
DIGITAL INFORMATION RESOURCES AND DIGITAL INFORMATION LITERACY: A SYMBIOTIC APPROACH

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Abstract

Paper deals with two most recent topics Digital Information Resources and Digital Information Literacy. After defining the terms it discusses their various features and shows a symbiotic relation between the terms. Finally it explains how library can play a pivotal role in minimizing digital divide.

Keywords : Digital Information Resources, Information Literacy, Information Architecture, Information Awareness, Computer Literacy

1. Introduction

The greatest challenge for society in the twenty-first century is keeping pace with the knowledge and technological expertise necessary for finding, applying, and evaluating information. It is acknowledged that we live in an information-rich society where the amount of information and knowledge in the world is presently doubling every two years. Power of information is enormous, such that, it divides the world in two distinct halves: Information rich and information poor. Society having more information infrastructure will rule over the other half of the society. The present article is humble approach to show a symbiotic relationship between two information related concepts: Digital Information Resources and Digital Information Literacy.

2. Digital Information Resources

Digital resources can be defined as: Information bearing material available in digital form. In other words any human manifest available digitally can be termed as digital resource. So, as a matter of fact these are machine driven: both written and read; basically intangible; in most cases multi-uses can be possible; in some cases only the mirror image of the materials can be accessed; may be distributed in different part of the world, so none of these can be termed as original one.

Having such attributes digital resources can be classified in the following order:

a. Database:

1. Local Database
2. Remote Database
3. CD/DVD Database

b. Electronic Publication :

1. E- journals
2. E-books

c. Web resources

There are some basic characteristics that apply across all types of digital resource that suggest it has been well-designed :

1. Repetitive tasks can be easily automated
2. Data structures are consistent, well defined and documented
3. Data is created according to consistent rules
4. The presentation of data can be easily changed

It is useful to think about designing a digital resource in terms of the following three elements:

1. The underlying data the resource contains
2. The software (and hardware) that is needed to make sensible use of the data
3. The user interface through which the user interacts with the software to retrieve, search, and manipulate the data

The software and user interface can be thought of as layers that lie on top of the actual data, making it easier to work with the data, at the same time, constraining the way in which a user can access and manipulate the underlying data the digital resource contains. A digital resource should be designed so that its core content is as independent as possible from the means of accessing that content. This will help keep the finished resource as flexible as possible, allowing it to change and develop to meet unanticipated requirements while avoiding becoming locked into obsolete software, hardware or methods of interacting with data. To achieve these aims, we need to start by thinking about the underlying structure and organization of the data without worrying about how it will ultimately be presented or stored for specific uses. The design goal should be to hold master versions of all the data in forms that can be converted to meet varying purposes.

Basically, designing a digital resource involves answering the question, what are we developing? Is it a database, a website, a GIS (Geographical Information System), a catalogue or some other type of resource? Each type of digital resource entails a different approach to organizing information i.e. information architecture - a data model -which will be appropriate for some tasks, but not for others. Perhaps the simplest data model is embodied in plain text files. These files simply store a sequence of numeric codes which represent characters. All we need to know is which character each code represents. A far more sophisticated data model many people have some experience of is the relational data model, used by most database software applications, such as Microsoft Access.

This data model imposes a range of constraints on how the content of a database can be organized (it must be arranged in discrete fields, each record must be unique and so on) which ensure that data is organized consistently and predictably so that the validation, searching and display of data can be automated. Different data models are implemented using different sets of standards, file formats and software, so it is very important to understand the type of resource we are building before proceeding.

Standard computing hardware is now very powerful, and will meet most needs. More attention needs to be paid to the purchase of scanners, digital cameras and other digitization tools. Digital resource creation needs a wide range of software, and it is not possible to discuss each category in detail here. A good rule to apply to any situation is to select software that implements relevant standards and allows data to be easily imported and exported. By adopting standards we will make it easier to share our data with others, and it will be easier for them to understand the data. These formats are also the most likely to import into another piece of software without any loss of formatting or structure. By selecting software with lots of export options we can minimize the risk of our data becoming dependent on an inappropriate or obsolete piece of software.

Most types of digital resource should also be accompanied by some formal, structured, resource discovery metadata. Metadata is 'data about data'. Resource discovery metadata is information that describes digital resource and helps potential users find it, similar to the type of information we find in a library catalogue. If our resource is a collection of texts, images, or some other type of material where users will need to search a large set of items, we will need to create resource discovery metadata for each item as part of the digital resource creation process. There are now many formal standards for resource discovery metadata intended for different subject areas and levels of detail. Dublin Core standard may be used as one of the standards. [7,8]

3. Digital Information Literacy

Information awareness may be defined as: First stage in the process of learning about a new product, service, or idea in which the consumer has received information about the existence of the innovation but has not yet formed an opinion. For example, in the early stages of a political campaign, we become aware of the candidates but do not immediately have an opinion or interest in each of them. Building awareness is extremely important in industrial marketing because a prospect may not agree readily to see a salesperson representing an unknown company or product.

So, information awareness is the first of the learning process, this very outset transcendent further with the introduction of the second stage of learning process i.e. "information literacy".

"Information literacy" is a means to express personal ideas, develop arguments, refute the opinions of others, learn new things, or simply identify the truth or factual evidence about a topic. Those who are not information literate, are unable to make informed decisions given an information-related

problem and must rely on others rather than thinking for themselves. Those who are information literate can analyse and interpret information and this ability enables them to respond critically and creatively to problems. Consequently, we can think of information literacy as contributing towards personal empowerment and our freedom to learn. When you know how to find and apply information you can teach yourself what you need to learn and essentially you have learned how to learn.

Most people think of information literacy as a set of skills requiring technical ability, or more simply, as "doing". True information literacy, however, involves both thinking and doing. Given the ever-expanding sea of information at our disposal, analysis of an information need, knowledge of resource types, evaluation of access tools, and interpretation of results are critical to successful information retrieval. We need to "know-how" but more importantly, we must first "know-why".

Perhaps one important point that can be drawn out, and which it is useful to emphasise here, is that Information Literacy is about information in all forms. Information may come from another person, from a paper-based magazine or book, report or newspaper, from a digital source such as a database, a search engine or a e-book accessed through a computer, or it may come from any other form of media: film, video, DVD, radio, television, etc. The definition and skills or competencies above cross all media.

3.1 Characteristics of Information Literacy

1. It stresses the basic concepts of how information is organized, the formats it comes in, and the structures used by different disciplines to record and transmit information.
2. Knowledge of these broader ideas provides an information-literate user with a map of information structures.
3. The map in turn represents the information landscape through which the researcher will navigate. Knowledge of the information search process and environment brings an awareness of the pitfalls and side roads that surface during information voyages.
4. Information-literate searchers are conscious of the research process as it takes place. They use meta-cognition to monitor each step or strategy they try and learn to revise a strategy when a barrier is encountered. Rather than concentrating on a single method for accessing information, theirs' is a holistic view of information retrieval.
5. Information literacy encompasses computer literacy and media literacy. A computer-literate person can manipulate electronic information tools to gain access to information. Computers are part of the wider category of information tools and require their own special search methodologies. Media literacy is a range of skills including the ability to access, analyse, evaluate and produce communications in a variety of forms" and that "it moves from merely recognising and comprehending information to the higher order critical thinking skills such as questioning, analysing and evaluating that information. [1,3]

3.2 Digital Information Literacy

It is a major component of information literacy. It helps users cope with information from a variety of electronic formats and provides techniques and methods of collecting digital resources. It creates awareness of issues like copyright and intellectual property rights in an electronic environment. Digital literacy includes the ability to understand the power of images and sounds, to recognize and use that power, to manipulate and transform digital media, to distribute them pervasively and to easily adopt them to new forms. The most essential aspect of digital literacy is the ability to make informed judgments about what is found online, for unlike conventional media, much digital information is unfiltered by editors and open to the contribution of all.

Codification of information in digital form is a predominant practice in this time, new skills are needed to drive the technology to search for, organize, manage information and use it to solve problems. As the internet is becoming a mostly used communication tool, information literacy often understood as digital literacy. Computer literacy is an essential component of information literacy, but there are differences between computer literacy, media literacy and information literacy.

Digital information literacy as consisting of the two following elements:

- Basic information and communication technology (ICT) skills: use of program applications and search, locate, transform and control of information from different digital sources.
- Advanced skills to secure a creative and critical use of digital tools and media

Digital literacy thus implies basic ICT skills and information literacy. [2, 5]

In another way digital information literacy may proceed as per the following line of action: Access-Interpret-Create. For better understanding of the terms following points should be kept in mind.

Access :

1. Understand how digital information is created, stored and transported; and how to establish Internet connectivity and a network.
2. Know how to use search techniques to find digital information

Interpret

1. Be able to identify a range of digital formats i.e. file formats available and their uses
2. Understand copyright as well as other related issues like Digital Rights Management etc. as it is applied to digital objects.

Create

1. Be able to use different data capturing technologies.
2. Be able to edit text, audio, images and videos.
2. Know the ways to publish digital information. [6]

4. Symbiosis Through Library

Information literacy is part of the basic entitlement of the every citizen, in every country in the world, to freedom of expression and right of information and is instrumental in building and sustaining democracy.

One common aspect of information literacy (in any form) and library (any type) is that both of these having a prime objective of "life long learning". Since inception, "Library" has established its role as a center of life long learning, self-education and devoted to create a congenial learning atmosphere. Information literacy form the basis for life long learning and is common to all learning environment, all disciplines and all levels of education.

The libraries are integrating parts of the total environments. One of the libraries' primary goals is to support the citizen in their learning process. The establishment of digital learning resources and digital publishing has become an important part of library services, which in turn, requires higher ICT skills. In order to enable customers to retrieve and fully utilize the information sources in their activities, the libraries see it as a major task to develop learning resources to increase their digital information literacy.

5. Conclusion

Society demands a different kind library with more value-added services. As it is already termed as "People's University", it should customize itself to cater the needs information-rich society. So, building a digital information resource repository is essential. The libraries of this time moving in that direction. Digital information literacy is also a proposed agenda of UNESCO's information literacy programme. A person who is capable of critical evaluation and dissemination of information is an active participant in society. Digital information literacy is the starting point for creating texts, participating in discussions and making individual choices. It is also important that information should be available to avoid a "digital divide", that is the division between the information rich and information poor.

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