There is no real goal and it is very little focused. This can be likened to what happens when someone is flipping through a magazine and channel-surfing. An information seeker may scan broadly a diversity of sources, taking advantage of what is easily accessible (Thani, 2011).

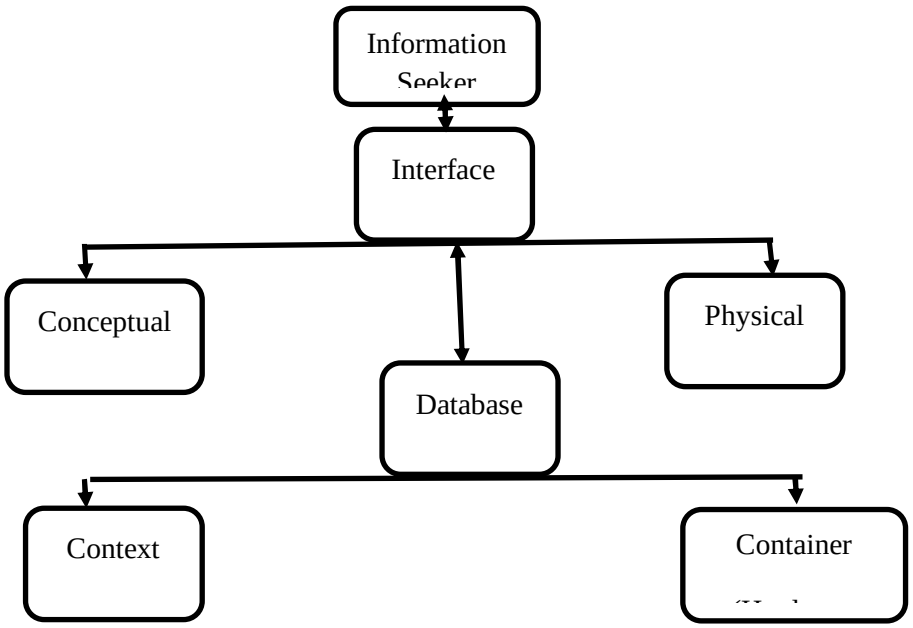


Fig. 16: Search System Components

His model of information-seeking has eight phases: 1) recognise and accept information problem, 2) define and understand the problem, 3) select source or search, 4) formulate query, 5) execute search, 6) examine results, 7) extract information and 8) reflect and iterate.

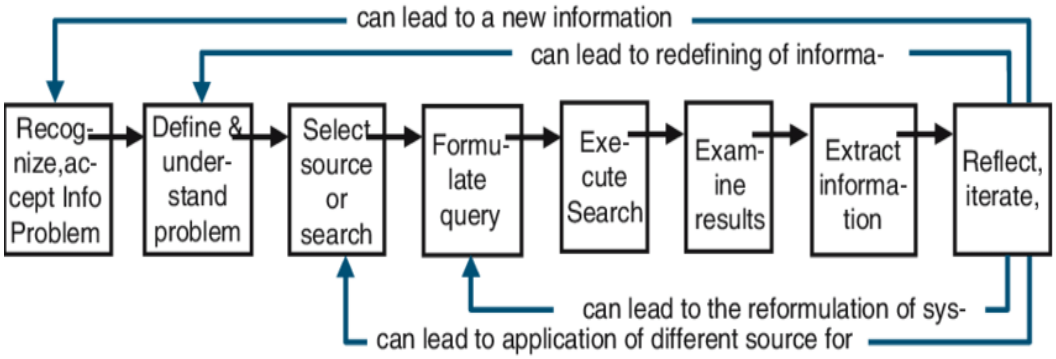


Fig. 17: Marchionini's (1995) Information-Seeking in Electronic Environment Source: https://www.researchgate.net/)

The process starts when the user recognises/accepts his information need. He/she carefully defines and understands the problem, then selects a source (for instance, a database out of many others) that will most likely give the information he/she needs, he/she formulates a query for the problem, searches the databases, examines the retrieved results, extract the relevant information and reflects/iterates.

At the recognition and acceptance of problem phase, there can emerge new information which he/she reflects on and this may mean going back to defining and understanding the problem, selecting a source, formulating a query, executing a search, examining retrieved results, and reflecting and repeating. So, the process is like a loop. The search will be completed when the information seeker decides or a search might take the person to another database different from the one he/she began with.

**Self-Assessment Exercise 3**

Attempt these questions to measure what you have learnt so far. This should not take you more than 5 minutes.
Marchionini's information seeking in electronic environments model has 8 phases. Which is the fourth phase?

a. Select source or search
b. Execute search
c. Formulate query
d. Select source

## 2. Ellis's Information Seeking Behaviour Model

David Ellis's Behavioural Model of Information Search Strategies created in 1989 was based on an actual empirical research conducted by the researcher. The model is concerned with the information-seeking patterns of social

scientists during a real search activity. The focus was on the types of materials the participants used (books vs articles, foreign language materials vs English) and the methods they adopted to obtain those materials rather than constructing a model of information-seeking behaviour (Ge, 2005). It is also used to explain information-seeking on the Web.

The model has six characteristics which are not presented in stages. They are 1) starting, 2) chaining, 3) browsing, 4) differentiating, 5) monitoring, 6) extracting, 7) verifying and 8) ending.

- **Starting:** This describes the activities that takes place during the initial search for information. This includes identifying the references that could form the starting point of the research cycle. They could include sources that are familiar, and which the information seeker has used before (in which case the individual is starting from the known) and other less familiar references that could provide relevant information. The information seeker may also start with asking colleagues or looking up literature reviews, indexes, abstracts etc.

- **Chaining:** This is concerned with following "chains" of citations or other forms of referential connection between materials or sources identified during "starting" activities. This chaining activity could be either backward or forward. When it is backward, it means that the seeker is following references from initial sources that he/she had encountered and used. With forward chaining, the seeker identifies and follows up on other sources that refer to an initial source. This happens for instance when one uses a citation index as a tool for literature search.

- **Browsing:** This is defined by Elis **(**1989**)** as "semi-directed or semi-structured searching in an area of potential interest." In the case of browsing, the seeker engages in casual search for information in his/her area of interest. He/she may scan through journals, abstracts and references of studies that have been carried out by other researchers and so on.

- **Differentiating:** Here the information seeker uses known differences between sources to filter the amount of information. Some known differences include author and journal hierarchies such as the impact factor of a journal. What the individual does here is comparison.

- **Monitoring:** By monitoring, the seeker maintains awareness of developments in a field through monitoring particular sources and by

so doing keeps him/her updated. In the library, this can be done through current awareness services or selective dissemination of information services. In the digital space, one can set up alerts on topics of interest.

- **Extracting:** This involves the seeker going to particular information sources and selectivel identifying relevant materials in them that meets his/her own needs.

- The information sources include sets of journals, series of monographs, collections of indexes, abstracts or bibliographies, and computer databases.

- **Verifying:** Having extracted all relevant information, the seeker now ties up the loose ends.

- **Ending:** A final search is done and the search is finally brought to an end.

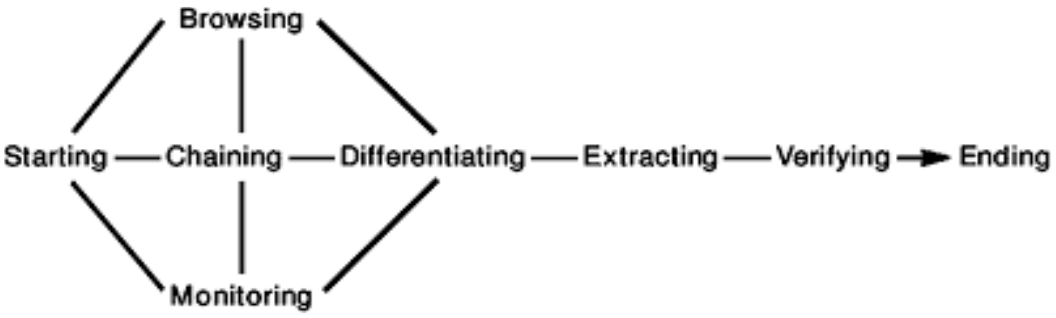


Fig. 18: Elis' Information-seeking Behaviour (Source: encrypted-tbno.gstatic.com)

Unlike so many other information-seeking behaviour models, Eliss model concentrates on the activities involved in the information-seeking process rather than the factors or variables that affect information-seeking such as, the types of information need, what sort of information can help meet the need or the availability of sources and their characteristics (Case cited in Xe, 2005).

## Self-Assessment Exercise 4

Attempt these questions to measure what you have learnt so far. This should not take you more than five minutes.
At what point in the 8 phases of Eliss's model does the information seeker tie up the loose ends?

a. Browsing
b. Chaining
c. Verifying
d. None of the above

5 Arrange in the correct sequences, the processes in Ellis's model of information-seeking behaviour
a. Browsing
b. Chaining
c. Differentiating
d. Extracting
a, b, c, d ( )
b, a, c, d ( )
c, d, b, a ( )
d, a, b, c ( )

## 3.3.4 Practical Reviews of Marchionini's and Eliss's Models

**Marchionini's, Ellis' and Meho & Tibbo's Models in Application**

- Joseph, Debowski, & Goldschmidt, (2013) conducted a study using Ellis's Meho and Tibbo's and Marchionini's model information seeking behaviour models as scaffolds to examine the information search behaviour of users working with a commonly implemented information sources in organisations (electronic document and record management systems).

The researchers conducted a review on the four information seeking models before hypothesising the search behaviour of users of electronic document and record management. A case study method was used to collect the data using multiple research tools such as interviews, questionnaires and protocol analysis with forty users across four organisations and three different systems.

Transcripts of the interviews and protocol analysis of search processes were the data for analysis. From the protocol analysis, flow charts for each of the forty users' searches were plotted.

The researchers found that the search results supported the hypothesised model and enabled identification context specific search behaviour.

- **Ellis' Model in Application**

Meho & Tibbo (2003) revised David Ellis's information-seeking behaviour model of social scientists that has the following characteristics: starting, chaining, browsing, differentiating, monitoring and extracting. The study population of their study was social science faculty researching stateless nations. The sample was sixty faculty members from 14 different countries. Structured and semi-structured electronic mail interviews were used to collect data. A face-to-face interview was also conducted with five faculty members for purposes of a reality check. A description and analysis of the information-seeking process of this group of scholars were based on the data from the email interviews

The study confirmed Ellis's model but also found that a fuller description of the information-seeking process of social scientists studying stateless nations should include four additional features besides those identified by Ellis. The new features were: accessing, networking, verifying, and information managing. From their findings, the researchers developed a new model which unlike Ellis's, groups all the features into four interrelated stages: searching, accessing, processing, and ending.

## 3.4 Summary

The Web is becoming increasingly popular as a source of information seeking. Given the ease of accessing the Web from handheld devices as well as other advantages such as the enormous amount of information it contains, speed of access among other things, individuals now spend a considerable amount of time searching for one thing or another.

This has given rise to growing interests among researchers to investigate how information seekers behave on the net. Some models of electronic information-seeking behaviour such as Marchionini have attempted to explain the process of electronic information seeking.

In this unit, you were put through the definitions of Web information-seeking behaviour and some empirical studies conducted in this aspect of information behaviour were also presented.

## 3.5 Glossary

1. **Interface:** A programme that allows a user to interact with computers in person or over a network

## 3.6 References/Further Readings/Web Resources

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## 3.7 Possible Answers to Self-Assessment Exercises

SAE 1 b. False
SAE 2 b. False
SAE 3 c. Formulate query
SAE 4 c. Verifying
**SAE 5 a, b, c, d**