



## INFORMATION SEEKING BEHAVIOUR OF VISUALLY CHALLENGED STUDENTS

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### ABSTRACT

*Information is needed in all human activities. The modern world has been termed as the period of information dispensation, with information-bearing materials in different formats. Giving equal access to information is essential to the establishment of an information community which also applies to people with disabilities. Visually challenged students experience varying degrees of sight loss that may necessitate diversity in the level of their information needs and type of library resources required to cater for them. While managing their work load, these students often experience difficulties in accessing information to suit their needs. Accessing information is a good resource required by students to excel in their educational pursuits. This study is an attempt to evolve an analytical frame work to assess the information seeking behaviour of visually impaired students.*

*Key words: Human development; Information; Information seeking behaviour*

*Many a time, to search for relevant information of any format is more often challenging especially for the visually challenged students. It is more frustrating and time*

*consuming for information users. At times, most of the information seekers give up in the course of seeking information due to various challenges they encounter (Halloway, 2001). Visually challenged students require specialized materials to help in accessing and seeking relevant and useful information (Hill, 2013). This means that extra time is required for information processing and transcription from information sources (Case & Davidson, 2011). It may become difficult or impossible for visually challenged students to find materials without specialized assistance.*

*Blindness and visual impairment can be found in all countries in the world. India is no exception. Considerable changes in the education of people with impairments have led to an increase in their educational aspirations. Thus, an increasing number of visually challenged people are in tertiary institutions. Since the publication of the Standard Rules on the Equalization of Opportunities for Persons with Disabilities, and United Nations Educational, Scientific, and Cultural Organization (UNESCO) Public Library Manifesto (1994), "the awareness that information is a key and fundamental right even of the disabled has developed extensively".*

*Even though visually challenged students cannot read the print materials, they can access/use information in different formats. Due to individual differences the way people search for information differ in respect of physical characteristics, motivations and source preferences (Saumure and Given, 2004). With the help of Information Communication Technology (ICT) and assistive technologies, the chances for the visually challenged students to find and use information have been greatly enhanced and their independence has also increased. More researches are therefore required to learn more on how students with visual impairment find and access information.*

**Keywords:** Visually Challenged, Behaviour of Visually Challenged,

### **The Research Question**

The colleges in Kerala enroll students from different backgrounds and with different medical conditions, in different programs. Some of them are described as special needs students with varying forms of disabilities. Compared to other sections of the society, these students encounter more challenges. In other words they face many capability restrictions. Some of the challenges include lack of sign language interpreters for hearing impaired students, unfriendly physical structures for physical handicapped and visually challenged students, lack of computers to read electronic texts and the lack of accessibility to use Internet resources, lack of funds and financial assistance for their services and resources they required. The most vulnerable of the group are the visually challenged individuals. Their inclusion in the opportunities for human development, demands greater institutional interventions, right from the family to the Government.

There is a need to attend the information needs of visually challenged students who face different experiences in comparison with other students in colleges. In spite of the social and economic importance of educating the visually challenged and the positive influence they have on society, the facilities available to them seems to be less favorable. There seems to have a gap between the existing theories, models and law relating to visually challenged students and actual situations. This necessitates solutions. For this a thorough analysis of the information seeking behaviour of visually challenged students is necessary. This study is directed towards understanding and analyzing the study of information seeking behaviour of visually impaired college students using an analytical framework.

### **Analytical framework**

Information seeking is an important part of learner's lives, and in order to improve the services rendered to learners, a better understanding of student's information seeking behaviour in relation to existing information systems is necessary. One way of achieving this understanding is by using theoretical information seeking concepts as lenses for the identification, analysis and description of their behaviour. On the basis of the theories and model of information seeking behaviour an analytical framework was developed, consistent with the objectives of this study.

### **Models**

The models that have been developed to date by information behaviour researchers are not necessarily applicable to all user groups. Research seems to indicate that various factors influence specific information needs and information seeking behaviour that are often context- specific, such as, the users' work role.

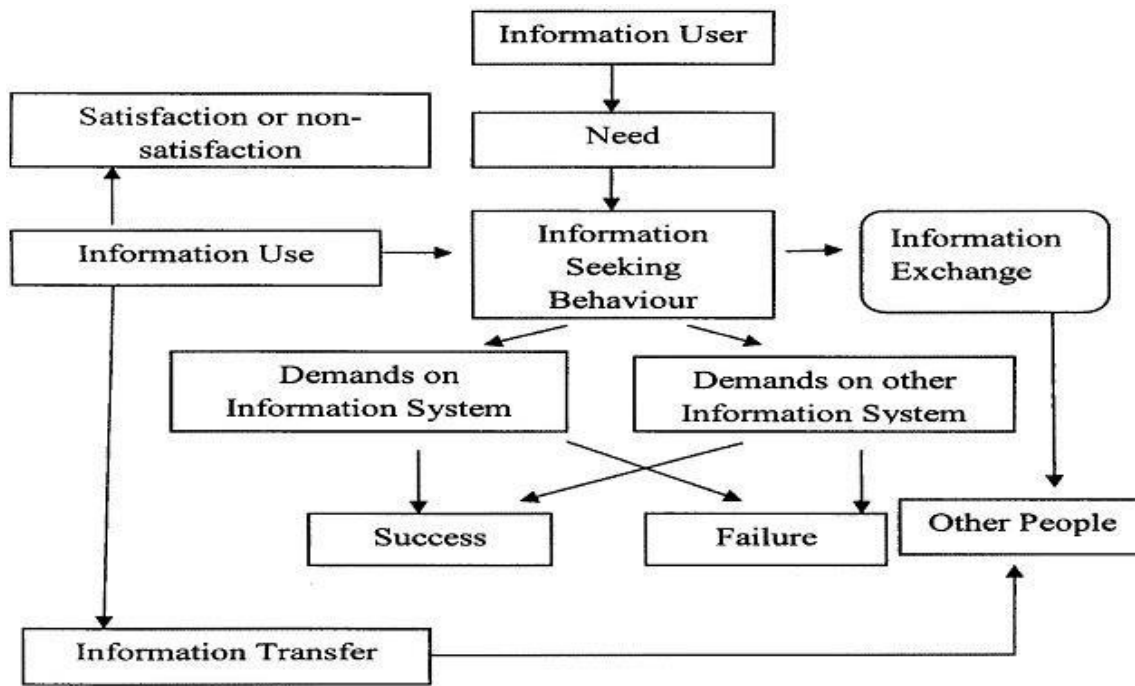
Some models comprehensively study users from information behaviour, information- seeking and information needs perspectives whereas other models only focus on aspects of information retrieval. Furthermore, a model intended for a study of information behaviour should allow for a description and explanation of user behaviour and should focus on the user.

### **Wilson's model (1981)**

The Wilson model (1981) says that information need perceived by an information seeker gives way for information seeking behaviour to occur. In order to satisfy the information need, the user demand for formal and informal information sources and systems. The demands lead him for either success or failure in getting required information. On success, the user gets his need be fully or partially be satisfied. On failure, the user restarts his search process.

It was also explained that information seeking behaviour may involve other people through information exchange by means of passing the useful information to them as well as using the information by the seekers themselves.

Figure 3.1  
Wilson's model

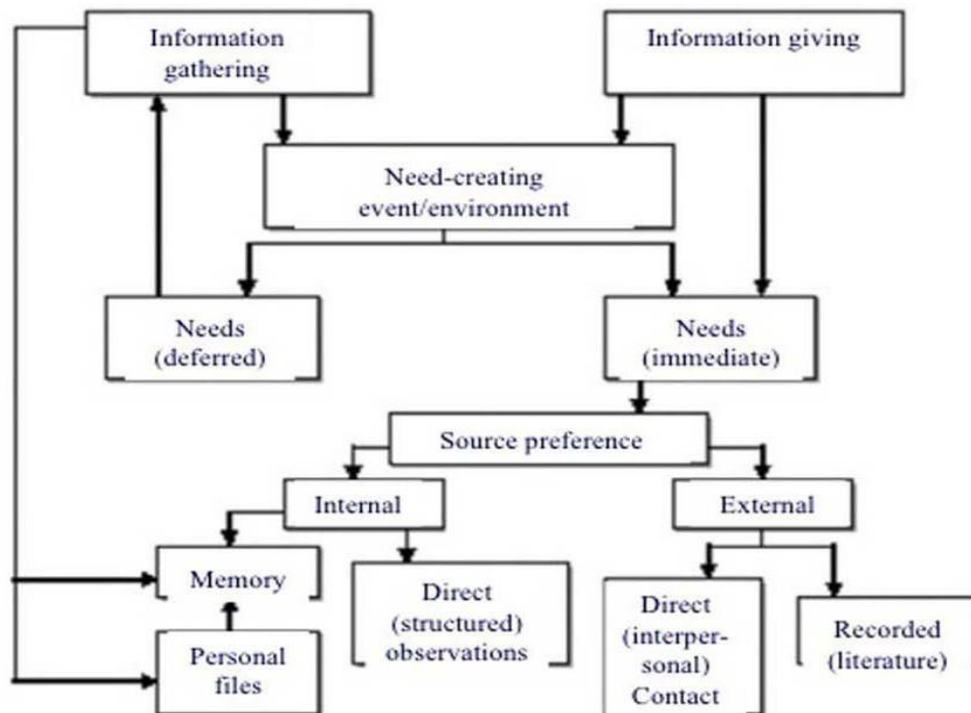


Source: Wilson T.D, 1999.

### 3.1.1 Krikelas's model

The Krikelas model (1983) is an early model and was cited widely. The model contains thirteen components. It is a general model that is applicable to ordinary life. In the model the twin actions namely information gathering and information giving are given at the top. The information gathering process is carried out based on the deferred needs which are kindled by an event or environment of the person who seeks information. The model shows that the gathered information is directed to memory or personal files.

Figure 3.2  
Krikelas model



Source: Krikelas, 1983

The other kind of action termed as 'information giving' which is carried out based on the immediate needs for which the information seeker assumed to select either internal or external source of preference. When the internal source leads to memory and personal files, the external source makes it to direct (interpersonal) contact and recorded material (literature).

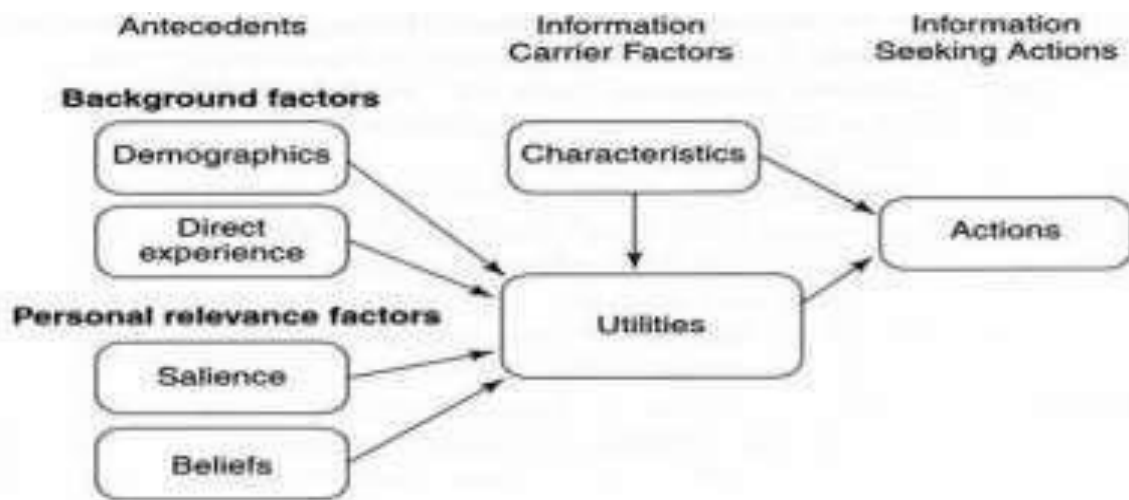
One appealing aspect of the Krikelas's model is its simplicity. The model is a simple; one

dimensional flowchart in which all of the arrows travel in one direction and no one part of the process encompasses another (Case 2002).

### 3.1.2 Johnson's model (1987)

There are seven factors under three headings given in the Johnson's model (1987). The fundamental process flows from left to right. The four factors under the heading antecedents are grouped under two sub headings which are termed as background factor and personal relevance. The background factor includes the factors of demographics and personal experience and the personal relevance factor includes salience and beliefs. The second heading Information carrier factors include characteristics and utilities of the information channels selected and used by the seekers. The last heading is information seeking actions.

Figure 3.3  
Johnson's model

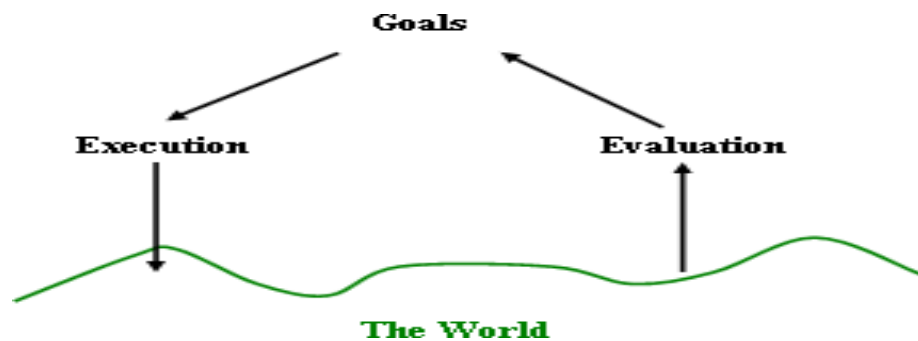


Source: Johnson, 1987

### 3.1.3 Norman's cognitive model

The model given by Norman depicts a broad perspective on how people operate in the world. According to his model, a person must first have a basic idea of what they want and the goals they want to achieve. Then they mentally prepare their own model of the situation and decide on some kind of action to be taken which will affect them, other related people or objects with the aim of achieving their goal.

Figure 3.4  
Norman's cognitive – evaluation model



Source: Norman

Norman divided actions into actual doing (execution) and then checking (evaluation) the results. After taking an action, a person must assess what kind of change occurred and if there were any changes and whether these changes had a positive impact on achieving the desired goals.

Norman also suggested that less knowledge a person has about their task, the less they might be successful in formulating goals and assess results. Recognizing a need for information is akin to formulating and becoming conscious of a goal.

Formulating the problem and expressing the information need through queries or navigation in a search system corresponds to executing actions. The examination of the results to determine whether the information need is satisfied corresponds to the evaluation part of the model. Query reformulation is needed if the distance between the goal and the state of the world is too large.

### ***3.1.4 Ellis and Ellis (1989) and Cox and Hall (1983) model***

Ellis investigated the behaviour of researchers in the field of physical, social science, engineers and research scientists by conducting semi-structured interviews using a grounded theory approach and focused on describing the activities carried by them rather than expressing them as process.

The activities given in this model are:

**Starting:** This means employed by the user to begin seeking information, for example, asking some knowledgeable colleague. It includes identifying sources of interest that

could serve as the starting point of the research.

**Chaining:** This is the process of following chains of citations or other forms of referential connection between materials or sources identified during “starting” process. This can be of two types – backward and forward. Backward chaining occurs when references from an initial source are followed. On the other hand forward chaining identifies and follows up on other sources such as footnotes and citations of the initial source or document.

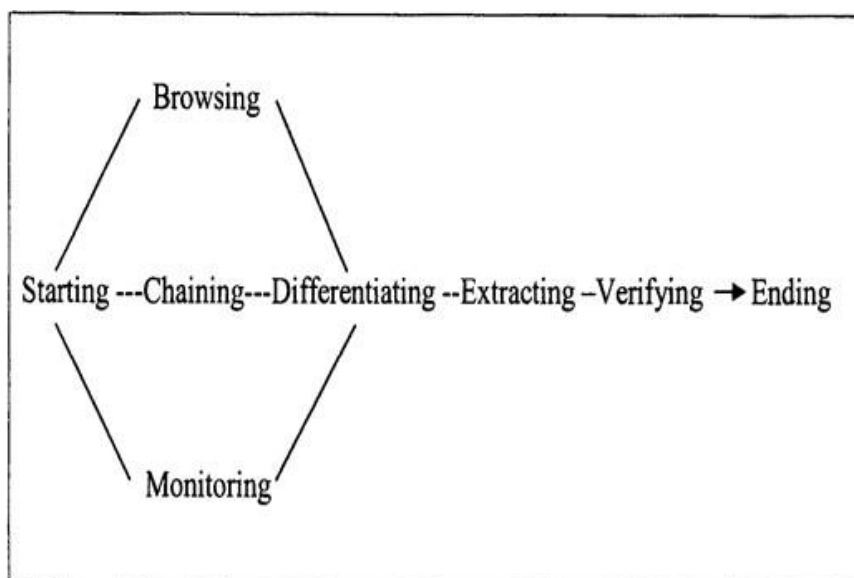
**Browsing:** It means looking for information in areas of potential interest. It includes scanning of published journals, tables of contents, references abstracts of printouts from retrospective literature searches.

**Differentiating:** It is a process in which individual filters and selects from among the sources scanned by noticing differences between the nature and quality of the information offered.

**Monitoring:** It means keeping abreast of developments in an area by regularly following particular sources.

**Extracting:** It is a process of selectively identifying the relevant material in an information source required by the individual.

Figure 3.5  
Ellis's model



Source: Ellis, 1989

### 3.1.5 Kuhlthau's model (1993)

The Kuhlthau Model (1992) is explained as follows:

#### Initiation

When a person comes to know the lack of knowledge or understanding, uncertainty is felt. Thoughts would be vague and action for seeking information would be initiated.

#### Selection

In this stage the uncertainty on the area, topic or problem is not cleared and the person with a brief optimism gets ready for exploration of the information.

#### Exploration

While exploring for information people will get doubt on the consistency of the information, confused on the compatibility and get frustrated in the process.

#### Formulation

In this stage the person gets focused perception which leads to clarity and the process of seeking for information gets continued.

#### Collection

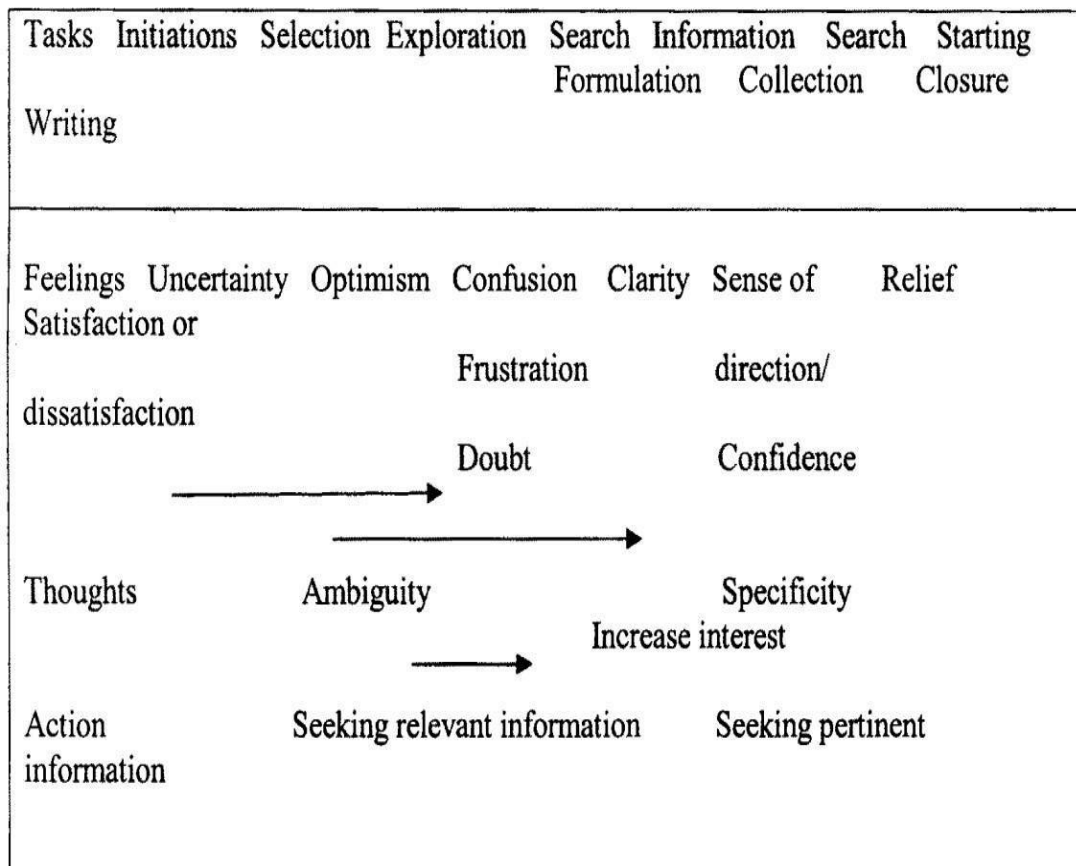
The process of information seeking, senses the right direction, information related to the focused perspective is gathered and it minimizes the ambiguity of the information **Presentation**  
After the completion of the search the seeker gets new knowledge which the person can present to others and put the knowledge to use.

#### Assessment

When the information seeker attains the required knowledge, seeker gets a sense of accomplishment and the self-awareness increases.



Figure 3.6  
Kuhlthau's model

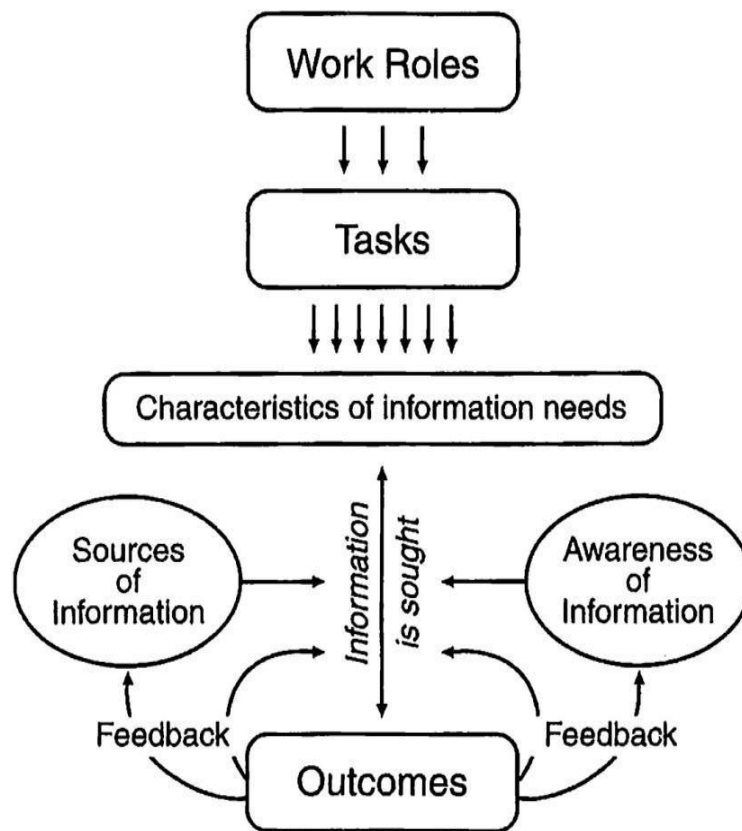


Source: Kuhlthau, 1993

**3.1.6 Leckie's model (1996)**

The Leckie's model (1996) concentrates on professionals such as engineers, doctors and lawyers. This model features six factors connected by arrows flowing down from the top. When five factors are unidirectional one factor is bidirectional. According to this model the factor 'work role' enables 'tasks' to perform. The performance of tasks creates information need. The model shows information seeking behaviour as bidirectional arrow labeled as 'information is sought'. The factor termed as 'outcomes' is the end result which connects the factors 'source of information', 'awareness of information' and 'information is sought' through feedback arrows.

Figure 3.7  
Leckie's model



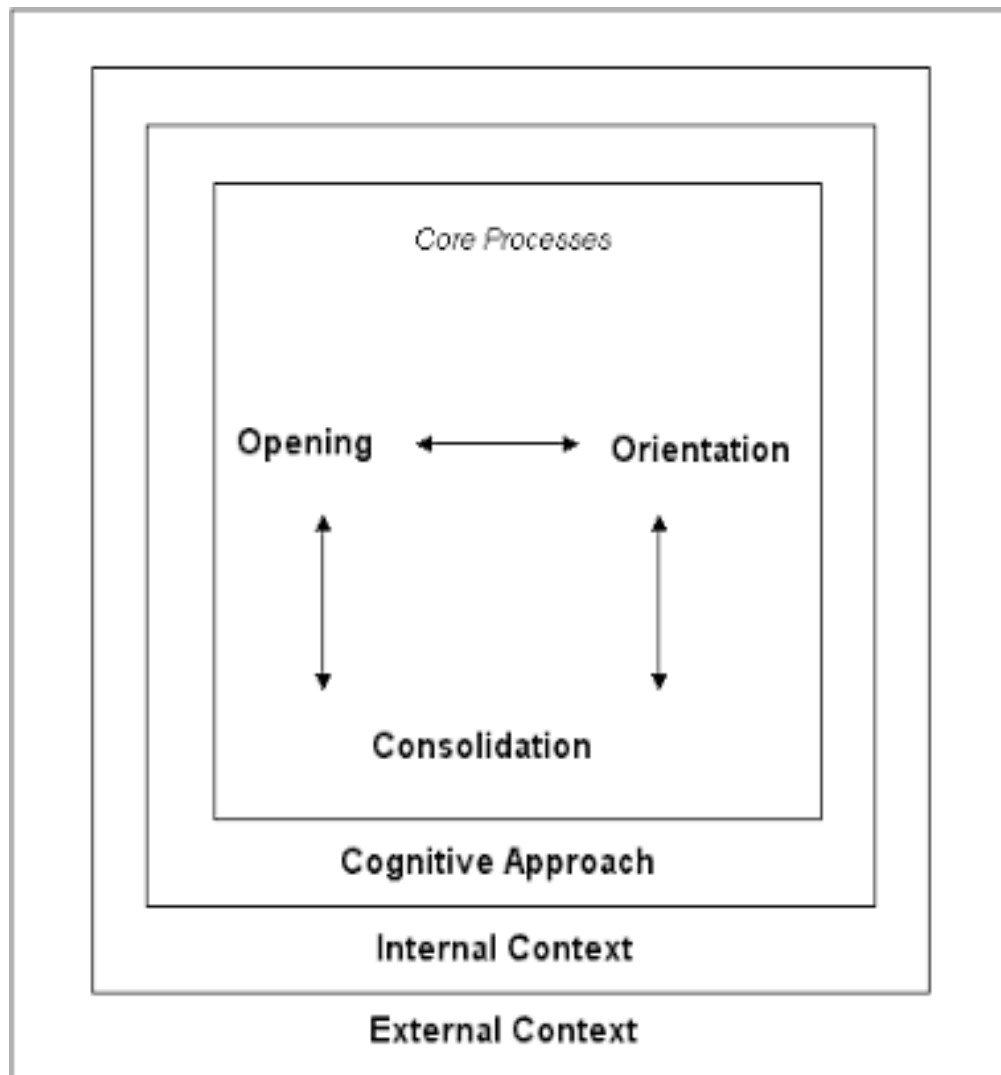
Source: Leckie, 1996

### 3.1.7 Foster's non-linear model

Foster's non-linear model of information-seeking behaviour (2005) represents a shift towards a new understanding of this subject area. The model is based on findings of an interview-based naturalistic inquiry on information seeking behaviour of a sample of 45 academics and postgraduate researchers representing many disciplines (Foster; 2004). It comprises three core processes like opening, orientation and consolidation in addition to three levels of contextual interaction: cognitive, internal and external. The process of "Opening" includes breadth exploration, networking, keyword searching, browsing, monitoring, chaining and serendipity, as shown below. The "Orientation" process consists of defining a problem, building a picture and identifying the shape of existing research. "Consolidation" refers to the process of having enough

knowledge, redefining and incorporating the same. It is also the stage of verifying and finishing the task.

Figure 3.8 Foster's  
non – linear model



Source: Foster, 2005

According to Foster the model's external influences are categorized as social and organizational also covering the time, the project and accessibility of resources. Foster also found the social networking aspect of interdisciplinary experience to be one of the most significant factors influencing access to information resources. The internal influences refer to prior knowledge on the part of the information seeker, in addition to self-perception and self-efficacy. The cognitive approach, describes the participants' willingness to identify and use information that might be relevant to an interdisciplinary problem. One practical implication of the model is that it suggests a need to revise the teaching of information literacy

and library skills, with a move towards a holistic skills programme, including curriculum development and training design. (Foster; 2004)

Apart from these models Dave (2012) listed out few more ISB models in his study like the Episodic Model developed by Belkin. This model is based on intuition and insight and concentrates on four dimensions like method of interaction (searching), goal of interaction (selecting), mode of retrieval (recognition), and resource consideration. Elfreda Chatman developed a model "Life in the round Model" and she explained the fact that unless an initial problem arises, there is no point in seeking information. From the review of the above ISB models it could be deduced that all the ISB models have similarities except few elaborated points.

### ***3.2 Theories***

There are many theories in the context of information seeking behaviour have been developed. A few of them are given below.

#### ***3.2.1 Zipf's principle of least effort***

The Principle of Least Effort was proposed in 1949 by Harvard linguist George Kingsley Zipf in 'Human Behavior and the Principle of Least Effort.' The theory postulates that human beings, animals, or even well-designed machines will commonly choose the path of least resistance or "effort". This theory can be applied in a variety of discipline including the information seeking process. The principle states that an information seeking user will tend to choose the most convenient search method. In other words, the user will use tools that are most familiar and easy to use so as to find results.

#### ***3.2.2 Uses and gratification theory***

The Uses and Gratifications theory has been developed by Katz, Blumler and Gurevitch (1974). The concept has come into existence during 1940 with the researches on the children's use of comics. Uses and gratifications theory is an approach to understanding why and how people actively seek out specific media to satisfy specific needs. UGT differs from other media effect theories in that it assumes that individuals have power

over their media usage, rather than positioning individuals as passive consumers of media. UGT explores how individuals deliberately seek out media to fulfill certain needs or goals such as entertainment, relaxation, or socializing.

### ***3.2.3 Sense making theory***

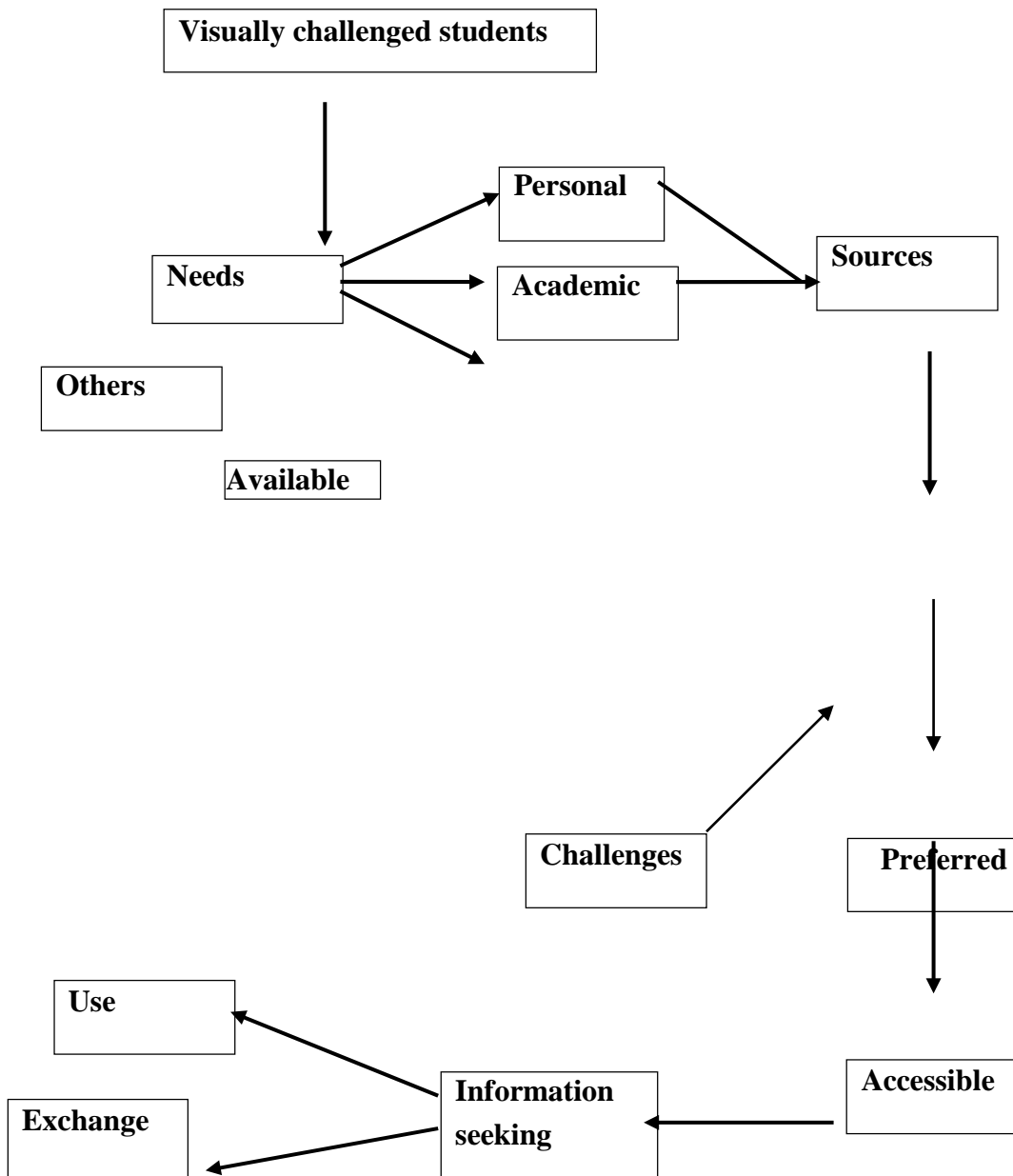
The sense-making theory within the context of information science was developed by Brenda Dervin (1992). Though the process of sense making was termed in different names by different disciplines for centuries, the term has been manifested in the fields of Human-computer interaction, organizational studies and information science.

According to Dervin the sense making methodology was described as theory for methodology that builds a bridge between substantive theory and metatheory. The concept was also explained as an active two-way process of fitting data into a frame (mental model) and fitting a frame around the data.

Neither data nor frame comes first; data evoke frames and frames select and connect data. When there is no adequate fit, the data may be reconsidered or an existing frame may be revised.

### 3.3 Analytical framework of the study

Based on these models an analytical framework of the study has been evolved by synthesizing various components explained in the different theoretical approaches.



### ***Visual impairment***

Visual impairment is the term used for people who have some degree of sight, but who have, for example, a limited range of sight and focus that cannot be easily corrected with spectacles, who are squint, who need special lighting to be able to see, who have blurred vision sometimes as a result of cataracts, or who have tunnel vision (Howell and Lazarus 2003)

### ***Information needs***

Crawford (2003), described information need to be very difficult to defined and measure but it involves cognitive process which may operates different levels of consciousness and hence may not be clear even not the inquirer himself.

Information needs could be seen as demand (requirement) and want (desire). The uses of information vary among individuals, groups and society. Information need is also refers to the extent to which information is required to solve problems as well as the degree of expressed satisfaction or dissatisfaction with the information (Ehikhamenor, 1990). Wilson (2000) opined that information needs are influenced by a variety of factors such as the range of information sources available; the uses to which the information will be put; the background, motivation, professional orientation and individual characteristics of user. Other factors are socio-political, economic, legal and regulatory systems surrounding the users as well as the consequences of information use. The quality of sources of information available to the users is also important because relevant sources are most likely to get useful information.

The information needs of visually challenged students may be related to personal purposes, academic purposes or some other purposes. Personal purposes may be related to their day to day life needs. Academic purposes may be related to the information they gathered to apply in the examination, information to improve their knowledge etc.

### ***Sources***

A source is a person, thing, or place from which the required information comes, arises, or is obtained. It may be family members, friends, associations, printed materials, audio and visual materials, e-resources etc. In the case of visually impaired students every sources available and preferred can't able to get easily accessed. They employ different

means to get access of it and make use of the information they get according to their needs.

### **Information seeking**

Case (2002: 5) described the concept as a conscious effort to acquire information in response to a need or gap in one's knowledge. Kuhlthau (1991) regarded information seeking as users' constructive efforts to derive meaning from information in order to extend their state of knowledge on a particular issue or topic, thus incorporating a series of encounters with information within a space of time rather than a single reference incident.

Many factors motivate in the information seeking process of visually challenged students. As a result of these factors they begin to start search of the required information. They may search individually, with classmates, with teachers etc depending on the circumstance.

### **Challenges**

The term challenge in common parlance means a call to someone to participate in a competitive situation or fight to decide who is superior in terms of ability or strength. But when it comes to the case of visually challenged students, it may relate to the difficulties they face in order to gather the required information they needed. They may face lack or inadequacy of physical, psychological and financial support from family, friends, educational institution in which they study, government etc. in related to information seeking process. In order overcome these challenges they need the support and help from the above mentioned groups.

### **Use and exchange**

By overcoming all the challenges and difficulties they will get the required information. They make use of the information according to their needs. If they wish to communicate it with someone else they exchange the information by using the convenient exchange mode depending on the person and situation.



People are always in constant search of information relating to different aspects of life, which is also true in the case of visually challenged students. There are various types of theories and models of information seeking. One way of understanding the conceptual dimensions is the development of an analytical framework, based on various parts of the process.

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