

## INFORMATION LITERACY FOR DENTAL PROFESSIONALS: REFLECTIVE TO SEEKING AND SEARCHING BEHAVIOUR

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### ABSTRACT

*Information Literacy (IL) cannot be developed without understanding the needs, seeking and searching behavior of the targeted users. The information literacy of later is becoming domain specific and hence the study is undertaken specifically for the dental professionals about the information needs, seeking and searching behavior, using descriptive survey of 623 dental professional(PG students and faculty members) across Karnataka state. During the study, transition management from print media to electronic media is becoming important. It has found that impact of technology on scholarly communication also is an important aspect in developing a suitable model, which depends on the design and integration of IL to the activity of the users like learning, research and point-of-care.*

**Keywords:** Information Literacy, Dental Professionals, Information seeking behaviour, Searching behaviour, Karnataka

### 1. INTRODUCTION

Majority of user casually say – why should anybody search for information somewhere, when everything is available on Internet. The Internet provides access to books, journals, course materials, multimedia learning materials, images and videos including ‘big data’, both paid and free of cost. Yet reader find it hard to search and reach the related information, as Internet search engines are not precisely enough to search and access related information.

In-fact ,users are not well trained or prepared for the search language. Some of the sites are confusing for the user, due to unclear layering, difficult to follow links, lack of insight on search options and permanence on web site. There are some constant changes and alteration of the website or its content may disappear, move or change without advice. Many of the links, which do not have maintenance, will be broken or unreachable, that will make a web portal inefficient or even useless. Also there are many beliefs (not problems) like ‘information overload’ or ‘information scarcity’ due to many factors like quality of information, access rights

and knowledge on searching.

It is well known that the searching is an iterative process for gathering, sorting and evaluating information thereby the refining the search strategy. The search results are different at different context (like work-related and discipline specific), where it sets a behaviour pattern or way of consulting sources. Majority of the information seeking and searching studies in web environment concentrates on use of Internet, accessing and downloading document. Generally the studies on information seeking and searching behaviour helps libraries and librarianship to develop collection, explore research habits of the users and to understand the user's knowledge of searching information (both traditional and web environment).

## **2. EVOLUTION OF STUDIES IN INFORMATION SEEKING BEHAVIOUR**

Majority of the studies, from time to time, reflect the evolution, culture and development of the field, its use and users. Likewise the developments of libraries, particularly the information seeking behavior, also have reflected the user culture from time to time:

- 1902 - Sacredness and library suitable collection
- 1960 – Need and use information
- 1970s – about LIS professionals
- 1970-1980 – about collection development
- 1980 - about users than system
- 1980 -1990 -about research habits (facilitating researchers)
- 1990s and 2000s – information seeking behavior in digital environment

The above studies on information seeking behavior were grouped as quantitative studies (for developing models), qualitative studies (domain-specific studies) and later the studies evolved as mixed studies.

## **3. MODELS OF INFORMATION SEEKING BEHAVIOUR**

There are various models found in context of information seeking behavior, like search process model (Ellis,1989); problem-solving model (Kuhlthau's,1993) ; interactions models(Wilson's,1997; Robins, 2000). Some models helped to identity 'knowledge gap' and its reflective search process (Ellis, 2005); build ability to scan literature efficiently (Borgman et al.2005); behavioural model (Foster, 2005);and modeling user's education (Taylor and Procter,2005).

## **4. SEEKING AND SEARCH BEHAVIOR**

The use of information or information seeking process has become an integral part of search process. People are very comfortable with Internet search engine for searching and accessing information for their routine needs. Of course, scholarly and learning content are having some barriers, particularly the paid content, otherwise serendipity works for the users. The seeking for information in web-based systems, differ from traditional tools (like library catalogue and shelf arrangement), hence it need to train users in developing searching skills. As per Davis (2005) "Information seeking is a subset of information literacy. Without a conceptualization of what one is seeking, the exercise of seeking becomes superfluous." In effect, it becomes necessary to

create well informed users (through information literacy skills) for seeking and searching information.

## **5. BEHAVIOUR OF DENTAL PROFESSIONALS IN KARNATAKA**

The survey conducted on information seeking and searching behaviour of the dental professionals, in Karnataka, found that the information seeking moved from library-centric to user-centric, wherein overall behaviour is also subject-centric. Also it was found that there is difference in information seeking behavior between traditional and electronic environment. The major findings of the study are as follows:

- Majority of users (faculty and students) prefer both print and electronic media.
- While accessing the scholarly content, user does not differentiate between subscribed, free or open access journals, through aggregated (portal) list of journal. After all, user (Dentist) preference is for scholarly and authentic content, relevant to their need.
- The type of resources, dentists preferred is continued to be book and monograph (1<sup>st</sup> preference), STM journals (2<sup>nd</sup> preference) and bibliographic database –specifically PubMed (3<sup>rd</sup> preference). The preference for access (in order of preference) journal respectively are print, online subscribed ,free journals on Internet, open access journals and RGUHS-HELLINET Consortia.
- The users predominantly use Internet for searching scientific literature, email and accessing course materials. Next preferences of users are social network, pharmacopeia, conference proceedings, clinical trials and library catalogue. Very less use of Internet are listserv, newsgroups, IRC chat room are very rare.
- The less frequently used purpose are like writing technical paper, preparing atypical cases, preparing/supplementing lectures and conference.
- Highly preferred information resources by dentists are books, monographs, scientific and technical journals, bibliographic database.
- Sources preferred for solving problems, particularly for research (order of response) are article in periodicals and research reports. Less preferred items for research problems are encyclopedia, monograph, dictionaries and theses.
- Preference to access full text articles (in order of preference) are print journals, online journals from library, free journals on Internet, open access journals and at last HELINET consortia.
- The media preference by the dentists-first preference is print and next both print and electronic.
- The preference of search parameters, in order of strongly preferred, are title, author and annotations. Less preferred search parameter are keywords, full content, title of the chapters, structure of the text, indexes and introductory sentences.

- Search options on search engine (in order of response) are simple search and later advanced search.
- The search elements option on simple search is keyword, subject search and thesaurus, Less response elements are title search and text word.
- The characteristics of e-resources preferred (in order of response) are quick retrievability, full text resources (at free of cost), up-to-date, link to other resources and multimedia resources.
- Majority of respondents are interested in taking assistance for seeking and searching information from the trained library staff.
- Seeking information online is dependent on a number of factors, such as experience, information gathering skills, and/or the nature of the problem or need. The information seeking studies invariably think that the process of searching for information is part of information seeking in web environment. The present study and many literature published shows that more and more people are independently searching the web and there is less consultation with intermediaries. There is no clear pattern, but it was clear that because of the huge amount of information available on the web, users typically locate useful web pages by using an Internet search engine. Most of the respondents claimed to use search engines daily, notably Google, have thus become the first point of searching for information resources on the web.
- The key for seeking or searching for information on web are also depending on the adequate IT infrastructure (computer and speed), accessibility to information resources and training or assistance to search and evaluate information. The present study found that dentists, due to clinical load of work at the point care, lack of time for searching information (to use web facilities) and expertise (to determine the most useful sources) and lack of access to computer facilities (overcrowding). In some of the institution, useful sites were blocked, access outside campus is problem due to IP-based access, and many institutions do not have some important journals, other than HELINET consortia.

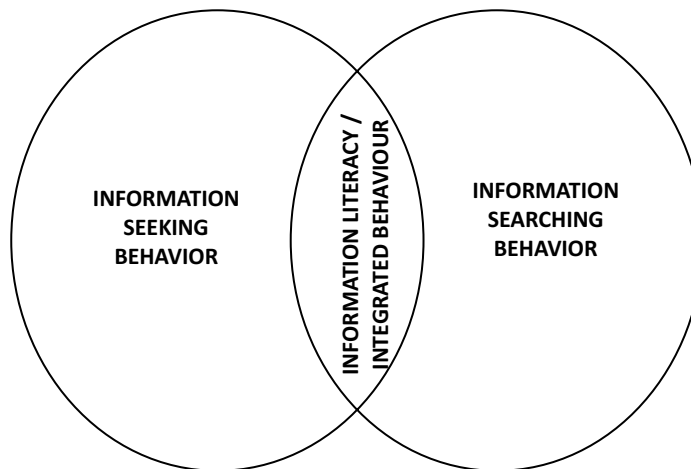
Although use of electronic media is increasing, people are afraid to give up the print media; people still have some kind of uncertainty about e-media. At the same time, user still feels that electronic sources are increasingly becoming more relevant. Access to use of information at work and at home is not necessarily the same. The use of web-based information seems to be more at colleges/institution than at home. More use of Internet search engines, email and general websites shows that users are just scratching the surface or use just basic services. Also, though students have good exposure to computer and Internet, still they are poor in searching scholarly literature. Other concerns are like lack of local content, required journals, access to course materials, virus, pop-ups and unsolicited mail or advertisements.

The evaluation of the search results are like - Is the search results enough for the need? Is it reliable and up to date? If the search result is not satisfactory after evaluation, it may have to be redefined with new search terms and logical combination suits to topic. In this context, study found the following:

- Users feel there is lack of formal training on searching information.
- Users strongly feel that formal training about information resources and searching is essential.
- User feel accessing e –resources on Internet is not easy and hence user preference organization of resources like classified listing, broad subject index, library catalogue and help of librarian.

## **6. INFORMATION LITERACY**

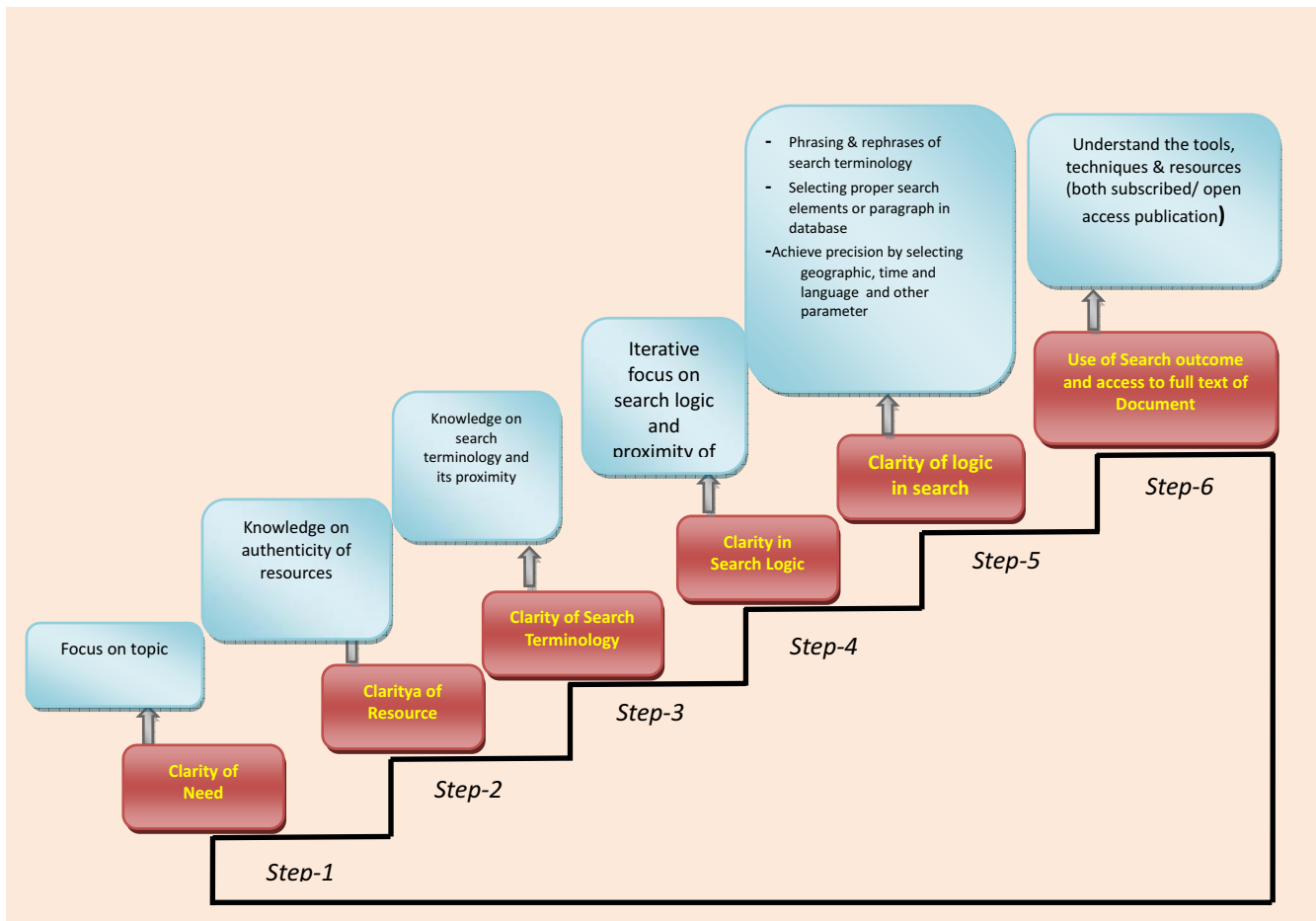
The finding of the study makes it clear that there is a need for suitable information Literacy model integrated to curriculum (Debowski, 2003), The information literacy may not be a directly related to core curriculum of the dentists, but it supplements their knowledge in finding relevant and required learning materials. The study found that information literacy is the locus of information seeking and searching behavior.



In web environment, user seeks information outside the library, it very difficult for library staff to guide users and to pin down the information literacy needs of the users. The present study found that the users in medical/dental field requires training on - how to define the topic, plan the search, choose the sources, evaluating the result, locating the information and searching. The related aspects for information literacy are:

- Online resources in the field, particularly the learning
- Evaluation the resources for reliability and authenticity
- Characteristics of various kind of literature for the contextual use
- Database and search engines in the field for teaching and learning
- Point-of care resources for the use at clinical activity and patient care

**INFORMATION LITERACY MODEL BASED ON INFORMATION SEEKING AND SEARCHING BEHAVIOUR ON WEB**



As a first step, while introducing the information literacy, it is essential to find knowledge gap of the users, learn domain knowledge and mapped it to the curriculum. The information literacy, in context of clinical information needs, has to cover varies types of resources, characteristics and appraisal of the literature. The information literacy also needs to cover various aspects, like formulating search to the context such as diagnosis, treatment planning and prognosis. To achieve a good result, it is required to construct a well-built clinical question, structure a search strategy, identify suitable source for searching including evaluation of search result for relevance and authenticity. At the course level, information literacy should develop curriculum, proportionate the level of students, incrementally, in consonance with the course program:

- How to use technology?
- How to identity suitable resources?
- How to refine a topic or focus the topic?
- How to develop search strategy?
- How to appraise the search result?
- How to use or apply outcome literature

- Areas of interest for Information Literacy Program are:
- Technology literacy.
- Knowledge about the resources in the field.
- Search process for the database in the field (like PubMed).
- Interface program to access full text.
- Accessing resources like interactive anatomy and physiology resources (with multi-media materials).
- Accessing subject gateway for various information in the field.
- Point-of-care resources with related full text data base.
- Searching logic for conducting systematic reviews and evidence based literature (both sensitivity and specificity search).

## 7. CONCLUSION

The study is clear that ICT infrastructure (e.g. computer and Internet speed) in dental college is very good, and online resources are same in all the dental colleges due to HELINET consortia. At the same time, study makes it clear that information literacy is essential and planned carefully, integrated to the academic, research and clinical activity of the dental professionals. The impacts of ICTs on education, clinical and point of care activities is enormous and hence it is required to work collaboratively to pin-point and improve from time-to-time the curriculum for information literacy, particularly for point-of-care. Also it requires working on onsite for evaluating the resources, its use and the cost-benefit analysis at the point of need such as clinical practice and research.

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