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Introduction to Web Resources
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INTRODUCTION TO WEB RESOURCES

3.0 INTRODUCTION

History of mankind has witnessed many revolutions including emergence of language as a means of expression of ideas, initiation of art of writing as a vital means for preservation of ideas communicated by human brain, but the invention of printing press by Gutenberg (Robert Lechêne, 2014) completely transformed the whole scenario of communication of information leading to the mass production and spread of printed works. The printing press was also a key factor in the prolific increase of scholarly communication, verily due to the result of ease in communication of discoveries by scientist through widely disseminated scholarly journals. With the progression of technology yet another media namely the electronic media was developed consequently leading to the emergence of a wide range of electronic documents that made F.W. Lancaster (1978) to envision the concept of a ‘Paperless Society’ to significantly describe the situation evolving as a result of information generated in electronic form where paper and written documents will be replaced by electronic publishing.

The World Wide Web has proliferated into vast information repository by agglomeration of a number of information resource and services and this accumulation is constant and loads and tons of information is added every day. Web has formed an inseparable alliance with our life in this era; where learners have access to a universe of electronic information through the information superhighway. The web has brought an exceptional change in the scope of web resources that can be reached by making them accessible, like never before. Prabha and Irwin (2005) accepted web as preferred medium for discovery and delivery of information also, acknowledging it as a major source for a variety of information of scholarly, scientific, commercial, and entertainment information.

The web and the use of web resources as a tool have changed the global trend of information access and dissemination by researchers and educators. From its inception the web was static, linear, providing information and resources to users who were obliged to be the mere consumer of information, but with the development of
web 2.0 and its dynamic and collaborative nature, the proliferation of open source
concept with its fast and efficient ways to share content has focused on user generated
content and applications for sharing. The emergence of web resources has led to more
efficient and productive ways of knowledge sharing and scholarly communication
making them an important vehicle and a spontaneous choice for various research and
academic activities.

3.1 HISTORICAL OVERVIEW OF WEB RESOURCES

The concept of web resources is primitive in the web architecture, and is used in the
definition of its fundamental elements. The term was first introduced to refer to
targets of uniform resource locators (URLs), but its definition has been further
extended to include the referent of any uniform resource identifier. The concept of a
web resource has evolved during the web history, from the early notion of static
addressable documents or files, to a more generic and abstract definition, now
encompassing every 'thing' or entity that can be identified, named, addressed or
handled, in any way whatsoever, in the web at large, or in any networked information
system.(Wikipedia, 2014)

Historically, scholars have put forward several definitions of the term
“resource” in the context of the web, and the concept has since been updated and
evolved. The first explicit definition of “resource” pertaining to web was given by
Berners-Lee, Fielding, Irvine & Masinter in RFC 2396 in August 1998 where the
concept of resource was defined as follows: “A resource can be anything that has
identity. Familiar examples include an electronic document, an image, a service (e.g.,
“today’s weather report for Los Angeles”), and a collection of other resources. Not all
resources are network “retrievable”; e.g., human beings, corporations, and bound
books in a library can also be considered resources. The resource is the conceptual
mapping to an entity or set of entities, not necessarily the entity which corresponds to
that mapping at any particular instance in time. Thus, a resource can remain constant
even when its content—the entities to which it currently corresponds—changes over
time, provided that the conceptual mapping is not changed in the process”.

An update to RFC 2396 in the form of RFC 3986 was published in January
2005 by Berners-Lee, Fielding, Software & Masinter providing an extension of the
existing definition which is:
“This specification does not limit the scope of what might be a resource; rather, the term "resource" is used in a general sense for whatever might be identified by a URI. Familiar examples include an electronic document, an image, a source of information with a consistent purpose (e.g., "today's weather report for Los Angeles"), a service (e.g., an HTTP-to-SMS gateway), and a collection of other resources. A resource is not necessarily accessible via the Internet; e.g., human beings, corporations, and bound books in a library can also be resources. Likewise, abstract concepts can be resources, such as the operators and operands of a mathematical equation, the types of a relationship (e.g., "parent" or "employee"), or numeric values (e.g., zero, one, and infinity).

Berners-Lee et al. (2004) put forward a definition of “resource” which is “the term "resource" is used in a general sense for whatever might be identified by a URI. It is conventional on the hypertext Web to describe Web pages, images, product catalogues, etc. as "resources".

Gangemi and Presutti in 2007 defined web resource as “a computational object that can be composed of other resources. A composed resource has a part of relation with its components. It might have a location (i.e., Abstract, Web Location), the address of which is a URI. If the resource is a composed resource the identifier of its abstract location is also an approximate identifier for its parts”.

3.2 CONCEPT OF THE WEB RESOURCE
A web resource is a unit of information on the World Wide Web that has an identity and is identified by Uniform Resource Identifiers (URI). Web resources are accessed and browsed using HTTP protocol and files are exchanged using FTP. Diversity of Web resources is immense i.e. they are available on every conceivable topic. Wang, Hawk and Tenopir (2000) described the concept of web resource as “Web resources are networked, re-aggregated, heterogeneous and available in multimedia formats. There is a vast array of digital data formats: text, hypertext, image, sound, video, animation, etc”. Web-based resources are collections of links to other sites or combinations of links (Pitschmann, 2001). Each resource is described by one or more concepts and is identified by its URL, and can be accessed by one or more keywords describing its content (Ronzano, Marchetti, & Tesconi, 2008).
3.3 WEB RESOURCE: DEFINITION

According to Lavoie and Nielsen (1999)

- **Web Resource** is a resource, identified by a URI (Uniform resource identifier), that is a member of the Web core.

  Where the Web core is “The collection of resources residing on the Internet that can be accessed using any implemented version of HTTP as part of the protocol stack (or its equivalent), either directly or via an intermediary”.

- The Web is a network spanning information space in which the information objects, referred to collectively as **Web resources, are identified by global identifiers called URIs** and are interconnected by links defined within that space (Christodoulou & Papatheodorou, 2005).

- A resource that is made available on the world wide web, hence accessible through a web protocol (e.g., a document, a web service) (Gangemi & Presutti, 2006).

Hence, a web resource can be defined as:

“A productive resource that is stationed on the World Wide Web and has an identity and the identity in case of web resource is Uniform Resource Identifier (URI)”.

3.4 SIGNIFICANCE OF WEB RESOURCES IN RESEARCH AND LEARNING

Technology offers opportunities to be innovative, and rapid development of information and communication technology has provided us with many such opportunities to be innovative. Egberongbe (2011) believed that “the academic community has undergone tremendous changes during these years, assuming new dimensions influenced by technology-driven applications”. As a result the focus of researchers and learners has shifted from the limited number of print information sources to a plethora of web resources available on a single click. The proliferation of web resources has brought revolutionary changes in the realm of academic research and learning. World Wide Web has presented users with a stimulating environment for research and learning by modernizing the tools of learning as well as the process of research (Arya & Talukdar, 2010). The productive use of web resources as research tools has brought a new era in the research field making researchers efficient users of web resources. Kwafoa, Imoro, and Afful-Arthur (2014) acknowledged the
acceptance of e-resource as an important scholarly information resource for both students and faculty, highlighting their importance especially for the distance learners because of their restricted access to the traditional library resources. McDowell (2002) also accepted the significance of e-resources in academic tasks quoting the author “The availability of a vast array of electronic information resources accessed from the internet, the Web or other forms of electronic storage is widely viewed as a significant feature of the contemporary educational context and one which offers exiting new opportunities”.

Over the years researchers and learners have made significant contributions in the knowledge creation and scholarly communication of information, though initially the process was slow and time-consuming one affected by printing delays, geographical barriers etc. researches produced in one part of the world took time to be communicated to the other parts. However, the whole scenario has entirely changed as the web has formed an inseparable alliance with our life. In this era where the web resources have escaped these boundaries and shattered the barriers of time and space providing researchers with quick and speedy access to a universe of electronic information through the information superhighway 24x7 from any part of the world. Thus the significance of web resources in research and learning is undeniable.

3.5 IMPACT OF WEB RESOURCES ON RESEARCHERS

The availability of wide range of web resources with the amount of diversified information that is available and a number of advantageous and favourable features for researchers associated with them has made it mandatory for researchers and learners to consider these resources as a major source of information for their research and scholarly work. Amjad, Ahmed & Naeem (2013) opined that web resources “are persistently persuading the growth of new ways of scholarly communication”. Hung (2004) accredited the reason behind the popularity of World Wide Web as an extensive research tool to the wealth of information that it makes available. Dadzie (2005) stated that web resources are valuable research tools complementing print resources and providing hyperlinks to explore additional resources or related content. The resources on web have positively impacted the research and scholarly work resulting in the reduction of amount of time spent in searching for print information sources, also making it easier to find the needed material electronically on web as and when needed. An ongoing digitization trend has considerably influenced the choice of
researchers towards the web resources taking into account the ready availability of information for their higher studies and research (Islam & Panda, 2007).

Vakkari (2007) stated that the use of web resources have provided the scholars with improved access to scholarly literature. Availability of greater range of scholarly literature has been significant in improving the quality of work also in keeping up-to-date with the current development and inspiring new ideas.

Resources on the web are flooded with extensive amount of substantial scholarly information and the ease with which they can be accessed have significantly impacted researchers by improving the quality of work consequently resulting in an increase in research output /Publications. Amjad, Ahmed & Naeem (2013) acknowledged the dependency of researchers on web resources, they stated that there is a rapid increase in the use of electronic resources among the research scholars as they have become very dependent on e-resources and have adopted them as valuable tools in their academic tasks.

Different types of web resources serve different purposes for researchers for example e-journal as a web resource is the most important source for any research and scholarly work. Journals in its online form have emerged to be the most important tool for scholarly communication speeding the span of time with which the research output is communicated globally.

The staggering amount of information that is retrieved through web creates a ‘problem of plenty’ or the information overload; here subject gateways can be a breather to researchers. Subject gateway is a great web resource to access information and resource on a particular area of subject.

3.6 ADVANTAGES OF WEB RESOURCES
World Wide Web is an extraordinary information resource which has influenced human civilization in every aspect of life and research and academic field is no exception. The advantages that the web resources offer to the researchers are tremendous. Web resources are playing a crucial role in scholarly communication. Web resources have expedited the process of scholarly communication by overcoming the publication delays. Some of the advantages of the web resources are as follows:
3.6.1 Universal accessibility

One of the important features of web resources is their universal accessibility i.e. web resource can be searched and accessed from any location universally. Use of web resources is not restricted to a physical boundary.

3.6.2 Round the clock availability

Web resources are available round the clock on the World Wide Web. Their 24 X 7 availability is of great importance to the users as they can be accessed as and when the need arises, irrespective of the time.

3.6.3 Speed of publication

Web based information can be published very quickly, which overcomes the publication lag that is often associated with print publications. Information published on web resources tends to be up-to-date and current as there are no printing and distribution delays.

3.6.4 Interactivity

Web resources are interactive i.e. they also allow interactivity among readers, authors and editors by including mechanisms to send feedback via emails. Articles can be read and commented by the readers, so that the feedback can be given through the web resources.

3.6.5 Review process

Web resources help in speeding up the review process, and thus avoiding unnecessary delay that may occur in publishing or distributing the regular print resources.

3.6.6 Search techniques and mechanisms

Web resources provide powerful searching tools. Web resources can be explored and searched by employing a variety of simple and advanced search techniques. Words and terms in the records on the database can be searched with the help of the Boolean Operators. Search can be broadened or narrowed by using the search filters thus allowing users to search and retrieve the material belonging to a specific period or years. Searching web resources through search techniques allows large collections of pertinent material to be retrieved instantly.
3.6.7 Availability of Hyperlink

The availability of hyperlinks to related resources in the articles is another important feature of web resources. Hyperlinks provided in the web resources can be a great way of exploring the related subject matter. Hyperlinks allow users to discover the valuable content of the related subject area such as related articles, websites, & URLs.

3.6.8 Archiving facility

Archives of web resources allows for the long time preservation of valuable research and scholarly content. Archiving of Web resources allows for easy preservation and conservation so that they can be made available to future generation for reference purposes.

3.6.9 Multiple accesses

Web resources allow multiple accesses to its users i.e. the same resources can be utilized simultaneously by a number of users.

3.6.10 Currency of information

Information of web resources tends to be current as compared to the traditional print resources. This is due to the fact that web resources can be easily updated and electronically published without any publication delays.

3.6.11 Multimedia formats

Presence of different multimedia formats such as videos, audio, animation, text, images presents users with improved learning environment consequently, enhancing their research and learning experience.

3.7 TYPES OF WEB RESOURCES

World Wide Web is a vast source of information that hosts a number of web resources. Examples of web resources include e-journals, e-books, online databases, e-theses/dissertations. Some of the important web resources are explained ahead.
3.7.1 E-journals

Electronic journals are scholarly journals or intellectual magazines that can be distributed and accessed electronically. Electronic journals are often referred to interchangeably as e-journals, electronic serials, online journals, and electronic periodicals. They are the primary sources of information and are published with certain periodicity. Electronic journals are the most important form of web resource for up-to-date information on all disciplines and, are regarded as the most important document type in formal scholarly communication.

Jones and Cook (2000) opined that “An e-journal may not be all that different from a print journal in the fundamental editorial process. That is, articles are submitted by individuals in the academic and practice community, are peer reviewed by editorial board members of the journal to be accepted or rejected, and subsequently
published. It is the digital medium of presentation that is different”. E-journals are very well serving the research and scholarly community globally as a major source of communication of nascent thought. E-journals have become an essential means for the dissemination of knowledge among the researchers from all over the world.

According to Harrods Librarian’s Glossary(2005) “An electronic journal is a journal for which the full end product is available on disc, over a network or in any other electronic form strictly a journal in which all the process is carried out electronically. In other words, an electronic journal is one where the writing, editing, referring and distribution of item are carried out without any paper intermediaries.”

E-journals have become an integral part of the scholarly communication owing to the number of advantages that they possess. They allow easy access to scholarly articles around the world at any time and at anyplace, they are published more quickly than paper publications, Electronic journals provide users with powerful searching tools so that the articles can be easily searched and accessed using a number of search techniques.

3.7.2 E-books

Electronic books or e-books are those books that are stored in digital format and are read by electronic methods. E-books require a combination of a hardware and software system for getting access and reading the digital content of the e-books. E-books make use of portable handheld hardware devices such as e-book readers, tablets and smartphones for reading the electronic text contained in the books. While the software requirements can be fulfilled by using any one of the many software available for reading e-books such as Adobe Reader and Kindle, etc.

According to Armstrong (2008) an e-book is “any content that is recognizably ‘book-like’, regardless of size, origin or composition, but excluding serial publications, made available electronically for reference or reading on any device that includes a screen.” Whereas, Merriam Webster dictionary defines e-book as “a book composed in or converted to digital format for display on a computer screen or handheld device”.

An e-book offers numerous advantages to its users. E-books can be easily downloaded and stored by the users. One small device can be used to store hundreds of books hence it also makes e-books more convenient and portable than the printed
books moreover, e-book reader allow reading in low light or even total darkness. E-books present users with keyword searching, provide built-in dictionaries, font size and font face can also be adjusted according to the user’s preferences and pages can be bookmarked.

### 3.7.3 E-theses/dissertations

Electronic theses and dissertations, or ETDs are the electronic versions of theses and dissertations. Electronic theses and dissertations are submitted, archived and accessed principally in electronic formats. An ETD repository may include both traditional print theses and dissertations that are scanned and digitised, as well as the born digital ETDs that are produced in digital form, rather than having been converted in digital form from print equivalents and are published electronically on CD-ROM or on the World Wide Web.

Electronic theses and dissertations serve as a very important primary information sources helping and assisting the students and researchers in formulating their research interests. (Ezema & Ugwu, 2013).

Electronic theses and dissertations offer many advantages such as it increases the visibility of research. ETDs can be easily searched and accessed by the researchers and academician around the world rather than by the users from within the institution which generally happens in case of print form of thesis and dissertation also, the electronic versions are much more cost effective than their print counterpart. Electronic theses and dissertations can be easily preserved and archived without the storage concern. This has lead to emergence of Electronic theses and dissertations as a very valuable source of information. Popular examples of ETD Initiatives in India include Vidyanidhi and Shodhganga. While in global context a prominent example of ETD Initiative is Networked Digital Library of Theses Dissertations (NDLTD).

### 3.7.4 E-research reports

An e-research report is the result of formal investigations of a research study in electronic format. It presents an account of the results of experiment, observation, inquiry etc. Research report is considered a major component of the research study as it plays a crucial role in facilitating and effectively communicating the generalizations and research findings of research investigations to the scholarly community globally.
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Research report presents research work in a systematic, orderly and articulate manner. It acts as a good source for preservation of research work for the future reference.

3.7.5 Digital libraries

Digital libraries are a collection of electronic material. Collection of a digital library may be really diverse that can range from text, images to audio and video material. Digital libraries serve as useful information retrieval system offering ways and means of accessing and retrieving the files and media retained in the library collection.

Arms (2000) defined digital library as “a managed collection of information, with associated services, where the information is stored in digital formats and accessible over a network”. Arms (2000) identified an important characteristic of digital library is that in a digital library information is managed and systematically organized. Moreover, Lesk (2005) defined Digital Library as a collection of information that is both digitized & organized and which offers capabilities beyond those of the traditional library.

Candela et al. (2007) envisioned a digital library as “A possibly virtual organization that comprehensively collects, manages, and preserves for the long term rich digital content, and offers to its user communities specialized functionality on that content, of measurable quality and according to codified policies”.

Examples of the world’s best known digital libraries include Project Gutenberg and Project Perseus. Furthermore from Indian perspective Traditional Knowledge Digital Library (TKDL) and Digital Library of India are two of India’s well known digital libraries. Some important digital libraries also serve as long term archives, such as arXiv and the Internet Archive.

3.7.6 Online Databases

An online database is an organized collection of information, on a particular subject or multi-disciplinary subject areas. A database contains a collection of logically related data. Online databases are accessible over a network such as Internet. Information on online databases is organized in such a manner that it can easily be accessed, managed, and updated. The information or any desired pieces of data on an online database can be easily searched and retrieved electronically. Online databases provide different types of search facilities to the users such as by keyword, title, subject, type and Boolean logic etc.
Online Dictionary for Library and Information Science envisions the concept of online databases as “A large, regularly updated file of digitized information (bibliographic records, abstracts, full-text documents, directory entries, images, statistics, etc.) related to a specific subject or field, consisting of records of uniform format organized for ease and speed of search and retrieval and managed with the aid of database management system (DBMS) software. Content is created by the database producer (for example, the American Psychological Association), which usually publishes a print version (Psychological Abstracts) and leases the content to one or more database vendors (EBSCO, OCLC, etc.) that provide electronic access to the data after it has been converted to machine-readable form (PsycINFO), usually on CD-ROM or online via the Internet, using proprietary search software”.

Encyclopaedia Britannica defines electronic database as “any collection of data, or information that is specially organized for rapid search and retrieval by a computer. Databases are structured to facilitate the storage, retrieval, modification, and deletion of data in conjunction with various data-processing operations”.

Online databases are a collection of electronic information sources by publishers from various fields and disciplines. Online databases have presented researchers with a great means for exploring and accessing thousands of scholarly articles in their fields of specialization or research realms. Online databases provide access to journal articles, e-books, book chapters, book reviews, conference proceedings, government publications, reports, scholarly magazines and newspapers etc.

3.7.7 Online indexing and abstracting sources

Researcher’s work always involves getting access to the right information at the right time and the importance of online indexing and abstracting sources as effective tools for retrieval and dissemination of information cannot be overlooked. The basic purpose of indexing and abstracting sources are ensuring users easy access to information. Online indexing and abstracting sources very efficiently serve scholars and researchers around the world by functioning as valuable tools for discovery of information and the management of information overload. A good example of an indexing and abstracting source includes Library, Information Science & Technology Abstracts (LISTA).
3.7.8 Web OPAC

An online public access catalogue (OPAC) is a database of materials owned by a library and contains complete bibliographic and holding information of all items in the library. OPACs have been serving as the gateway to library's collection and are very well used as a successful tool for searching the collection of the library for long but the limitation with OPACS is that it is searchable within the library campus. With the advancement of technology libraries are working towards transforming their OPAC to Web OPAC so that the bibliographic detail of their collection is globally searchable. Web OPAC is the Online Public Access Catalogue which provides users access to required information from all over the world through the Internet. Web OPAC make use of MARC 21 format, a standard format which in used worldwide for database searching. (Uma & Ali, 2014)

According to Online Dictionary for Library and Information Science Web OPAC is “An online public access catalogue (OPAC) that uses a graphical user interface (GUI) accessible via the World Wide Web, as opposed to a text-based interface accessible via Telnet”.

Some of the salient features of Web OPAC are as follows:

a) It provides direct access to the bibliographic database of the library through the internet.

b) Offers hyperlinks to facilitate navigation through bibliographic records.

c) Has provision for linking to the full text.

d) Information can be searched through various advanced search techniques.

e) It allows users to send reprint requests immediately by e-mail (Husain & Ansari, 2006).

f) Has provision for requesting an item on Inter library loan and also allows requests for electronic document delivery of a specific documents or items (Uma & Ali, 2014).
3.7.9 Subject Gateways

Web is constantly and exponentially flourishing into a massive source of information. Multitude of information is being added every day into this ever evolving source of information. Owing to the vastness and depth of the web it is becoming difficult to find out the high quality resources pertinent to the area of interest moreover, there is an ambiguity over the quality of information retrieved through the web and such information cannot be blindly trusted upon. The concept of subject gateway has emerged out as a valid solution to address this problem of both quantity and quality of information retrieved through the World Wide Web.

Subject gateways are a collection of resources on a particular subject. Subject gateways have been developed as a tool for Internet resource discovery that belong to a particular subject area. Subject gateways contain web resources that have been selected and evaluated by subject specialists. Subject gateways are developed with the intension of compiling and developing a collection of high quality resources. Subject gateways ensure high quality of resources as they are created and maintained by editors and subject specialists.

According to Koch (2000) a “Subject gateways are Internet services which support systematic resource discovery. They provide links to resources (documents, objects, sites or services), predominantly accessible via the Internet. The service is based on resource description. Browsing access to the resources via a subject structure is an important feature”.

Campbell (2000) defined a subject gateway as: “a Web-based mechanism for accessing a collection of high quality, evaluated resources identified to support research in a particular subject discipline where the resources are evaluated and described by information specialists in the field, such as science librarians.”

Coverage of a subject gateway include the following types of resources such as electronic journals, reports, e-books, E-Theses and Dissertations, conference proceedings, educational software, bibliographic databases, courseware, bibliographies, electronic newsletters, video lectures, dataset and links to home pages of key organisations pertaining to the subject of interest.
3.7.10 Institutional Repositories

Institutional Repository is an online archive of scholarly output of faculty members, research scholars and other community members of the institution. An Institutional Repository collects preserves and disseminates the intellectual output of an institution. Institutional Repositories may include in its collection a wide variety of documents such as research articles and scholarly papers, conference proceedings, working papers or technical reports, computer programs, data sets, electronic theses and dissertations. Institutional Repositories can be created and developed using any one of a number of software available for building them. Examples of prominent Institutional Repository are DSpace, EPrints, Fedora and Bepress.

An Institutional Repository has been defined by Lynch (2003) as “a university based Institutional Repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members”. An another important definition of Institutional Repository was put forward by Crow (2002) which is “a digital archive of the intellectual product created by the faculty, research staff, and students of an institution and accessible to end users both within and outside of the institution, with few if any barriers to access”.

Institutional repository is a valuable asset to its institution it helps creating global visibility for an institution's scholarly output, improved visibility of the research output hence results in greater citations of the research publications of the institutions as the content of the repository can be searched and accessed globally, it serves as a archive for the digital preservation of the valuable research output of the institution.

Crow (2002) proposed some essential elements of an institutional repository as follows:

- **Institutionally defined**: Institutional repositories contain the scholarly and research output of an institution and specifically aims to preserve the entire intellectual output of the institution.

- **Scholarly Content**: An institutional repository may contain any scholarly content created by researchers of the institution. Scholarly content of the institutional
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repository may include research articles, conference papers, electronic theses and dissertations, and gray literature.

- **Cumulative and perpetual**: The content or the materials once submitted in an Institutional Repository should not be withdrawn except in rare cases such as of plagiarism or copyright infringement. Institutional repository systems must be able to accommodate and preserve a large number of documents that are submitted every year to on a long-term basis.

- **Open and interoperable**: Institutional Repository should be open access so that it provides easy and barrier free access to the intellectual output generated by the institution and thus increasing awareness about the research contributions of the institution. It should be interoperable so that it can be searched by search engines and other discovery tools and users outside the institution are able to find and retrieve information from the repository thus making its content available to the broader research community.

3.7.11 Blogs

A blog or Weblog is a website that can be personal, institutional or professional consisting of entries or posts in a reverse chronological order i.e. the most recent appears first. The post in a blog can be in the form of text, images, audio, video or other type of files. Blogs can serve as a great source of information about social cultural and political information.

Encyclopaedia Britannica presents the concept of Blog as “online journal where an individual, group, or corporation presents a record of activities, thoughts, or beliefs. Some blogs operate mainly as news filters, collecting various online sources and adding short comments and Internet links. Other blogs concentrate on presenting original material. In addition, many blogs provide a forum to allow visitors to leave comments and interact with the publisher”

Merriam Webster dictionary defines blog as “a Web site that contains online personal reflections, comments, and often hyperlinks provided by the writer”.

“To blog” is the act of writing material for a blog. The “blogosphere” is the online universe of blogs.
3.7.12 E-lectures

An e-lecture may either be an audio or video recording of a lecture. E-lecture is a term that can include web lectures, knowledge clips, and other video recordings that transfer knowledge. E-lectures can be viewed live or can be easily saved and archived.

Demetriadis and Pombortsis (2007) defined e-lecture as “any digital learning resource in lecture format, captured in the studio (“in vitro”) with only the necessary technical personnel and with the purpose of engaging students in e-learning experiences. The lecturer addresses a virtual audience, that is, the students who will potentially attend the lecture at a later time. Distinguishing between LDLs and e-lectures is essentially a socio-cognitive issue rather than a technical issue. The reason for making the distinction will become evident later in this article”.

According to Jadin, Gruber and Batinic (2009) “an e-lecture can be defined as a media based lecture including an audio or video recording, synchronized slides, table of contents and optional complementary information (e.g., external links)”.

E-lectures are a beneficial tool for innovative research and learning experience. E-lectures offer immense flexibility to learners as these lectures can be easily accessed and used and reused as and when needed as per the ease of the users. E-lectures are helpful in providing learners with content “on demand” irrespective of time or location (Jadin, Gruber & Batinic, 2009).

3.7.13 Webliographies

Webliography is digital web based equivalents of bibliographies. Webliography is a list of electronic documents or websites relating to a specific subject, especially one used in a scholarly work.

Alimohammadi (2004) defined webliography as “an enumerative list of hypertext links and a gateway to the scientific sources of information on the Net, whether annotated or not”.

Online Dictionary for Library and Information Science defines webliography as “an enumerative list of digital resources on a specific topic or subject, available in print or on the Web. Typically, the URLs of any Web sites
included in the resource list are embedded in the HTML document, enabling the user to connect to the site by clicking on its hypertext link”.

3.8 CONCLUSION

Human beings have always felt the need to communicate, to exchange information and to disseminate knowledge. However, earlier the processes of communication was hindered due to a number of factors such as distance, time, or location, but the advent of World Wide Web and rapid development of Information and Communications Technologies have overcome the barriers in the communication and exchange of information. Moreover the prolific development of web resources have revolutionized the process of scholarly communication and expedited the process of research. Web resources have influenced researcher’s research work in a number of ways. Use of web resources has led to instant access to plethora to scholarly information catering to the information need of the researchers. Web resources have presented users with fast and efficient ways of information sharing thus making them an important vehicle and a spontaneous choice for various research and academic activities thus the role of web resources in the research and scholarly process cannot be denied.
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