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# ICDL 2019

International Conference on Digital Landscape

Digital Transformation for an Agile Environment

**November 6-8, 2019 | New Delhi**

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Darbari Seth Block
IHC Complex, Lodhi Road
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India

**Tel.** 2468 2100 or 2468 2111
**E-mail** teripress@teri.res.in
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# ICDL 2019

International Conference on Digital Landscape

## Digital Transformation for an Agile Environment

**November 6-8, 2019 | New Delhi**

## Foreword

With the Digital Transformation (DT), the era of trotting from one place to another for services, processes, business decisions, knowledge access have become a story of the past. Virtual world has conquered the world of knowledge and information so much so that by the click of a button a gateway of wider avenues gets opened like a wonder world. DTl in all sectors across the world has taken over the process of accumulation, transactions, decision making, marketing and dissemination of knowledge with ease and accuracy. Today, DT is no more a concept in incubating stage, but a reality with cutting edge precision. Digitization and the digital transformation have taken proactive steps to transform economy into digital domain bringing revolution into business decisions, policy making and become iconic in accelerating the on-going global processes of change in society.

Digital transformation can involve many different technologies but the hottest topics right now are the Internet of Things, cloud computing, big data, and artificial intelligence. Digitization – going paperless -- can save money, boost productivity, save space, make documentation and information sharing easier, keep personal information more secure, and also help environment.

ICDL 2019: Digital Transformation for an Agile Environment, the Sixth in the series conducted in every 3-years, is about revolutionizing internal operations and functions of organizations and institutions in addressing the needs of their various stakeholders by embracing new trends and technologies in a sustainable way. An agile approach shall roll-out new initiatives across the organization to strengthen coordination between all stakeholders to adapt and deliver key product and service innovations in a rapidly developing digital world.

The success stories of ICDL conferences in provide knowledge access, innovative content, developing partnerships and creating learning opportunities for participants speaks of the enthusiasm generated in the knowledge dissemination arenas across the globe. Here scholars speak, share and carry home ideas values and technological updates and continue enriching the vast repository of bits and dots of great thoughts, facts and figures. I am sure that your participation would add value to the event and surely would be fruitful to your future endeavours.

Nitin Desai

**Mr Nitin Desai**
Chairman, TERI

# ICDL 2019

International Conference on Digital Landscape

## Digital Transformation for an Agile Environment

**November 6-8, 2019 | New Delhi**

## Message from Director General

ICDL 2019 conference is being organized this year on the broader theme on Digital Transformation for an Agile Environment. It has envisaged holding discussions on cross-cutting areas in sustainability, access to information and digital transformation in various sectors.

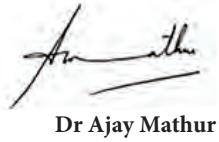
In September 2015, the UN Sustainable Development Summit adopted the 2030 agenda which is the key document guiding international efforts for sustainable development until 2030 through 17 goals in key areas such as poverty, water, energy, education, gender equality, economy, biodiversity, climate action, and many more. While the targets set by the UN for different countries are far from achieved, major improvements have been seen in SDG achievements using digital disruption and innovative technology adoption. In recent years rapid developments in the fields of internet of things, big data, robotics, block chain technology, sensors, artificial intelligence, augmented reality, 3D printing etc have noticeably changed the processes of manufacturing industry. Digitization is fundamentally transforming the way goods are developed, produced and consumed, and galvanize the development of new business models, services, and behaviours. However, its potential can be realized only in the presence of "digital inclusion" of stakeholders. Skill development in these areas and sectors are gaining prime importance.

Under this perspective, one part of the ICDL 2019 conference is addressing an important issue of need to develop new business models and innovative products to leverage digital transformation to realize the SDG targets through smart industrial growth and intelligent business processes in water, agriculture and smart industrial sectors.

Besides, ICDL 2019 will also focus on the recent digital technology trends and developments in data and information access, collaborative learning and knowledge research. As the demand for anytime, anywhere access to information grows, technology is disrupting all areas of global enterprise in organizations, industries and academia. Organizations are increasingly capitalizing enormous opportunities of digital transformation more than ever through increased use of digitization, knowledge management, data analytics and connected devices.

In recent years, most important developments in modern information societies are data-driven research, use of social media for collaborative research and learning and use of mobile technologies for knowledge access. The explosion of Social Media in the form of user-generated content on blogs, twitter, discussion forums, product reviews, and multimedia sharing sites presents many new opportunities and challenges to both producers and consumers of information. Further to this, enterprise knowledge access using social collaboration models have changed the organization decision making and social collaboration pattern substantially. The Government intervention in these areas is phenomenal through it's Digital India and Make in India programmes to manage societal knowledge.

TERI being a research institute working for sustainable tomorrow, understand the value of digital transformation (DT) towards achieving SDG targets and also believes in collaborative learning through innovative research. Under the present era of transition in knowledge, technology disruption in business, the theme of the event is topical and I hope would generate huge knowledge base, which will then be shared among the stakeholders for achieving key benefits. With this understanding, TERI in collaboration with a number of Government, Multilateral and Private bodies, is organizing the International Conference on Digital Landscape (ICDL) 2019 to prepare us for new challenges and opportunities. I hope that the event will create a collaborative platform and initiate discussions to build new partnerships, so that knowledge can be used for collaborative learning to handle future challenges.



**Dr Ajay Mathur**
Chair, ICDL 2019
Director General, TERI

# ICDL 2019

International Conference on Digital Landscape

## Digital Transformation for an Agile Environment

**November 6-8, 2019 | New Delhi**

## Preface

Digital transformation is about revolutionising the way organisation and institutions are continuously changing internal operations and activities, addressing need of various stakeholders, and embracing new trends and technologies. Whereas an agile approach is to roll out new initiatives across the organisation, which will ensure all team members to quickly adapt and deliver key product and service innovations and survive in a rapidly developing digital world. It has been estimated that by 2030, India will have 50% share of digital economy in GDP. So there is a dire need to grow a digitally fluent workforce, with capabilities and competencies to use, understand and adapt digital technologies; working collaboratively, solving problems and improving services. By sharing digital skills, and learning from professional colleagues, we need to take collective responsibility for digital evolution. The digital ecology is to create digital inclusion for people across various domain to lead digital initiatives and digital technologies evolution. The broader goal of Digital Transformation outlines four major objectives:

- To increase *opportunities to share innovative practices* and concepts across the profession, nationally and internationally.
- To increase *recognition of and support for experimentation* with innovative and transformational ideas.
- To *assist and make use of new and emerging technologies* by promoting and supporting technological experimentation and innovation.
- To increase *leadership development and training opportunities* designed to support the on-going transformation of organisation and institutions.

Digital transformation is a continuously changing process that represents a fundamental change in how organizations should operate in a digital world. It modernizes an organization or community with digital technology at its core — one that uses the power of today's technologies to create new forms of organisations/communities value chain for the future.

Today, ICDL is a global acronym and also one of the flagship events organized in every three years' interval by The Energy and Resources Institute (TERI). It has become one of the premier international platforms to facilitate the exchange of knowledge on all dimensions of digital libraries. The entire ICDL was started in 2004, but today in the sixth edition of this conference and research it has evinced a paradigm shift from *Digital Libraries to Digital Landscape*. This shift is due to continuous penetration and emergence of Digital Technologies to transform the 17 Sustainable Development Goals identified by United Nations. The ICDL 2019 with the theme **"Digital Transformation for an Agile Environment"**, which will not only create a roadmap to guide us through what will come next, but also help us prepare ourselves for new challenges and opportunities. The event will address emerging trends and issues that accelerate Digital Transformation in institutions across countries to address SDGs. ICDL 2019 has identified industry – particularly manufacturing and business processes - as one of the key areas where digital transformation is undergoing a paradigm shift, called Industry 4.0. In order to achieve Sustainable Development Goals (SDGs), digital disruptions, application of analytics, artificial intelligence and IoT applications are taking place in manufacturing and service oriented industries in many processes.

The event will bring together leaders spearheading digital disruptions in their organizations to offer insights, knowledge, and case studies on contemporary issues and challenges of digital transformation. This conference will comprise an educative mix of events like:

- Plenary Sessions and Thematic Tracks highlighting recent digital library research across the globe by the luminaries
- Workshops addressing contemporary issues to a focused group of stakeholders
- Thematic Events in select niche areas for business houses and academics Exhibition by national and international knowledge vendors and publishers
- Stakeholders engagement in digital platform using online collaborating tools

Every year ICDL, tries to bring in a sea change in the conference format. One of the major breakthroughs is Digital Engagement Platform, where we have bridge the knowledge gap on contemporary issues using Webinars, Virtual Classroom and Storytelling. A large number of audiences from across the globe participated and stay tuned during pre- and post-ICDL.

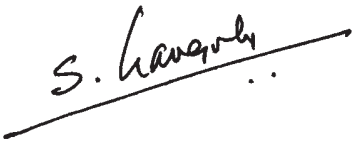
The ICDL 2019 has received 115 papers, which underwent a rigorous blind-review process and finally 74 papers have been selected for oral and 17 papers have been selected for poster presentation. These papers will be presented in different sessions during the event.

The ICDL 2019 organizers are also thankful to the experts, resource persons, committee members, delegates and sponsors for their overwhelming response to make this event a grand success.

We welcome you all and hope that you will all gain intellectually from this event.

Regards

***Dr P K Bhattacharya***
Organising Secretary, 2019
Associate Director`
Knowledge Resource Centre,
TERI



***Dr Shantanu Ganguly***
Organising Secretary, 2019
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## Digital Transformation for an Agile Environment

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# ICDL 2019

International Conference on Digital Landscape

## Digital Transformation for an Agile Environment

**November 6-8, 2019 | New Delhi**

# KEYNOTE SPEECH

Organizer

The Energy and Resources Institute

**6 November 2019**

**Keynote speech at the ICDL 2019 Conference:**

# Digital Transformation leading to a low carbon footprint and achieving the SDGs

**Nikhil Seth**

**PART I**

## Agenda 2030 and its significance

1. It is a special privilege for me to be in Delhi, invited by my "guru" Nitin Desai and TERI. Thank you organizers for putting this together.

2. 2030 Agenda and the SDG's were adopted in September 2015 in the presence of over 169 Heads of State and Government. The Climate Change agreement in Paris came soon thereafter.
   - The adoption came after two years of intense negotiations with the robust engagement of governments, business, academia, UN System and civil society.
   - The agenda was built on the ideas and approaches contained in the Millennium Summit, in the UN Summits of the 1990's and in the outcome of the Rio+20 conference "The future we want".
   - The themes and the process of deep engagement makes the 2030 Agenda one of the most significant. And it is passing the test of time. It continues to be the agenda with the greatest political traction.
   - The Climate Change outcome in Paris was equally significant. They are twins conjoined at the hip.

3. The special significance of the agenda is:
   - Its universality and relevance to all countries
   - Its bringing together, as never before, economic, social, environmental issues as also issues around the creation of peaceful and just societies.
   - Its focus on an integrated approach to solving contemporary problems.
   - Its focus on individual rights, hopes, aspirations and fears.
   - Its focus on reaching the furthest, the poorest and most vulnerable first.
   - Its emphasis on actions by all – governments, business, academia and civil society.
   - SDG's define goals, targets and indicators to help reach its ambition mostly by 2030.
   - Its primarily focus on ending poverty in all its forms, on reducing inequality within and between countries, ending corruption, enhancing the delivery of justice and ensuring better institutions.
   - Its orientation, in implementation, or ensuring that we safeguard our planet for present and future generations.

4. The integration vision is best understood by viewing the SDG's and targets as an interrelated matrix e.g. girls' education target will contribute to the goals on poverty, health, food security, gender empowerment, water, energy, etc. this vision will help smarter planning and better budgeting.

## PART II

# Global Assessment

5. I have been at the SDGs Summit in New York this year. Overall, progress is being made with some favorable trends:
   - Extreme poverty and child mortality rates are falling
   - Progress in some diseases such as hepatitis
   - Electricity access is increasing
   - Unemployment levels are back to pre-crisis levels
   - Urban population living in slums falling
   - Marine protected areas increasing
   - Governments integrating SDGs in national plans increasing
   - Near universal response and country ownership
   - Local governments, business, civil society, academia, youth engaging UN system in deep reform.

6. However, while the situation varies amongst regions:
   - Progress not fast enough to transform our world by 2030
   - Extreme poverty will not be eradicated by 2030
   - Hunger has risen in the last three years
   - Biodiversity loss is alarming
   - GHG emissions reaching record highs since 2015
   - Institutions not strong enough or effective enough
   - All categories of those left behind remain largely excluded.
   - Gender inequalities and violence against women continue unaltered.

7. Moreover:
   - Political environment has changed dramatically. Multilateral cooperation is suffering especially from the all-time highs of 2015
   - Conflicts and instability have intensified. 68.5 million displaced persons, 85% living in the developing world.
   - Disaster losses have increased 150% in last 20 years.
   - Global economic growth slow, volatile and trade prospects cloudy
   - Rising income and wealth inequalities threatening social cohesion
   - Rising intolerance threating fundamental human rights and progress
   - Growing lack of trust in governments and institutions

8. The tasks for the next 11 years included:
   - Special focus on the most vulnerable
   - Well directed financing
   - Strengthening institutions
   - Strengthen local actions especially at municipal levels
   - Strengthen data systems for better evidence-based decisions everywhere
   - Harnessing science technology and innovation with a greater focus on digital transformation.

9. But in my view we have the greatest challenge in awareness, attitudinal and behavorial skills which are the bedrock of change. And we need to reach people in the millions and not in the thousands.

## PART III

# Digital Transformation leading to a low carbon footprint and achieving the SDGs

10. In the past years, digital technologies have spread and began to transform virtually all sectors. The educational sector has benefitted largely. And while face-to-face learning will continue to play a role, it is clear that online and blended learning offerings will continue to grow. The promises are immense when we think of the fact that information is a public good, ie everyone can use it (non-exclusion) without reducing the benefit of others (non-rivalry). However, there are also challenges in developing effective online learning platforms. Let me outline some lessons based on the experience at UNITAR. While we have numerous platforms on the Divisions of our on Planet, People, Peace and Prosperity, Diplomatic Training and Satellite Applications, I will eventually draw on the SDG platform and the Climate Change learning platforms.

11. We have developed two digital platforms with the aim of training and encouraging millions of people to work toward a low carbon footprint and the promises of the SDGs. These platforms are the UN Climate Change Learn platform, or UN CC:Learn, and the UN:SDG Learn platforms, respectively.

12. **Platform and partnership approach**
    - The UNCC: Learn e-learning platform provides learners credible and free content as well as certification that can help them to progress in their careers or become innovators/champions in their professional careers. At this time most learners are public sector or university graduated, although increasingly teachers are signing up to our courses as a basis for becoming climate change teachers within the general education system.
    - The main added value of UNCC:Learn is that the content is backed by the relevant expertise within the UN system. 38 UN entities have joined together. UNITAR does not generate the content; it works with the relevant agencies to pull it together and package it as an e-learning product. Examples include working with UNICEF on climate change and children, or with WHO on climate change and health. There are many more examples of this. These agencies get an excellent deal because their content is associated with the UNCC:Learn platform which is growing and already has 250,000 registrants, and is seen as an implementing mechanism of Article 6 of the UNFCCC on education and training.
    - UN SDG: Learn, which was just recently launched in July, follows a similar logic but goes a step further with the collaborative efforts of the United Nations, multilateral organizations, and sustainable development partners from universities, civil society, academia and the private sector, UN SDG: Learn provides a unique gateway for a wealth of SDG-related learning products and services that are currently available. UN SDG: Learn currently has over 40 members.
    - UN SDG: Learn is helps facilitate access to Agenda 2030 learning products. These have been very scattered making if difficult to get an overview of the offers out there. Hence SDG learn gathers information on accessing such solutions in one place, while giving direct links to the individual member's training material.
    - So my <u>first message</u> is that in developing platforms build partnerships for content, feedback and constant refinement. Ownership in all forms builds trust and improves usage.

13. **Reaching thousands of learners worldwide**
    - UNCC: Learn is the single largest provider of online courses on climate change and green economy globally, with a total of 250,000 registrants to date and currently issuing more than 30,000 certificates of completion a year. There are about 25 different courses currently available

in multiple languages. We expect the content to continue to grow. The feedback is positive from learners as evidences by the numbers that are not only starting the courses but completing them.

- SDG: Learn was just recently launched and so only preliminary feedback has been gathered from members. It is too early to feature statistics on courses. The initial feedback was positive from the members, in particular in view of search functions, mobile phone compatibility and visibility for course providers.
- In general, we can see in our number of beneficiaries, that online platforms contribute the biggest share of new learners per year, from 38.000 in 2017, to 60.000 and 85.000 in 2018 and 2019, respectively.

14. **Limitations to scaling numbers of beneficiaries:**
    - Customizing to local realities and language: While these two platforms can be scaled up, this does not mean that coverage is equal. For example CC:Learn does not have much traction in Francophone sub-saharan Africa even though most of our courses are in French. The challenge we face is that scaling up in this region requires both reframing of content to regional realities and a better understand of how knowledge is transferred, which tends not to be via traditional computer based interfaces. Societies are more mobile based and capacities to download high density files are also limited.
    - SDG:Learn faces challenges related to course languages. Although it features courses in multiple languages and allows to search on specific languages, there is a pre-dominance of English language courses. Efforts to have the platform on all six UN languages are being discussed, with increased focus on diversity in language offer.
    - My second message is the necessity of customization, based on an in-depth needs assessment. Customization can be national, sub-national, local sectoral and relevant to the socio-economic and cultural context.
    - Blended learning: There is little excuse now for providing foundational learning content via expensive face to face approaches. UNCC:Learn can issue a certificate of completion on the basics of climate change, for example, at less than USD 20. By contrast, more advanced and applied content still requires a face to face approach, potential backed by on the job coaching. E-learning can significantly increase the cost effectiveness of this latter approach but blended learning is the optimal approach in our estimate.
    - SDG:Learn features search functions for blended learning that lists the available blended learning courses within the users preferred interest areas. We foresee an increase in the blended learning courses offered.
    - My third message is that in UNITAR's experience blended learning works best to reinforce knowledge transfer. In the case of Indian diplomats we have a three module e-learning course followed by face to face training following a case-study approach.

15. **Innovation in design**

- Learning from social media: UNCC:Learn has active social media accounts but the impact in this area is relatively weak. It is hard to measure the effectiveness of social media in advancing UNCC:Learn objectives and the programme is constantly re-evaluating its strategy. One lesson learned appears to be that all visible global programmes need to have social media in order to have credibility. But whether social media achieves something more tangible beyond this remains a key question.
- Incorporating best practice: SDG:Learn has made efforts to design the platform to be mindful of people with colour-blindness and also made sure to keep a design that is well suited for mobile phones.

- Instructional design: Digital learning platforms need to learn from social media and the gaming industry. Interactivity, simulation and entertainment are crucial ingredients for effective platforms. Quizzes, tests and evaluation are equally important. Maintaining, reviewing, and constant updating is required to keep the digital platforms topical.

16. **Business models**

- Free vs. fee based approaches: Both platforms are free to the learner but is relatively high cost to maintain and to create content. We still depend on traditional donor contributions and UN co-financing. Private sector funding has been obtained in developing specific courses that are of interest to clients, but getting seed funding to support the overall efforts of the platform has been more difficult. We foresee that the traditional donors will continue to be needed for this with the argument being that we can leverage this funding significantly. At this time we do not think that a direct payment model would work. However we intend to implement a voluntary payment system by the end of the year to offset maintenance costs.
- My fourth message: There are numerous business opportunities and business models, e.g. charging a small fee for certification and fees for curated and face to face training. They need to be explored in the relevant context.
- In conclusion, I am convinced that digital platforms will be key for the future success of UNITAR and any organization in the educational sector. They will increasingly be relevant for the attitudinal and behavioral changes that are required by millions for achieving the goals layed out in the 2030 Agenda. But challenges remain which I have outlined based on the two platforms we have developed.

  - Thank you.

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# Digital Rights Management and how it is solution to libraries

**Priyanka Bose**
Student, Master of Library and Information Science, Tata Institute of Social Sciences

## Abstract

This kind of Rights are thought to be very restrictive for libraries to flourish. We will search through this paper. That they are not in fact they are bridge between the intellectual output and the users.

## Keywords

DRM, Right Holders, Copyright, IITD, Fair-use

## Introduction

In India and in the world we find various laws and rules regarding various things such as civil laws, criminal laws, rights and duties of the citizens. In all this comes a very important emerging topic in the present times is that of "Digital Rights Management" in the present world.

DRM is seen as iceberg in the growth of the library, similarly to the one which sank Titanic. But presently DRM is getting importance in the libraries in and around the world. These are kind of standards or the codified law which is important before publishing that is for the publishers, the nexus does not end here they are present between the publisher and the library. Some points to be considered before giving away of the digital rights that is what are the various technical limits, and how these limits the technical work of the librarians. Rights and duties are important for any fundamental work here we will discuss specifically about the digital world. When a library is dealing with the digital work it is dealing with the access it is not getting the total ownership over the digital work. To be more effective all these is written on the agreement between the library and the publisher, it can be digital document as well as in hard form. There are various forms of document which is electronic has various types of the licences such as for 'open content' it is **creative common** and **digital peer publishing licences** this has large number of rights of an electronic document. The concept of usage is connected to digital work.

## DRM: The concept

It is by which that the control and management of the user right & business logic, integrating DRM technology with the components such as locker right, subscription management would be

across the various devices. Those who have right in their hand can work out over who will use their work and how will they use the work. These kinds of the rights are attached to the particular document at the time of the distribution with the work author give up the rights of his work to the publisher. Those who have rights ownership give away this in the devices which the user use.

## Types of DRM

The DRM are divided into two form **managing DRM** and **enforcing DRM**. So what this means that there is two types of DRM. Its not always like that DRM is bad or have any negative effects on the altogether running of the libraries.

Let us study this in much more detail, this involves managing digital and print materials, rights in the digital format is a base for the management of the large number of documents.

Rights description define the retrieval and its usage regulation, in a machine readable way, by judiciously using the language, any right can be positive and also negative. When we read the description of any right we find out that license agreement and copyright, that is fair use. This is the way in where the right which is by the library is by the way of rights expression language.

## Right Holders

- User of the digital content.
- Frequency Number of times the content can be used.
- The zone of access of the data. (That is the library, the Institution complex or the remote login)
- In what form the usage is possible.
- It is also important to set permission as per the users that is the rights is for the student, faculty or the staff.

## Identifiers

Things like digital object identifier, uniform resource name, and electronic product code, are all the technical data which is very important wherever the REL is being used. Things like encryption is important as there is presence of workflow such as for those works which are yet to be published.

Whatever we are observing above is very important for the REL for the management of the data which is also automated.

## Interoperability

There are large number of stakeholders who are working with these regulations, there is no alternate ways for cooperation, and all the standards have to be international in the global internet. It is a precondition to see that if things are interoperable. Example can be taken of the things such as in case of Rights Expression Language, Adobe Acrobat PDF or file formats.

It should be always kept in mind that author and title is being linked easily with every digital part of the work. As there is chances of loss in the digital network.

Now let us study digital library, digital content creation and copyright issues.

With coming up of the digital libraries, there has come various new technologies, storage issues, management of the rights. Digital Libraries with the related issues are new, there are few libraries in the world which have become fully digital now. Growth of the digital library strongly depends on the technology and software, not on the content. It is very easy to observe that copyright and related issues are hardly on the eyes of the creators of the digital libraries. Focus is on the selection criteria, technical and policy issues, managing, recommendation standard conventions, creation of metadata providing browsing history.

Digital Content creation requires lots of skills in the staff, publishing the content to the world. When it is print libraries gaining content is very easy task, but this is not in the same way as the digital libraries, availability of the digital content and sourcing the same content and creation. But presently we live in copyright era where choosing digital content is daunting task.

## Types of Digital Contents

Let us study these.
Basically Digital content are generally of two forms such as born digital and digitalized.

### *Born Digital:*

With the advent of internet came the production of more digital material, and there is special kind of storage, creation of this kind of the file is done basically for the use in that particular form only. To produce this kind of files simple office tools are used such as Microsoft office, Libre office and various kind of office suites.

In the era of only print libraries the libraries had minimal job when it comes to publishing. Only publication done was catalogue card and library manual. In the current era the libraries job has turned into what is known as a publisher. The creation of the content is done in the parent organization and by its students and faculty. The content can be very specific as the parent institution such as, if the institution is of engineering then the library will produce more content on the engineering. This can also include creating course content, and course management

software are also there for all this thing. Born Digital can be in both form, it is possible this content is present in analogue form, print form and also certain times it is possible that it is present in only in the digital form, sometime we find document which are not for printing also. *Disadvantages*: Content creation and popularising it can be time consuming task. It is difficult to find manpower etc.

### *Digitalized:*

These are the document which were in print sometime the objective behind it is the preservation of the content. Scan is a technique which is present in the process of digitalization. The scanning process was earlier a tiresome work but presently it has upgraded itself.

*Disadvantages*: There are disadvantages involved here, such as large size of the scanned file, downloading this file becomes a time consuming process.

### *Gained Digital:*

There is form of document where the library is just a service provider, library is not related to the content creation anyway this can even involve resources such as e-journals, and various e-prints & databases, these are provided by the libraries through licensing mechanism, as the content is hosted by licensors, such as publisher. Sometime the libraries keep the media content in the form of CD-ROM and DVD-ROM, and make it available in the library website itself. There is involvement of high cost in the maintenance of this.

Looking at various Copyright Laws

### *Copyright Issues*

Whatever available in the internet seems to be free of copyright but in reality it is also protected by some kind of copyright. Even it goes for internet and paper prints. It is very necessary for anyone dealing with information to be well conversant with copyrights. Copyright law can be found anywhere in the world. Most of the nation in the world work on the basis of the international treaties. Makers and creators of the digital library copyright issues should be kept in mind with a legal framework. Content made should be protected with water marking, digital signatures, encryption, to have a good security in the digital environment, digital environment. The present time of open access where the content, and it's digitalization, of copyrighted materials is not the difficult. Digitalization is also important as it preserve all the printed material.

# Copyright Laws

### *World Intellectual Property Organization*

This is a kind of special organization of United Nations, created in 1967 so there is production of more creative action to promote protection of intellectual right in the world. In this 192 members are present who administer 26 worldwide treaties, it's headquarter in Geneva, Switzerland.

### *Digital Millennium Copyright Acts (DMCA)*

This law which was signed by U.S. President Clinton on October 28, 1998, as a response to World Intellectual Property Organization treaties, there is a provision where overcoming is impossible, it can be observed that this prohibits manufacturing and sell of the devices or service can deceive technological measure to protect copyrighted works.

### *Fair Use*

As per USA under section 107, use of all the copyright work include use in the reproduction in the form of copies for the use of them in the form of use like criticism, or comment, report, teaching purpose and for the copies for the use in the use in the classroom, research, is not the breaking the copyright.

### *Indian Case*

Posthumous of the publication of the work by the author from 60 year of publication, the right to copy the work. The term copy is very broad that is covering from the electronic form and making the translated version. In some country it is automatic and in some country there is proper process of registration.

# How Library is bridge between the DRM and the work

Librarian presently are also working as right manager, accession & usage will be permitted only with license agreement whose right will be readable by machine. Digital management helps to conclude license agreement between users and publisher. Presently libraries reach user of the content directly. Publisher feel sometime libraries as their competition, but not as bridge which fills the gap between the customer and the publisher.

DRM sometimes turn out to be good for librarians such as, this make it possible to manage all the rights which are associated with it. Machine readable information can enhance to develop new offer. This becomes important for libraries if they don't want to be get lost in the newly established intelligence world. They need to support rights which are transparent libraries need to have new ways of showing rights to show things are transparent which supports DRM such as

documents & open access to have legal confidence. The users of the library will use their rights well if they are aware about it. Legality and Technological issues become very important in the work of the librarians. This can be achieved by machine readable from of rights to get big amount of digital content. Therefore worldwide standard is needed. DRMS should be made for the libraries, which will give trusted environment to publishers, which will give better access and using condition, libraries should have active role in the establishment, to give latest information to be interesting for the users.

Libraries coping with it
**Example**: I am currently in the second year of Master of Library and Information Science in Tata Institute of Social Science, Mumbai. As a part of the course it is compulsory to complete one month internship in one of the recognised library. Indian Institute of Technology, Hauz Khas, Delhi, where I learned from 1st April 2019 to 30th April 2019. IITs in the India are most recognized institution in society as well as in the rankings. So in this paper of my, I would like to briefly about Digital Rights Management and how this institute is dealing with various aspects of the users demand as well as maintaining the digital rights. There are some specific rules regarding the use of the e-resources by the users, where the patrons are aware about their rights. Central Library has subscription for various 1000 resources from the publishers and ess Consortium. For using this resources things are mentioned in the license agreement with every publisher. It becomes the task of the users that no such breach is taken place as per the license agreement. These changes from publisher to publisher but few general rules are as follows:

### *Usage Policy: Guidelines for fair use of e-resources*

- All the e-resources are provided here for the academic use.
- Complete download of entire book or e-resources are strictly prohibited.
- Use of agents like spiders and artificial intelligence etc. is strictly prohibited. Not following this could lead to penal action.
- If systematic download is done then the publisher will block entire community of users from accessing this resources.
- Should not be used for commercial gains. Distributing it to unauthorized user is not allowed. Uploading publisher's version on the open access website is not acceptable.

## Conclusion

As it can be seen that DRM is sometimes taken to be very restrictive on the libraries, at the same time it is very useful, and make things manageable.

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# Role of Librarian in Promoting Open Access: Study of Indian Librarians Community

**Vrushali Dandawate**
Librarian, AISSMS College of Engineering College Pune; DOAJ Ambassador, India.

**M Dhanamajaya**
Registrar, Reva University, Bangalore

## Abstract

Open Access put lot of impact on Library and information centres from last decade. Growth of Open Access Journals and Scholarly communication is affecting Library services. Many Libraries are moving from closed access to open access of resources. Every year nearly 10000 plus open access journals are coming in market so here librarians has to help their patrons to identify the correct journals for publish the research work and make funds available for APC charges for such journals. Librarians are supporting Open Access publishing and also playing an important role in promoting OA. But understanding the importance of open access by user community is depend upon how actively that institute librarian promote OA. This paper deals about awareness of open Access among Indian Librarians Community. The main aim of this study is to get an idea about how Librarians view about open Access and various open access resources. Data is collected through online survey method from various Librarians group.

## Keywords

Open Access, Librarian Role, Open Access and Indian Librarians

## Introduction

### *What is Open Access*

Open Access is a revolution which has to a great extent reduce intellectual monopoly, made provision for everyone to be a publisher, reduced digital divide, drives the transparency and seriousness for academic integrity

**As per Budapest Open Access Initiative (BOAI)[1] 2002:** "By 'open access' to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or

[1] http://www.budapestopenaccessinitiative.org/ Accessed on 18/3/2018

technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited."

**Peter Suber 2007 mentioned[2]:** "Open-access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions. OA removes price barriers (subscriptions, licensing fees, pay-per-view fees) and permission barriers (most copyright and licensing restrictions."

**Open Society foundation mentioned[3]:** "Open access is an alternative publishing and distribution model that makes scholarly research literature—most of which is already funded by taxpayers around the world—freely available to the public online, without restrictions."

## Open Access and Librarians

Earlier Librarian role just considered as "Information gatekeeper" but due to information exposition librarian role is changed and he can be call as "Information Scientist ". Now librarian has to take care of managing research output, support information policies, providing discovery services, also harvest faculty publications in repositories and also promote open access resources among the patrons. Now every librarian knows the importance of open access but every Library cannot procure all database and journals due to increasing cost of publications. Many Librarians are adopting open access since we are living in a democratic world and society and all knowledge and Information are for all for the balanced development of the Society. Hence Librarians should work essentially for the promotion of Open Access.

## Benefits of Open Access

Open access scholarly information source book (OASIS) describe the benefits of open access for all[4]

### *Researchers*

Open access helps to researcher by following ways

1. To improve visibility and impact of their research
2. Free access to required research material.
3. Control of researcher publications usage policy

[2] Suber, Peter. "Open Access Overview" Archived2007-05-19 at the Wayback Machine.. Earlham.edu. Retrieved on 17/3/2018. http://legacy.earlham.edu/~peters/fos/overview.htm
[3] https://www.opensocietyfoundations.org/explainers/what-open-access Accessed on 18/3/2018
[4] http://wordpress.openoasis.org/promoting-open-access/ accessed on 24/5/2018

### *Administrators*

1. Help to improve visibility and prestige of Institute
2. To enable research institutions to better account for their research output.

### *Policy makers and funding agencies*

1. All Government funded project are available for public access. Free peer reviewed articles can be refereed by all
2. Open Access will increase the government's return on investment in research by enabling more widespread dissemination and uptake of knowledge.
3. Open Access will enable research funders who need to be able to access and keep track of outputs from their funding, and measure and assess how effectively their money has been spent.

## Open Access Resources

### *Open Access Books*

DOAB[5] (http://doabooks.org) is open book project. The primary aim of DOAB is to increase discoverability of Open Access books. Academic publishers are invited to provide metadata of their Open Access books to DOAB. Metadata will be harvestable in order to maximize dissemination, visibility and impact. Aggregators can integrate the records in their commercial services and libraries can integrate the directory into their online catalogues, helping scholars and students to discover the books. The directory is open to all publishers who publish academic, peer reviewed books in Open Access and should contain as many books as possible, provided that these publications are in Open Access and meet academic standards.

### *Open Access Journals*

Open access (OA) journals are scholarly journals that are available online to the reader "without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself." They remove price barriers (e.g. subscription, licensing fees, pay-per-view fees) and most permission barriers (e.g. copyright and licensing restrictions). While open access journals are freely available to the reader, there are still costs associated with the publication and production of such journals. Some are subsidized, and some require payment on behalf of the author.

[5] http://doabooks.org/

DOAJ (https://doaj.org)[6] is a centrally, publicly and internationally available community-curated database containing information on high quality open access journal titles across all disciplines, maintained by a team of professionals. It aims to become the default service for finding quality, peer-reviewed open access publications. Only trusted scholarly journal titles adhering to DOAJ criteria are considered for inclusion.

### *Open Repositories*

Various universities started to mention their faculty students' research work in digital platform, To avoid research duplication and to make world aware about institutional research Universities started keeping their repositories open for public OpenDOAR[7] is an authoritative directory of academic open access repositories. Each OpenDOAR repository has been visited by project staff to check the information that is recorded here. This in-depth approach does not rely on automated analysis and gives a quality-controlled list of repositories.

## Literature Review

Many studies have investigated the question about impact of open access Preeti Jain[8] (2012) investigated benefits of open access. She also emphasis on , " How developing country are still behind for adopting best practices for promoting open access as there are major problems in understanding of the objective of open access in the developing countries."Giarlo, M.J.[9] (2005) studied impact of open access on academic libraries he found, "The benefits of open access are manifest, as are the many challenges posed by shifting towards broader support for open access. Academic libraries are positioned to be at the forefront of the open access revolution, but it is altogether possible that they will allow themselves to be left behind. They stand to gain much by investigating potential new roles they might play in the transforming landscape of scholarly communication, but first they must consider the many ways in which they may be affected by open access, weighing significant costs against significant benefits and always with their communities' best interests in mind."Cryer & Colline[10] (2011) found that now academic libraries are leading towards promotion of open access by promoting it in a variety of ways such as: including records for OA journals in their public catalogues and e-journals lists, collaborating with their institutions to establish institutional repositories, participating in institutional initiatives to encourage faculties to deposit their research outputs in the institution's repository,

[6] http://doaj.org
[7] http://opendoar.org/
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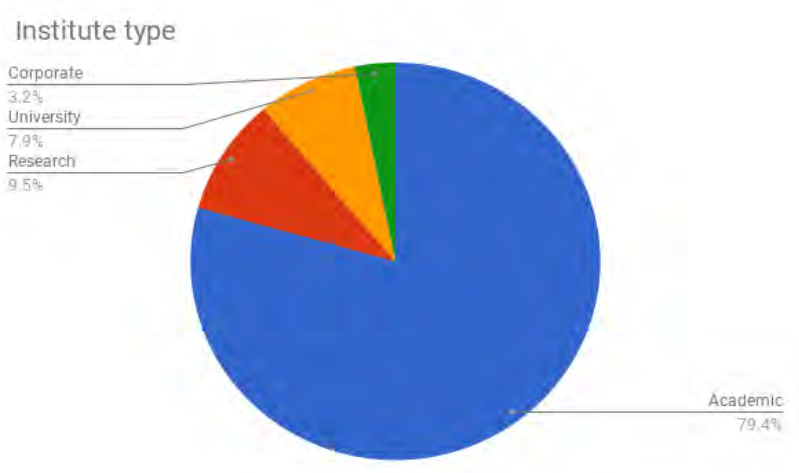
and becoming active OA journal publishers. Ugwuanyi etl[11] (2013) identified that the perceptions of librarians in colleges of education in south-east Nigeria towards Open Access to knowledge were positive. The researchers Ugwuanyi & Ugwaungy (2013) also discovered that most of the librarians did not understand the concept of Open Access Kelem Kassahun[12] and Chatiwa Nsala (2015) studied the use of open access by private learning institute in Botswana to find out use of open access by academic librarians they found that there is lack of faculty participation towards open access and there need of promoting open access awareness by academic librarians to improve information literacy skills of faculty through workshops, public lectures, meetings and conferences. [12]

## Objectives

1. To find out awareness of Open Access among Indian Librarians Community
2. To find out which type open access resource is mostly used by them
3. To find out methods used by Indian Librarians to promote Open Access at their Institute
4. To find out rule and regulation followed by Indian Libraries to pay APC charges to Publishers

## Methodology

To accomplish the objectives of the study, an online survey was conducted with the Indian Library Community survey mail send to all librarians groups but only 173 librarians responded to this survey. Total response rate is 78%




[11] Library Philosophy and Pr Ugwuanyi, A., Ebere, E. M., I.C, O., & Ugwaungy E, I. (2013). open access to knowledge: perception of librarians in colleges of education in south -East Nigeria. Journal of Educational and Social Research , 3 (4), 29-35.

[12] Kelem Kassahun and Chatiwa Nsala (2015). The awareness of academic librarians towards Open Access resources to support reference services: A case of private institutions of higher learning in Gaborone, Botswana Conference paper IFLA Conference 2015

**Chart 1:** It shows the response rate to questionnaire from various respondent institute librarians 79.4% was working as Academic Librarians while 3.2 % was corporate librarians 7.9 % was university librarians and 9.5% was research librarians

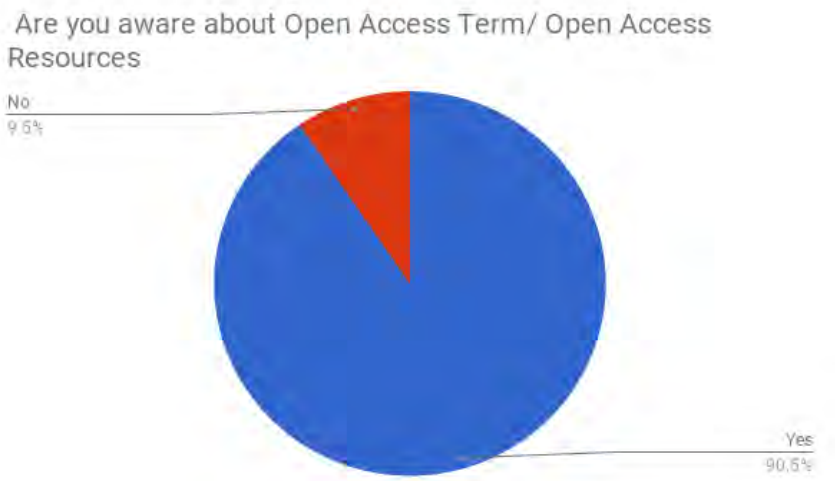



**Chart 2:** It shows 9.5% librarians was not aware about term Open Access where 90.5 % Librarians was aware about Open Access Resources.

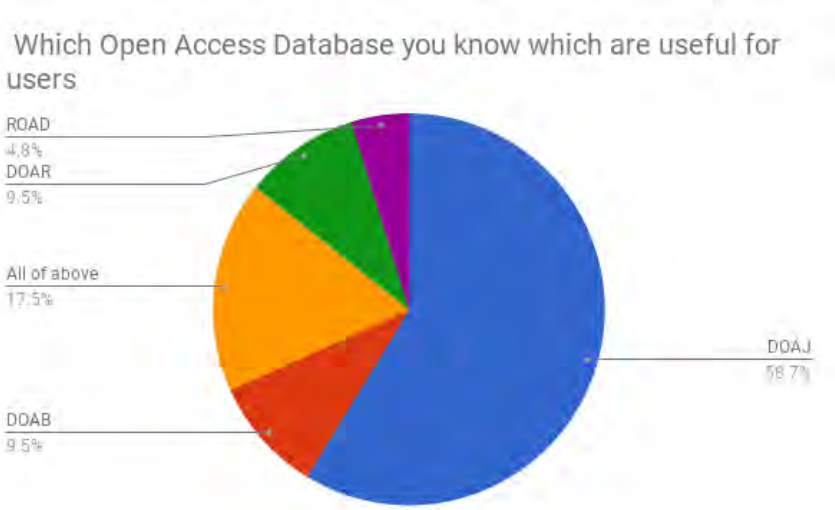



**Chart 3:** It shows 58.7 % librarians thought DOAJ is most useful Open Access Database for user community while 9.5% Librarians said DOAB is most useful database 4.8% librarians said ROAD is most useful database and 9.5% said DOAR is useful for researchers and 17.5% said all this database are useful for researcher and academic users.

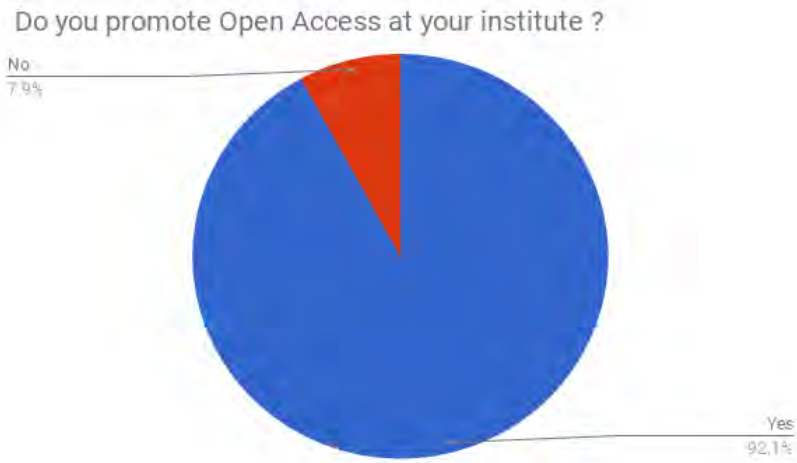



**Chart 4:** It shows 7.9% librarians were not promoting Open Access and 92.1 % Librarians was promoting open access at their institutes.

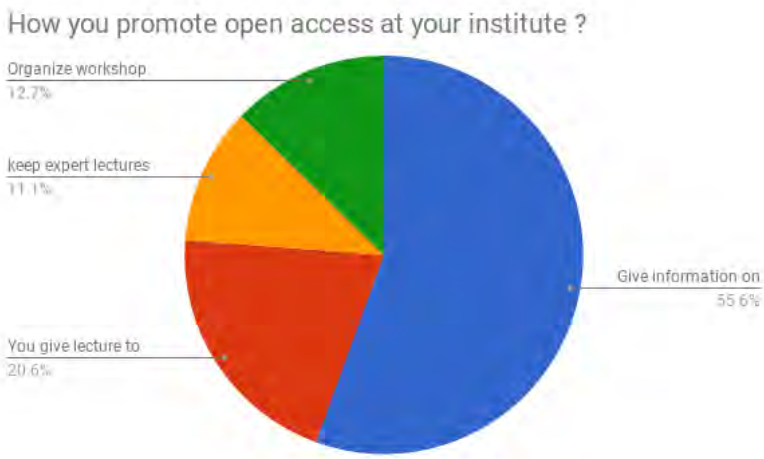



**Chart 5:** It shows 55.5% librarians was promoting open access among the users by giving information on College/ Institute Website while 20.6 % librarians was themselves giving lecture on Open Access to the users. 11.1 % Librarians were preferring to keep expert lecture on Open Access for users. And 12.7% of librarians were involved in organizing workshop and conferences on Open Access for user community.

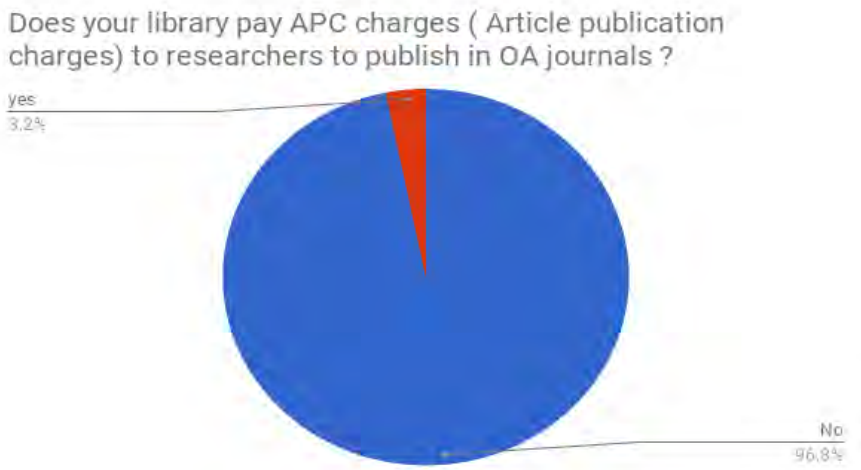



**Chart 6:** It shows 96.8% libraries in India are giving APC charges to the users to publish their paper in Open Access Journals while 3.2% libraries have budget for this was research Libraries.

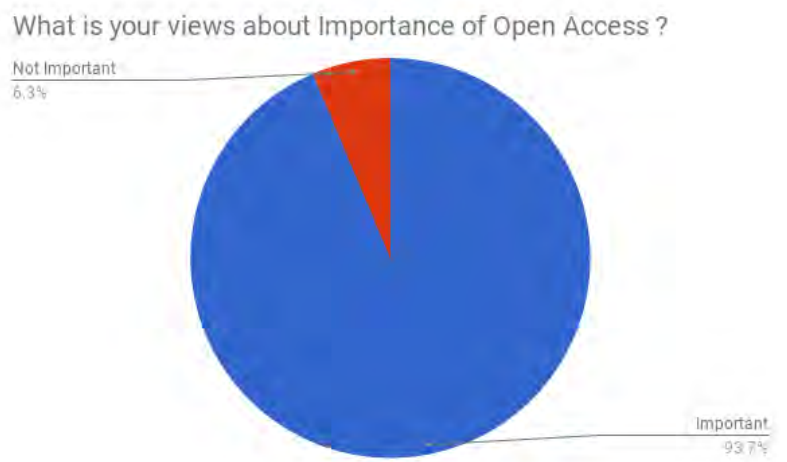



**Chart 7:** 93.7 % librarians said that Open Access is important for them while 6.3% librarians still feel Open Access in not important

## Analysis of survey

Many librarians mentioned Open Access is a good source, but most of the students and teachers avoid library use and depends on the free documents only. They also mentioned mostly library

users are unaware of open access. Many librarians mentioned Open Access to books, journals etc. are useful for researchers and students. and Open Access always worth to use and it is essential E-information sources in paid environment. Open Access is solution for migration of information in standard format also it is universal resource sharing system. Few Librarians mentioned due to lack of knowledge there is less use of Open Access Resources

## Findings and Conclusion

This study shows that many Indian Librarians were aware about importance of Open Access and they were trying to promote OA at their own institute. Most of librarians giving OA resources information on institute websites. But still there is no provision of paying APC charges for researchers users to publish in scholarly research journals in academic library system. The reason may be there is lack of financial support or unawareness about such provision. Due to time limit Author is not able to go deeper in this area. 6.7 % librarians still feel OA is not so important that is needed to be observed.

## Recommendations

This paper makes following recommendations on how Indian Librarians can promote Awareness of open access among the users

1. All Librarians should start implementing an open access repositories
2. Training programs workshop on use of open access resources should be organized by Librarians for their users
3. Library should start promoting Open Access Weeks (http://www.openaccessweek.org/page/about)
4. Librarian should educate the users by proving links of various useful open access resources on the library website. Librarian should assist in payment of author's fees to publish in open access journals.

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12. Kelem Kassahun and Chatiwa Nsala (2015). The awareness of academic librarians towards Open Access resources to support reference services: A case of private institutions of higher learning in Gaborone, Botswana Conference paper IFLA Conference 2015

# Security and Safety issues in Libraries with special reference to Disaster Management

**Anam Jamal**
Junior Research Fellow (JRF), Dept. of Library and Information Science, Aligarh Muslim University, Aligarh, India

**P.M Naushad Ali**
Professor, Dept. of Library and Information Science, Aligarh Muslim University, Aligarh, India

## Abstract

Security and safety of libraries are imperative in contemporary time when everyday we get news of theft, violence, and natural disasters. Librarians as the custodian of library have the responsibility to ensure the safety and security of library. If a library fails to provide security to its collection and building, it will not be able to facilitate efficiant and effective services to its users. Academic library being the 'hub of learning' has to provide timely services to its users. Users from different social and economical background utilize the library resources pertaining to his/her need. For the betterment of library services, most academic libraries's collections have became accessible to the users openly which led to the problem of theft, mutilation and misplacement of library resources and different data security issues. In addition to the above-said problems disaster has also become an important issue for the libraries. The National Disaster Management Authority of India has stated that India is prone to various natural calamaties such as fire, flood, hurricane, tsunami, earthquake etc. These natural calamities have also done great damage to various libraries. The flood in Kashmir, Kerala, Assam, Orissa and other state have destructed various libraries. So this paper is to examine the security challenges faced by the two central university libraries ie. Aligarh Muslim University and Jawaharlal Nehru University. It explores the reasons and methods of theft, mutilation, and mutilation of library materials along with the preparedness for natural disasters such as fire, flood, and earthquake. For this purpose, the survey research method was employed, and two sets of questionnaires were constructed for the collection of data from the users and librarians of the above-said libraries. The paper also explores the data security measures taken by both libraries. The result of the analysis revealed that akin to other libraries, these two libraries are also facing security issues such as the problem of theft, mutilation, and misplacement of its collection. However, both libraries are well-equipped with Fire Extinguishers, Water Hydrants, and Sprinklers to safeguard its collection and building from fire. Some suggestions are also be proffered for the security of the collection including E-resources and buildings of both libraries.

# Is Science Built on False Claim: An Analysis of Citation Dependency of Scientific Literature on Retracted Article

**Rosy Jan**
Sr. Assistant Professor, Department of Library and Information Science, University of Kashmir, India.

**Sabha Ali**
Faculty, Department of Library and Information Science, University of Kashmir, India.

**Irfan ul haq**
Faculty, Department of Library and Information Science, University of Kashmir, India.

## Abstract

In the current era retraction is used as a vital tool by the scientific community in order to maintain and safeguard the integrity of scholarly literature. However, knowingly or unknowingly the authors build the work on these false claims. Citing a retracted article may pose a profound and long-lasting threat to the credibility of the scientific literature. Such dependencies on retracted articles are implicit and sometimes indirect. Consequently, it becomes increasingly important to detect and analyze such dependencies and threats. The article aims to demonstrate dependency of citing articles on retracted article with reference to the rest of the literature. A case study of highly cited (as reported by retraction watch) retracted article "**Visfatin: A protein secreted by visceral fat that mimics the effects of insulin"** published in Science in 2005 by **Fukuhara, A** as lead author is visualized in terms of bibliographic coupling of citing journals and network visualizations cited references. The study concludes that there is high-order citation dependency of scientific literature on retracted article.

## Keywords

Scholarly communications, Research misconduct, Retractions, Retraction watch, Network Visualization, Science, visfatin, insulin.

## Introduction

It has been seen from the earlier studies that retractions were least or uncommon in the past, because the awareness among people on retractions was very poor. However, a number of studies suggested that retractions are on the rise "with reference to overall growth in scientific literature" **(Marcus & Oransky, 2014)**. There are number of reasons which lead to loss of

ethics, misbehavior or fraud in research and it has been revealed the main reason for such cause is the lack of dedication and honesty of researchers/scientists towards their research. Scientific fraud can take place with the emergence of various undesirable practices such as plagiarism, falsification of results, data inconsistency, image duplication and compromised peer review etc. Moreover, the identification of research misconduct in a research article leads to its retraction **(Greitemeyer, 2014)**. Retraction of an article can take many years from the time of its publication till retraction depending on the reason of retraction. Articles involving misconduct take longer time to be retracted than erroneous papers **(Steen, 2011; Fang, Steen & Casadevall, 2012; Moylan & Kowalczuk, 2016).** However, studies suggest that articles continue to be cited even after their retraction **(da Silva & Dobranszki, 2017; da Silva & Cimenti, 2017)**. **Van (2011)** defines retraction as "science" is ultimate post-publication punishment: retraction, the official declaration that a paper is so flawed that it must be withdrawn from the literature". Before retracting an article having slight error or incorrect information an alteration message may be send to author or in a more acute case "*expression of concern*" may be issued **(Grieneisen & Zhang, 2012)**. This is an alarming trend. "Any retraction speaks to an enormous misuse of scientific assets and the publication of retracted literature can erode the faith of public in science" **(Fang & Casadevall, 2011)**. Error propagates when retracted literature is continuously cited and such propagation of error can be particularly dangerous in the field of medicine **(Steen, 2011).** Number of problems arises when researchers favorably cite an erroneous article. Citations to erroneous paper make such papers credible. Finally, a researcher prompted by the invalid point may incorporate it in his writings and becomes a means for propagation of an error **(Cor & Sood, 2017)**. Thus it is necessary to study and showcase the problem in more explicit form. It is important to find out the extent to which retracted articles are interwoven with the rest of the scientific literature. More importantly how such flawed literature is firmly entrenched in co-citation networks. The study specifically demonstrates the potential of a visual analytics approach to examine and monitor not only retracted articles, but also articles that might be at risk of contamination. Construction & visualization of bibliometric maps of co-occurrence of data is done in the study by using VosViewer software. The software is developed by ***Nees Jan van Eck and Ludo Waltman,*** researchers at the CWTS Leiden of Leiden University in Leiden. "The software was built for the analysis of scientometric data, but the software has a broader relevance. In particular, VosViewer is particularly good at producing textual maps of any sorts, not just from scientometric datasets but its 2.0 version is capable of handling larger datasets and broadening its focus explicitly targeting non-scientometricians" **(Sangam & Mogali, 2012).**

## Scope

The scope of study is confined to one of the retracted article *"Visfatin: A protein secreted by visceral fat that mimics the effects of insulin"*

## Methodology

List of highly cited retracted articles were retrieved using "***Retraction Watch",*** devoted to the examination of retracted articles as "a window into scientific process". One the highly cited retracted article list on retraction watch was selected for analysis and examination in terms of networks visualization of citations using VOS viewer. The retracted article was searched in ***Web of Science*** (WoS) and a total number of 1302 citations as on July 2019 were retrieved. The results obtained were exported to VOSviewer for Constructing and visualizing bibliometric networks of data.

## Review Of Literature

**Da Silva and Cimenti (2017)** studied the problem of post retracted citations and traced various works that have observed that articles continue to be cited post retractions almost similarly as they were cited before retraction **(Budd, Sievert & Scoville, 1999; Unger & Couzin, 2006; Neale, Northup, Dailey & Abrams, 2007; Van Der Vet,. & Nijveen (2016).** However, the recent studies are interested in Bibliometric mapping. It has become an important research topic in the field of bibliometrics **(Börner.,Chen., & Boyack, 2003). Redman, Yarandi and Merz (2008)** analyzed 315 retracted articles in Pub-Med from 1995-2004 and found that these articles were cited 3942 times before retraction and 4501 times post retraction. Construction of bibliometric maps and the graphical representation of such maps are the two aspects of current research in bibliometric mapping. However, there seems to be a trend towards larger maps **(Boyack et al., 2005; Ioannidis., Klavan., & Boyack, 2018; Leydesdorff, 2004; Van Eck et al., 2006),** and for such maps simple graphical representations are inadequate. The graphical representation of large bibliometric maps can be much enhanced by means of zoom functionality, special labeling algorithms, and density metaphors. However, such kind of functionality is not integrated into the computer programs, frequently used by bibliometric researchers. The requirement was fulfilled by the software introduced by (**Van & Waltman, 2009**), the program is used for bibliometric mapping. This program pays special attention to the graphical representation of bibliometric maps. VOSviewer, where VOS stands for *visualization of similarities* is a program developed for constructing and viewing bibliometric maps. The software is used in various study to study the bibliometric mapping and citation clustering **(Chen., Hu., Milbank., & Schultz, 2013).; Leydesdorff., Carley., & Rafols, 2013; Derrick, Meijer., & Van , 2014; Waltman, 2017)**

## Data Analysis and Interpretation

The article *"**Visfatin: A protein secreted by visceral fat that mimics the effects of insulin"*** published on 21 January, 2005 in ***SCIENCE***. The article was retracted since the authors have been unable to reproduce some of the reported spontaneous transformation events and suspect the phenomenon is due to a cross-contamination artifact. However, the retracted article is cited continuously in the literature.

Table 1: Citations Received by the article Before and After Retraction

| Retracted Article | Authors | Citing Articles before retraction | Citing Articles after retraction | Total cites in Web of Science |
|---|---|---|---|---|
| "Visfatin: A protein secreted by visceral fat that mimics the effects of insulin" | Fukuhara A, Matsuda M, Nishizawa M, Segawa K, Tanaka M, Kishimoto K, Matsuki Y, Murakami M, Ichisaka T, Murakami H, Watanabe E, Takagi T, Akiyoshi M, Ohtsubo T, Kihara S, Yamashita S, Makishima M, Funahashi T, Yamanaka S, Hiramatsu R, Matsuzawa Y, Shimomura I. | 228 | 1074 | 1302* |

*Citations received by article as on July 2019

Table 1 lists citation to retracted article. It was observed that out 1302 citations, 228 citations are received before the article is retracted and 1074 citations are received by the article after retraction. Thus, it shows that a majority of articles are using the retracted works after retraction. It implies that it could have a direct implication on the citing literature.

Table 2: Top Ten Source/Journals Citing Retracted Article

| S.No | Name of Citing Journal | Times Citing Retracted Article |
|---|---|---|
| 1 | Plos One | 22 |
| 2 | Journal of Clinical Endocrinology & Metabolism | 20 |
| 3 | Metabolism Clinical and Experimental | 19 |
| 4 | Clinical Endocrinology | 15 |
| 5 | Cytokine | 15 |
| 6 | Hormone and Metabolic Research | 13 |
| 7 | Journal of Endocrinological Investigation | 13 |
| 8 | Mediators of Inflammation | 13 |
| 9 | Biochemical and Biophysical Research Communications | 12 |
| 10 | Diabetes Research and Clinical Practice | 12 |

Out of the total number of 1302 citations received by retracted article. Table 2 lists top ten journals, which publishes the articles citing the retracted article. The reputed journals like "***Plos***

***One, Journal of Clinical Endocrinology Metabolism, Metabolism Clinical and Experimental"*** are among the reputed journals having no policy to stop citing the retracted articles.

## Construction & Visualization of Bibliometric Maps of data

Fig.1a: Bibliographic coupling of Sources/Journals

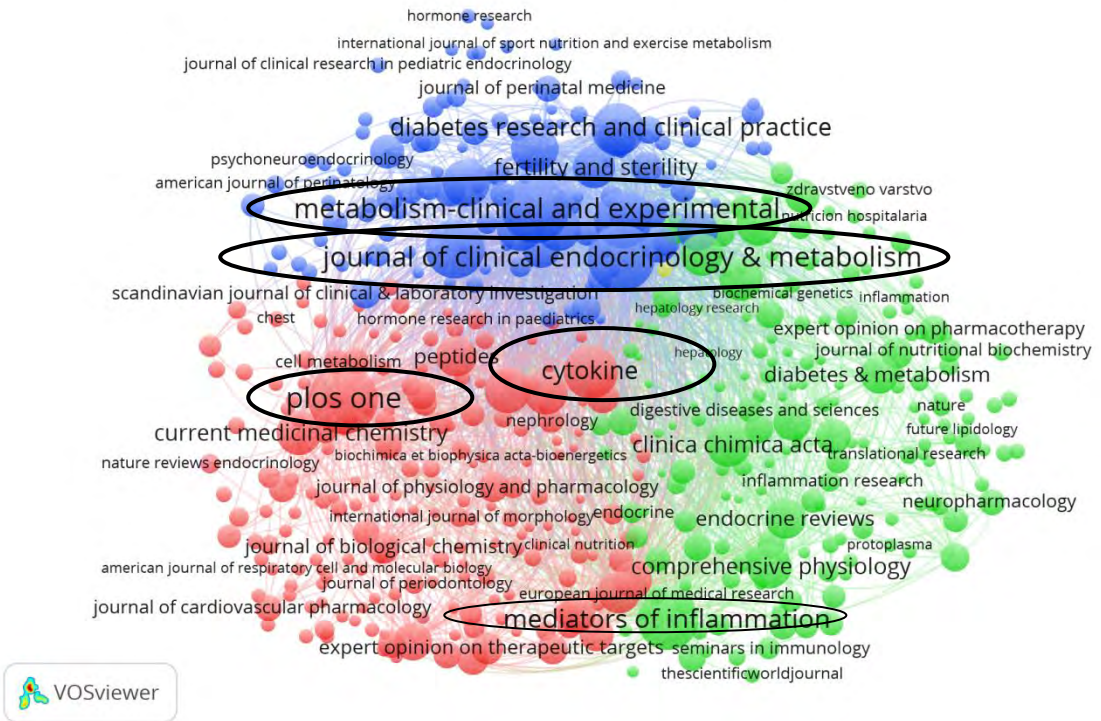
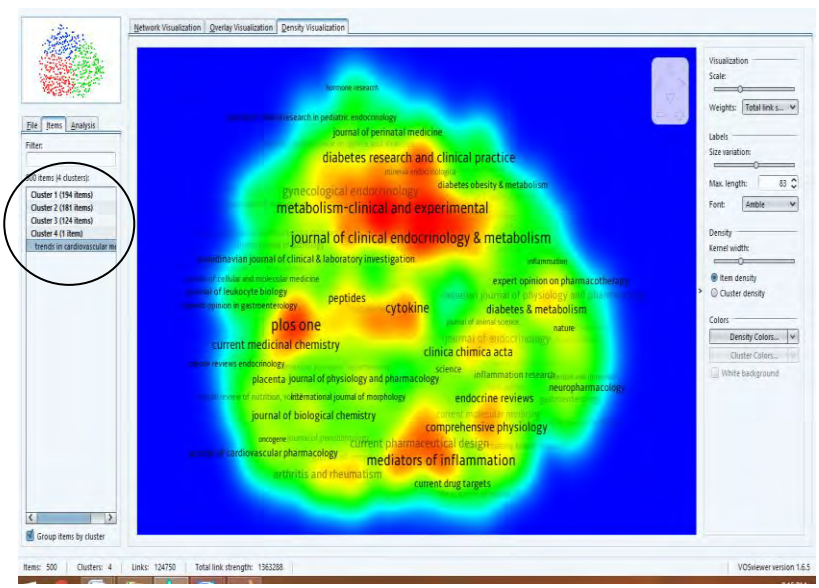
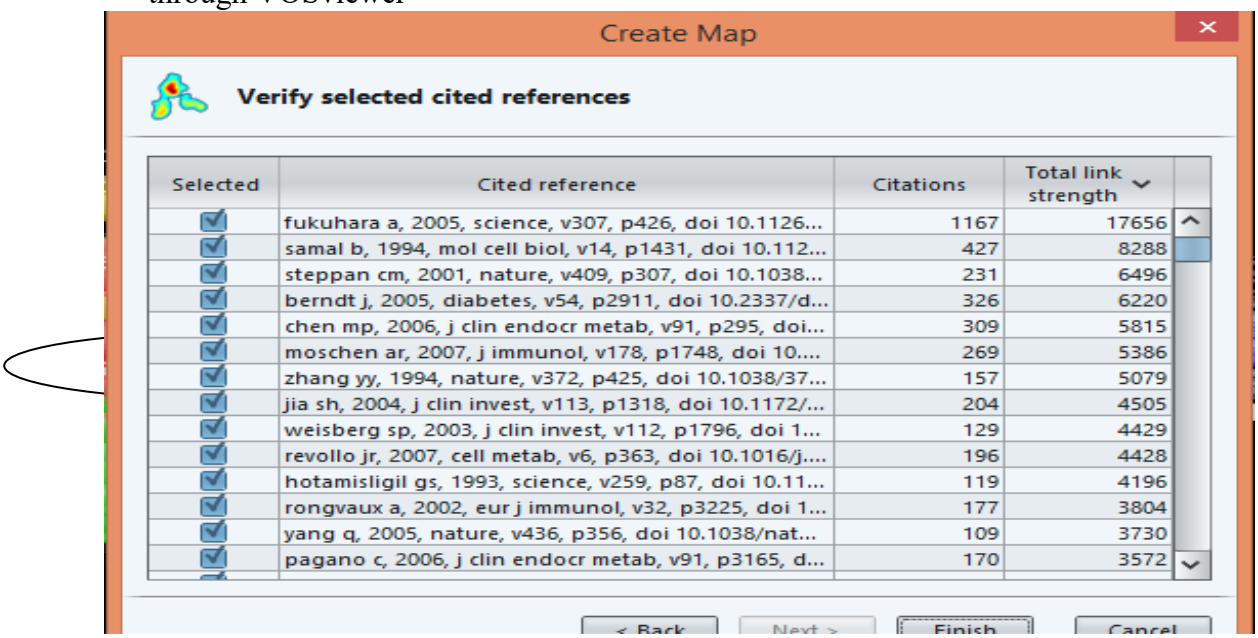



Fig.1b: Bibliographic coupling of Sources in cluster View with left hand side and bottom panel providing details about clusters and link strength



The above network visualization map shows bibliographic coupling patterns of the 100 citing journals of selected retracted article. Bibliographic coupling network includes the journals with the largest number of bibliographic coupling links. The distance between two journals in the visualization approximately indicates the relatedness of the journals in terms of bibliographic coupling. Smaller the distance between two nodes, the higher is their relatedness. The color of an item is determined by the cluster to which the item belongs. Lines (fig1a) between items represent links. As shown in fig.1b there are four clusters represented Red, Green, Blue and yellow. Journals like *Plos One, Cytokine, Journal of clinical endocrinology & metabolism* and *Mediators of Inflammation* and other top ten citing journal fall in red zone or in cluster 1 consists of 194 items, cluster 2 consists of 181 items, cluster consists of 124 items and cluster 4 consists of 1 items with a total of 124750 links and total link strength of 1363288.

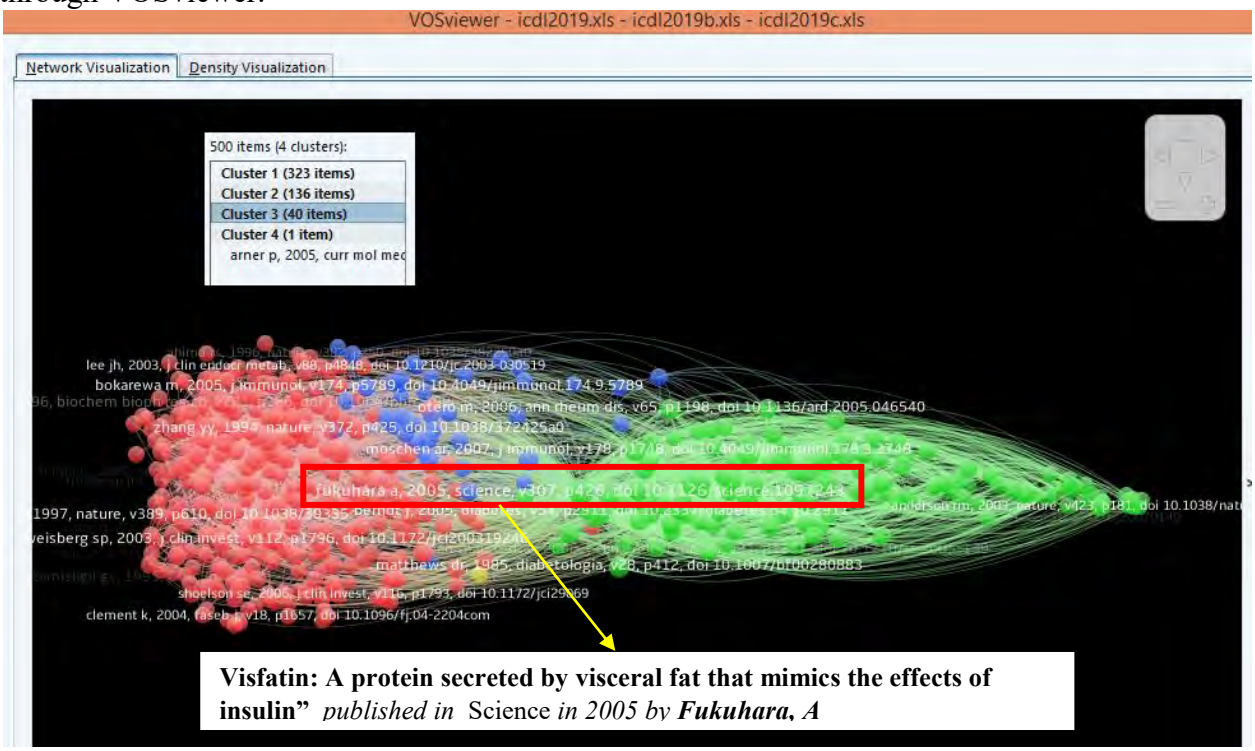
Fig.2 Highest number of citations and total link strength of cited references as visualized through VOSviewer




Source: VOSviewer

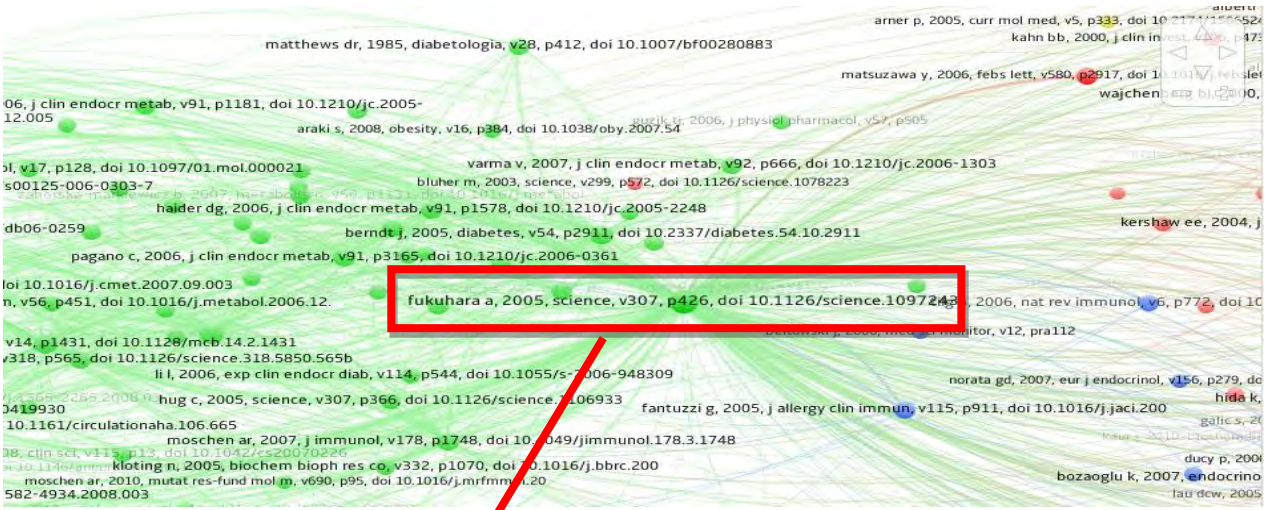
The status of co-citation of cited references as visualized through VOSviewer (**Fig. 2**) revealed that ***Fukuhara, A*** (lead author of the retracted article) has not only the highest citation count 1167 but also the greatest total link strength of 17656 in the data set. The data could be further verified and analyzed through the following screenshots captures in the VOSviewer.

Fig.2a Cluster view of Citations and Total Link Strength of Cited References as Visualized through VOSviewer.

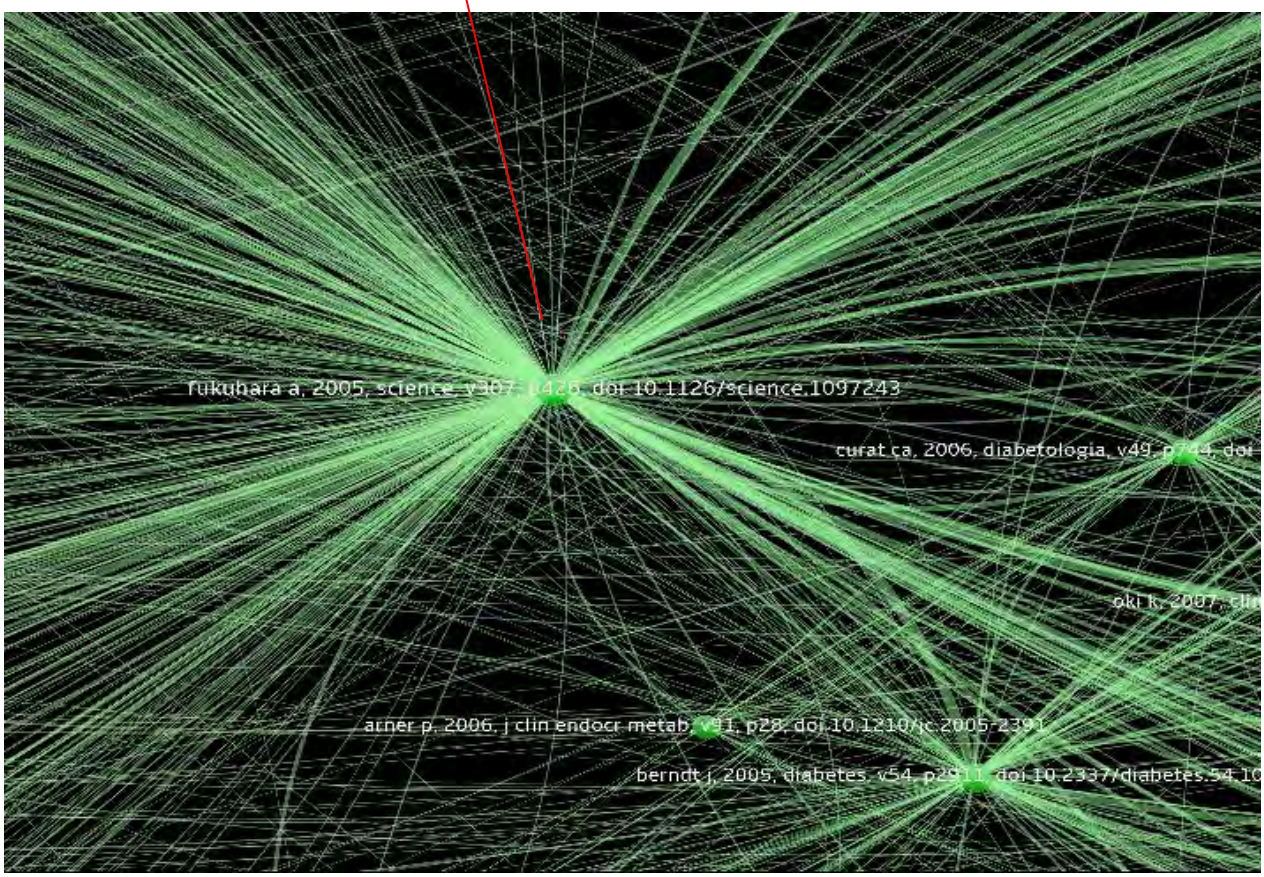



The network visualization represented in fig. 2b represents the data set of cited references of the retracted article and chain of citation links of the cited references. It is divided into four clusters. Cluster 1 represented in red is the biggest cluster with a total of 323 items linked followed by cluster 2 represented in green containing 136 items. It is worth to mention that the retracted paper falls into cluster 2. The third and fourth cluster is represented in blue and yellow having 40 and 1 items respectively, where by default the color range of blue and yellow represents low score. The items falling in the cluster of same colour have direct dependency on each other and the indirect dependency with the items located in other clusters. However, all the items are connected to each other in nearer or distinct manner through citation chains. The map depicts the retracted article of ***Furkara, A*** published in ***Science*** has taken the central position in the data. It represents the dependency of scientific literature on the retracted item.

Fig.2b Network visualization of Bibliographic coupling and co-citation of retracted article




**Visfatin: A protein secreted by visceral fat that mimics the effects of insulin"** *published in* Science *in 2005 by* ***Fukuhara, A***



## Discussion and Conclusion

Our study aims to raise the awareness of the increasing prevalence of citations to retracted article by showcasing how retracted article is cited hundreds of times in the scientific literature. Visualizations of co-citation networks of the selected retracted article demonstrate that it is deeply interwove with the rest of literature. We have demonstrated with visualization and science mapping techniques that retracted articles are highly cited as part of vibrant lines of research. In other words, these retracted articles are potentially more dangerous than are retracted articles in less active areas of research, especially when no effective tools are readily available to track down closely related articles. We recommend that the study of scientific literature should be done routinely such that retracted articles and closely related articles can be identified in a timely manner. We have demonstrated how a visual analytics approach can be used to facilitate the studies to identify the presence and citation of retracted articles in scholarly literature. Articles citing retracted works are not methodically reexamined and there are no set guidelines to stop citation to retracted articles. Hence, new articles may unknowingly cite a chain of such articles. More important, verifying the validity of articles on citation chains becomes increasingly challenging as new publications are added to the literature, and their validity may be taken for granted because they are not directly involved in any retractions. New mechanisms for checking plagiarism, duplication, and indirect citations to retracted articles in new manuscripts should be considered as an integral part of a manuscript-management workflow.

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# Was Beall's List of predatory Journals worth Disappearing?

**Rosy Jan**
Sr. Assistant Professor, Deptt. of Library and Information Science, University of Kashmir, India

**Sumeer Gul**
Sr. Assistant Professor, Deptt. of Library and Information Science, University of Kashmir, India

## Abstract

The substandard, low quality or predatory journals are the real threat to the publishing industry. It is a challenge to the quality and ethics of publication. The problem grabs the attention of scholarly community when the publisher of an open access journal **Gunther Eysenbach**, identified a black sheep among open access publishers and journals, since then many experiments were conducted to identify the black sheep and guidelines were issued to avoid them. However, the most substantial work in the field of predatory publishing was performed by **Jeffery Beall** who came up with a blacklist of predatory OA publishers and journal. For several years since the publishing of the Beall's list, there has been increasing concerns about the criteria that Beall used to develop his lists, with some scholars dismissing his lists as inaccurate, misleading and dangerous to academics. The paper is a discourse on the 56 characteristics list by Beall as guidelines for Determining Predatory Open-Access Publishers and journals**.**

# Predatory Publishing or Quality Research: Which is Bigger Challenge for India

**Rosy Jan**
Sr. Assistant Professor, Deptt. of Library and Information Science, University of Kashmir,India

**Sumeer Gul**
Sr. Assistant Professor, Deptt. of Library and Information Science, University of Kashmir, India

## Abstract

International Consortium of Investigative Journalists initiated an investigation on predatory journals and found India as one of the biggest hubs for predatory publishing. Publishing and supporting such outlets represent an attempt to deceive people and contradicts the goals of scientific rigor and honesty. Indian academics continue to publish in fake journals in high volumes giving the higher education sector a bad name. In this context it is necessary to revisit the Indian academic research scenario to understand the reason behind the problem. The paper proposes that predatory publishing is a "symptom of dissatisfaction" within the Indian academic research system which includes Pressure to publish, unrealistic demand for perfect results, bad selection processes, lack of infrastructure resources, facilities and opportunities. Further, weak ecosystem for creativity and innovation need to be bridged to make academic research and publication system more relevant and strong to stop and eradicate the problem of predatory publishing or coerce publishing.

## Keywords

Predatory publishing, Perish or Publish, scholarly communication, Beall's List, UGC CARE list.

## Introduction

In the context of open-access (OA) academic publishing, the mounting pressure cross global academe to publish or perish has spawned an exponentially growing number of dodgy academic e-journals charging high fees to authors, often US$300-650, and even triple that amount, promising super-fast processing and publishing OA online. *Jeffrey Beall* has characterized this phenomenon as 'predatory OA publishing,' since it is oriented largely to extorting a high fee from authors particularly from the developing countries. In 2014 over 400,000 articles were published in about 8000 journals that many regard as predatory (**Shen &Bjork, 2015**). The term "predatory publishers" was first used by Jeffrey Beall of the University of Colorado, who documented this phenomenon on his blog and in an annual list (**Beall,2017**). Although his website closed in January 2017 under mysterious circumstances, it has effectively set the tone of

debate around such journals, and the term 'predatory' has become the standard way to describe them. Indeed, the closure of his website has generated considerable consternation. In this framing, Beall is treated as the lone bulwark against the tide of predatory journals that would otherwise overrun academics. Although the term, and its variants such as "predatory journals", is widely used, they have been criticized. One problem is that the term predator may cover a spectrum of organizations, business activities and publications ranging from the amateurish but genuine to the deliberately misleading. As with other ethical questions, drawing a line between good and bad can be difficult. In this respect, defining predatory behavior poses similar difficulties to defining other types of unethical behavior. Jeffrey Beall lists over 50 characteristics he used to identify predatory publishers and journals from their websites but notes that although these features usually reflect poor practice, they are not unambiguous criteria **(Beall, 2017)**. One of the most concerning features of predatory journals is that they claim to peer review submissions to ensure their quality, but actually they do not. This misleading characteristic was well demonstrated by investigative journalist *John Bohannon* who tested it by submitting clearly flawed manuscripts to over 300 journals, over half of which accepted them without proper scrutiny. Whatever we choose to call them, it is therefore impossible to deny that many journals have worryingly low standards and some appear to deliberately mislead authors, for example by referencing bogus impact factors or high jacking the titles of legitimate journals. Many of the companies on Beall's list are based in Asia, especially India. Some have argued that researchers from developing countries are most likely to be the "victims" of such publishers. **Xia et al (2015)** noted that those who published in predatory journals were mainly "young and inexperienced researchers from developing countries. Others have noted that non-native English speakers are more likely to be taken in by predatory websites. However, Indian is ranked as highest contributor in predatory journals. The problem is directly connected with the dissatisfactory Indian academic research system and unrealistic performance measures for selection, promotions, and other similar benefits which enhance the incentive to cheat. The problem of publishing in such cheat outlets is also attributed to the explicit versus implicit rules, penalties and rewards attached to such rules, extent of training imparted, regulations involved and insufficient mentoring and the lack of institutional transparency.

### *Objectives:*

- To understand the process of Predatory Publishing and its infiltration into Indian Academia.
- To identify the reasons of low quality research in India.
- To suggest the possible remedies for the nuisance.

## Predatory Publishing and its Infiltration into Indian Academia

Taken advantage of the Internet technology, the open access movement, and the needs of young, inexperienced, or incompetent researchers for scholarly publications avaricious individuals and publishers created shoddy websites where authors might be enticed to publish because of lax

review, if any, and promised fast printing. It has a negative impact on OA publishing in particular and on scholarly communication in general. Predatory publishing are often unprofessional and lack quality control, it has many attributes that make it different from professionally managed scholarly publishing (**Butler, 2013; Clarke & Smith, 2015; Raghavan, Dahanukar & Molur, 2015**). It has Article Processing Charges (APC), dubious editorial boards, and absence of a formal peer review process. Facing these realities, scholars have devised strategies to battle these noxious practices. These include submitting grammatically correct but nonsensical papers to shabby open access journals to detect the deception (e.g**., Bohannon, 2013; Davis, 2009; Djuric, 2015**), and opening blog threads to expose particular journals (e.g., **Eisen, 2013**). Several studies have been conducted to investigate predatory journal publishing. For example, Björk and his colleagues published a series of articles seeking to understand it within the context of a scholarly publishing ecosystem **(Björk, 2012; Laakso & Björk, 2012; Shen & Björk, 2015).** Other scholars have engaged in empirical research to explore reasons behind such practices in selected countries (e.g., **Ezinwa Nwagwu & Ojemeni, 2015; Nwagwu, 2015; Omobowale et al., 2014)**. Many steps were taken by international community to identify the threat. Most famous are two long lists of the so-called predatory publishers and journals, amounting to a virtual blacklist of as many as 1,000 publishers and almost the same number of standalone open access journals (**Beall, 2016a, 2016b**). These two lists were suddenly taken down in January of 2017 for unknown reasons, which shocked the media and scholarly community (**Chawla, 2017; Silver, 2017).** However, the Internet archive site Web Archive has preserved the lists, including all of their update history since the first publication of both lists. Beall's list include most of the predatory journals emerged from India. As indicated by many studied most often Indian academicians and researchers submit in the predatory journals. The prosperity of such journal publishing in developing nations reflects an imbalanced supply-demand market that sees an inadequate number of publishing venues and an increasing number of researchers who need publications for survival (**Xia, 2014a**). There are socio-cultural and political factors that may have also driven submissions to these journals by authors from some developing countries, e.g., the culture that values quantity of publications more than quality, or simply policies that compel junior researchers, who do not usually have necessary experience and resources for conducting high quality scientific studies and completing scholarly acceptable articles, to publish in international journals (**Pulla, 2016**). Thus, it is not astonishing that the studies found that the majority of predatory publishers are located in Asia – including continental Asia and the Middle East – particularly in India and Pakistan (**Ameen, 2017; Bohannon, 2013; Lakhotia, 2015; Pulla, 2016; Seethapathy, Santhosh & Hareesha, 2016; Shen & Björk, 2015).** India is also identified as a country where single-journal predatory publishers prefer to grow their business (**Shen & Björk, 2015**). Examinations of the origin of authors who publish in predatory journals singled out Asian countries, primarily China, India, and Pakistan, although Nigeria also ranks high on the list (**Ezinwa Nwagwu & Ojemeni, 2015; Lakhotia, 2015; Xia et al., 2015)**. This geographic distribution makes one wonder why this business model is Asia-centric and what effect predatory publishing has had on scholarly communication within Asia, particularly India.

# Reasons of low quality research and the consequent submission of manuscripts by Indian Acedemicians in Predatory journals

## *Low Quality Academic Research in India*

The establishment of the "***Indian Association for the Cultivation of Science (IACS)***" in Calcutta in 1876, whose founder Dr. Mahendra Lal Sircar envisioned an institution for "purescience learning and science-teaching" with the hope of ultimate success in research. Elsewhere, beginning in late nineteenth century, Sir Jagadis Chunder Bose and Sir Prafulla Chandra Ray conducted internationally recognized research work as professors at Calcutta's Presidency College. Many talented Indian academicians including classical scholars, social scientists, geographers, historians, linguists, musicologists, philosophers, and experts in other branches of knowledge, attained name and fame for their scholarly work. This was a great start. There was a small but active group of outstanding academics in colonial India, who did world class research and published articles in world's leading academic journals. India established a huge lead in doctoral education and academic research over other Asian nations except Japan. However, India got lost in a quagmire and the essence of research is lost. The factors contributing to the poor research culture in India includes: (a) blind adoption of mainstream research culture of the West, (b) lack of an ecosystem that facilitates research, (c) viewing faculty members as "generalists", (d) emphasis on teaching and training, (e) no genuine incentive for faculty to conduct relevant research, (f) limited bandwidth to conduct relevant research, and (g) a preoccupation with methodologically rigorous research.

Academic research in developing countries including India, as pointed out by **Chossudovosky (1977)**, has adopted the mainstream research tradition of the West at some point of time in history. He argued that the research tradition and culture in developing countries seems to be the byproduct of the global framework of international capitalist relations. Academic scholars in India seem to be under pressure to create "universal knowledge" in alignment with the developed countries research paradigm (**Khatri,et al., 2012**). That seems to have led faculty to borrow knowledge from western world, rather than develop it indigenously. Academic scholars in India, as Prof. A. Ojha of IIM Bangalore has noted (**Khatri et al., 2012**), seem to have limited confidence and rarely assert their stand if it does not confirm to the received wisdom from the developed countries. They rarely question the dominant Western research paradigm that has limited applicability in the Indian context and tend to replicate studies conducted in the West using the Western research paradigm. As **Meyer (2006)** has noted, many Asian scholars lack the self-confidence to challenge existing theories where they are unsuitable, and to push locally relevant research agendas. Even the custodians of knowledge in India, as pointed out by Prof. Ojha, mostly trained in reputed institutes of the West find it difficult to appreciate indigenous knowledge creation, since the issues of interests and the methods do not conform to the norms acceptable in the West. **Banerjee (2013**) has also noted that no institute has enough infrastructure for quality research and that contributes significantly to the low number of quality research projects undertaken. Further, he pointed out that academic faculty are viewed as generalists; they are expected to be superior performers in all aspects of academics (teaching, research and administration), which is unrealistic as each requires a unique competence. The lack

of research in India universities could also be attributed to the "teaching" and "training" emphasis, which is in keeping with the mandate given by the Government of India to provide quality teaching and produce quality graduates. The recruitment of faculty is also based on their teaching skills. The institutional mechanisms of reward and recognition, as also the performance appraisal system focus on teaching excellence. Further, as **Panda & Gupta (2007)** have pointed out, there is a lack of "real" incentive for academic scholars in academic institutions in India to conduct relevant research. At the individual level, most institutions have teaching goals for their faculty (**Khatri et al., 2012**). Not many institutes have mandatory research goals for individual faculty though they may incentivize research publications. India Academicians and scientists also seem to be under pressure to establish their reputation and credibility in the international arena by enhancing their international ranking. Hence, they encourage faculty members to publish in peer reviewed journals of international repute, identified by US norms and on citations in databases such as the web of science and scopus, through various kinds of incentives. Such criteria tend to create incentives to work on themes of global or US interest at the expense of themes that are relevant to the Indian context. Academic scholars in India seem to find themselves caught between the need to conduct context sensitive research to ensure "relevance", and the need to publish in reputed peer-reviewed journals to ensure enhancement of their professional reputation and the ranking of their schools. The review processes of these peer reviewed journals tend to emphasize methodological rigor rather than organizational relevance: methodological rigor includes nature and size of the sample, nature of data collected, methods used for data collection and analysis, and so on. This often comes at the cost of relevance of the findings to organizational realities (**Odiorne, 1966**). Most researchers are academically trained to develop or validate theories/ frameworks using scientifically rigorous data analysis tools rather than conducting problem solving research through application of available knowledge (**Kilmann et al., 1983**) this is a requirement to publish in reputed peer review, and indexed journals. Researchers Aspirations toward academic promotion are directly connected with the presence of their papers in such journals. More importantly fear of job lose and "publish-or-perish" is another major issue equally important to competition among colleagues; desire to score higher and gain respect.

### *Other issues*

Adding to the above reasons Indian institutions have commonly cited probable causes like poor academic environment, dearth of academic resources, low salary, and same salary regardless of academic quality. Further, dearth of graduate students and potential collaborators of high academic caliber, need to be carefully examined and appropriately remedied. The process of selection of researchers of caliber from all corners of globe through keenly competitive process is missing in Indian context. Rather like many other nations; India faces the "brain-drain" problem. Instead of staying stuck in serene mediocrity, Indian institutions should make efforts to attract high quality Ph.D. students from India and other nations which require strong financial backing. Therefore, Resource starved Indian institutions need more money. Another issue is related to the appointment of talented individuals as leaders of Indian institutions. The selection policy of India and developed countries vary with respect to academic distinctions, leadership skills, fundraising ability, strong prior administrative record, and a long list of other accomplishments; political appointments are rare in western world in comparison with India.

Consequently, the academic leaders at Indian institutions are not really successful in raising money for research projects and other related aspects. Thus, to support and uphold academic research India needs considerable improvement in this regard. But education policymaking in independent India is yet to demonstrate familiarity with the complex issues that underlie highest level academics and have failed to build great research universities and institutes.

## Suggestions to create an enabling ecosystem for research to end the demand and dependence on predatory publishing

In order to create an eco-system that facilitates organizationally relevant research, Indian academic system should collaborate for research, review and revamp doctoral research programmes, attract and groom academic faculty for conducting relevant research and collaborate and sponsor a pan-Indian academic journal that puts balanced emphasis on both methodological rigor and practical relevance of the contributions. The academic scholars too in their individual capacities should understand the nature of disconnect with organizational realities, be more confident and assertive, collaborate with scholars from other disciplines and expand their methodological repertoire by including methodologies which take cognizance of the role of practical issues and explicitly address the interdependence of theory and practice. First, researchers should seek to understand the nature of disconnect between the world of academics and practice, which needs to be explored through appropriate research **(Rynes, 2007).**

Personal courage and independence of thought is required for a researcher to suggest the western theories and instruments of grading research performance are inapplicable or irrelevant in Indian context**.** Such self-confidence would come through mentoring and coaching by experienced and more accomplished researchers. **Ghosal (2005)** has urged academic institutions should take fresh guard by revisiting the structure of the PhD. Programme; the requirements of publishing in top journals, and the criteria of faculty recruitment and tenure system. The relevance of academic research can be enhanced by doing research in relevant areas and working collaboratively with organizational members to understand research findings (**Mohrman, Gibson, & Mohrman, 2001**). Academic institutions need to attract faculty with research skills and aptitude and who are adequately grounded in Indian ethos and also suitably exposed to other societies and cultures. In the current system, as noted by **Banerjee (2013)**, with the approach of evaluating faculty members on research and teaching, the quality of academic output would suffer as only a small number of faculty members would be excellent at both. He has suggested that need to develop specialized tracks and groom a group of faculty members for teaching, another group for research, and a third group for academic administration, as one cannot be expected to be excellent in all three aspects. Academic researchers with writing skills and research caliber need to be mentored by senior scholars so that they evolve into serious researchers and engage in deeper research and contribute to peer-reviewed journals. Junior scholars should seek out partnership with senior scholars around the world to collaborate on and co-author research. This would help them publish in quality journals that would bring an end to the demand and dependence on the market of predatory publishing.

## Conclusion

A healthy eco-system that facilitates organizationally relevant research and transformation of the academic research environment and reward system, raising standards and development of true collegiality both within and between institutions will help to revamp the Indian academics and research system. It will lead to a balanced emphasis on both methodological rigor and practical relevance of the contributions rather than irrelevant mechanisms of reward and recognition and performance appraisal based on some vague and artificial number system. If the system is ready to make such transformations the market for predatory journals will disappear and the country will no longer be regarded as the blooming market of predatory publishing.

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# Information Literacy Skills among Faculty members of Central Universities in India: A survey

**Haleema Khatoon**
Assistant Professor, Dept. of Library and Information Science, Bareilly College, Bareilly

**Khalid Nadeem Khan**
Assistant Librarian, Faculty of Dentistry, Jamia Millia Islamia, New Delhi, India.

## Abstract

Information literacy education is relevant to quality research, quality teaching and learning and quality teaching environment. Quality Education is one of the important goal of 17 sustainable development goals that were adopted by the United Nations General Assembly with the 2030 agenda for sustainable development.

With the recent developments in Information and Communication Technologies (ICT) and globalization of information, it is easy for individuals to access information from anywhere and at any time. But this process requires the best skills to find out the qualitative and authentic information from the vast source of Information.

***Purpose:*** Present study is an attempt to know the digital information literacy skills of faculty members of central universities in India. It has been tried to analyze the skills of faculty members in searching of desired information from various digital sources. This paper highlights the ways and means used by the faculty members in searching of required information and various constraints faced by the faculty members at the time of searching.

***Design/methodology/approach:*** A well-structured questionnaire was prepared and administered for collecting data from faculty members of various branches of science and social science of major central universities in the country ie. Banaras Hindu University (BHU), Varanasi, Delhi University (DU), New Delhi and JamiaMiliaIslamia, (JMI), New Delhi. A total of 446 questionnaires were administered respectively to randomly selected faculty members of BHU, DU and JamiaMiliaIslamia. Out of which 148 respondents from BHU, 97 respondents from DU and 118 respondents from JMI have been responded.

***Findings:*** Major findings of the study basically focus on the information Literacy skills of Faculty members of major central universities in India. The investigator has discussed the major findings in detail. This study finds the most preferred electronic information sources and search tool used by the faculty members. Finding shows their information literacy skills, various constraints faced by the faculty members and impact of various digital sources on their academic work performance.

***Research limitations/implications:*** The study is limited to three central universities such as BHU, DU and JamiaMiliaIslamia, New Delhi by only targeting the discipline of Science and

Social Science. Therefore, findings, conclusions and recommendations may be applicable and reasonable to be generalized on all the faculties of these universities as well as other central universities. The study recommended a further research to examine more additional aspects of information literacy skills among faculty members of other disciplines.

***Practical implications:*** Findings and suggestions of this study will definitely help to develop information literacy skills among faculty members which will in turn improve the quality of teaching. It will definitely be good for the future and existing style of learning and teaching. The study may help to change and influence the way of learning and accessing of appropriate information resources and services. It will also help the universities to provide opportunities for ensuring that all students acquire the necessary competence in knowing how to navigate the web and find quality resources, to formulate questions,to access potential sources of information, to critically evaluate information for accuracy and quality, to organize information and finally to use information to do something.

***Social implications:*** The study provides valuable insight into the information Literacy skills of faculty members. IL has become a new paradigm and the most critical set of skills in todays and tomorrow's advanced information and communication world. It acknowledges the crucial role of information in our everyday lives. It will immensely increase the ability to access and employ information using various sources. It will help the learners to gain an understanding of the technological environment in which information resources are incorporated and used.

***Originality/value of the study:*** There has been a lot of literature published regarding the information literacy skills of faculty members of Engineering and Medical colleges and different students (UG,PG level); but no study has been conducted to investigates the information Literacy skills in the context of faculty members of Indian central universities.

## Keywords

Digital Literacy,Information Literacy, Faculty members;Teaching and Learning

## Introduction

The ability ofmost developing nations to achieve the earlier stated millennium goals(MDGs) which include eradication of poverty, universal primary education, gender equality and combating diseases of various kinds; among others, led to the adoption of 2030 agenda for the achievement of new sets of sustainable development goals by the united nations in 2015.(Olufunke,2018).

The new formulated sustainable development goals include among others, ending poverty and hunger, fighting inequality, having access to clean water and sanitation, good jobs and economic growth and peace and justice among others.(Olufunke,2018 as cited in global goals2018)

Good as these new sustainable goals might be, they may become a mirage and unattainable if the citizens of any nation willing to achieve the above goals lack information literacy skills.(Olufunke,2018 as cited in Eyong, 2016)

The implication is that diverse strategies must be employed to facilitate the acquisition of information literacy so that sustainable development goals would become realities on the individual level as well as the national level. (Olufunke, 2018).

Information Literacy education is relevant to quality research, quality teaching and learning and quality teaching environment. Quality education is one of the important goal of 17 sustainable development goals that were adopted by the united nations general assembly with the 2030 agenda for sustainable development.

Focus of this agenda is on “universality”.so, quality education must be ensured on the entire planet.

## Information Literacy

Information is the living of democracy and it is measured as the vital source of power. Information Literacy is currently understood as acceptance or the ability to define a problem, find information to solve the problem, evaluate information and use it effectively. (Thirmagal and Mani, 2016 as cited in Thanuskodi,2011)

With the recent developments in information and communication technologies and globalization of information, it is easy for individuals to access information from anywhere and at anytime. But this process requires the best skillsto find out the qualitative and authentic information(Lata and Sharma, 2013).

The tsunami of information in today’s world has urged modern societies to explore and develop new intelligent search skills and behaviors while accessing and using information from different sources. Such skills are known as Information Literacy(IL) skills. Information Literacy(IL) has therefore become a new paradigm and the most critical set of skills in todays and tomorrow’s advanced information and communication world. (El Hassani and Nfissi, 2015).

According to the UNESCO,the empowerment of people through media and Information Literacy(MIL) is an important requirement for fostering equitable access to information and knowledge and “promoting free, independent and pluralistic media and information systems.”

With the rapid technological advances in society today and increased access to said technology by people around the world, becoming information Literate is of utmost importance It is very complicated to promote information Literacy in the digital age.Technological skills are the common prerequisite and necessary to cope up with digital environment.(Kumari and Mallaiah, 2017).

To survive and work in this digital age, high level skills for using information and communication technologies are essential for all Professionals.

## Digital Information Literacy

Digital information Literacy is a major component and an improved term of information Literacy which put forth the present condition of libraries and information centres.
It is the ability to find, evaluate and use digital information effectively, efficiently and ethically. It includes analyzing,locating, organizing, evaluating, creating and using information by using digital technology. (Kumari and Mallaiah, 2017).
Glister(1997) defines digital Literacy as "a set of skills to access the internet; find, manage and edit digital information; join in communications and otherwise engage with an online information and communication network.
In simple terms,digital literacy is the ability to properly use and evaluate digital resources tools and services and apply it to their lifelong learning process.

## Objectives

- To understand the IT skills of faculty members of central universities;
- To find out the preferred electronic information sources used by the faculty members;
- To identify the most used search tool for searching the required information;
- To find out the purpose of using electronic sources;
- To find out the criteria used for evaluation of web resources;
- To find out various search strategies used by faculty members to access information;
- To understand the role of digital sources on the academic work performance of faculty members;
- To identify the various constraints faced by faculty members while retrieving desired information.

## Literature Review

A large number of studies have been conducted on Information literacy competency. However there are far few studies on Information literacy competency. Kumar and Kaur (2006) conducted a research study of internet use by students and teachers in engineering colleges of Punjab ,Haryana and Himachal Pradesh. The study provides information about the benefits of internet

over conventional documents.It has been found in the study that internet has become a vital instrument for teaching , research and learning process of respondents. Mishra(2007) conducted a questionnaire survey to study digital information literacy among faculty members at Sambalpur university . It was found that faculty members need e-information in addition to traditional print sources and to some extent they are computer literate.The study by Elgorta ;Smith and Toland(2008) gives an overview of students and lecturers on using wikis in the context of course group work that indicates that both the students and the instructors saw value in using wikis as a collaboration tool.In another study Fariza and Yaacob(2009) explores that information literacy skills can be build and achieved through integrated project work that facilitates and creates independent learning where students learn to be more organized,systematic and self motivate.Mutula(2010) discusses the information literacy challenges faced by the university of Botswana occasioned by the admission of new students who lack to pursue university education because of their information illiteracy.Level of ICT awareness among staff members of Kenneth Dike and Nimbe Adedipe university libraries of Nigeria has been studied by Olatunji and Oluwadore(2011).Murugesan(2011) investigated application of ICT in research and development libraries in Tamilnadu and analyzed that most of the libraries faced a number of barriers like lack of funds ,lack of infrastructures and lack of skilled professionals in the application of ICT.A survey of five leading university libraries in Africa to identify the barriers facing Il programmes in Africa has been conducted by Emmanual and Tarela Kabol(2012).Ganaie(2013) focuses on the concept of information literacy and role of library professionals in supporting information literacy.It has been found from the study that importance of information literacy has not been realized fully by the department of library and information science in North India.Mehaboobullah and Humayun Kabir (2013) conducted a study among college librarians in Kerala on their ICT literacy in the digital age. It has been found in the study that application of ICT has become inevitable in an era of information explosion and wide spread use of digital information.Suman Lata and Sharma(2013) found in their study that it is impossible for the medical professionals to locate the information in very less spare of time ,so keeping in view this ,it is necessary for the medical professionals to be equipped with IL competencies that can help them to effectively search ,locate ,evaluate and use the required information.A research was conducted on the use of ICT products and services among 65 research scholars of social science of Guru Nanak Dev University Amritsar by Kaur(2015).A paper by Krishna and Singh(2015) evaluated the effective use of e-resources and library services in Allahabad university among 75 research scholars and declared that OPAC service is very popular among research scholars rather than other print and e-resources.Thirmagal and Mani(2016) has focused on information literacy skills among faculty members of Engg. Colleges in Tirunelveli district, Tamil nadu.the found from the study that to acquire information literacy skills and to become information literate is not an easy task. It needs continuous updates of knowledge and skills in the competitive knowledge world.Various ways and means for using digital information resources by the faculty members of Sahyadri college of engineering and management ,Mangalore has been examined by K.Kumari and Mallaiah(2017).Haneefa K and Sarika C(2018) assessed the web competency of Library and information science students in universities of kerala.they revealed in the study that most of the students are aware of web applications and are agree that web helps to enhance knowledge and skills of students.

## Methodology

A well-structured questionnaire was used for collecting data from faculty members of DU; JMI and BHU from various branches of science and social science. A total of 125, 125 and 196 questionnaires were administered to the randomly selected faculty members of DU; JMI and BHU respectively. Out of 125 faculty members of DU 97 respondents(77.6%) responded. Out of 125 faculty members of JMI,118 respondents(94.4%) responded. Out of 196 faculty members of BHU,148 respondents(75.51%) responded. 97 respondents out of 125 faculty members of DU, 118 respondents out of 125 faculty members of JMI and 148 respondents out of 196 faculty members in BHU were selected as sample to administer the questionnaire.

## Data analysis and interpretation

The collected data was analyzed using simple percentage mentioned and presented in table 1 to 8.

### *Knowledge of IT*

Table 1: IT skills of faculty members

| S.No. | IT Knowledge | Responses (DU) | % | Responses (JMI) | % | Responses (BHU) | % |
|---|---|---|---|---|---|---|---|
| 1. | Internet | 82 | 84.53% | 108 | 91.52 % | 136 | 91.89% |
| 2. | MS-office | 77 | 79.38% | 98 | 83.05 % | 117 | 79.05% |
| 3. | Multimedia | 58 | 59.79% | 70 | 59.32 % | 96 | 64.86% |
| 4. | Programming Language | 69 | 71.13% | 77 | 65.25 % | 102 | 68.91% |

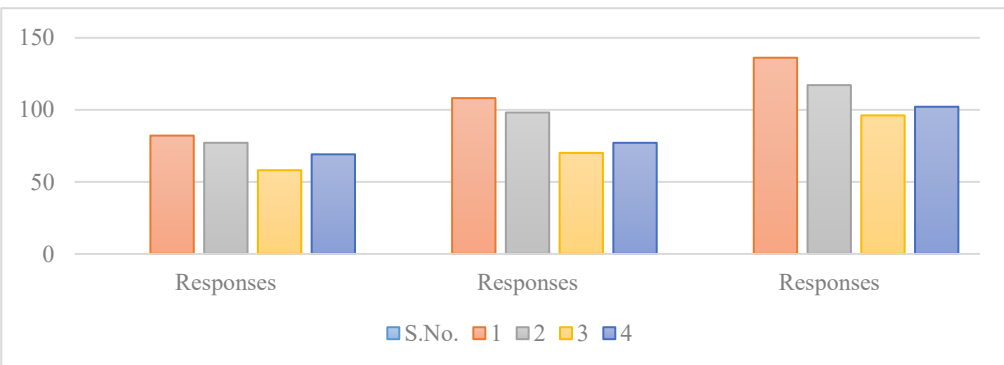
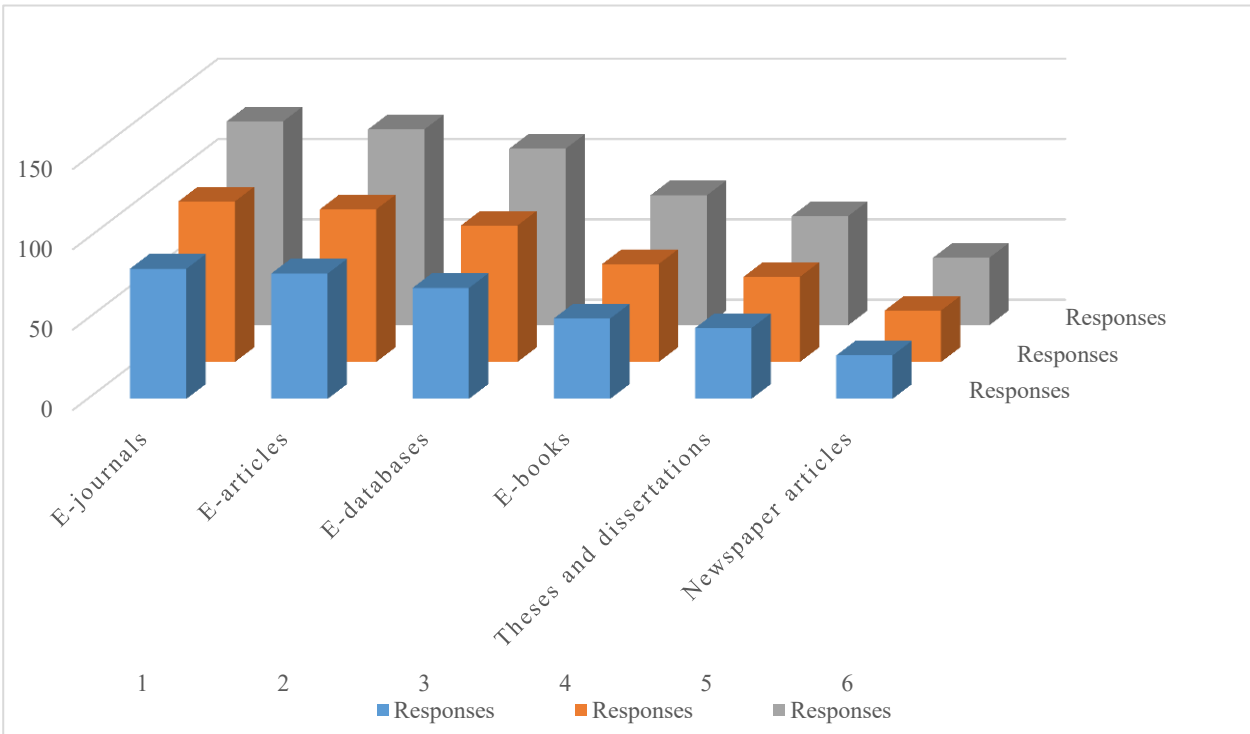



Figure 1: IT skills of faculty members




This table shows that maximum number of respondents(91.89%) from BHU followed by (91.52%) of JMI and (84.53%)of DU have used internet to acquire digital information. A significant number (83.05%) respondents of JMI followed by (79.38%) and (79.05%) of DU and BHU respectively have working knowledge of MS-office.
It has been found from above interpretation that faculty members of above mentioned universities have good knowledge of internet applications.

### *Information Sources*

Table 2. Information sources preferred to search information

| S.No. | Information Sources | Responses (DU) | % | Responses (JMI) | % | Responses (BHU) | % |
|---|---|---|---|---|---|---|---|
| 1. | E-journals | 81 | 83.5% | 100 | 84.74% | 127 | 85.81% |
| 2. | E-articles | 78 | 80.41% | 95 | 80.50% | 122 | 82.43% |
| 3. | E-databases | 69 | 71.1% | 85 | 72.03% | 110 | 74.32% |
| 4. | E-books | 50 | 51.54% | 61 | 51.69% | 81 | 54.72% |
| 5. | Theses and dissertations | 44 | 45.36% | 53 | 44.91% | 68 | 45.94% |
| 6. | Newspaper articles | 27 | 27.83% | 32 | 27.11% | 42 | 28.37% |

*Figure 2: Information sources preferred to search information*

Table 2 reveals that E-journal is the most preferred information source to search information as most of the respondents(85.81%) From BHU followed by(84.74%) from JMI and (83.5%) of DU are having more demand of E-journals as compare to any other information source. Electronic

articles are used by a significant number of respondents i.e. (82.43%) of BHU; (80.50%) of JMI followed by (83.5%) of DU. E-databases are however needed by 110 (74.32%) of BHU; (72.03%) of JMI and (71.1%) of DU.

The need of other sources of information such as E-books, Theses and dissertations and newspaper articles are less popular among faculty members of all the respective universities.

### *Most used search tool*

Table 3. Most used search tool

| S.No. | Search Tools | Responses (DU) | % | Responses (JMI) | % | Responses (BHU) | % |
|---|---|---|---|---|---|---|---|
| 1. | Search Engines | 84 | 86.5% | 102 | 86.44% | 131 | 88.51% |
| 2. | Web Portals | 70 | 72.1% | 95 | 80.5% | 117 | 79.05% |
| 3. | Subject gateways | 39 | 40.2% | 88 | 74.57% | 111 | 75% |
| 4. | Meta search engines | 25 | 25.7% | 27 | 22.8% | 87 | 58.78% |
| 5. | Online bibliographic databases | 44 | 45.3% | 33 | 27.9% | 45 | 30.40% |

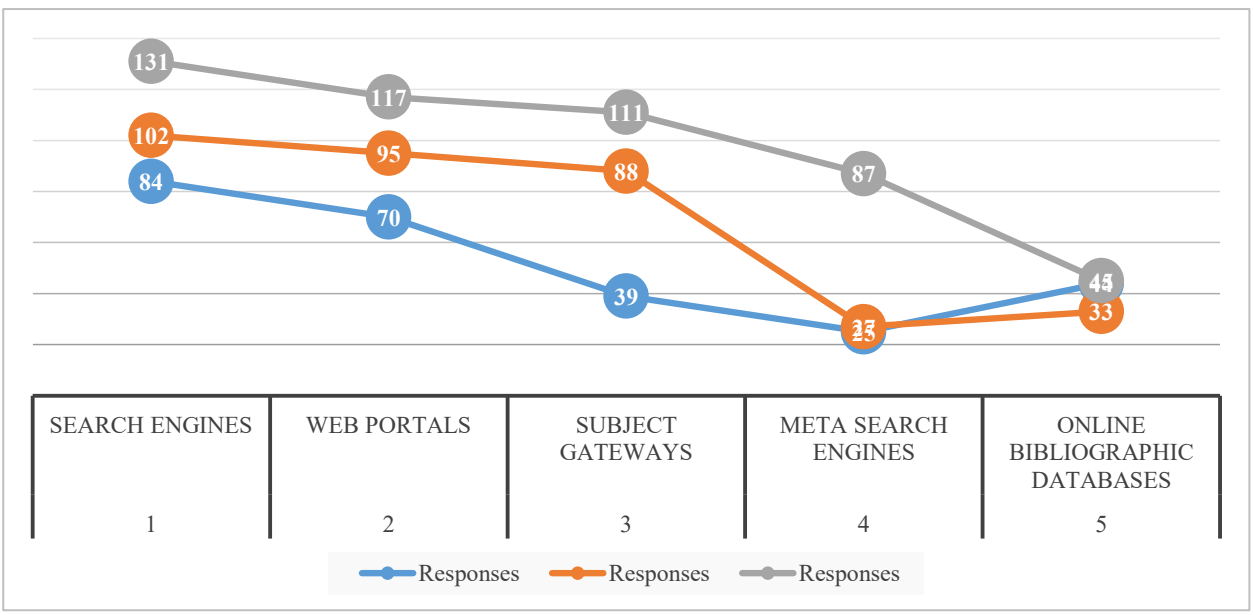



*Figure 3: Most used search tool*

Table 3 reveals that 84(86.5%) respondents from DU; 102(86.44%) respondents from JMI and 131(88.51%) respondents from BHU use search engines for searching the internet. A significant number of respondents i.e.70 (72.1%) respondents of DU; 95(80.5%) of JMI and 117 (79.05%)

respondents of BHU use web portals. Few of them prefer subject gateways i.e. 40.2% from DU; (74.57%) from JMI and (75%) from BHU. Meta search engines and online bibliographic databases are least used search tool by the respondents of DU, JMI and BHU.

### *Purpose of using E-resources*

Table 4. Purpose of using E-resources

| S.No. | Purpose | Responses (DU) | % | Responses (JMI) | % | Responses (BHU) | % |
|---|---|---|---|---|---|---|---|
| 1. | To prepare lecture for teaching purpose | 69 | 71.13% | 88 | 74.5% | 103 | 69.5% |
| 2. | To update subject knowledge | 58 | 59.79% | 70 | 59.3% | 81 | 54.7% |
| 3. | To support research | 53 | 54.63% | 61 | 51.6% | 75 | 50.6% |
| 4. | To write paper for publication | 58 | 59.79% | 73 | 61.8% | 88 | 59.4% |

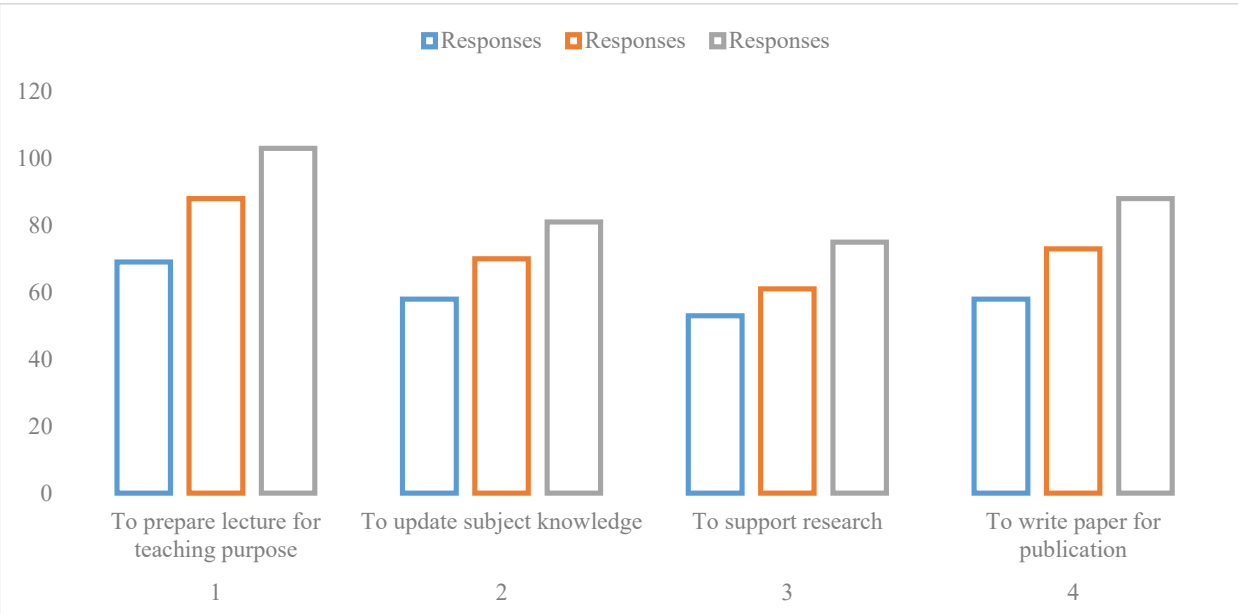



Figure 4: Purpose of using E-resources

Table 4 reveals that 69 respondents i.e.(71.13%) from DU; 88 respondents (74.5%) from JMI and 103 respondents (69.5%) from BHU use e-resources for preparing their lectures to teach; (59.79%)respondents from DU; (59.3%) respondents from JMI and (54.7%) respondents from BHU need e-resources to keep their knowledge update. A significant number of respondentsi.e. (54.63%) from DU; (51.61%) from JMI and (50.6%) from BHU use e-resources for writing paper for publication followed by support researchi.e.(54.63%) from DU; (51.6%) from JMI and (50.6%) from BHU.

### *Criteria for evaluation of web resources*

Table 5. Criteria for evaluation of web resources

| S.No. | Criteria for evaluation | Responses (DU) | % | Responses (JMI) | % | Responses (BHU) | % |
|---|---|---|---|---|---|---|---|
| 1. | Authenticity | 48 | 49.4% | 61 | 51.6% | 72 | 48.6% |
| 2. | Relevancy | 38 | 39.17% | 45 | 38.13% | 52 | 35.13% |
| 3. | Reliability | 15 | 15.46% | 18 | 12.16% | 19 | 12.83% |
| 4. | Others | 0 | 0% | 0 | 0% | 0 | 0% |

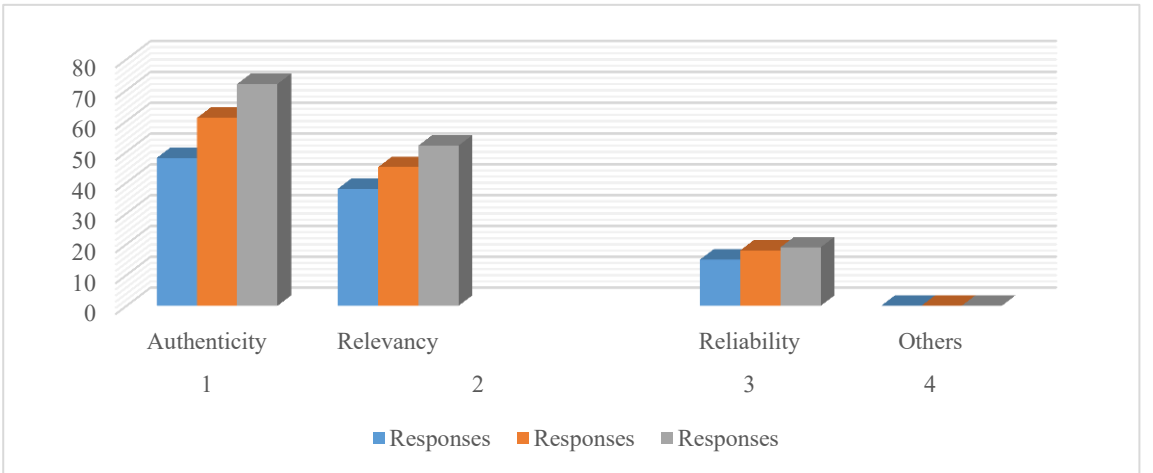



Figure 5: Criteria for evaluation of web resources

It is clear from table 5 that major criteria for evaluating web resources of information is the authenticity of information i.e. (49.4%) from DU; (51.6%) from JMI and (48.6%) from BHU followed by Relevancy (39.17%); (38.13%) and (35.13%) from the respondents of DU:JMI and BHU respectively. Reliability is the minor criteria as (15.46%) respondents from DU; (12.16%) from JMI and (12.83%) from BHU evaluate web resources of information for reliability.

### *Search strategy used at the time of searching*

Table 6. Search strategy used at the time of searching

| S.No. | Search Strategy | Responses (DU) | % | Responses (JMI) | % | Responses (BHU) | % |
|---|---|---|---|---|---|---|---|
| 1. | Simple search (use of keywords) | 82 | 84.5% | 100 | 84.7% | 123 | 83.1% |
| 2. | Phrase search( use of quotations) | 39 | 40.2% | 50 | 42.3% | 64 | 43.2% |
| 3. | Complex search | 30 | 30.92% | 37 | 31.35% | 47 | 31.7% |
| 4. | Advanced search | 20 | 20.61% | 26 | 22.03% | 30 | 20.2% |

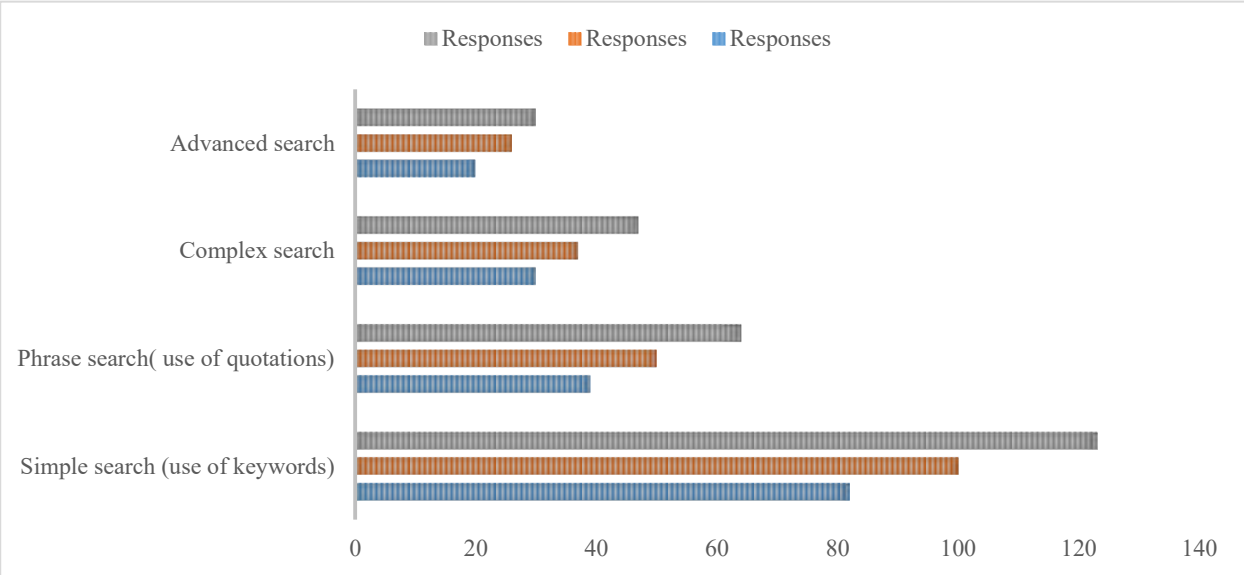



Figure 6: Search strategy used at the time of searching

It is revealed from table 6 that most of the respondents i.e. (84.5%) from DU; (84.7%) from JMI and (83.1%) from BHU use simple search by using keywords. It is followed by phrase search as (40.2%) respondents from DU ;(42.3%) respondents from JMI and (43.2%) from BHU use quotations for searching the required information. Some respondents (30.92%) from DU; (31.35%) from JMI and (31.7%) from BHU use complex search. Boolean logic is used by very less number of respondents i.e. (20.61%) of DU; (22.03%) from JMI and (20.2%) from BHU.

### *Impact of digital sources on academic work performance*

Table 7. Impact of digital sources on academic work performance

| S.No. | Disciplines of Impact | Responses (DU) | % | Responses (JMI) | % | Responses (BHU) | % |
|---|---|---|---|---|---|---|---|
| 1. | Current information accessed immediately | 92 | 94.8% | 106 | 89.8% | 137 | 92.5% |
| 2. | Easy access to information | 82 | 84.5% | 95 | 80.5% | 116 | 78.3% |
| 3. | Fast access to information | 72 | 74.2% | 87 | 73.7% | 101 | 68.24% |
| 4. | Access to wide range of information | 54 | 55.6% | 67 | 56.7% | 76 | 51.3% |

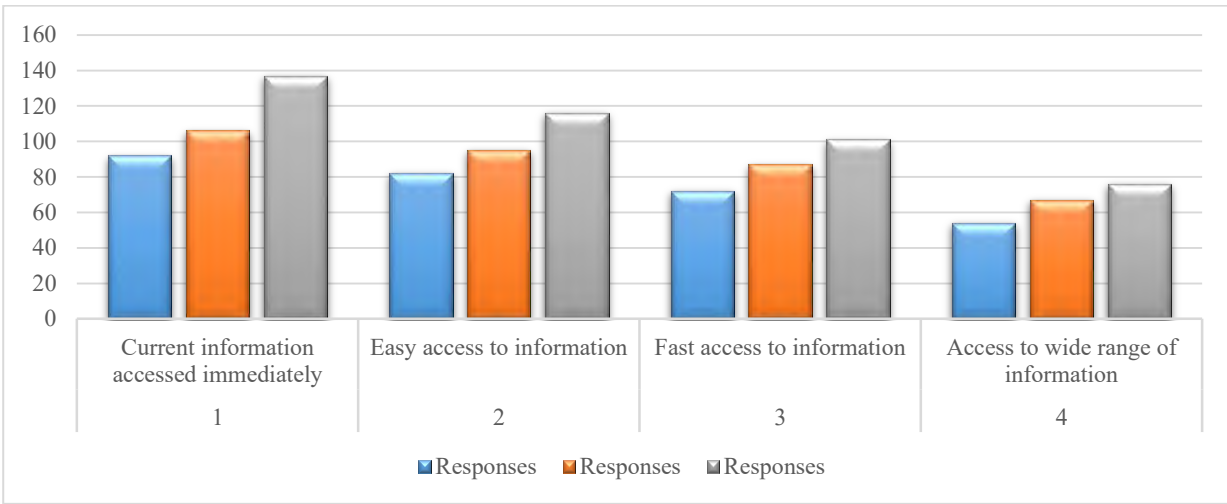



Figure 7: Impact of digital sources on academic work performance

Table 7 shows that 92 respondents i.e. (94.8%) from DU; 106 (89.8%) respondents from JMI and 137(92.5%) from BHU access to current up-to-date information by using digital resources. 82 (84.5%) respondents from DU; 95 (80.5%) from JMI and 116 (78.3%) respondents from BHU indicates easier access to information. 72 respondents i.e.(74.2%) from DU; 87(73.7%) from JMI and 101 (68.24%) from BHU stated that fast access to information is the great benefit of using digital sources.

### *Constraints faced in searching the required information*

Table 8. Constraints faced in searching the required information

| S.No. | Constraints | Responses (DU) | % | Responses (JMI) | % | Responses (BHU) | % |
|---|---|---|---|---|---|---|---|
| 1. | Non availability of required information | 38 | 39.17% | 53 | 44.9% | 78 | 52.7% |
| 2. | Unskilled Library Staff | 24 | 24.7% | 34 | 28.8% | 42 | 28.37% |
| 3. | Slow speed | 20 | 20.6% | 26 | 22.03% | 25 | 16.8% |
| 4. | Time consuming | 15 | 15.4% | 14 | 11.8% | 20 | 13.5% |
| 5. | Language of search engine | 12 | 12.3% | 10 | 8.47% | 16 | 10.81% |

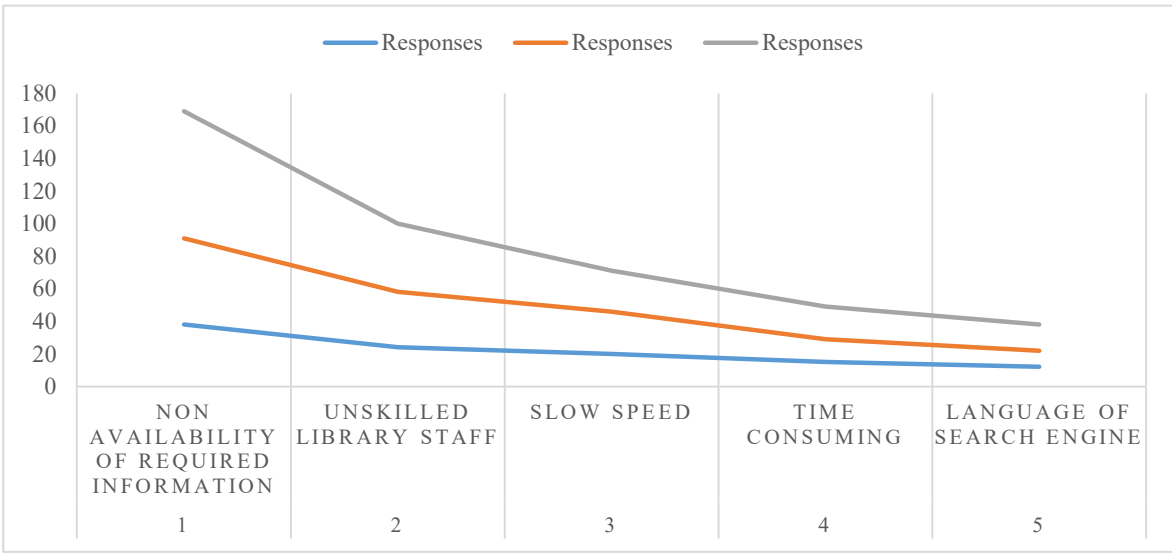



Figure 8: Constraints faced in searching the required information

It is clear from table 8 that major problem faced by the respondents while searching the information is non availability of required information according to their needs as per responses of 38 respondents i.e.(39.17%) from DU; 53 (44.9%) from JMI and 78(52.7%) from BHU. Other problems involved are untrained library staff, slow speed Time consumption and discrete language of search engine.

## Findings

- Maximum number of respondents i.e. (84.53%) from DU; (91.52%) from JMI and (91.89%) from BHU use internet for acquiring digital information and they all consult internet for the same.

- Majority of faculty membersi.e.(83.5%) from DU; (84.74%) from JMI and (85.81%) from BHU use E-journals for searching their required information. So, E-journals are the most preferred information source to search information.

- Maximum number of respondents i.e. (86.5%) from DU; (86.44%) from JMI and (88.51%) from BHU use search engines for accessing information from internet.

- Majority of faculty members i.e. (71.13%) from DU; (74.5%) from JMI and (69.5%) from BHU use e-resources for the preparation of their course material. (59.79%) respondents from DU; (59.3%) from JMI and (54.7%) from BHU use e-resources to update their subject knowledge. More than 50% respondents from all respective universities use e-resources in order to support their research work and for the preparation of articles to publish.

- It is found from the study that major criteria for evaluating web resources is the authenticity of information followed by relevancy and reliability.

- It is found from the study that more than 80% respondents from all respective universities use simple search by using keywords. It is followed by phrase search by using quotation and least number of respondents use complex search (more than 30% respondents) and Boolean logic (by more than 20% respondents).

- It is found that major problem faced by the respondents while searching the information is non- availaibility of required information due to the explosion of information. Other problems involved are unskilled Library staff, discrete language of search engine' time involved and slow speed.

## Suggestions

- It is found from the study that most of the respondents depend on internet for searching their required information. It shows that dependency on internet has been increased. Nowadays internet has become an important medium for communication.
  So,by extended internet services in libraries, we can satisfy information requirements of scholars as well as of faculty members. On the other hand we can make users more competent about digital resources of information.
  So, in this context university and college library authorities should provide various facilities such as internet,Wi-Fi and LAN facilities in the campus to promote electronic information services effectively.

- It is revealed from the study that major problems faced by the respondents are non-availability of required information; unskilled library staff; discrete language of search engine and slow speed.
  So, to rectify above obstacles librarian should provide training in advanced information and communication technology and for how to deal with advanced digital sources of information such as (online databases, institutional repository, student gateway, internet websites) time to time which will enable librarian to satisfy latest and advanced information need.
  User education and orientation programmes should also be conducted from time to time by university and library authorities which will make users more vigilant about uses of digital tools of information.

- According to UNESCO(2008), IL empowers people in all works of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals.

In view of the above assertion it can be recommended that:

- Digital information literacy should be incorporated in the university curriculum in such a way that every student of the college should undergo such a programme.

- Student learning advisors and subject advisors should encourage students to cultivate and sustain the interest in understanding digital information literacy.

- University libraries should haveWEB-OPAC facility, so that scholars and faculty members can access other institutions' resources worldwide.

## Conclusion

Due to the technological advancement most of the information sources are available in digital form.so, faculty members should be digitally literate.

To acquire information literacy skills andto become information literate person is not an easy task. It needs continuous updates of knowledge in this competitive knowledge world.
This study is an attempt to assess the extent of digital information literacy among faculty members of central universities. It has been tried to analyze the skills of faculty members in searching of desired information from various digital sources.

The elite aim of the study is to realize the structure of IL level of faculty members of central universities to meet the ever growing demand of users.

Faculty members with right ICT skills and expertise will have plenty opportunities in future and will be crucial to manage the technology intensive libraries.

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# Digital Avatar: Is e-Publishing Future of Publishing

*"Yesterday's backward nations were those which missed out on industrial revolution and tomorrow's backward nations would those which would miss out on communication and information revolution: Bandyopadhyay"*

**Anuradha Maurya**
Professional Assistant, Teerthanker Mahaveer Medical College & Research Centre, Teerthanker Mahaveer University, Moradabad

## Abstract:

The domino effect created by the cocktail of knowledge and technology in the 21st century is evident in all fields from the way we enjoy sports, movies and even the books we read. Education which once was considered a very humane affair is now modifying with the evident of digital contents, be it teaching or textbooks, even traditional textbooks are substituted with CDs, video lectures and dedicated websites with an intention to clear the concepts in an easier and better way. Textbooks, newspapers, magazines, reports, annual reports, yellow pages, dictionaries, encyclopedias, even manuscripts etc are available in digital formats which are known as E-publishing. With the increase in population and limited availability of natural resources, creating a sustainable method of satisfying the increasing educational and knowledge needs of the present and future generations requires larger volumes of information processing, publication and distributing responsibilities requires intelligent decisions. Can E-publication play the much anticipated role and impact the way we learn and exchange information and knowledge and become a serious substitute to traditional publications and information dissemination? This paper tries to analyze the impact of E-publication in future of publication.

## Keywords

E-Publication, Knowledge, Printing, Kindle, Self-Publishing, E-Books

## Introduction

The rise of the Internet along with information and communication technologies is fueling the electronic publishing towards multiplication of opportunities. Electronic publishing (EP) is fast transforming into a resource set of interactive publications endowed with rich multimedia that can be packaged and disseminated in various forms across different networked environments.

Electronic publishing also called digital publishing, e-publishing, online publishing refers to the application of computing software by a publisher for content creation and the distribution of the

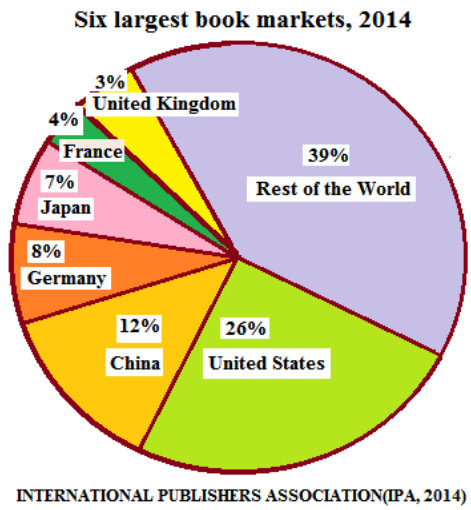
final product through electronic means. It includes the publication of journals, newspapers, books, magazines databases and other documents published electronically and can be read on electronic devices like e-book reader and tablets, PCs, laptops etc. They can be categorized into two parts - **open source**, which users can download freely and **paid contents**- those for which users have to pay.

EP can be categorized broadly into **offline** and **online** publishing. Offline publishing utilizes different types of storage and delivery media such as CD-ROM, DVD, memory card, and disks, while online publishing uses communication networks such as the Internet as the delivery platforms.

Marco's research estimates an ongoing 3% per annum decline in overall page count (11trillion pages) in print, by 2020, 16% of all books will be printed digitally versus the familiar offset method.

### *Publishing Models of e-Content:*

Electronic Publishing is an umbrella term which may contain various models of publishing such as electronic books (eBooks), electronic newspapers (eNewspapers) like digital editions of The Economic Times, The Times of India, liveHindustan etc, electronic magazines (eZines), like National Geographic, Discovery etc, eJournals like The Lancet, The Knee etc, email publishing, database publishing like Clinical Key, Elsevier, Manupatra etc and courseware publishing like McGraw Hill's Primis, epathshala etc. These models are different with each of them having its own set of distinguishing characteristics, features and functions.




### *Distribution Models for e-Content:*

The concept of EP embodies a variety of different distribution models, including internet bookshops, such as Amazon.com and Barnes and Noble.com, digital publishing on print-on-demand (POD) platforms such as Lulu, Picaboo, Blurb, Pothi.com are hybrid publications that reside in cyber space until they are printed on special digital printing machines, direct publishing on the web using HTML and XML and wireless Internet publishing on wireless/ mobile hand-held devices.

## *File formats:*

In order to read e-books, users are required to install specific software or app based on compatibility with e-book formats. For example, the .azw e-book format can only be read on Amazon Kindle software. In recent years, several e-book providers have adopted the e-book formatting technique by using HTML and CSS tools. Some of these formats are:

1. PDF (Portable Document Format)
2. DOC/ DOCX: Microsoft Word .doc or .docx format.
3. Mobipocket format: (.mobi) files are supported by various devices like Amazon Kindle, BlackBerry, Symbian OS (Nokia phones).
4. DAISY: DAISY (Digital Accessible Information System) format is designed to listen e-books by using a DAISY digital book player that converts text to speech.
5. EPUB: EPUB (Electronic PUBlication) Most pf the devices supports EPub such as Barnes & Noble Nook, Sony Reader, iPad, and Adobe Digital Edition.
6. TXT file: is a very simple plain-text universal format.
7. HTML: (Hypertext Markup Language) (.htm or .html) can be used read using a web browser.

## *E-book reading platforms*

**E-Book Readers:**

The eReader promises a comfortable, computer-free experience for reading. The devices work with so-called electronic ink (eInk), which ensures an experience similar to that of reading a real book as a result of its precise and stable characteristics. eInk technology enabled readers are easy to read, even in direct sunlight as it does not require any background lighting, they only require power for turning pages which also increase the operating time of battery; Sony pioneered the first electronic reading devices in 1990 with its **Data Discman,** a reading device with a CD-ROM drive, In 1998 NuvoMedia, launched the **Rocket eBook** in the United States and Europe.that could hold up to 4,000 pages with additional downloadable books from the Internet. Amazon introduced the **Kindle** in the US and Europe in 2007 and internationally in 2009 that generated a considerable amount of market attention where e-Books can be purchased, mostly at a considerable discount compared with printed books at the push of a button.

In 2010, **Nook** was introduced by Barnes and Noble, which is the largest bookstore chain in US, another US bookchain named Borders, presented an eReader called **Kobo.** Canada-based **Wattpad** readers spend over 2 billion minutes on the site every month. Sony captured the largest market shares in the eReader segment in Japan and pacific region.

eReaders are less convenient for special interest literature, newspapers, and magazines, Current e-Ink technology cannot jump instantly from one screen to another: In addition, photographs and

illustrations may not display well on an e-Ink display, as the screen lacks color and backlighting. Future eReaders may overcome these limitations.

**Tablets:**

A tablet is a portable computer with a touch screen. Apple devices can access an extensive range of e-Book apps via iBooks, Kindle app or the Nook app Apple's App Store. Unlike the eReaders, tablets use LED-lit displays enable the user to read in the dark. However, the LCD displays are susceptible to glare and can be washed out in direct sunlight, the tablets are generally heavier than eReaders, and must be recharged more frequently.

**Smartphone Devices:**

High penetration of smartphones and their direct access to the internet offer quick access to e-books however their small screens and lower battery operating time offer some resistance while reading e-books

**Laptops and PCs:**

e-Books can also be read via traditional channels such as PCs, notebooks, and laptops however backlit display and heavier weight makes them less suitable as a permanent reading device,

**Apps and Websites:**

These apps and websites are system independent therefore can be accessed by any tablet, smartphone, laptop or PC. Kindle clocks more than 100 million downloads on play store, Google playbook score a billion download till 2017. A huge collection of books that Google digitized is available on **Google Books,** apart from App store, **Google play** is a huge online e-bookstore having more than million titles, **Smashwords** is one of the biggest and most advanced sites with e-books from independent authors and publishers. There are currently around 300,000 from over 100,000 authors

## *Process of e publication:*

The process of electronic publication involves few steps that should be followed to generate an electronic publication. The steps are:

1. Firstly, think about the title, contents and the topics.
2. Now make simply a list of all the details that you know about that topic.
3. Organize your list into an outline based on categories and Elaborate the content
4. Proofreading.

5. Now the document is ready to get published, convert it to a desired file format.

6. Design Cover using image processing software

7. ISBN (International Standard Book Number) : Acquire a ISBN if desired however for electronic documents , ISBN is not necessary.

8. If price is applied, it should be clearly mentioned along with payment Gateway options for faster processing.

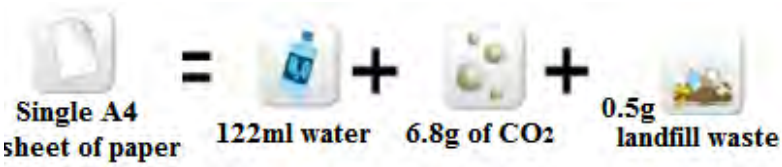
9. Provide Comments and Feedbacks space to communicate, update or rectify errors from his work.

Printed books can be converted into e-book by digitizing the contents using scanning or using specialized software like Blurb, There are also services like Bound Book Scanning and Blue Leaf that have made the hardware investment and will digitize your book for a fee (usually under $15 per book).

Traditionally offset printed materials and books or p-Publications were the only source of knowledge in academics and other fields, although they are the most familiar form of reading materials but they also pose some serious problems, Paper and inks are the raw material of publishing industry however Paper manufacturing is a highly capital, energy and water intensive process.

According to the International Energy Agency (IEA) pulp and paper industry is the world's fourth largest industrial energy user as it consumes around 6% of total world industrial energy and produces 2% of global industrial CO2 emissions, fourth largest emitter of greenhouse gases among manufacturing industries.

The global best specific water consumption is 28.66 m3/ tons for large scale wood based pulp and paper mills




The book-printing industry causes untold damage to the environment, both directly and indirectly. Aside from the 16 million tons of paper it consumes each year, leading to 32 million fallen trees annually, the industry's carbon footprint is enormous. On an average, each printed book releases 4.01 kg of COx into the atmosphere. Together, the newspaper and book-printing industries cut down 125 million trees per year and emit 44 million tons of CO2. Pollution is another negative offshoot of the publishing industry. Large scale paper production releases COx, NOx, Sulphur etc in the air which promotes smog, acid rain and climate crisis, Carcinogenic chemicals like Sodium hydroxide, hydrogen peroxide are used in paper bleaching process. Paper

sourced for forests have issues like biodiversity loss, water level depletion, floods, displacement of distinct native habitats and human rights violations also.

Americans are the heaviest paper users in the world with per capita consumption 354kg or about 7 trees. 40% of the world's industrial logging goes into making paper, and this is expected to reach 50% in the near future. India ranks 15$^{th}$ position among the paper producing countries worldwide. Although the per capita consumption of paper is around 11kgs against the global average of 56kgs and the Asian average of 40kgs, the current demand is estimated at 13.1 million tons with domestic production of 11.4 million tons, export of 0.5 million tons and import of 2.2 million tons. The demand is projected to increase to 23.5 million tons by 2024-25. India is the fastest growing market for paper in the world with a growth rate of about 6 per cent annually. Increase of per capita paper consumption by one kg will increase the demand by about 1.25 million tons per annum.

Despite the continued focus on digitization, India's demand for paper is expected to rise 53 per cent in the next six years, primarily due to a sustained increase in the number of school-going children in rural areas. Growing consumerism the consumption is project to increase to 23.5 million tons in 2026-27 from 14.8 million tons in 2016-17 even we have to import a lot for satisfying the demand

It takes about 26.4 liter to produce the average printed book, while a digital book can be created with less than two cups of water. According to the writersservice.com it takes about 3 to 6 months time to publish a book, Transportation, warehousing and others cost involved are paid by the reader apart from it, a printed book is taking book toll on environment.
According to Global E-book Market 2015-2019 research report the Global E-book market is the fastest growing sub-market in the worldwide book publishing industry accounted for approximately 12.6% of the Global Book Publishing market is expected to increase to 27.8% by 2019.

The publication of e-books is a natural consequence of the change of habits of billions of people on the planet who have Internet access via mobile phones and tablets anytime, anywhere in the world. According to 'Global e-Book: a report on market trends and developments, 2016 the global penetration of social media exceeds by 31% the world's population.

Public interests and preferences will finally govern the otherwise traditional process of publication. The book publishing is the second most important content industry after the TV, generating more than US$ 150 billion per annum in revenue globally.

## Reasons of Growing E-Publication

Publishers are open and responsive to e-Books because they generally offer lower costs and higher margins than print. An e-Book publisher does not incur inventory return costs that are typically associated with traditional print channels.

The demands and requirements of the users can be promptly catered by the Electronic publishers due to trimmed delivery process, also motivates larger range of titles availability, including books that customers would not find in standard book retailers, due to insufficient demand for a traditional "print run".

E-Publishing gives authors the opportunity to reach a global audience in a low cost effective manner. For authors capable of making the move from traditional publishing methods to e-Publishing, this is a very promising and lucrative market with a large global audience. Software such as Kindle Ritual allows publishing directly to the Amazon Kindle market place.

According to industry experts, the following factors are the drivers of e-publication:

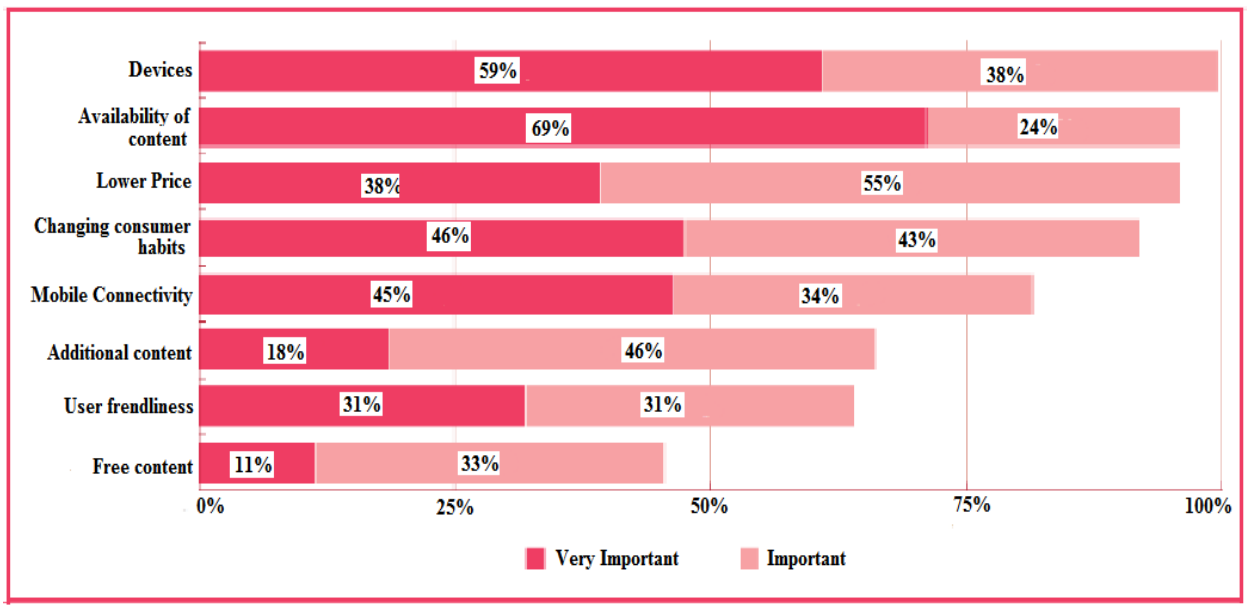



Fig 2: Drivers for E-Books and E-Readers in the opinion of the experts

Electronic publication provides the following flexibility which may lack in traditional publications.

### *Fast search:*

The convenience is major factor for selecting articles in electronic publications. Users can search information in electronic journals by keywords, titles and authors which saves time of browsing in case printed journals.

### *Accessibility:*

E-documents can be accessed by a number of users at a time without increasing the cost of acquisition; if the subscription is online a single user can also access e-documents on a multiple

device. Publishers and aggregators are providing access to online journals through assigning passwords to library patrons or IP addresses of universities and institutions.

### *Indexing and Abstracting Services:*

Indexing plays a crucial role for gaining acceptance of journals. Indexing services face the problems to cover electronic journals. Some journal publishers and authors post abstracts of their own journals in the public domain. A large number of electronic journals are available free on internet and scholars search information in electronic journals and abstracts by keywords, titles, authors, etc, and search engines like Google make an index of a number of related articles. In this way user also gets information on interdisciplinary subjects.
Major indexing services are indexing electronic journals. Few electronic titles which are not included in indexing services have been found out and cited heavily by scholars. **(**Llewellyn, 2002). Researchers may not find valuable articles in print journals if not indexed properly however, using eJournals, reader do not need to go through the indexes because of this the indexing services is decreasing.

### *Space:*

Electronic journals solved problem of space up to some extent in stack area. A large portion of space occupied by print books and journals in library is saved and only little space is required for hardware. Another effect of electronic journals is that shelving is not required for them.

### *Self Publishing:*

Self Publication is the way of publication in which author writes the book and arranges for ISBN number, barcode, internal layout, cover design, printing, and delivery. It allows author to have the better quality document with a definite selling price decided by his own and also do not have to face any kind of rejection. There are various publishing and distribution services like Amazon's Kindle Direct, Barners & Noble Nook, Smashwords publishing services, BookBaby etc that allows the individual to publish, upload revisions/updates and control the prices.

## Barriers of E-Publication

### *Market Barriers:*

Dedicated devices needed for e-books required substantial investment and supportive infrastructure like electricity and internet connectivity, these investments and resources are not affordable to various citizens of the world in under-developing and developing countries.

### *Intellectual property rights and copyright issues:*

Various users are reluctant to pay for the digital editions as they think that internet is a place where everything is free.
Various Publishers and committee members consider electronic journals as of lower quality than printed one in spite of the fact that e-journals also reviewed rigorously by editorial board. Even authors prefer printed journals for submitting their manuscripts. It is interesting to know that researchers prefer electronic journals as a reader but they choose printed versions while submitting the article.

### *Compatibility of the devices with different formats:*

Popular E-book readers like Kindle support only fixed formats and definite sourcing platforms while cross compatible devices like tablets don't have access to the quality materials at competitive cost.

### *Infrastructure:*

Electronic journals have changed the infrastructure of libraries. To provide access to electronic journals, networks, servers, computer hardware/software are required. For using the print journals all these are not required.

### *Collection Development and Management:*

The selection process has become more complex for electronic journals as compared to print journals because the business strategy of publishers has changed. Some journals are available in only electronic format which do not have print version. Some journals are published in both the modes and price is the same. Sometimes publishers charge extra payment to access electronic with print journals or vice versa. Managing both print and electronic version of same journal is double burden on staff. It is very difficult for library to decide whether a print journal should be canceled or continued for the coming year.

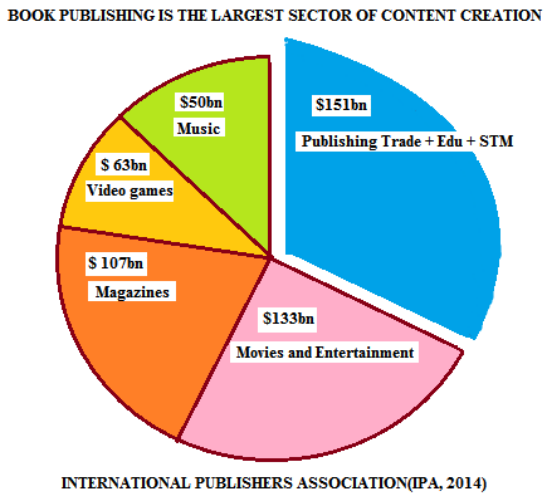
### *Lack of e-Books in Regional Languages:*

Most of e-books are available only in English or international languages, these create problems for regional or native language readers.

# Impact of E-Publishing

Book publishing is the largest of the industries that produce media and entertainment content, bigger even than the much more glamorous film and entertainment businesses. The economics of print publishing is complex which involves allocation of funds for printing, warehousing, transportation, salaries, delay times, estimating the demand and allocating new titles and promoting the current ones.

Production of E-books only requires editing, reviewing and marketing, this eliminates the printing cost and harmful consequences. Publishers in the subscription scheme would also have large stable incomes over a period of years, making it easier to attract venture capital for start-up or expansion, to plan and to reduce risk.




The emergence of new technology has completely changed the ways of publishing industry. The rise of electronic publishing has brought a revolution in the publishing world and creating an impact on the life of millions, some of those are:

### *Audiobooks:*

Audio books are useful for many demographics of the population - Elderly people with weaker eye-sights could go on "reading" audio books, busy persons can listen to journals, magazines and novels via audio books, children can listen to stories and higher level books even when they are not able to read them. Audio books can help students with disabilities like visually impaired and dyslexic child to achieve their educational goals.

In 1931, the American Foundation for the Blind (AFB) and Library of Congress Books for the Adult Blind Project established the “Talking Books Program” (Books for the Blind). The audio books are also preferred by people, who lose their sight later in life and are unable to read Braille as quickly,

Government of India is also working towards it in collaboration with DAISY(Digital Access Information System) Forum of India, with the launch of an online national library of accessible books known as Sugamya Pustakalaya. Across various subjects and languages, thousands of books has been converted in multiple formats and are available for the access for special students.
Bengaluru based Samarthanam Trust for Disabled has 5,000 audio books and more are added by the volunteers.

### *Audio Book Resources:*

**Audible.com** is the first and most successful source of commercial electronic books online. You can listen to the books on your computer (streaming), iPhone, or transfer them to a portable MP3 player. Audible book readers like **PlayAway Books** are self contained listening device that are best suited for older readers, these resources resemble print books—with artwork and hardcover.

Numerous players have been designed specifically with the vision loss community in mind like **The Victor Reader Stream (VR Stream),Milestone 312 digital Talking Books** from the National Library Service for the Blind and Physically Handicapped (NLS) and **Bookshare.org.** It can also play text files that have been loaded into it, as well as your favorite music.

A new study performed by the Smithsonian Institute found that ebook readers like the Amazon Kindle can actually help those with dyslexia with reading comprehension, difficulty in converting letters into sounds, difficulty in spelling, and difficulty in separating the phonological tones of one letter from another..

### *Saving Trees:*

- Worldwide consumption of paper has risen by four hundred percent in the last four decades with more than one third of harvested trees being supplied for paper production.
- If the current rate of deforestation continues, it will take less than 100 years to destroy all the rainforests on the earth, E-publication do not require paper, hence it saves papers and trees directly.

### *Convenient:*

The people working on the go, can access it from anywhere, can work on it anywhere. A working person can continue his hobby of reading or education.

**No Physical Barrier:**

There is no physical barrier in the use of digital content, as it is available online, so can be used with proper authentication, if required.

**Listen Your Book:**

If one is bored of reading with their eyes, they can read with their ears. There are many audio books existing which can be used by anyone.

**International Back Volumes:**

A researcher can access those journals that have been subscribed in their Libraries, but they always require more, with electronic publication researcher can use back volume journals of those journals that has been published internationally and can continue their research works.

**Less Space:**

The electronic publication helps the user to carry bulkier books, multiple documents in just one device, which is easy to share and use.

**Global Sale:**

As it has no physical barrier in the usage, it could be sold nationally and internationally too.

**No Transportation:**

There is no need of transportation of these documents as they are existing online. It saves time, energy and money, reduces pollution too.

**Decreased bag size:**

With the introduction of e books, school going students are also using tablets containing their course ware.

## Benefits and Limitations of E-Publication

### *Benefits:*

1. Live Links: In the e-publication of information the pages can be linked or may be visited directly without any restriction, it also allows user to access the related page whose link has been embedded.

2. Search Easily: the text searching, keyword searching or any advance searching is possible only with full text electronic publication of the document.

3. For Everyone: with electronic publication the information is available for all kind of readers either younger or older, student or teachers, researchers or user of those discovered information.
4. Age proof: In electronic form, any kind of document is free from deterioration.

5. Multi-user mode: It can be used by more than one person at a time, if access is permitted but printed documents can be used by single reader at a time unless document has copies.

6. Mini-library: Avid reader has the freedom to access various books with them in their device.

7. Reference Verification: The authenticity can be checked with the source if the content is available online.

8. Faster Publication: For paper documents, user need to wait till they are available in the market to their distributors, but with electronic publication, they just need to know about the source that where they can find that particular document and rest is easy.

9. Updates: These e published documents can be updated easily, errors can be removed easily with no time.

10. Pay Less or Nothing: E-book prices are mostly economical than physical document. Also, there are many online locations like Project Gutenberg, where free e books are available.

11. Adjust by Comfort: With the use of Electronic document, the user can adjust the size of the text and brightness of the document according to his comfort.

12. No Need to be Professional: E documents empower amateur writers to create his work and publish.

13. Reviews and Feedbacks: In e publication, there can be a option for the readers to share their views over documents and also can share their feedbacks, which is important, promotes correction and valuable for any writer.

14. Multimedia involved: Audio, videos, Images and graphics can be introduced e-books which enrich the reading experience.

15. No Warehouse Required: Electronically published documents do not need any kind of store or warehouse for storage as they can be stored online on drives while publishers need warehouses to store printed books, magazines etc.

### *Limitations:*

1. In spite of using e-ink technology, reading on an eReader may feel un natural to various users, moreover reading for longer period or at odd hours on LED led tablets may feel tedious to many users.

2. A dedicated device is required is to read those electronic documents, either smart phones or computer systems which require both investment and resources.

3. Not all the e-documents are freely available, so to purchase them internet banking is essential for payment of the cost of the document.

4. To access all the e documents, either paid or free, internet connection is required to download them or read online.

5. All e-book reading platforms are battery powered which required charging at regular interval which can create a waiting period before reusing.

6. The feel of traditional books is not available with digital book readers.

## Conclusion:

The electronic era has posed some exciting challenges and opportunities to explore electronic publishing. Publishers, device manufacturers, and online stores will have to work together and focus on the needs of customers to ensure that the transition is smooth and successful.

Looking to the Future e-Books and printed books will co-exist. In certain cases, e-Books may replace the paperback particularly in the case of special interest books, journals, reference sources and reports and in areas in which only sections of books are read. Tablets and eReaders should ensure that newspapers and periodicals can be attractively displayed in digital form. Before e-Publications can become as prevalent and accepted as p-Publications, copyright and technical issues needed to be resolved in order to allow readers a reading experience as good as, or better than p-Publications. Likewise, the convergence of formats and emergence of standards are essential to provide uniformity and to allow the constituents of publishers, authors and readers to adopt e-Publications on a wide scale. Encyclopedia Britannica has gained more popularity and earned more income from web based electronic version than from print publication.

The ultimate goal of electronic publishing is to provide fast & easy access to the information contained in the objective publications with simple, powerful search and retrieval capabilities. Thus, electronic publishing can be used effectively in the context of Dr. S.R. Ranganathan's Fourth law "Save the time of user" for many purposes.

## Recommendation

It is difficult to make obsolete the printed material. It will continue to be based for a long time. As Budd and Harloe stated that more likely possibility for the first decades for the 21$^{st}$ century is the continued evolution of a mixed system- part print, increasing electronic.

To encourage the use of e-documents and electronic publication, following actions can be taken:

1. Digital reading platforms should be provided to students at subsidized prices.
2. Education department can create databases for school going students containing recommended textbooks of each subject.
3. Once atleast go through government electronic databases like ePG Pathshala, SWAYAM, NDL, etc before purchasing any subject book.

4. Universities should subscribe international databases so that user can get access to those contents too, e.g., Clinical Key, Medline for Medical Students.
5. Digital edition of newspapers should be promoted as news prints are useful for a day only, which will reduce paper wastage.
6. Personal archiving of articles can be made easier with e format of journals and magazines.

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# Information E-resources for Generation Alpha: MRIS library as an Information Resource Centre

**Monika Mukh**
Librarian Manav Rachna International School Mohali.

## Abstract

There was a time when libraries were regarded as a store house and librarians were supposed to be store keeper to keep the books inside lock and key as there were no use of books. But now days that trend has totally been changed. 21st century libraries are regarded as Information service centres, which are more approachable and easy to access. Different libraries are working on different perspectives with one and only single aim to provide 'Student-Centred Learning' resources. In this digital era where the information is available in just a click away, no time to read paper books or lengthy paper readings therefore people approach to the most convenient and time saving resources. In this scenario automated and digital libraries are the way out to reach to their user and save their time.

## Keywords

Generation Alpha, E resources, Best Practices

## Introduction

Due to tremendous growth in literature sometimes it becomes very difficult to search for the only references which a user is looking for. Father Google is available and easier to access as well but not the solution for the limited and best answers with very few options. In this case the role of a librarian always matters as he/she must know the level of information seeking behavior of a user.

**Generation ALPHA** (children born after 2010) is more educated, tech savvy as compared to other past generations. Due to the binding of individuals into so many assignments, they do not have enough time to access the whole information through scrolling the book page to page. In this concern, following important Apps for example: **National Scholarships Portal**: for students looking for scholarship, **ePathshala:** for students and teachers who can access e-books on mobile devices and desktops, **mKavach** (Mobile security solutions), **DigiSevak**: for citizen volunteers, **DigiLocker**: for the safety of digital copies and **eBasta app**: for teachers and students is another very handy app, suggested by Indian Government in Education Domain for teachers and students which helps them access e-books and create study material. These E-resources are much helpful as they save the time of the users, are easy to access and more user friendly.

The Government of India has initiated major educational reforms aimed to improve the quality and access to education across the country. Setting up smart classes in government schools, emphasis on teachers training new premier higher education institutions have been opened across the country, interaction with globally renowned edu- leaders, opening new higher education institutes across the country are among many such initiatives that have helped the education sector to better the pedagogical approaches, curriculum and learning outcomes among students. Few of the initiatives are as follows:

### *SWAYAM MOOCs Portal*

Study Webs of Active learning for Young Aspiring Minds (SWAYAM) is an indigenous Massive Open Online Courses (MOOCs) portal that provides high quality education – anyone, anytime, anywhere at no cost- has been made operational. To make easy access of good quality educational content to even remotest part of the country, satellite communication has been used and 32 DTH channels have been made functional, under SWAYAM Prabha programme. So far, more than 1,000 courses have been made available and more than 33 lakh users have registered on this forum.

### *National Digital Library (NDL)*

The initiative of Ministry of Human Resource Development is one of the largest virtual repositories of learning resources with a single window search facility. With over 15 million digital books and journals, the facility has been used by over 31 lakh learners.

### *Unnat Bharat Abhiyan (UBA)*

It is a new initiative to make use of the knowledge base in the higher educational institutions for plugging technology gaps in the rural areas. It will help boosting the technology usage in rural India by customising the same as per local needs.

### *Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT)*

Launched in December, 2014, The scheme is aimed to address the issues of supply of qualified teachers, attracting talent into teaching profession, raising the quality teaching in schools and colleges.

### *Global Initiative of Academic Networks (GIAN)*

The initiative launched on 30th November 2015 to garner best international knowledge and experience into the country's higher education. GIAN is supposed to enable Indian students & faculty to interact with best academic and industry experts from across the world. So far, 1,075 courses have been conducted in which more than 40,000 students gained enriched academic inputs and knowledge.

### *IMPRINT India*

It is an effort to direct research in the premier institutions into areas of social relevance. 10 such domains have been identified which could substantially impact the living standards of the rural areas. More than 2,600 research proposals have been submitted by scientists in these areas.

### *Uchchtar Avishkar Yojana (UAY)*

The scheme has been launched to promote industry specific need- based research so as to keep up the competitiveness of Indian industry in the global market. It is proposed to invest Rs 250 crores every year on identified projects. The Industry is expected to contribute 25 % of the project cost.

### *Prime Minister Research Fellows (PMRF)*

The scheme is launched to support 1000 bright undergraduate students every year, for direct admission in the research programmes in the reputed institutions like IISc, IITs. The fellowship carries a lot of social recognition and it ranges from Rs 70,000 to 80,000 per month for five year period.

### *Smart India Hackathon*

The initiative is to promote innovation in the students by encouraging out of the box solutions for common problems faced by the society at large. In the first edition held in 2017, more than 40,000 students have participated to solve more than 600 problems. In 2018, the scope has been expanded to Hardware area also.

### *National Institutional Ranking Framework (NIRF)*

This is the biggest ranking exercise launched in 2015, in which more than 3,500 institutions participated. The first edition of India Rankings 2016 was released in April, 2016. The India Rankings 2018, the 3rd edition, will be released on 3rd April, 2018. The India Rankings is one of the biggest efforts for bringing in accountability and transparency in the higher educational institutions. The ranks are released in the various categories of institutions namely Universities, Engineering, Management, Pharmacy etc.

### *Higher Education Financing Agency (HEFA)*

It has been approved by the Cabinet for creation of a fund with government equity of Rs. 1000 crores, to give a big push for building up robust higher educational institutions. The HEFA would finance the academic and research infrastructure projects through a 10 year loan. It is expected to spend Rs. 1,00,000 crore in next 5 years, for creation of high quality infrastructure in premier education institutions.

### *Rashtriya Madhyamik Shiksha Abhiyan (RMSA)*

It was launched by the Government of India in March, 2009 envisaging inter-alia provision of a secondary school within a reasonable distance of any habitation and to improve quality of education imparted at secondary level by making all secondary schools conform to prescribed norms, removing gender, socio-economic and disability barriers etc. In 2013, secondary education the schemes of ICT, vocational education, Girls Hostel and IEDSS were subsumed under the umbrella of RMSA. Under the scheme, 12,682 new schools and 37,799 existing schools for strengthening have been sanctioned so far.

### *E-pathshala*

It has been developed by NCERT (National Council for Educational Research and Training) for showcasing and disseminating all educational e-resources including textbooks, audio, video, periodicals and a variety of other print and non-print materials. So far, 3,062 audios and videos, 650 e-books (e-pubs) and 504 flip books have been made available on the portal and mobile app.

## Library at Manav Rachna International School as 'Information Resource Centre'

At MRIS Mohali, library is a place with open access system, which is more than an Information Resource Centre wherein students come with full enthusiasm not only to access books, but also to do various activities.

Children explore the information from different information resources like reading books, various periodicals and other reference material. Children not only read books but also borrow books for home. Most of them carry books to their home **every day**. Library is also a good platform for Life Skill Sessions, Storytelling Sessions, Academic Workshops and Annual Projects. Early years children give wings to their imagination through picture books, touch and feel books, audio books, and pop-up books.

Class-Library connectivity is done during Academic Workshops wherein children visit the library to complete their work and review the work done in the class. Children explore the dictionaries, encyclopaedias to retrieve the information related to their concerned learning areas or annual projects.

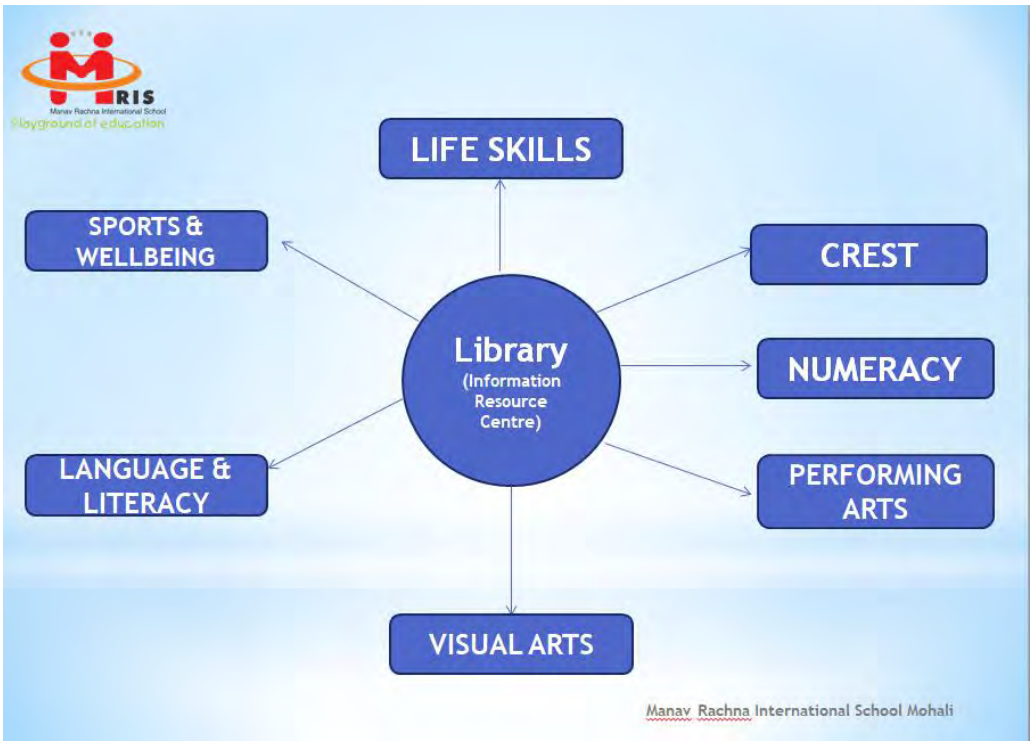


Chart 1 : MRIS library as “Information Resource Centre” for seven learning areas

Children take up various activities in library like: vocabulary building by reading newspapers, weaving their our own story with new words, writing book reviews, solving word puzzles, cross words, spotting the difference and many more. Children also make ‘Factual Diaries’ by reading newspapers. All these language differentiated activities provide a happy learning environment, which help children to keep themselves updated.

Special activities have been designed in the library to mark the importance and celebrate significant days like World Book Day, World Magazine Day, and Birthdays of different Authors etc.  Children read their favourite stories, watch and listen to stories online on the iPads.


Chart 2: Library activities @ MRIS Mohali

Children look forward to solve 'Mind Games' through solving on daily basis which include riddles, puzzles, brain teasers etc. It enhances their problem solving skills, boosts up their memory, and increases their **Intelligence Quotient.**

After reading reference books students display amazing facts on 'TRIVIA' tree. It is one of the best practices of library though which children collect different information on different aspects of life.

One of their favourite activity is to write a 'Book Review' after reading their favourite book/s. Children love this activity as it saves time of the next reader in order to decide whether the book is worth reading or not.

To develop reading habits/skills MRIS library emphasizes on the following:

- Make reading enjoyable through story telling
- Use interactive books
- Expose them to books from variety of genres through organizing 'Books Tasting' activity from time to time.
- Organize Edutrips to different libraries like State Library, District Library, Central State libraries etc. to acquaint them with different sections of different libraries.

Provide the badges for ‘Star Readers’, ‘TRIVIA Stars’ and ‘Riddle Master’

## Conclusion

There are various ‘Electronic Information Resources’ available with in a click away. A librarian as total quality person who manages these information resources help the patrons through disseminating right information to the right person at the right time. Identifying the information seeking behavior of the patron helps the librarian to explore the specific user needs with required information resources.

Electronic Information resources are need of an hour, but how are we choosing the specific one from tons of options is required.

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# Children's Right to Read: Community participation in improving Reading

**Sarwesh Pareek**
Librarian, Bharatiya Vidya Bhavan Vidyashram Pratapnagar, Jaipur, Rajasthan

## Abstract

In an age when browsing the net, playing with funky handsets and passing non-stop SMSs seem to be the order of the day, reading a book in a peaceful corner of a library has become an archaic idea for most people. While technology is slowly taking a steady control over individual lives, the reading habit is fast vanishing into thin air. Reading habits are calculated as how much a person read, how often they read, when they read and what do they read. Reading can be summarized as a habit that involves books, printed articles and electronic materials. It varies differently of how each material can affect their reading habits. Are students still reading books up until today? Or the reading habits among students have been on the decline?

## Introduction

Today, in the 21st century, where **everything mobilised**, we are experiencing a revolution of digital technology. Like the printing press did, technological blessings like the internet, smart boards, tablets and e-readers are once more reshaping our reading and learning habits entirely. Know a days, children are extremely fond of their gizmos like the tablets, smartphones, gaming gadgets and, of course, the television, which makes it difficult for parents to inculcate the habit of reading in young children. Fortunately enough, India can boast about some of the best children's magazine subscriptions, which helps parents to introduce their children to the beautiful world beyond their backyard.

One of the key things that have changed as a direct consequence of the advancing technology is our way of obtaining new information. The age of searching through dusty library shelves for books to find one piece of information is long gone. Now, one can access hundreds of resources on almost any subject with just a click of a button and by using search engines. Compared to searching through physical books and library archives which might have limited resources, using a search engine to find specific information is much more practical and efficient. Therefore, the time you would need just to find resources in a library could actually be enough to find, examine and critically analyse the same information.

The Children's Rights to Read initiative, launched by the **International Literacy Association (ILA) on September 7, 2018** to ensure every child has access to the education, opportunities and resources needed to read, focuses on 10 rights essential for individuals to reach full personal, social and educational potential. The global campaign asserts and affirms ILA's commitment to its mission of literacy for all and offers a framework for partnerships and action. To learn more and sign the pledge to support the Rights.

ILA asserts that every child deserves—frames reading as an issue of equity and social justice. The campaign was focus on activating educators, policymakers and literacy partners to join ILA in their efforts to raise awareness of these Rights and see them realized for every child, everywhere.

***The 10 Fundamental Rights of Children's Rights to Read are:***

1. Children have the **basic human right** to read.
2. Children have the right to **access** texts in print and digital formats.
3. Children have the right to **choose** what they read.
4. Children have the right to read texts that **mirror** their experiences and languages, provide **windows** into the lives of others, and open **doors** into our diverse world.
5. Children have the right to read for **pleasure**.
6. Children have the right to **supportive** reading environments with knowledgeable literacy partners.
7. Children have the right to extended **time** set aside for reading.
8. Children have the right to **share** what they learn through reading by collaborating with others locally and globally.
9. Children have the right to read as a springboard for other forms of **communication**, such as writing, speaking, and visually representing.
10. Children have the right to benefit from the financial and material resources of governments, agencies, and organizations that **support** reading and reading instruction.

A reading habit is beneficial for a child as it introduces them to new facts and helps them understand the meaning of newer words that boost their vocabulary and in turn, improves their speaking and writing abilities too. The various activities in the books, magazines and newspapers help develop analytical skills and improve their memory, which has a positive effect on their school studies and self-development.

## Education System in India

Education is a very important factor in the economic development of any country. India since the early days of independence has always focused on improving the literacy rate in our country. Even today the government runs many programs to promote Primary and Higher Education in India.

With a population of more than 1.3 billion, it's no surprise that India runs the largest national school system in the world. While it's not often recognized for its quality, education in the south Asian country has been on the rise, and now places in the top half of U.S. News & World Report's rankings of 80 countries for best in education.

With more than 700,000 schools in operation, India certainly has a big job on its hands. Despite the recent improvements in Indian school systems, many parents choose to educate their children in private institutions. In fact, just 70% of school age children attend public schools. That being said, only about 50% of Indian children go to school at all: while registration is compulsory, attendance isn't typically enforced.

## Meaning of Reading

Reading is the art of interpreting printed and written words. The oxford dictionary defines Reading as a **"way of interpreting something".** It is the basic tool of education and one of the most important skills in everyday life. Reading is one of the powerful and everlasting influence in the promotion of one's personal development in particular social progress in general. Regular and systematic reading sharpens the intellect, refines the emotions, elevates tastes and provides

perspective for one's living and thereby prepares one for an effective participation in the social and political life. Reading gives a unifying and civilization force tending to unite social group through the dissemination of common experiences.

It helps in acquiring newer ideas, in providing the needed information, seek support for our ideas and also help in adding to personal pleasure and broaden our mental horizon. Reading reflects the society's lifestyle, the ideals, beliefs, curiosities and seeking soul of the people. Reading culture leads us to a revolt of revolution which springs from a sensitivity to surroundings, resulting in transformation with reference to ideals, progress and civilization apprehended by imagination and sensibility nurtured by the best of books enshrined in the greatest literature.

> **According to Encyclopaedia Americana** "Reading involves looking at graphic symbols and formulating mentally the sounds and ideas they present".
>
> **According to Oxford English Dictionary** "The action of perusing written or printed matter, the practice of occupying oneself in this way".
>
> **New Standard Encyclopaedia** "Reading as the process of recognizing and understanding the meaning of written symbols".

## Definitions of Habit

The meaning of the term 'habit' as found in dictionaries is disposition or tendency to practice something regularly, constantly shown to act in a certain way, acquired by frequent repetition of act.

> **According to Oxford English Dictionary** "Habit means doing something having a habit or custom of so doing".

**According to New Standard Encyclopaedia**, "Habit is a learned action or other form of behaviour that is repeated often enough for it to become a largely automatic response to a particular stimulus on situation." Habits can be acquired by conscious repetition and desire to achieve proficiency in an activity".

Broadly, reading habits cover broadly individual's style of regularizing study behaviour and sensitization to curricular and extracurricular books, interest in newspapers, and magazines on the one hand and such personal habits like reading aloud or silently in group or seclusion etc. Reading instructs, entertains and transports (stimulates) and further going to stay with us. Reading scores over viewing because it is personal, intimate and certainly more stimulating.

## Importance of Reading for the Individual and for Society

Reading is an important process of acquiring information by receiving a message from print in a meaningful way. Some view reading as a complex process integrating all aspects of human behaviour and demanding varied and continued instructional guidance to read accurately, to appraise what is read and to relate, what is read in a significant way to other areas of life. A good reading habit is necessary for a healthy intellectual growth. Children normally use sensory perceptions to know their immediate surroundings and widen their vision, through reading. Reading is a habit, which is not a onetime experience. It is accepted that a good reading habit has to be cultivated and natured in the early years of life. The reading habit, therefore, plays a very crucial role in enabling a person to achieve practical efficiency.

Reading habit benefits our life in many ways. The regular benefit us in several ways like:

- Exercise our mind
- Builds self-esteem
- Gives Satisfaction
- Expands the imagination
- Enhances the ability to focus
- Improves knowledge
- Improves our vocabulary
- Helps to achieve goals in life
- Teaches the art of living
- Reduces stress
- Helps to accept other cultures and religions, and many more.

## 5W1H Annotation

5W1H is the abbreviation summarising the following six questions: **What? Who? Where? When? Why? How?** These questions whose answers are considered basic in information gathering or problem solving. They are often mentioned in journalism (cf. news style), research and police investigations. They constitute a formula for getting the complete story on a subject. This method consists of asking a systematic set of questions to collect all the data necessary to draw up a report of the existing situation with the aim of identifying the true nature of the problem and describing the context precisely.

Four of the **W's (who, what, where, when)** and the one H is used to comprehend for details, analyse inferences and judgment to get to the fundamental facts and guide statements to get to the abstraction. The last **W (why)** is often asked five times so that one can drill down to get to the core of a problem.

## Research Objectives

The objective of this study is to better understand the habits, attitudes and preferences of readers by examining when, what, how, why and to what extent children read. These objectives were created on the basis of 10 fundamental rights created by ILA. The study also highlights current opportunities and challenges related to reading.

## Research Questions

To achieve the research objectives some questions and their myths & predictions were formulated based on 5W1H analyses are tabulated below:

5W's & 1H analyses sheet to describe the problem

| 5W1H | Consider these Questions | Myths & Predictions |
|---|---|---|
| **Why** | Why children need to read? | 1. Is it really necessary for parents to take part in school reading activities?<br>2. Difference could I make as a Parent?<br>3. My child is too young to learn to read yet, but what can I do to set them off in the right direction? |
| **What** | What should children read? | 4. Can children choose their own books?<br>5. Can children read comics and leisure magazines? |
| | What kind of reading activities children need? | |
| | What if children just don't enjoy reading? | 6. My child doesn't enjoy reading-this is not his cup of tea?<br>7. I think my child's problems are more serious – what should I do?<br>8. My son is switching off reading - what can I do?<br>9. What should I do if my child is not at the reading level they're expected to be at? |
| **Where** | Where should Children read? | |
| | Where can I get help from? | |
| **Who** | Whom should Children read? | 10. Tips can I use to help child learn to read? |
| | Who decides what? | |
| **How** | How can we create a good reading environment? | |
| | How can we help children to nurture a reading habit? | 11. Should parents arrange a large number of extra-curricular activities and tutorials for children after school?<br>12. Is academic performance the most important? |
| | How technology is changing reading habits? | 13. If my child is using a tablet or computer?<br>14. Children make good use of information from the internet? |

## Why Children need to Read?

Evidence suggests that children who read for enjoyment everyday not only perform better in reading tests than those who don't, but also develop a broader vocabulary, increased general knowledge and a better understanding of other cultures. They are active, curious and eager to learn. Reading books with healthy contents can help them acquire knowledge, develop thinking skills, develop positive values and attitudes. It is important to nurture good reading habits and positive attitudes towards reading in the early years. In fact, there's evidence to suggest that reading for pleasure is more likely to determine whether a child does well at school than their social or economic background.

### *A. Developing Cognitive Abilities:*

During the reading process, it is common to apply different skills such as understanding, induction, analysis, deduction and imagination, which facilitate the development of children's cognitive abilities. Thus children who read regularly have faster brain development and will be more mature in their thinking.

### *B. Enhancing Language Competence:*

Reading can help children acquire more vocabulary, knowledge as well as written language patterns. As children read, they need to interpret and deduce meanings from the words, phrases, sentences, paragraphs and articles constantly. Such process reinforces and enhances their reading abilities and language competence.

### *C. Nurturing Thinking Skills:*

The process of reading itself involves the use of skills like deduction, induction, critical thinking and problem solving, which are very helpful in the development of children's thinking skills.

### *D. Developing Positive Values:*

Through classic stories and literary masterpieces, children learn from the wisdom of the past and cultivate positive values. For instance, tales of adventures and

heroism and stories about how other children overcome adversity, can encourage children to face difficulties and failures bravely. Some traditional Chinese folktales encourage children to serve parents with filial piety and their siblings with friendliness and respect.

### *E. Building Vocabulary and Understanding:*

Learning to read is about listening and understanding as well as working out print. Through hearing stories, children are exposed to a rich and wide vocabulary. This helps them build their own vocabulary and improve their understanding when they listen, which is vital as they start to read. It's important for them to understand how stories work as well. Even if your child doesn't understand every word, they'll hear new sounds, words and phrases which they can then try out, copying what they have heard.

As children start to learn to read at school, you can play an important role in helping to keep them interested in books, finding out what interests them and helping them to find books that will be engaging and fun for them. Give time to helping them practise reading the books they will bring home from school.

# Myths & Predictions

### *Myth-1. Is it really necessary for parents to take part in school reading activities?*

According to the findings of PIRLS 2006, more frequent home-school co-operation led to better student's reading performance. If parents can serve as 'Story Pop' or 'Story Mom' in schools regularly, they can help promote reading by creating a favourable atmosphere. In addition to nurturing children's reading interest and habits, parents can convey the message that they have high regard for reading and great concern for children. As a result, parent-child relationship is enhanced.

### *Myth-2. Difference could I make as a Parent?*

The short answer is: a lot! Parents are by far the most important educators in a child's life and it's never too young for a child to start, even if you're only reading with your child for a few minutes a day.

Before they're born, babies learn to recognise their parents' voices. Reading to your baby from the time they're born gives them the comfort of your voice and increases their exposure to language.

### *Myth-3. My child is too young to learn to read yet, but what can I do to set them off in the right direction?*

Make sure that your child is familiar with language and books so that they can see how enjoyable reading is. Some of the things we can do include:

- Reading aloud to your child, talking about the words and pictures, and sharing ideas about the book

- Reading yourself: Children who see adults reading, and enjoying reading, are much more likely to want to read themselves

- Making sure your child is surrounded by books: You don't need hundreds of books at home, but make regular trips to the library or bookshop, not just to borrow books but to spend time together browsing and learning to make choices. In this way, reading becomes a habit.

Most importantly, talk to your child. Spend time with them, doing simple activities (cooking, making something, building a model). As you talk about what you're doing, you are helping them to learn new words. Later, when they see words written down, they have already heard them and know what they mean.

# What should Children Read?

Parents should let children choose their own books for leisure reading and expose them to diversified reading experiences and text-types. Reading materials with healthy contents and correct language are all suitable for children.

Reading stories and fiction is undoubtedly beneficial for fostering competence in reading literary texts. At the same time, reading magazines for children, geographic journals, magazines on sports, music and art periodicals, science series, product manuals and catalogues help enhance children's ability in reading informative texts too. Reading both text-types is equally important and a balanced exposure should be provided.

The following are some reading materials suitable for children:

## *A. Fables, Fiction, Stories:*

'Fables' are short invented stories with lively contents to arouse reading interest. These stories help children understand moral lessons.

'Stories' and 'fiction' contain rich twists and turns in their plots. They reflect life experiences and develop children's imagination and thinking skills.

## *B. Biographies, Autobiographies, Travel books:*

'Biographies' record stories and deeds of famous people and can serve as good examples for young children.

'Travel books' widen children's knowledge and experiences of scenery, heritage, customs and cultures in places around the world.

## *C. Poetry, Folk songs:*

Poetry and folk songs are refined and concisely written literary works characterized by rhymes and rhythms which are easy to remember. They facilitate children's literary appreciation when reading aloud.

## *D. Science series:*

Science writings attempt to explain basic scientific principles and concepts. These books provide simple and interesting experiments and challenging problems which stimulate children's curiosity as well as develop their interest and inquiry about science.

### *E. Newspapers & Magazines:*

Newspapers help to improve reading habits, knowledge, and awareness. They can be part of good study habits for readers in any area of specialization.

Newspapers are reading materials related to our daily lives. Newspapers of a high standard both in contents and language expose children to current affairs and

international news as well as latest information of various kinds. Newspapers which meet the above criteria are good choices for children are also available in school and public libraries.

Magazines are an amazing chance for a child or teen to grow ideas from the pages they read. They are available in printed and electronic form in libraries. Magazines are full of short stories with colourful pictures, games and many more fun activities. The children find it easy and interesting to read such small stories and this, eventually, leads to the habit of reading longer stories and books.

The list of children's magazines prescribed for the students are listed in appendix 2.

## MYTH

### *Myth-4. Can children choose their own books?*

Allowing choices in favourite reading materials not only can help nurture children's reading interest, but also facilitate parents to have a better understanding of their children's thoughts and likes.

If children show preference only for a particular type of book, parents should guide them to read a larger variety of reading materials to widen their horizons.

### *Myth-5. Can children read comics and leisure magazines?*

Comics and leisure magazines do, in general, stimulate children's reading interest. They also provide certain social experiences and topics for conversation with parents and schoolmates. Children should not be discouraged from reading such materials, but parents need to be sensitive about them and make sure that the contents are healthy and the language is correct. Parent-child discussion should be held to convey the correct messages if necessary.

## What kind of Reading activities Children need?

Librarians are doing their best to attract young readers and develop in them a love for reading. Here are some strategies intended for students to be conducted during their library period, once in two weeks by the Teacher librarian. Students are free to choose their library activity.

The objectives of the school library activity:

- To create an aesthetically pleasing as well as practical learning environment,
- To provide access to sources of varied, current and useful information for both pupils and teachers,
- To arrange the possibility to study information management skills, which forms a basis for lifelong learning, and
- To encourage reading for pleasure.

Another important goal of the school library as defined in the school curriculum is tempting pupils to read and teaching them about literature.

In order to fulfil its task of inspiring pupils to read the school library needs to offer a collection that is tempting and inspiring, contains new novels as well as the classics studied in class and is suitable for the pupils' age.

There are many good ways to tempt children to read:

1. Organising book fairs and exhibitions.
2. Meet the author: Invite authors to come and read out excerpts from their books. Maybe even autograph their books. This is a win-win for both parties.
3. Have book review contests and give away the latest book as a prize.
4. Allow students to borrow books during vacations and permit them to be renewed online during vacations. (If the librarian and school authorities think that the borrower is responsible enough).
5. Have book clubs: Let students meet say once a fortnight and discuss their favourite books. Follow this up with a book reading session.
6. Have a story writing competition with a creative writing workshop prior to the event.
7. Constantly be in touch with the pupils, telling them all about the latest arrivals and ask them for feedback. Ask them if there is any special author or title that they are interested in.
8. Have multiple copies of popular books. Create smaller class libraries if you can.

9. Get parents involved. Permit them to use the library if they wish. This will create a sense of belonging and partnership.

10. Have a Read Together Session: Let the child and the parent read a book together. This will help in strengthening their bonds.

11. Organise Treasure Hunts using book titles as clues. Have a quiz, what's the Good word, Dictionary and Pictionary Challenge, and so on.

## What if children just don't enjoy reading?

If you think your child is having problems reading, the first step is always to speak to your child's teacher and share your concerns. Many children learn at different rates, and you shouldn't get anxious. Remember that anxious children can't learn, and that early enjoyment of books and stories lasts for life.

### *Myth-6. My child doesn't enjoy reading-this is not his cup of tea?*

- Make sure your child isn't tired, hungry or desperate to watch their favourite TV programme when you read to them. Sit with them for a short time every day and read a book with them on a subject that interests them, whether that's cars, animals or sports. Don't expect them to read it for themselves. Just show them how interesting it is to be able to read so that they want to do it for themselves.

- For many children, especially boys as they get older, non-fiction books are more interesting than fiction, so it may be as simple as changing the type of books you are reading together. Talk to your teacher or a local children's librarian to see what books are available that match your child's interests.

- Give plenty of praise. Let your child know how pleased you are when he or she looks at a book. Show interest in what they have chosen. Children really do develop at their own rates when it comes to reading.

### *Myth-7. I think my child's problems are more serious – what should I do?*

Always speak to your child's teacher and share your concerns again. Explain exactly what it is that is worrying you. Your child might have hearing problems, for example, that are getting in the way of learning to read and the school can arrange for tests to be done.

### *Myth-8. My son is switching off reading - what can I do?*

Research shows that boys are less likely to enjoy reading than girls. More boys than girls struggle with reading and writing at school and boys are more likely to say they don't spend any time reading outside the classroom. But there are ways you can help:

- It’s important to make sure that you’re reading something with your son which interests him. Many boys like non-fiction books, so try asking at your local library for recommendations – it may be that he’ll enjoy reading Horrible Histories or the Guinness Book of Records more than fiction.

- Role models are also important. Make sure boys see their dads, uncles or granddads reading, even if it’s a newspaper, so that it seems familiar and they can copy their reading behaviour.
- Finally, praise your son when something is read well. Equally, if he reads something incorrectly, don’t make him feel that this is bad - mistakes are just part of the learning process.

### *Myth-9. What should I do if my child is not at the reading level they’re expected to be at?*

Don’t panic and don’t make your child stressed about reading. It may be the case that your child is young for their year group, or not developmentally ready for reading. Also, most children don’t progress in a straight line as they learn to read: they may have periods of fast progress followed by periods of consolidation. Children who start off behind for any reason tend to take a little while to catch up. It can be very worrying if you think your child is falling behind. Make an appointment to discuss your concerns with your child’s class teacher.

## Where Should Children Read?

Most adults today would remember their school library as a place they went to, once a week for the "**Library period**". Some eagerly waited for this period while others pretended to choose a book, issued it in their name, kept the book for over a week and returned it without reading. Most often it was a room somewhere secluded far away from the hustle and bustle of the school — a seemingly mysterious place that housed more mysteries than the Enid Blyton books it housed.

What a far cry from the present day library! Today the library in most progressive schools is a thriving 'organism' by itself. Well-lit, large and airy, the library is not just a storehouse of books but a complete information centre on its own. Several schools have not just one library but maybe even three — a reading room for pre-school, a primary school library and one for high school. Even if it is restricted to just one, it is a repository of information.

Books — both texts and reference — neatly catalogued and classified in well-designated areas make the library more friendly and accessible. Books according to the choice of the reader and within the budget of the school are available in more than one copy. Fiction books are arranged class-wise with a separate rack reserved for the staff. I have always loved libraries, and even today try and visit it at least once a day. The latest arrivals too are prominently placed so as to catch the visitors' attention.

Libraries today have become bustling information centres. What with Wi-Fi availability one wonders whether it is a school library. But, I must state that more than the books that are read, the young student makes a beeline for the technology centre and accesses his reading material online. Yes, there are students who read the actual book, but the rest prefer the Kindle. I guess we need to accept the winds of change; we are after all catering to a generation that will throng the adult world maybe ten years from. Who knows what sort of a world that will be!

## *A. Role of library and librarians:*

The library needs to play an important role in the promotion of reading habits. Libraries, especially school libraries, are fundamental to the design, implementation, and attainment of educational excellence. Libraries are an integral part of the educational development of secondary school students and youth. Without the support of efficient libraries, schools cannot successfully achieve the goals of education.

Libraries provide access to reading materials through the school library, students and youths can gain and improve their skills. Libraries help introduce the use of reading for information, pleasure, passing examinations, and personal growth through lifelong learning. Libraries provide materials that offer more extensive and varied information than classroom study alone cannot provide. Voluntary reading helps develop reading skills and mastery of language, extends students' knowledge, and assists them in their academic work. Students and youths who read are likely to have background knowledge, familiarity with new topics or subjects, and thus, find learning easier and interesting.

The role of the libraries in promoting reading is especially crucial in developing scientific, reflective thinking and creativity. Librarians can help secondary school students and youths develop critical and independent thinking through their exposure to a wide variety of instructional resources and learning opportunities. Apart from the development of creative and critical thought, the role of the library in the promotion of reading habit can be seen in the readers' development of values, attitudes, and appreciation.

In the process of encouraging or inculcating the reading habit in secondary school students and youth, stakeholders (parents, teachers, schools, librarians and other library staff) should avoid nagging, bribing, judging, criticizing reading choices, and setting unreasonable goals.

a) **Creating an Enabling Environment**: Libraries generally provide a very conducive environment that encourages people to engage in meaningful reading, learning and research activities. They provide space, reading carrels, reading materials and noise-free environment. School libraries offer opportunities for developing good reading habits in secondary school students.

b) **Provision of Reading Materials**: Libraries play important role in providing a wide range of reading materials. Apart from textbooks, the library provides access to supplementary learning materials such as computers, audio-visual materials like CD-ROM, tapes, videos, films. School libraries are always rich in colourful story books

that capture the attention and imaginations of students to develop lifelong learning abilities. Secondary school students can be taught about basic ICT appreciation to prepare them for future use.

c) **Library Orientation Programmes**: Librarians engage in coaching fresh users on the use of library materials. People using the library for the first time may not be accustomed with retrieving information from the library. It is the onus of the librarians to educate the fresh users on information retrieval process such as the use of library catalogue, indexes and abstracts. Much more, the school librarian can encourage secondary school students to imbibe reading habit by guiding them to the right books that may interest them, by serving as a matchmaker between students and books.

d) **Use ICT resources for promoting reading habits**: ICT facilities and audio-visual resources help children to learn a variety of subjects, from simple calculation, spelling, dictation, to educational stories. It offers children the opportunity to explore the world beyond their immediate environment. Encouraging and modelling leisure-time reading using ICT and audio-visual resources such as computers, home videos games, televisions etc. help in fostering children's reading development. Healthy viewing habits and parental supervision can help children develop positive learning experiences. Story books in video format help in capturing the attention of children, offer great lessons, extend their experience beyond their immediate environment and teach them proper reading behaviour.

- For the promotion of reading habits special lecturers, training courses, book fairs, exhibition, etc. should be organized.
- Library activities should be promoted through advertising using the mass, electronic and print media.
- Books and journals should be recent, relevant to users' interest and according to their needs.
- Well-trained and qualified staff should be appointed in libraries.
- Library staff should provide training to the user to organize home libraries.
- For the promotion of reading habits several campaigns can be launched, e'g' library week' book day, etc.
- Quiz competitions can be organized in libraries to check the student's knowledge about various books.

### *B. Role of teachers:*

- Provide reading assignments
- twenty minute reading time;
- Teachers started the program in the first period and it was part of every school day;
- Students were free to choose which book to read;
- All students, teachers and staff were to do nothing but to read books which they like;
- Class teachers acted as role models by participating in reading;
- Teachers allowed no interruption of students' reading; and
- Teachers encourage students to write notes and reflections in their reading journals.
- The teacher should enjoy reading herself/himself so that s/he can transfer this feeling to the students as well.
- Encourage the students to think and discuss the message hidden in the story and ask them to pose questions about it.
- Distributing story books among students and exchange questions and analyse them after reading.

### *C. Role of parents:*

Reading habit should start from young itself. There for parents should play a main role in convincing and telling. Their children on how important it is for a person to read no matter what type of reading material it is but it must be beneficial. The parents of all children should provide an environment for the fostering of healthy reading habits. Reading should be as natural to a child as the activity such as watching television or using computers. It is important that the parents who are keen to foster the reading habit among their children should themselves know something about books and authors. Now a day it is understood that parents are busy with their work, but they must make sure their children reads daily. Other than that, parents should bring their kids to the library at least once a week and they have to read together with their kids, so that the kids will be encouraged to read. Parents also can set up a mini library at home with the materials available and suitable for reading. Parents also should advise their adult children to read newspaper on a daily basis and not only reading story book or novels. This is to make sure that they are aware about the current issues.

## Where can I get help from?

Don't feel that you are alone. Family members and friends may be willing to support you in helping your child learn to read. Your child's teacher and local librarians are knowledgeable and can offer help. You can also seek advice from community organizations such as child care centres and from your family doctor.

## *Your Child's Teacher*

When children see their parents and teachers working together, they feel more secure and confident. Taking an interest in your child's education will help your child do better in school. Your child's teacher can provide advice about helping your child learn to read. Here are some topics you could discuss with the teacher:

- your child's reading strengths
- the reading goals for your child and how you can support your child in working towards those goals,
- books that your child could read easily and books that he or she would find more difficult,
- books and authors your child might enjoy,
- your child's interest in reading – for example, whether he or she chooses to read for enjoyment,
- reading strategies your child could use,
- books or guides that could help you help your child.

Your child's teacher can suggest a variety of strategies that your child can and should use to learn how to read, and especially to get through challenging passages.
For example, your child's teacher may suggest some or all of the following strategies for your child to try if he or she gets stuck on a word:

- Think about what word would make sense in the story or sentence.
- Check the pictures and the punctuation marks for clues.
- Go back and read again.
- Think about what word would sound right in the sentence.
- Think of a word that looks and sounds similar.
- Look for parts of the word that are familiar.
- Sound out the word.
- Ask for help with the word.

## *Others Who Can Help*

You can enlist many other people besides your child's teacher as partners in helping your child learn to read. Here are some suggestions:

- Consider involving relatives and friends in helping to motivate your child to learn to read. Older siblings, grandparents, family friends, and your child's caregivers can add their support and encouragement.

- Take your child to your local library and look for books that will interest him or her. Some children find books with interactive features particularly motivating.

Ask the librarians for help. They will know which books are most appealing to young children.

- Talk to staff in local child care centres, parent-child drop-in centres, and other community organizations. They will be familiar with community resources that could be helpful.

- If you have questions about your child's hearing and vision, talk to your family doctor. Sometimes a medical condition may affect reading development.

# Whom Should Children Read?

### *A. Reading With Your Child:*

Sharing a book with your child allows you to share adventures and experiences in the safe world of the book. It allows you to ask questions, talk about what has happened and decide what you think together.

Sharing a book can be a bonding experience and for young children, cuddling up with a parent to read a book can be a special time.

Reading is important, but don't feel that you have to take the role of your child's teacher or put pressure on your child to start to read before they go to school. It's great to instil a love of books and language from an early age, but most of all, be led by your child and their interests and pace of development.

Over the next pages, you can pick up some tips on:

- how to read with your child
- helping children to enjoy reading
- choosing what to read
- understanding phonics

### a) How to read with your child

For most of us, reading aloud isn't part of everyday life, so the thought of reading a story to your child may be a bit daunting. But don't let this put you off – your children will be enjoying themselves too much to criticise your performance!

### b) When should I start reading with my child?

It's great to read to your child from the earliest months. Cuddle close and sing nursery rhymes, read a story with lots of sound effects, or play peek-a-boo along with a book. This shows your

baby how important books are to you, that books come with a loving adult and that books are fun and exciting.

### *Top tips for reading with your children:*

- To a young baby, 'reading' means holding them in your arms, exploring a soft book.
- Start reading with your baby when they are around three months old. Remember that for babies reading is like play – let them wave the book around.
- Once your baby sits up, choose light, sturdy board books with rounded corners, bright pictures and textures to feel. From six months, babies love lift-the-flap books. From nine months, introduce noisy sound books. Be guided by what makes reading fun for you both.
- Use the pictures as well as the words. Babies learn by doing: as baby reaches for the pictures, say the words to help build vocabulary. Be relaxed about what books mean to a baby - a five-minute bouncy sing-song game with an open book is still reading!

**c) How should I read to my child?**

- As you read to your child, bring the characters to life – talk about the characters, the drawings and the events so that the story starts to come alive.
- Don't be afraid to try different voices or try out your acting skills. While you may not win an Oscar, your child will enjoy your performance and appreciate the story even more.
- Remember that your face says it all – so exaggerate your normal expression times three like a children's TV presenter: children will love it.
- Emphasise repeated words and phrases ('the big bad wolf '; '… blew, and blew, and blew the house down'). In this way, your child starts to learn the language used in books. Encourage your child to say the words with you.
- Turn off the television and concentrate on enjoying the book.
- Try audio books that children can listen to on the car stereo, on computers or phones – this is a great way to build a child's understanding of stories and improve their listening.

**d) How often should I read to my child, and how long for?**

- Be guided by how long they will listen. For younger children this may be quite short periods of time, while slightly older children may be readier to listen for longer.

- As for how often, there's no right answer, but many experts suggest a routine helps. For school-age children, a bedtime story can be a nice way for you to spend a small amount of time together and wind down after a busy day. For pre-school children, shorter bursts of reading throughout the day may be a good idea but, again, be guided by how long your child will listen.

### *Top 10 tips to help children enjoy reading:*

To help make reading enjoyable and fun, we asked experts and authors what they recommend to help get kids reading.

1) **Make books part of your family life** – Always have books around so that you and your children are ready to read whenever there's a chance.

2) **Join your local library** – Get your child a library card. You'll find the latest videogames, blu-rays and DVDs, plus tons and tons of fantastic books. Allow them to pick their own books, encouraging their own interests.

3) **Match their interests** – Help them find the right book - it doesn't matter if it's fiction, poetry, comic books or non-fiction.

4) **All reading is good** – Don't discount non-fiction, comics, graphic novels, magazines and leaflets. Reading is reading and it is all good.

5) **Get comfortable!** – Snuggle up somewhere warm and cosy with your child, either in bed, on a beanbag or on the sofa, or make sure they have somewhere comfy when reading alone.

6) **Ask questions** – To keep them interested in the story, ask your child questions as you read such as, 'What do you think will happen next?' or 'Where did we get to last night? Can you remember what had happened already?'

7) **Read whenever you get the chance** – Bring along a book or magazine for any time your child has to wait, such as at a doctor's surgery.

8) **Read again and again** – Encourage your child to re-read favourite books and poems. Re-reading helps to build up fluency and confidence.

9) **Bedtime stories** – Regularly read with your child or children at bedtime. It's a great way to end the day and to spend valuable time with your child.

10) **Rhyme and repetition** – Books and poems which include rhyme and repetition are great for encouraging your child or children to join in and remember the words.

**e) Choosing what to read:**

When it comes to instilling a love of reading, it doesn't really matter what you read. The important thing is that we all help to inspire our children to feel confident and comfortable reading.

Ask yourself what type of reading the book is for. Is it a book they have got from school to help practise reading and build fluency? Is it a book that they find easy to read that helps them build confidence? Is it a book for you to read for pleasure to your child?

f) **What should I read to my child, what should they be reading, and when?** With hundreds of books in your local library, school or bookshop, it can be hard to know where to start when choosing a book for your child. Remember that as adults we like to re-read favourite books, relax with a magazine or tackle something challenging. Children are the same, so encourage choices – maybe a familiar book for re-reading as well as something new. Don't show disapproval if your child returns to favourites.

You can find advice on what books children of different ages might enjoy reading on the Puffin website: www.puffin.co.uk

If you're stuck for something to catch your children's imaginations, it might be worth asking their teacher or a librarian for some advice.

**g) How can I choose books at the right level for my child?**

Especially for younger children, be guided by the teacher. Most schools have some kind of system, sometimes colour-coded, by which they grade how difficult a book might be. This is particularly important when children are still learning phonics.
As a rule of thumb, you would expect a child to read a book with about 95% accuracy if they want to read it to themselves. Less than that, and it's likely that they're missing out, or misreading too many words for them to make sense of the story.

Introduce the 'Rule of five' to older children. Encourage them to read the first page or two of a new book. They must put up one finger for every word they cannot read. If they get to five fingers, then the book is too hard for them and they should choose another one. Don't encourage them just to guess at words they can't read.

When we asked authors what they liked to read to their children, a few old favourites cropped up:

**h) My child has just started school and is learning to read via phonics. What is phonics?**

With phonics, children are taught to read by learning the phonemes (sounds) that represent letters or groups of graphemes (letters).

With this knowledge, children can begin to read words by learning how to blend the sounds together. Unlocking how this alphabetic code works means they can learn to decode any word. For example, when taught the sounds /t/,/p/, /a/, /i/ and /s/ early on, children can read words such as it, is, tap, tip, pat, sip and sat by blending the individual sounds together to make the whole word.

These words can also be broken down (segmented) into their phonemes for spelling. For example, the word 'sat' has three phonemes, /s/, /a/ and /t/ which the children learn to write with the three graphemes (letters) 's', 'a' and 't' that they have been taught.

They will also be taught to read words – such as 'once', 'was' or 'have' – which don't follow the phonic 'rules'. They'll build up a stock of these tricky words that they can recognize straight away.

### *Top tips on phonics*

**Say the sounds correctly: I**t's important that the sounds are pronounced correctly, as they would sound in speech. Try not to add 'uh' to consonant sounds, such as /t/ and /p/, as this makes it trickier to blend the sounds together into words.

**Link sounds and letters to make words:** Children are taught in school to quickly see a link between the phoneme (sounds) and a written representation of that sound (grapheme). At home, encourage your child to do the same when playing with fridge magnets in the kitchen, for example, or 'writing' when you are writing.

**Don't be scared – make it fun!:** Phonics can seem daunting for parents who were probably taught to read in a rather different way. However, simple games such as 'I spy' are great for helping reading, because the children have to listen to sounds. Say, "I spy, with my little eye, something that begins with (for example) the sound 'f-f-f '" Look at the 'football' or the 'fridge'. Make sure you refer to the first sound (not the first letter). Take it in turns, with your child saying, "I spy…" Make it lots of fun.

**Practise**!: Encourage your child to use their phonic knowledge when they are practising their reading. Make sure that they look at each letter in turn, all through each word. Encourage them to work out the sounds and then blend them together to make the whole word. Praise them for trying to use all the letters rather than guessing from just the first letter or the picture.

# Myth-10. Tips can I use to help Children learn to Read?

### A. Talk to your child:

Talking and singing teach your child the sounds of language, making it easier for him or her to learn how to read.

- Tell family stories about yourself, your child's grandparents, and other relatives.
- Talk to your child as much as possible about things you are doing and thinking.
- Ask your child lots of questions.
- Encourage your child to tell you what he or she thinks or feels.
- Ask your child to tell you about his or her day – about activities and games played.
- Be patient! Give your child time to find the words he or she wants to use.
- Sing songs, such as the alphabet song, and recite nursery rhymes, encouraging your child to join in.
- Play rhyming and riddle games.

### B. Make reading fun:

Reading aloud can be a lot of fun, not just for parents but for all family members. Here are some ways to get the most out of reading to your young child:

- Read with drama and excitement! Use different voices for different characters in the story. Use your child's name instead of a character's name. Make puppets and use them to act out a story.
- Re-read your child's favourite books as many times as your child wants to hear them, and choose texts and authors that your child enjoys.
- Read stories that have repetitive parts and encourage your child to join in.
- Point to words as you read them. This will help your child make a connection between the words he or she hears you say and the words on the page.
- Read all kinds of material – stories, poems, information books, magazine and newspaper articles, and comics.
- Encourage relatives and friends to give your child books as gifts.
- Take your child to the library and look at interactive CD-ROMs and the Internet, as well as books.
- Subscribe to a magazine for your child. He or she will love receiving mail!

## C. Read every day:

Children love routine, and reading is something that you and your child can look forward to every day. By taking the time to read with your child, you show him or her that reading is important and fun to do.

Try to read with your child as often as possible. It's the best thing you can do to help him or her learn at school! It also allows you to spend time together in an enjoyable way and to build a strong and healthy relationship.

- Start reading with your child when he or she is a baby.
- Set aside a special time each day when you can give your full attention to reading with your child.
- Choose a comfortable spot to read, where you can be close to your child. Make it your "reading place"! Set aside a special shelf in that area for your child's books.
- Choose a variety of books.
- Vary the length of reading time according to your child's age and interests. For young children, several short sessions (of 10 minutes each) may be better than one long session (of 30 minutes).
- Read slowly so that your child can form a mental picture of what is happening in the story.
- Praise your child for his or her ideas and participation!
- When you and your child are away from home, take along books, magazines, and books-on-tape for your child to read and listen to.
- Keep reading to your child even after he or she has learned to read. By reading books that will interest your child but that are challenging, you can stretch your child's understanding and keep alive the magic of shared reading.

## D. Talk about books:

Talking about the books you read is just as important as reading them. Discussing a story or a book with your child helps your child understand it and connect it to his or her own experience of life. It also helps enrich your child's vocabulary with new words and phrases. Here are some ways to help your child acquire skills in comprehension, reasoning, and critical thinking:

- Ask your child about the kinds of books he or she would like to read.
- Talk to your child about your favourite books from childhood, and offer to read them.
- Encourage your child to ask questions and to comment on the story and pictures in a book – before, during, and after reading it.

- Look at the cover and the title of a book with your child, and ask your child what he or she thinks might happen in the story or what the book may be about.
- Encourage your child to think critically about the story. Does he or she agree or disagree with the author? Why?
- Think out loud as you read, and encourage your child to do the same. For example, ask, "Does this make sense? Why or why not?"
- Give your child time to think about the book, and then ask him or her about it again a few days later.

### E. Listen to your child read:

As your child learns to read, listen to him or her read aloud. Reading to you gives your child a chance to practise and to improve his or her reading skills.

As you listen to your child, remember that your reactions are important.

Above all, listen without interrupting. Be enthusiastic and praise your child as often as you can. If possible, be specific with your praise so that your child knows what he or she is doing well.

- Show your child that you are enjoying the book by indicating interest and by asking questions.
- Give your child time to figure out tricky words, and show your child how he or she can solve problems.
- Try to have your child read aloud to you at times when there will be no interruptions.
- Make sure that your child selects books that are not too difficult. Don't worry if the books your child chooses are a little easier than the ones he or she reads at school.
- Encourage your child to "listen" to his or her own reading. Listening will help your child hear what he or she can do, and think about what he or she might try next.
- Take turns reading with your child, especially if he or she is just beginning to read, or try reading together.
- Talk about a book after your child has read it, to make sure that he or she understands it.

### F. Show that you value your child's efforts:

Remember, your child needs to know that you value his or her efforts. Children learn to read over time, with lots of practice and support from parents and teachers.

Here are some ways you can show your child that you have confidence in his or her ability to learn:

- Help your child decide on a reading goal. Choose books and activities that are “just right” for your child and that will help him or her improve reading skills and confidence.
- Be patient and flexible in your efforts to help your child.
- Show your child that you see him or her as a growing reader, and praise his or her efforts to learn.

## Who decides what?

In developing the school library many people have an important role to play both in the school and the groups affiliated with it. One person cannot change the learning culture of the school. For this reason it is important for the school library development work to have a multi-professional team that focuses on the task and represents the needs of the entire school.

### 1. Headmaster

- Decides on the budget for the school library
- Supports the development of the school library
- Co-ordinates the further education of the staff
- Keeps in touch with the board of the municipal educational administration
- Guides the drawing up of the school curriculum

### 2. School librarian, library-teacher

- Acquires and removes material
- Organises the cataloguing, covering the books with plastic and other book maintenance work
- Organises the borrowing
- Arranges teaching in the school library (information retrieval, data management, enticing pupils to read)
- Leads the school library team
- Acts as a liaisons officer between the library and the school

### 3. ICT-teachers and ICT- contact persons (helpdesk)

- Are part of the school library team
- Help and guide pupils in using the computers, especially in the library
- Participate in teaching how to retrieve information

- Maintain the computers in the school library

**4. Guidance counsellor and upper secondary school guidance counselor**

- Guide pupils in study skills
- Are part of the school library team
- Teach information retrieval

**5. School library team**

- Headmaster, library teacher(s), guidance counsellor, ICT teacher, representatives of different subjects
- Together they plan the activity of the school library

- Plans the division of labour within the team (especially if the school does not have a school librarian)
- Draws up the school curriculum as it concerns the school library
- Gathers a 'wish list' from the different user groups of the school library regarding the acquisition of material
- Evaluates the activities and function of the school library
- Defines the rules for the school library (borrowing, fees, opening times) and the library etiquette

**6. Trusted pupils**

- Act as contact persons between the pupils and the teacher librarian
- Participate partly in the activities of the school library team
- Carry out assistant duties in the school library
- Organise exhibitions of the pupils' work in the school library

**7. The board, the parents' association and the school committee**

- Support the development of the school library
- Collect money for the school library
- Arrange for visiting authors etc. to support the library activities
- Participate in the planning of the school library activities

- Do voluntary work in the school library

**8. The municipal education authorities**

- Are responsible for the centred development of school libraries in the municipality
- Plan and organise the acquisition of the common library system and the cataloguing in the schools
- Organise teachers' further education regarding school library matters and teaching information management skills
- Issue guidelines regarding the organisation of acquisition of material (place of acquisition, system of acquisition)
- Co-ordinate collaboration between the library administration and the education administration

**9. The municipal library authorities**

- Collaborate with the education administration (library system, catalogue information, common agreements concerning the the use of databases, etc.)
- Name the liaisons officers for the school libraries and the public library
- Perform educational collaboration with the educational administration

## How can we create a good reading environment?

To help children develop good reading habits and attitudes, parents need to engage them regularly in family reading activities and create a desirable reading environment at home. Hence, it is essential to have adequate reading resources at home.

### *A. Providing a Favourable Reading Environment:*

a) **A desk specifically for study**: It was found from the studies that if a child had a desk of his or her own, his/her concentration on reading and learning would improve. The best way to create a reading environment is to provide every child with a desk specifically for reading and study. A simple desk will serve the purpose.

b) **A quiet environment**: Provide a quiet reading environment for children. Turn off the television or radio for just two hours each evening, or turn the volume down so that children can read and learn with better concentration.

c) **Computers**: Plenty of reading materials are available on the Internet. A home computer not only helps children learn the application, it also broadens their scope of reading and develops independent learning abilities.

### *B. Creating a Rich Reading Environment*

**a) Children should have books of their own (other than textbooks and supplementary exercises):**

Children can buy the books they like, or receive them as gifts from parents. The number of these books they own need not be huge, but they can gradually build up their collections. Building up a book collection arouses children's reading interest and helps them develop positive reading habits and attitudes.

**b) An adequate collection of books at home:**

Children are more prone to developing a reading interest and good reading habits if there is a rich collection of books at home and they constantly have access to a variety of books. If there are insufficient books at home, an alternative is to visit the library frequently.

## How can we help Children to nurture a reading habit?

Setting good examples, creating a favourable environment and an atmosphere conducive to reading at home and encouraging children's positive reading attitudes are all effective ways for parents to help children develop good reading habits.

### *A. Role modelling:*

Parents are children's role models. If parents want children to have positive reading attitudes, good reading habits, a love for reading, they should set an example for them. They should read in their spare time, enjoy talking about books with others, and make reading part of their daily routines.

### *B. Encouraging reading:*

Children of this age group are generally curious. Parents could first encourage them to read books they are particularly interested in and then go on to other reading materials.
To create more fun for reading, parents can engage children in different kinds of reading activities. For instance, they can take turns to read aloud and then read aloud together, encourage children to share views on the characters in the story, the plot and the ending as well as reflections after reading.

### *C. Creating space for reading:*

Children need to have enough space in order to develop good reading habits. Parents can help children draw up a schedule with a balanced time allocation for reading, doing homework, revision and participating in other activities to allow for a whole-person development.

## MYTH

**Myth-11. Should parents arrange a large number of extra- curricular activities and tutorials for children after school?**

A suitable amount of extra-curricular activities can help children develop their multiple intelligences. However, it is counter-productive to impose too many on them as children may become resistant. The development of children's reading competence will also be affected as there is limited time for leisure reading.

If tutorial lessons are mere repetitions and drills of what was learned at school, they do no good to children's learning. On the contrary, children's learning will be improved if time spent on tutorial lessons is devoted to reading and sharing of thoughts and feelings.

**Myth-12. Is academic performance the most important?**

Academic learning is indeed important, but do not put too much importance on marks and grades. If parents place undue emphasis on academic results and put pressure on children for academic excellence or make them attend too many afterschool remedial classes, they would run the risk of turning children away from learning.

Children may even become resentful and can no longer enjoy learning. It would then be difficult to cultivate their life-long learning attitudes.

**Myth-13. If my child is using a tablet or computer?**

When you are reading using a tablet or a computer, stay with your child. Talk to them about what they are doing, and help them use the device.

- It is a good idea to put the device into 'Airplane Mode' before giving it to a child to avoid any unexpected costs or internet access.

- Ask the same questions about the story that you would with a printed book.

**Myth-14. Children make good use of information from the internet?** To go in line with the reading programmes in schools, parents can help children access the Internet at home, schools or other places (e.g. public libraries) so that they can browse educational websites to improve their reading literacy.

Although many children spend a lot of time on reading website materials, books cannot be totally replaced.

If children spend a lot of time on computer or video games, they will have less time for reading. Parents should ensure that children spend adequate time on leisure reading.

## Recommendation

| S/N | Stakeholders | Recommendation |
|---|---|---|
| 1 | Students | - Students should strive to be avid readers<br>- Avoid all forms of distractions from social media site on the Internet.<br>- Students should pool their reading resources together to overcome the problem of paucity of reading materials.<br>- Form book/reading clubs where they can come together to share exciting reading experiences. |
| 2 | Parent | - Parents should partner with school librarians in order to enhance secondary school students reading habits. |
| 3 | School | - There must be a fixed time for reading, that is, there should be a reading period in the school time table that will enhance students' reading time and consequently improve reading habit.<br>- Adopting different approaches to arouse the interest of students which could enhance their reading habits, such as organising reading contest, book talks by school media specialist and school teachers.<br>- There should be provision for classroom libraries to be funded by the Ministry of Education, parents, the government and public-spirited individuals.<br>- Schools should convene regular Parents-Teachers Association (PTA) meetings to establish solid foundation for strong reading habits among secondary school students.<br>- Parents should be given hints about how they should help their children at home to become avid readers. It is obvious that once good reading habits are not inculcated at this level of education, it will be extremely difficult at a higher level of education to develop solid reading habits. |
| 4 | Teachers | - Teachers as role models should be afforded the opportunity to attend reading conferences at both national and international levels and should be motivated to be members of the Reading Association of Nigeria so that they can keep abreast of current developments in reading research. |
| 5 | School Librarians | - School Librarians should form readers' forum where students engaged their leisure time to read inspirational, motivational, biographies and story books.<br>- School Librarians should organise library exhibition at least once a term to create awareness of all kinds of books in the school library and arouse the interest of students. |

# Electronic Publishing: A Simplified Approach

**Priyanka Roychowdhury**
Former MLISC Student (Digital Library Student), Dept. of Library and Information Science, Jadavpur University, Kolkata-700032

**Subarna Kumar Das**
Professor, Dept. of Library and Information Science, Jadavpur University, Kolkata-700032

## Abstract

E- Publishing or Electronic Publishing is a more recent way in which books, short stories, collections and works of non-fiction can be distributed via the Internet and computers in general. The term- electronic publishing is also known as e-publishing, digital publishing, desk top publishing, online publishing, web publishing for topical searches. This paper presents a very simplified approach on e- publishing. This paper aims to explore the meaning, concepts, and explanations on the contents of Electronic publishing and also describes the main categories, advantages, limitations and products and services of electronic publishing. This paper emphasizes the wide range of e publishing types like Email publishing, Print-on on-demand, E-books, E-journals, Electronic ink, Web publishing, Digital content etc. This paper also highlights the characteristics, process and reasons of electronic publishing. Finally, this paper attempts to discuss the role of electronic publishing on Library Information Management and radical changes in the publishing industry especially with impact of electronic media and Internet.

## Keywords

Electronic publishing, Publishing, Web publishing, Digital content, Electronic ink

## Introduction

Information Technology has brought about changes from traditional print to electronic format. Electronic publishing (EP), uses new technology to deliver books and other content to readers. Since the technology allows publishers to get information to the readers quickly and sufficiently, it is causing major changes to the publishing industry and stakeholders in the publishing sector. The application of electronic technology to almost every aspect of human endeavors is on the increase in the modern era of digital information revolution (Oladejo and Adelua, 2012).

Information is an intellectual resource that has the capacity to change the image of the society. Consequently, large investments are being made by government all over the world on information technology industry for generating, processing and disseminating the information. Most of the scientific research literature today is coming on an array if information resources,

such as floppies, magnetic tapes, internet, websites, CD ROMs, the outgrowth of advances in computer and communication technology. They are becoming more popular for accessing, retrieval and offering services electronically, replacing gradually their print counterparts. During the last three decades, the information formats and delivery systems have changed considerably. Internet is emerging as a very powerful tool to make information quickly available on network to all potential users located anywhere. Internet documents have the quality of all time accessibility. Timely delivery of extremely current information has always been a crucial factor in special libraries. Moreover such libraries have always dealt with a diverse range of non-book information and material, most of which is inherently suited to electronic format.

Electronic publishing is the dissemination of information in electronic formats and its distribution to potential users either on electronic networks such as Internet and intranet or in stand-alone formats such as CD ROMs and diskette. E-publishing has been defines as any non-print media material that is published in digitized form to an identifiable public. The media in an electronic publishing can be text, numeric, graphic, still or motion pictures, video, sound or as in frequently the case a combination of any or all of these. E-publishing can be represented as -

Electronic publishing = Electronic technology + computer technology + communication technology + publishing.

Electronic publishing (e-publishing) deals with the collection, modification and distribution of information, art and software in any form, such as on physical media or via computer networks. E- publishing may be broadly divided into two categories: online and offline publishing. Online publishing uses computer and communication networks including the Internet, intranet and extranet for delivery of the content. Offline publishing uses storage media such as CD ROM, CD-I, DVD, memory card and diskette for distributing the content. By definition, electronic publication (e-publication) is the publication of any form of electronic media.

## Definitions of Electronic Publishing

When the computer and electronic media are used for the publishing of any intellectual output, it is called electronic publishing. F.W. Lancaster (1995) defines Electronic Publishing as “a publication process where the manuscripts are submitted in electronic format, edited, printed, and even distributed to readers (users) in electronic form by employing computer and telecommunication technology”.

According to Encarta Online Dictionary it is the ‘publishing on computer network or disk: the production of documents in computer-readable form for distribution over a computer network or in other formats such as CD-ROMs’. John Unsworth (1995) opined that ‘electronic publishing refers to the dissemination of information, whether text-only or multimedia, via the internet or through some hybrid or local media and networked archives. Networked electronic publishing can be the basis for producing these other media, and indeed for producing print’. Further Chandrakar (2006) quotes Gordon Wills of MCB University Press, UK, as he explained that “electronic publishing is the exploitation of electronics in any and every cost-effective and cost-

beneficial way that can facilitate the process of publishing, where publishing for our purpose means: conceiving, creating, capturing, transforming, disseminating, archiving, searching, and retrieving academic and professional knowledge and information". In fact electronic publishing is the publishing system where all the possibilities of electronics, computer, Internet and communication technologies are utilized for the speedy, cost effective, and most efficient publishing and distribution of the intellectual endeavor of the human being.

## Objective

The main objective of this paper is to present the simplified approach of electronic -publishing. The specific objectives are to:

- Trace development in electronic publishing
- Describe the processes involved in electronic publishing
- Highlight the characteristics and reasons of electronic publishing
- Describe the categories and product and services of electronic publishing
- Discuss the advantages and limitations of electronic publishing
- discuss the role of electronic publishing on Library

## Methodology

This is a desktop research and literatures were reviewed using core keywords for the literature search. To ensure that all concepts were included within publishing, the following general related terms, were used as core keywords for all literature searches publishing combined with any of the following terms; digital, web, Internet and electronic. For example electronic publishing, web publishing, digital publishing etc. The literature searches were conducted using online databases (Library and Information Science Abstracts (LISA), Science direct, Ebscohost, Emerald, Google scholar) available at University Library to retrieve journal articles in electronic publishing. LISA provides access to abstracts. The abstract accessed help to identify relevant articles; therefore an insightful analysis is possible. LISA offers authority controls strictly for subject terminology that can enhance recall or precision in searching. The searches were limited to publications in English. In addition, a variety of search engines (altavista, yahoo etc.) were used to identify relevant works on electronic publishing. Different relevant materials like articles, books and conferences proceedings addressing electronic publishing were used. Journal articles were consulted because they offer a relatively concise and up-to-date format for research. Conference proceedings were used because they provide the latest research, or research that has not been published

## Genesis, Development and Evolution of Electronic Publishing

The fusion of electronics, computer and communication technologies together for publishing can be termed as electronic publishing to denote any information source published in electronic form.

ARPANET, the forerunner of the Internet were created more than forty years ago in 1969 by researchers at the University of California Los Angeles, University of California Santa Barbara, Stanford Research Institute and the University of Utah. Even in the early days of the internet some publishing was taking place through e-mail mailing lists and the circulations of working papers to limited groups of people in various fields. Electronic publication really took off, however, following the invention of the World Wide Web software by Tim Berners-Lee in 1991 and the invention of the Mosaic Web-browser in 1993. In 1993 the impact of these developments was immediate: traffic on the Internet expanded at an annual growth rate of 341,634%. Wilson (1997) reported that in January 1997, according to Network Wizards (1997) there were estimated to be 16,146,000 Internet "hosts" and 650,000 Web sites (up from 130 in 1993). It is said that the story writer Stephen King was the first person who published his book in electronic format (Dash and Panda, 2006). It is commonly believed that electronic publishing began with as a result of Project Gutenberg. The project started in 1971 when Michael Hart was given computer time by the operators of the Xerox Sigma V mainframe at the Materials Research Lab at the University of Illinois (Wiesner, 2003). It was Michael Hart who envisioned the idea that computers could indefinitely reproduce anything that was entered and stored for future retrieval.

Subsequently, there have been many offspring of his original idea leading to what was termed Electronic Texts. A Gutenberg Philosophy has evolved which strives toward “making information, books and other materials available to the general public in forms a vast majority of the computer, programs and people can easily read, use, quote and search”. (http://promo.net/pg/history.html). The first e-book was published in 1985 in Germany and since then there has been a steady growth in the number of electronic publications. American Chemical Society (ACS) was the first professional association to offer its publications in electronic form in 1983. Harvard Business Review was made available online providing full text articles via Bibliographic Retrieval Service (BRS) since 1982.

Advanced Document Over Network Information Services (ADONIS) started its trial version in 1987 with only 224 Bio-medical journals being e-published. But by 1994, the number of journals included in the service rose to 505 and 160 new titles were added in 1995. Online Library Computer Centre (OCLC), through its Electronic Journals Online (EJO) service, provides peer-reviewed journals online since 1992. This is the first scholarly peer reviewed journal made available in the on-line environment (Moorthy and Karisiddappa, 1996), (Sahoo, 2004). Lancaster (1995) describes the evolution of electronic publishing having the following manifestations:

- Use of computers to generate conventional print-on-paper publications. This development can be traced back to the early 1960s (e.g., the production of Index Medicus at the National Library of Medicine). The use of electronics to print on paper is not a completely pedestrian application since it allows new capabilities such as printing on demand and even the production of customized publications tailored to individual needs.

- The distribution of text in electronic form, where the electronic version is the exact equivalent of a paper version and may have been used to generate the paper version. For secondary publications (indexing and abstracting services), electronic distribution began early in the 1960s. For primary journals, the development occurred somewhat later. Today there is considerable activity and interest in projects that make electronically accessible the text and/or graphics of journals that are also sold in print-on-paper form.

- Major projects of this kind (in which the electronic version is accessible online, as CD-ROM, or as a combination of these modes) include ADONIS (Stern & Compier, 1990), Red Sage (Borman, 1993), CORE (AnnuaEhieu,1992; Borman, 1993), and TULIP (Borman, 1993). Moreover, the full text of a significant number of journals is now made accessible online by vendors such as DIALOG.

- Distribution in electronic form only but with the publication being little more than print on paper displayed electronically. Nevertheless, it may have various "value added" features, including search, data manipulation and alerting (through profile matching) capabilities.

- The generation of completely new publications that exploits the true capabilities of electronics (e.g., hypertext and hypermedia, electronic analog models, motion, sound). This phase of development can actually be subdivided into: (a) the presentation of existing text and graphics in innovative ways (e.g., the Perseus Project), and (b) the production of publications designed to exploit full electronic capabilities.

## Process of E-Publishing

The stages of electronic publishing are similar to the process of traditional print publishing in many ways but there are some variations that consist of eight steps:

- **Content creation**: Content creation is the first step in electronic publishing. The creator may be researchers, scholars or authors. The content of e-publication can be in various form and format – text, graphics, image, video, audio or combination of all these. Hyperlink and hypermedia can be given to a file within or external.

- **Manuscript Submission**: digitally created manuscript will be submitted to the publisher via e- mail as an attached file or copied in a storage device like CD-ROM or DVD and sent to the publishing house. It reduces the processing time as the typesetting is already done by the content creator.

- **Peer review**: Peer review is a process to ensure the quality of scientific writing. The electronic publishing enables peer review more easy than print publishing. The digitally produced content can be sent to reviewers by email within seconds and return back to editor's desk without much delay.

- **Copy editing and typography**: As the manuscript is submitted in digital form, editing the text, page design, and other editorial works are easy and less time consuming. In electronic publishing typing and editing are done by author himself where in print publishing all these works are repeated at publisher's desk also.

- **Database preparation**: The content selected for publication will be converted into the database. The format of the database is depending upon software used for e publishing. Some electronic publishing software automatically converts the content into desired file format.

- **Testing**: In this stage, the content, file format, file size, compatibility, and accessibility are tested. The publisher takes care of content compatibility because the users may not use the same device and software to read the content, for example the text should be readable at desktop computer as well as Kindle e-book reader.

- **Production and distribution/ publishing**: production is an important stage like in print publishing. E-publications are available both online and offline. In case of online the content will be uploaded in the respective web site on local network whichever is selected. For offline publication, digital storage media like CD-ROM or DVD are used. Online publishing is easier than offline because it take less time to upload and distribute the content to unlimited subscribers where as CD/DVD publishing take more time for preparation and distribution.

- **Archiving**: Archiving is a debating issue among the scholars. Keeping the archive of each content is important but who will do this? Normally publishers are responsible for archive but how the users can access it (without prior permission). Many e-publications are available only for online use, these are not permitted to download and keep at subscribers' computer. So whoever responsible for keeping the back up of the content archiving is an essential step in electronic publishing. The entire process of electronic publishing is represented in the.

## Reasons for e-publishing

There are many reasons for choosing electronic publishing over print publishing. Scholars have expressed different opinions and views regarding the motives of accepting electronic publishing. Some important reasons are listed below:

- Process of the print publishing is same as the electronic publishing and common between both publishing is availability of intellectual content in digital format.

- Universities, societies, and research institutions in India have lots of scientific publications do publish in different Indian languages on various subjects, needs visibility.

- Electronic version of journals gets wider exposure to research scholars through greater accessibility of 24X7 hours and offers opportunity to use new form of creative scholarship through use of interactive elements, multimedia, hyperlinks etc.

- Availability in electronic format of the intellectual contents changes learning behavior of the user and provides positive impact towards growth in academic research. The universities have lagged behind due to lack of fund, support and skill in this area. They need training and proper platform for hosting their journals online.

- Electronic publishing has brought down the overall time lag of publishing from article submission to its final publications. (Chandrakar 2006).

## Characteristics of Electronic Publishing

Wilson (1997) enlists the characteristics of electronic publishing as follows:

- Electronic publications can be produced and disseminated very rapidly - once a page of text has been coded with HTML tags it can be published immediately.

- If correction is necessary, an electronic text can be updated or corrected with the same immediacy, whereas a book must either go through a second edition, or, if the error is caught in time, have an erratum slip inserted;

- Electronic publication can be made collaborative and interactive, involving either several "authors" or authors and readers;

- Electronic publications can be disseminated world-wide without the need for separate rights negotiations for different countries and without the costs of distribution or reprinting;

- The producer does not incur the costs associated with retail bookselling, that is, there are no "middleman" costs;

- Through effective electronic interaction with the buyer or user of an electronic publication, the producer can collect valuable market-research data very cheaply.

## Categories of e-publishing:

Electronic publishing can be categorized into two ways.

- Off- line
- On- line

In off-line publishing information is entirely passes into the possession of the purchaser or user, who can access it an unlimited number of times without any further change. For example computer software or reference material on compact disc in a physically tangible and transportable form. In can be accessed repeatedly using an electronic reader like a personal computer or compact disc player. In on- line publishing, the information remains in a publisher controlled computer, usually accessible only on payment of fee for each use. Unlike off-line publishing on-line publishing can be continuously updated, managed and refined. In off-line publishing the publisher has no way to quickly update the database. So new editions or supplements must be periodically distributed to each user.

## Products and Services of Electronic Publishing

Electronic publication can be described as a document distributed primarily through electronic media in different forms. Electronic publishing is transforming itself in a wide range of products and services, although most of them try to be like the traditional publishing while others are revolutionary in their approach and design.

### *Electronic books*

Borchers (1999) defines an eBook as a portable hardware and software system that can display large quantity of readable textual information to the user and let the user navigate through this information. An eBook is digital reading material that a user can view on a desktop or notebook personal computer, or on a dedicated, portable device with a large storage capacity (1,500 to 50,000 pages) and the ability to download new titles via a network connection required hard ware. The reader hardware is expensive, e-titles cost about the same as their print counterparts, ink and paper are still easier to read and handle. Chong and Ling (2009) investigate the students‟ preference for the e-book designs. Researchers compiled three e- books non-fiction in portable document format for evaluation. It was indicated in the result that ease of use of e-book is highly associated with ease of navigation. Publishing a book electronically is to achieve greatly decreased publication costs, quick and dissemination of information (Cunningham and Rosebush, 1996). CD-ROM is appropriate medium for publishing books because it can be operated offline without Internet and it relieves end users of the fear of high connecting time charges, the readability of the text and preservation of the quality of the images (Koganuramath et al., 2000).

### *Electronic periodicals*

Electronic journal (or e-journal) is defined as any journal, magazine, e-zine, webzine, newsletter or type of electronic serial publication which is available over the Internet and can be accessed using different technologies (Arora, 2001). Electronic Periodicals are accessible to all users regardless of geographic location. Anyone in the world with services and the proper computer software and browser services can access online journals. This accessibility leads to a more diverse audience throughout the world as well as a readership that may include not only academics, but students and lay people (Saxena, 2009).

### *Electronic databases*

With the influx of computers and communication technologies, the strength of information system in the development of modern database has taken a new dimension. The stocks of the library database consisting of books, periodicals, reports and theses can be converted to electronic form that allows access for public use through digital networks. A variety of electronic database publishers today account for publishing information both bibliographic and full text on CD-ROMs as well as making them available for On-line retrieval. The prominent On-line publishers include DIALOG, EBSCO host etc. (Chama and Saxena, 2008).

### *Electronic publishing on CD-ROM*

CD-ROM has provided new dimension for information storage and retrieval. Publishing information mainly abstracting sources are quite common in CD-ROM. Although much of the work on e-journals has concentrated on distribution via the Internet, there has been some work on CD-ROM as well. There are many non network electronic publications such as encyclopedias on CD and DVD as well as technical and reference publications relied on by mobile users without reliable and high speed access to a network (Kumar, 2012). Some of the advantages of CD-ROM are; More material can be included, both in terms of quantity (650+megabytes) and type (multimedia resources). Full text searching is relatively easy to include.

### *Print-on-Demand (POD)*

Print-on-Demand is a new method for printing books (and other content) which allows books to be printed one at a time, or on demand. It is a mix of electronic and print publishing .i.e. (print on demand combines the Internet with more traditional publishing methods). The book is held by the publisher in electronic form and is printed out in the hard copy form only on order. This method helps free publishers from the process of doing a traditional print run of several thousand books at a time. Print on demand thereby “eliminates the need for editions to be printed beforehand, greatly reducing up front publishing costs” (Segur-Cabanac, 2005). POD is highly in demand nowadays, because it is a good intermediary step between the regular method of printing paper books and electronic books.

### *Digital content*

Digital content generally refers to the electronic delivery of fiction that is shorter than book-length, nonfiction, and other written works of shorter length. Publishers of digital content deliver shorter sized works to the consumer via download to handheld and other wireless devices. Technology used for delivering digital content includes portable document file (PDF), hypertext markup language (XML), WAP (Wireless Application Protocol) and other technologies. The security of the data being delivered is the major concern of publishers, who want to ensure they can deliver digital content without the risk of someone copying the work and selling or giving away the works (Saxena, 2009).

### *Electronic ink*

Electronic Ink is a developing technology that has a huge impact on the media and publishing industries. Electronic Ink could be used to create a newspaper or book that updates itself. It is a high-contrast reflective display ideal for e-book applications. In addition, this content could be programmed to change at any time. For example, you could have a billboard that rotates different advertisements, or you could receive a coupon in the mail that is frequently updated with the latest offer. For media companies, the possibilities are almost endless. Someday, electronic newspaper will simply update itself every day. E - Ink Corporation, a new company with major investors, and Xerox are two companies currently developing this technology (Saxena, 2009).

### *Email publishing*

Email publishing is designed specifically for delivering regular content-based email messages. Email publishing, or newsletter publishing is a popular choice among readers who enjoy the ease of receiving news items, articles and short newsletters in their email box. The ease of delivery and production of email newsletters have led to the development of a massive number of available email newsletters, mailing lists and discussion lists on a large variety of topics (Saxena, 2008).

### *Web publishing*

Web publishing is not a novel practice any longer, but it continues to change and develop with the introduction of new programming languages. Hypertext Markup Language (HTML) is still the most widely used web programming language, but Extensible Markup Language (XML) is also making headway. XML is valuable because it allows publishers to create content and data that is portable to other devices. Nearly every company in the world has some types of website, and most media companies provide a large amount of web based content (Saxena, 2009).

## Advantages of E-Publishing:

Following are the main of e publishing:

- **Maintenance of updated information**: Data can maintain aptitude so that buyer will be able to purchase the latest version of publication.

- **On demand publishing**: The individual subscribers can be provided with only those documents, which match their profile, and can be charged accordingly. ‘On demand publishing’ also allows retrospective searching and SDI.

- **Information retrieval Just in time**: Library and Information Centers does not ‘buy publication’ to access the information in it, they can have online access to the E Journals and download or print the required material. EP provides aids for connectivity, audio

visualization customizability, creation and revision of documents, interactivity and rapid information retrieval.

- **Speed**: Publication of E Journals saves the turn-around time, i.e., the time lag in submission, referring, vision, editing, composing, printing, binding, and forwarding, which is eliminated by using computer and communication networks. This enhances timely publication and is suitable to the letters-type journals where rapid communication is of utmost importance. This leads to further reducing the gap between the author and the end-user.

- **Distribution**: The major advantages of e journals are their global distribution, their hyperlinks, and the ability to access from different sites and ability to search.

- **Retrieval**: There are a good number of search engines available to access and retrieve the appropriate articles. Most of the publishers of E journals are providing keywords, author search, terms reducing the role of additional indexing and abstracting.

- **Multiple Accesses**: Most of the publishers of E journals are coming up with site license policy providing multiple accesses and access through the campus LAN.

- **Manageability**: Electronic information can easily be managed be managed by adding book- marks and personal notes to be sites or by downloading it of private files or databases for copying and editing.

## Limitations of Electronic Publishing :

Along with the advantages electronic publishing has some limitations, especially with regards to developing countries like India. Some of the limitations are listed below:

- Electronic publishing still reaches only a minority of potential users or customers - even though this minority may constitute most of the market for some products (e.g. financial business information, scholarly communications), and much of the majority is in the developing world, where usage is likely to be slow to emerge.

- Electronic publishing demands access to relatively advanced technology on the part of both the producer and the consumer of information or entertainment even the base level of provision is still expensive for the ordinary citizen.

- Mobile computers, notebooks and smaller, are either too big or have screens that are too small, or otherwise inadequate, for use across the full range of environments in which a book can be read.

- The technology is still, to a significant degree not user-friendly to many people.

- The technology consumes a greater amount of energy in its use than the book.

## Electronic Publishing and its Role in Libraries:

Definition of a library is an institution that selects, acquire, organize, and provide access to record knowledge. This is obviously a very broad definition, but both the collecting ad organizing aspect of librarianship is threatened by electronic publishing. When it becomes cheaper to offer patrons access to material that is stored electronic ally than on paper, then electronic access will rapidly become accepted, in spite of many limitations it has. One of the primary characteristics of scholarly publishing is that he use of any particular article is fairly low, low enough that it will be probably cheaper to store the material at central sites rather than at each library. In spite of being in electronic form, the amount of material that a typical library acquires in paper form is still a substantial burden. This will push libraries into using central repositories to handle electronic publications is so easy and fast, that the lack of local storage should not be a problem to the users, hardly noticeable, in fact if the system is properly constructed.

## Conclusion

Electronic publishing has created a revolution in publishing industry. By now, they have received adequate acceptance among the users. During the past one decade, they have become quite popular, particularly for scientific and scholarly communication. Electronic publishing has led to a boom of online publishing by 'self author' and 'self-publisher' brought about Internet and World Wide Web. Drawbacks to this boom include the flexibility of copying, lack of style, uniformity and standardization etc. Emergence of self-publishing, combined with lack of consistency and quality has led many to question the validity of all electronic journal. Long-term success of an electronic journal requires acceptance by the reader, editor and contributors who help attract readership and potential contributors. Referred electronic journals of high quality come under this category. Editorial participation is an important contribution to add the reputation of the journals. Author of such journals want to make their work available to a large audience. Electronic journals readily provide this opportunity to scholars.

Electronic service are not cheaper than print, but they provide much faster access and more option and ways to recover costs. In spite of these limitations, electronic publishing is becoming popular vehicle of scientific communications in the fast changing high tech research environment.

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# Campus TV Through Digital Library: A Never-ending Possibility for Knowledge Streaming

**Shafiqunnabee Samadi**
Professor, Dept. of Bangla & Former Administrator (Librarian-in-Charge), Rajshahi University Central Library, Rajshahi, Bangladesh

**M.A.M. Mominur Rahman**
Operation Manager, Faculty of Engineering, Rajshahi University, Rajshahi – 6205, Bangladesh

## Abstract

Knowledge streaming through digital process is very important now a days for a country like Bangladesh. Rajshahi University Central Library has identified this mater five years back. Now Rajshahi University Central Library has complete setup of digital operation and RFID system for the security purpose and sharper usage of the library. We have to keep it in our mind that audio visual knowledge streaming is more effective than the older techniques. In this connection we can set up a Campus TV network. Rajshahi University already has a Fiber Optics Backbone Local Area Network (LAN) all over the campus. It is the most easy to setup TV network throughout the campus using our Fiber Optics Backbone. Through this network we can stream our seminar lectures, class lecture of senior professors, lectures of national and international scholars. In this paper we will present the technical, financial, possibility & challenges of the Campus TV network through Digital Library.

## Keywords

knowledge stream, Digital knowledge stream, Digital Library, Camus TV

# Reinforcing Library Resources Access for Different abled Person through Assistive and other technologies

**Payel Shee**

## Abstract

Libraries are the gateways of knowledge and culture. They also help to ensure access to full range of resources and facilities to their user community irrespective of their differential abilities. Libraries play a vital role in case of providing information resources to one and all but access to information resources is major problem for the disables in India. This study focuses on the existing scenarios of the library services for the differently able users in India and also tries to enhancing library resources access for different able persons through Assistive technology

## Keywords

Differently able person, assistive technology, access of library resources, library

## Introduction

Libraries are synonymous with education and offer countless learning opportunities that can fuel economic, social and cultural development. As an information centre library can provide different types of learning resources to its users. There are different types of users in a library but some of them are not able to access resources of a library due to their different disabilities so, as an information centre the environment of a library should be a barrier free. The term 'barrier-free' indicates an environment where all users irrespective of their physical disadvantages can enter, use or access the resources as and when they want. In the library environment, library building, its furniture, learning resources should be easily accessible by all. This paper aims to enhance library resources access for different abled persons by procuring proper equipments, assistive and providing proper infrastructural facilities and need based services for them.

## Objectives

1. To provide access to the information sources to differently abled users.
2. To explore the benefits of assistive technology for providing better library services to the specially abled users.

# Indian Scenario

As per the Census 2011, in India out of the 121 Cr population, 2.68 Cr persons are 'disabled' which is 2.21% of the total population.

| Population ,India 2011 | | | Disabled persons, India 2011 | | |
|---|---|---|---|---|---|
| Persons | Males | Females | Persons | Males | Females |
| 121.08 Cr | 62.32 Cr | 58.76 Cr | 2.68 Cr | 1.5 Cr | 1.18 Cr |

India is trying to empower its disabled citizens. All possible support is being provided to the persons with disabilities either by enacting a special Act, or by executing a 'National Policy for Persons with Disabilities, 2006', or by providing reservations in education, employment, government schemes and programmes or establishing institutions and organizations. In addition to the legal framework, extensive national infrastructure has been developed including the 'National Institute of Visually Handicapped in Dehradun' with an aim of empowering persons with disabilities with appropriate skills. Given this background, it is evident that India is committed to support, encourage and empower its large population of specially-abled persons. A brief account of such initiatives and efforts are given in this module.

### *Persons with Disability (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995*

The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995 has come into force since February 7, 1996. This law is an important and significant step in the direction of ensuring equal opportunities to people with disabilities and their full participation in the nation building. The Act provides for both preventive and promotional aspects of rehabilitation like education, employment and vocational training, job reservation, research and manpower development, creation of barrier-free environment, rehabilitation of persons with disability, unemployment allowance for the disabled, special insurance scheme for the disabled employees and establishment of homes for persons with severe disability.

### *National Policy for Persons with Disabilities, 2006*

The National Policy for Persons with Disabilities, 2006 recognizes persons with disabilities as valuable human resource for the country and seeks to create an environment that provides those equal opportunities, protection of their rights and full participation in society. The policy focus on the following aspects:

1. Prevention of Disabilities: In Large number of cases disability is preventable; there is strong emphasis on prevention of disabilities. Programme for prevention of diseases, which result in disability and the creation of awareness regarding measures to be taken for prevention disabilities during the period of pregnancy and thereafter will be intensified and their coverage expanded.

2. Rehabilitation Measures: Rehabilitation measures can be classified into three distinct groups, i.e. Physical rehabilitation, which includes early detection and intervention, counseling & medical interventions and provision of aids & appliances. It will also include development of rehabilitation professionals; Educational rehabilitation including vocational education; and economic rehabilitation for a dignified life in society.

## Library services for persons with disabilities

All library collections and materials should properly be accessible for all persons with disabilities, till today depend on two primary sources for information, i.e. Braille Books; and Talking book service. Libraries should acquire Assistive technology to facilitate information exchange, resource-sharing among different libraries for the purpose of serving persons with disabilities and meet their changing needs. Wide range of Assistive technology products are available throughout the world some are priced and some are available free of cost. In this case assistive technologies that is most appropriate for those differently able users of the library. Selection of Assistive technology product is very important task for a library mainly it's depending upon its user recuirements.There are no specific guidelines for deploying assistive technologies in the libraries. But the disability laws of the different countries mandate that all public places, educational institutions should facilitate access and use of resources to the differently abled persons. Consequently, the libraries deploy these technologies to provide access to library resources and help differently abled users in becoming self- dependent.

| Types of disabilities | Library services |
|---|---|
| Print disabilities | • Talking books<br>• Audio magazines and newspaper<br>• Large print books<br>• Computer files of text<br>• Audio descriptive videos<br>• Braille and other tactile materials |
| Deaf or hearing impairment | • Books and pamphlets on sign language, dictionaries of signs<br>• Audio loop<br>• Counter loop<br>• Telecommunication devices |
| Cognitive disabilities | • Books in enlarged print<br>• High interest, low-vocabulary materials and books.<br>• Spoken word collections<br>• Books on tape and text kits<br>• Audio and video tape in daisy format |

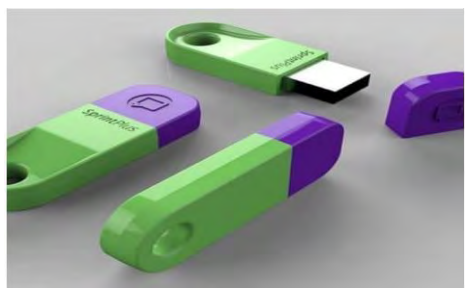
| | |
|---|---|
| Physical disabilities | • Voice recognition<br>• Screen enlargement<br>• Software for converting print documents<br>• Text highlighting and advanced reading in different formats |

### *Assistive or Adaptive Technology*

Assistive technologies (ATs) that refers to assistive, adaptive rehabilitative devices, products, or equipment for helping people with disabilities. ATs assist individuals in communication, education, work, and recreation and enhance quality of life. Assistive technologies offer independence by enabling people with disabilities to perform tasks which they were formerly unable to accomplish.

### *Types of some Assistive technology*

**Text-to-speech software**: Text-to-speech software enables computer to read aloud web pages, text documents, emails and PDF documents in a natural sounding voice. Examples: ClaroRead , Read&Write, SprintPlus, and Kurzweil 1000 for windows are most popular text to speech software.

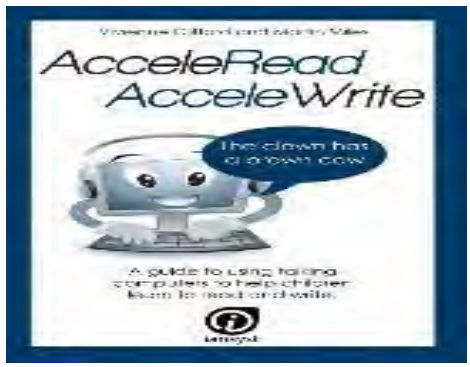



Text to speech software Sprint plus

**Speech recognition software**: Speech recognition software allows individuals to transform their spoken words into digital text. Example: The most popular software is Dragon which is available for PC and Mac.

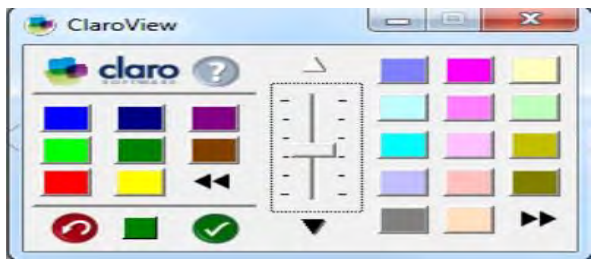

Speech recognition software Dragon

**Reading and writing support software**: There is a wide range of assistive technology to support individuals with reading and writing difficulties. Example: AcceleRead AcceleWrite is a popular reading and writing software




AcceleRead AcceleWrite

**Visual stress**: Visual stress can range from blurred letters or words, headaches, or difficulty with tracking across a page. There is a wide range of assistive technology that can help with visual stress including coloured overlays which are placed over text to make reading more comfortable. Example: Claroview




Software ClaroView

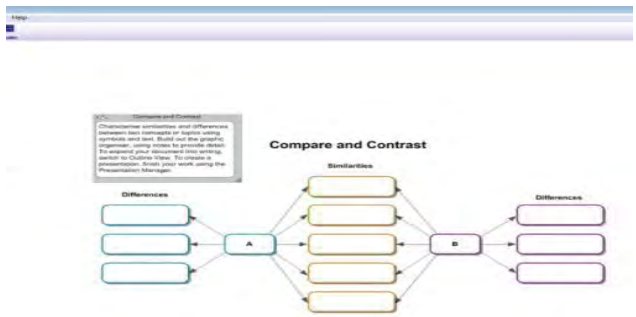
**Visual impairment software**: There is a variety of popular visual impairment software which can help individuals with different levels of sight loss. These products can output to Braille, magnify text, read aloud text and much more. Example: Dolphin SuperNova and ZoomText


Dolphin SuperNova

**Note-taking support**: There is a wide range of note-taking support technology, the majority of which help to eliminate the difficulties that are associated with writing whilst listening. Some technology also helps individuals with organising and editing notes that have been made to help them digest the information. Examples: Sonocent Audio Notetaker

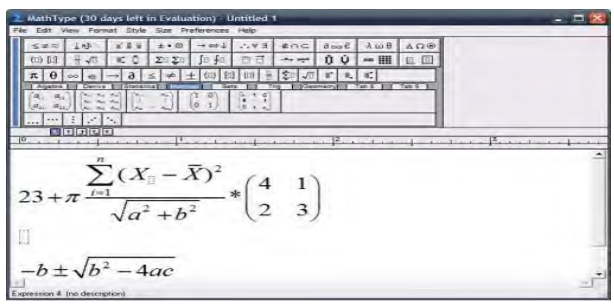
Audio Notetaker 4 from Sonocent

**Mind mapping**: Mind mapping is an established learning and organisational tool, allowing users to create maps and diagrams to represent their ideas.Example: Mindview, Inspiration.



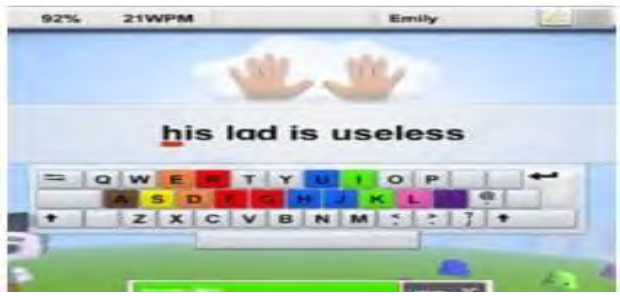

Inspiration software

**Maths support**: There are both online and stand-alone resources which support individuals of all ages with maths topics, including number sense, scale, addition, subtraction, multiplication, division and much more.Example:Math type,Numbershark, Multi-step Maths and Dynamo Maths.




Software Math Type

**Typing tutors**: Typing Tutors help individuals to type quickly and accurately when using a computer, which in time can benefit reading, comprehension, vocabulary and spelling skills. Example: English type, Mavis Beacon and Nessy Fingers are popular examples of typing tutors.




English type

**Ergonomic**: Popular ergonomic solutions such as alternative mouse devices or keyboards can help those with physical difficulties, as well as reducing the risk of repetitive strain injury (RSI). Popular examples include the Evoluent VerticalMouse, switches and the RollerMouse Pro 2.

RollerMouse

### *Hardware*

**Portable scanner**: C Pens, Reading Pens and the All-in-One Scanning Mouse are suitable for all ages and helps with dyslexia and memory problems as you can scan text and transfer to your computer.

**Livescribe**: Livescribe Smartpens are a note taking solution with a difference, can capture handwriting whilst recording the audio of your meeting or lecture which can then transferred to your computer, The special inks and notebooks are also available in this section.

Livescribe Smartpens

**Digital recorder**: Digital recorder is ideal for anyone with dyslexia and who needs support with note-taking.


Digital Voice Recorder

**Headsets**: Headsets are designed for a variety of uses for conference calls, telephone, podcasts, speech recognition, music and much.

## ICT for the differently abled persons

Some of the most relevant and innovative applications of information and communication technology for development can be found in interventions developed for the differently abled. The development of ICT presents new opportunities for these individuals to mainstream their activities and lifestyles, promoting their inclusive growth.

### *Devices and software*

**Jaws** :Jaws (Job access with speech) are one of the most popular and effective software developed for the blind or visually impaired.

**Sparsha**: Sparsha is a toolset for the blind. sparsha can translate the text on screen to bharati braille – a unified braille script used to write english languages using cells containing six braille dots

**Sanyog** : Sanyog a project of the Indian institute of technology, Kharagpur has impacted the lives of several speech impaired children, and enabled them to express themselves in creative ways.

## Conclusion

Libraries should ensure that they acquire resources and offer services to meet the needs of all people without discriminating against individuals with disabilities. Libraries should work with persons with disabilities, local communities, organizations and vendors to integrate assistive technology into their facilities and services to meet the needs of people with a broad range of disabilities, including learning, mobility, sensory and developmental disabilities. Library staff should be aware of how available technologies address disabilities and know how to assist all users with library technology.

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# Preservation of Digital Assets in libraries for present generation and posterity

**Vikas Singh**
SRCC, University of Delhi

**Archana Shukla**
DLIS, IGNOU

## Abstract

The present paper discusses digital prevention activities and processes. It also discusses why the preservation of digital assets in libraries is required. It has been observed that the preservation of traditional material turns out to be more successful and systematic after libraries and archives integrated preservation into the overall planning and resource allocation. The movement a document completes a process of digitization it becomes immortal and could be accessed easily as and when required. As the libraries are heading towards the possession to accession and managing the knowledge in digital form. The present study covers the need and importance of digital preservation followed by the different strategies given by OCLC and UNESCO. Further, the study moves forward towards challenges being faced in the country and the way should be used for selecting the material for digitization.

## Concept Building

Digital Preservation is key not only for human history, education, culture, and economics but also for our civilization. Earlier we used to preserve knowledge via wood, stone, bamboo, leather, ceramic, fiber, etc. but slowly and gradually the need and requirement of society for information changed and so the way of providing information also changed. Discovery of the printing paper technology introduced writing on silk or printing on paper. Eventually, we were able to put photographic images, films, and music on records[1]. Today oceans of information are available and preserving them digitally is a herculean task. Digital preservation is the "management and preservation" of digital objects i.e, files which contain information in digital form for easy access and use by present generation and posterity. There are several stratagems used to help preserve digital objects, such as emulation, migration and data redundancy. ALA defined digital preservation as a combination of "policies, strategies, and actions that ensure access to digital content over time[2]." Further, According to the Harrod's Librarian Glossary[3], digital preservation is the “method of keeping digital material alive so that they remain usable” as technological advances render original hardware and software specification obsolete. During 2015 eminent librarians have formed a group called DPWG i.e Digital Preservation Working Group in Montana for increasing the efforts statewide in Digital Preservation. This has resulted in five-point plan i.e (i) Cultivate a foundation of knowledge and identify a shared vision; (ii) Assess the current digital preservation landscape at each institution; (iii) Advocate for the value

of digital preservation activities; (iv) Implement shared digital preservation services; (v) Sustain group activities and establish structures for on-going support.

Before we move further, we should understand digital material which refers to any material processed by a computer and born-digital. The digital preservation community is developing an awareness and understanding of the concept of disaster planning as part of a digital preservation program[4], but a thorough understanding of disaster planning in practice has not yet been achieved. The most important goal of preservation is to "prolong the existence of cultural property". It has been observed as preservation is an act of "responsible custody," On the other side, it encompasses controlling the considerations including storage and accommodation provisions, staffing levels, policies, techniques and methods environment in preserving library and archive materials. Preservation refers to the "protection of cultural property through activities that minimize chemical and physical deterioration" and damage to prevent loss. (According to the UNESCO)

## Definition

There are many definitions available on digital preservation. It is a formal endeavor to ensure the digital information of continuing value remains accessible and usable. Some of the definitions are:

**The American Institute for Conservation of Historic and Artistic Work (AIC)** defines as "Preservation is the protection of cultural property through activities that minimize chemical and physical deterioration" and damage and that prevents loss of informational content.

**According to Russell (1998),** Digital Preservation is a process by which digital data is perceived in digital form in the offer "to ensure the usability, durability and intellectual integrity of the information contained therein".

**ALA defined** as "It is the combination of policies, strategies, and actions that ensure access to digital content over time".

## Concept of Digital preservation

Digital preservation is done to have wider access to digital content and for doing this a combination of hardware and software tools acting on data is required. For having to achieve is required digital objects for managing at four level i.e (i) Physical phenomena; (ii) Logical encodings; (iii) Conceptual objects that have meaning to humans; and (iv) assets of essential elements that must be preserved in order to offer future users the essence of the object. The dangerous threat to digital continuity is "losing the access".

## Need and Importance for Digital Preservation

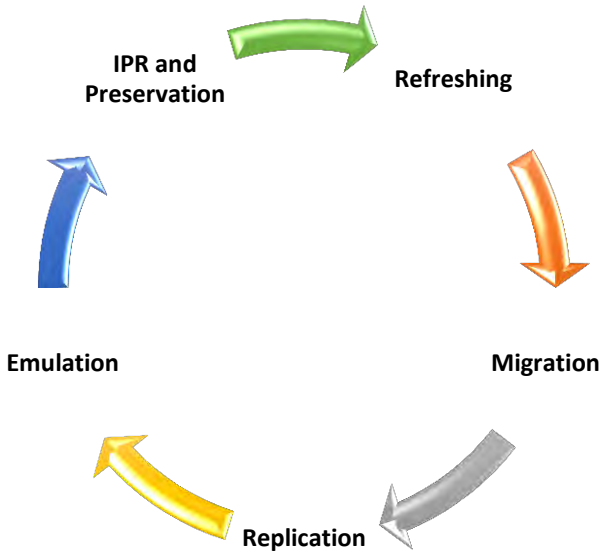
It becomes very easy, quick and ubiquitous access to information in the digital environment. Simultaneously it also has the risk of losing due to some unavoidable in short space of time and preserving information for meaningful reuse for posterity. Ensuring reliable access to digital content over time can be difficult due to hardware failure or changes in technology rendering digital content obsolete (https://www.sheffield.ac.uk/library/digitalpreservation/need)[5].By understanding the need for information which we lost on old websites. We have to preserve information by choosing a platform where we could store the information for longer and easily accessible. Now information is moving from print to digital. The world has already lost a lot of digital material on old websites. With the development and change of digital technologies, it is important to copy digitized material into a new form.

It is always emphasized that digital material should remain "authentic and accessible to users" for a long time. The same could be saved from any digital disaster or attack. The digital preservation requirement depends on the type, size ad amount of data. The system of digital preservation must be designed to store data indefinitely without suffering any data loss and should be trustworthy. The dynamic collection and environment for digital preservation require technical scalability to face technology evolution. It is always said that the implementation of new technologies requires higher investment initially but it gives a lot of benefits in the long term in the context of lower maintenance cost.

Nowadays, libraries have started procuring/subscribing more collection in e-form as compare to print collection so the challenge for preserving them has also increased. We need a system in which long term preservation of digital content could be possible.

## Strategies for the preservation of Digital Materials

There are various organizations and institutions have been constantly thinking about digital preservation strategies and some of the organizations have given their view also such as OCLC who developed four-point strategies for long term preservation. Further, UNESCO has also given guidelines for the preservation of Digital heritage four categories in (2003) namely: short-term strategies; medium to long term strategies; investment- strategies; and alternative strategies. OCLC has come out with an idea in 2006 for preserving of digital material for long term as they are "(i) assessing the risk for loss of content due to technology variable; (ii) type of format conversion or other preservation should be applied; (iii) revealing the appropriate metadata needed; and making the content available to the end-user". Further, the below-mentioned picture shows the other pathways being used for digital preservation.




The above-mentioned cycle has unique items helping in the preparation of digital material such as transferring the data from one old preservation CD to a new one because of the deterioration of physical media. Further, migration is also very important in digital preservation such as from my programming language which is getting out-dated to another one. It also may be one file format to another (word to pdf) or one operating system to another one. Keeping many copies of the same data at a different location known as replication if such a process is followed then disasters such as fire, flood, etc. will have no impact on a digital copy. Further, emulation focuses on recreating on original computer environment which can be time-consuming and difficult to archive, but valuable because of its ability of a computer program to imitate another program or device. Despite all that copying, the digital content into another medium is the violation of intellectual property rights. It strictly needs permission from copyright holders. Further, it also includes data protection act or similar privacy legislation protection information on individuals.

## *Digital Preservation Strategies*

UNESCO has given strategies for the preservation of digital heritage during 2003 in four categories. They are short term strategies; medium to long term, investment strategies and Alternative strategies.

## *Short-term Strategies*

Bit-stream Copying, Refreshing, Replication, Technology Preservation or Computer Museum Backwards Compatibility and Version Migration.

**Medium-to long term Strategies**
Migration, Viewers, and Migration at the Point of Access, Emulation, Canonicalization, Emulation

### *Investment Strategies*

Restricting Range of Formats and Standards, Reliance on Standards, Data Abstraction and Structuring, Encapsulation, and Software Re-engineering, Universal Virtual Computer.

### *Alternative Strategies*

Analogue Backups, Digital Archaeology or Data Recovery

## Challenges to Digital Preservation

It is so easy creating content in digital media and keeping it up-to-date also but it has a lot of economic and technical challenges in preservation. It is also could be challenging because of “its dynamic nature such as interactive web pages and virtual reality”. Digital Preservation is an area characterized by a “high level of uncertainty, in which experimentation and discovery are employed in the search for preservation solutions”. Digital preservation presents a unique type of challenges, arising from the basic nature of digital data. Digital preservation is very challenging from technological obsolesce of hardware, software to media vulnerability. Some of the challenges are data management, Anticipatory planning for preservation, Ingest and preservation planning, etc.

### *Data Management*

In this age of information explosion, managing classified information is a big challenge. The information available/ preserved should be accessible and ready to use as and when required. Data management is an execution of "Architectures, policies, practices, and procedures"

### *Anticipatory planning for the preservation*

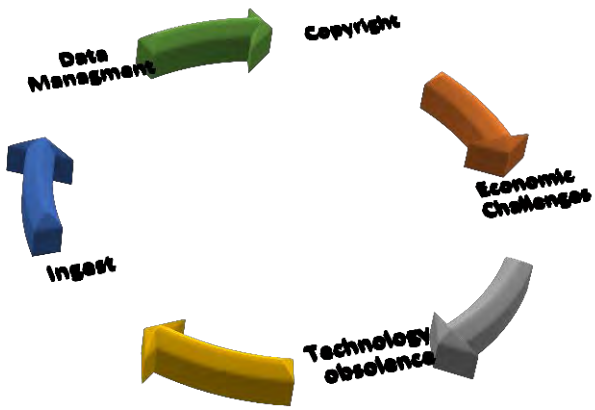
Anticipatory planning for preservation is very essential. Preservation planning is not planning in itself rather a process of organizing preservation activities in a very logical sequence.

### *Ingest*

It is a process of transferring content to a storage system. It also means “recording of video material or to a hard disk recorder". The term is used in broadcast. The whole process tells as digitizing signals, compressing the digital data stream to reduce the amount of data stored and finally storing the data as a file and hard-disk.

### *Preservation Planning*

In this process preservation activities are organized in a logical sequence. Preservation planning is a process that organizes preservation activities in a logical sequence. The “standards for planning discuss the relationship among these activities while the remaining activity standards consider how each activity should be carried out”.




The above-mentioned cycle shows the challenges being faced in Digital Preservation

## Digital preservation in India

Each country of the world has been giving importance to a country's intellectual outputs for their posterity. “Preservation of digital material has not received the attention for which it deserves. Neither a regulatory framework for digital preservation nor it is pursued with any seriousness” under the national e-governance plan undertaken by the Department of Information technology, India. Due to lack of information communication technology Policy and launching of the national digital preservation Programme remain stagnated with no further development in India. As mentioned above the preservation of digital material has not received much attention with the advancement in technology old methods and applications are becoming obsolete. The present era required good policies and laws to protect the same. Experts feel that the national digital preservation program cannot be removed until unless the Govt. of India takes positive steps. The problems of intellectual property rights are found during digital preservation Initiatives. With the advancement in technology day by day, old applications and methods are becoming obsolete. It always requires up-gradation. The issue of intellectual property rights in the digital era and cyberspace are difficult to manage both need good policies and laws to protect the same. According to Praveen Dalal, Advocate Supreme Court of India and Cyberlaw expert of India, “digital preservation issues would become more complicated”. Efforts are going on for the adoption of a digital rights management system in India. The stagnation of national digital

preservation program cannot be removed until or unless the government of India takes positive steps in the required direction of availing the services of experts who are very much familiar with this. No doubt that till now no such serious efforts have been undertaken by the Indian government.

## Selection of Library Materials for Digital Preservation

The primary work of the library is "selecting, collecting and preserving it for posterity". This is also a truth that we cannot preserve everything, and that nothing can be preserved forever. Preservation is the series of managed activities necessary to ensure continued access to digital materials for as long as necessary. The libraries select the material for acquisition intending to preserve it for a longer time but for most items in most libraries, it is assumed that their useful life will be comparatively short.

In most countries, the right to receive publications is linked to the obligation to preserve them and make them available to users. Although in some countries libraries can exercise some choice and include the most ephemeral material, in practice, they seek to obtain all but a handful of the published output. The long-term preservation problems that this presents are enormous in terms of storage space alone, quite apart from technological issues about the physical preservation of the materials and the arrangements for access and use. Long-established professional procedures have been challenged by the development of digital objects. This is essential if the research libraries of the future are to contain the late twentieth-century and later equivalents of the printed books and manuscripts, which now fill their shelves.

**Some Examples**

It has been observed that the preservation of digital material has a lot of challenges from selecting tools for preservation to saving the digital content for a longer period. While doing this if we could not remain conscious or made some mistake the consequences could be much more dangerous. The below-mentioned examples show some of the incidents:

1. Avant-Garde 3: AM Magazine used an outside service to manage their servers. One day, they tried to access information saved on those servers and were denied access. They thought at first that there was a technology issue, but their servers had been shut down by the service providers and the company could not get in contact with them.

2. Employees at Pixar were working on Tot Story 2. Data was contained in many different connected files. Data in those files started disappearing. They retrieved back up files of the data only to find out that data was corrupted. They had to pull up different versions and piece together enough good data to fix the problem[6a]

## Conclusion

Long term preservation of library material in today's time is a big challenge. It is also considered as fragile. Preservation is the "oldest and most fundamental function of libraries and archives". Earlier documents were chained to preserve them. It is also being emphasized to preserve the information by using the latest digital preservation technique. The future of library and information services is closely "associated with preservation and application of new technologies to create, collect, store, process and retrieve information" and deliver the same as and when needed. Every library takes some measures/methodologies towards the preservation of digital materials. In the present era where technology is getting obsolete day by day. There is a big challenge in front of the library and information science professionals to safeguard the material of the library available in digital format. We, however, face the "challenge of preserving digital information with its paradox of short media life, obsolete hardware and software, slow read times of old media, and defunct web sites". There is no doubt that we have enormous challenges but opportunities too. For the growth and development of national infrastructure, we need to adopt long term preservation of digital information which also will be fruitful to posterity.

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# Digital Rights Management (DRM) in India: Threat or Opportunity to Intellectual Property Rights (IPR)

**O. P. Verma**
Principal Library & Information Officer, LalBahadurShastri National Academy of Administration (LBSNAA), Mussoorie, India

**Somen Chakraborty**
Senior Legal Analyst, and Hon'y Director, Society for Social Development and People's Action. New Delhi

## Abstract

An attempt has been made to explain the concept of DRM (Digital Rights Management), which allows content providers to distribute, promote and market the digital contents in a secure way. The main focus of this paper consists of 2012 Amendments of Indian Copyright Act, 1957 with regard to DRM.

This paper refers the management of Rights digitally systems within devices (Computer, Mobile etc.). DRM begins with user authentication when accessing digital information system and Preventing copying in any form. It is copyright protection by further locking safeguard. Yet, it is not a full proof system. Technologies used by software and hardware manufacturers; publishers, copyright holders and individuals limit unauthorized use of digital contents and devices. Content publishers are able to enforce their own access policies on content, such as restrictions on copying or viewing in respect of problem faced by Library and Academia. The serious researchers and academics may face problems because of excessive restrictions in accessing data and information. Similarly library professionals may not be able to provide needful services in digitization era when so many restrictions are there on information dissemination system. The author explains the operational mechanism of DRM with regard to process the content through a series of workflow steps; to prevent copying and piracy; to decide on permission level – viewing, using, reproducing, printing, and trading; to make downloading a complex process; to implement licenses through software controls; to Retrieve & Preserve data in potentially distributable database and trading of data; to evolve Security tools with support from encryption partner, DRM partner; to implement Mechanism for tracking access through tamper detection tools, anti-screen capture, unique-identification, water marking. All these aspects are of paramount important for the general readers, academia and public libraries. The effects of DRM and some case studies related to disputes and litigations in India are discussed. The Indian Property Law is discussed in respect of Indian Copyright Act 1957, Indian Patents Act 1970, Trademarks Act 1990, Geographical Indications of Goods Act 1999 and Design Act 2000.

## Keywords

Digital Rights Management; DRM; Indian Copyright Act 1957; Intellectual Property Rights ; IPR

## Digital Rights Management (DRM)

Digital Rights Management (DRM) refers to technologies used by software and hardware manufacturers, publishers, Content Owners, and Copyright holderslimitunauthorized use of digital contents and devices. It also includes technologies that control the use, modification, and distribution of works, as well as systems within devices(Computer, Mobile phone etc.). DRM allows content providers to distribute, promote and market the digital contents in a secure way. Copyright holders are allowed to use DRM to safeguard their work being duplicated or utilized by others. Therefore copyright laws across the world allow fair use of the copyrighted work for the purposes of a commentary, search engines, criticism, parody, news reporting, research, teaching, library archiving and scholarship etc. Content publishers are able to enforce their own access policies on content, such as restrictions on copying or viewing.
Digital Rights Management (DRM) is concerned with the ownership of digital information and access to that information. Organizations and individuals increasingly seek to prevent unauthorized or inadvertent release of owned, proprietary, or sensitive information. A variety of technologies are available to prevent the piracy and verify the true owners of digital content, unfortunately specifics of these technologies are often proprietary. Content can be protected by a variety of encryption techniques for the storage and transmission of digital information yet; these same techniques can limit access and usability of digital content.

## Objectives

The objectives of Digital Rights Management to provide needful services in digitization era in respect of library professionals are:

- To protect intellectual property
- To restrict access to specific digital work, digital media or device without authentication content creator
- To control free use of content, design and methodsthrough rights protection mechanism
- To prevent piracy of digital media property
- To prevent loss of revenue, tax, employment
- To prevent unauthorized duplication artistic works
- To prevent use of the content on false ownership
- To ensure compliance with regulatory standards more than making profit
- To strengthen home management instead of litigation and recover indemnity

# 2012 Amendments to Indian Copyright Act 1957

The Copyright Act, 1957 had been significantly amended five times prior to 2012, once each in the years 1983, 1984, 1992, 1994 and 1999, to meet with the national and international requirements.

In May 2012, both houses of the Indian Parliament unanimously placed their seal on the Copyright Amendment Bill, 2012, bringing Indian copyright law into compliance with the World Intellectual Property Organization "Internet Treaties".

While introducing technological protection measures, the amended law ensures that fair use survives in the digital era by providing special fair use provisions. The amendments have made many author-friendly amendments, special provisions for disabled, amendments facilitating access to works and other amendments to streamline copyright administration.

This article gives a narration of the changes made by the Copyright (Amendment) Act.
The amendments introduced through Copyright (Amendment) Act 2012 can be categorized into:

1. Amendments to rights in artistic works, cinematograph films and sound recordings.
2. WCT and WPPT related amendment to rights.
3. Author-friendly amendments on mode of Assignment and Licenses.
4. Amendments facilitating Access to Works.
5. Strengthening enforcement and protecting against Internet piracy.
6. Reform of Copyright Board and other minor amendments

# Protection of Technological Measures

The new section 65A, introduced for protection of technological protection measures (TPM) used by a copyright owner to protect his rights on the work, makes circumvention of it a criminal offence punishable with imprisonment.

As a result, "any person who circumvents an effective technological measure applied for the protection of any of the rights, with the intention of infringing such rights, shall be punishable with imprisonment, which may extend to two years and shall also be liable to fine." The rationale is to prevent the possibility of high rate infringement (digital piracy) in the digital media.
This amendment also clarifies the problem of circumvention impacting the public interest on access to work facilitated by the copyright laws. Sub-section (2) permits circumvention for specified uses.

## Digital Rights Management Information

Section 65B has been introduced to provide protection of rights management information, which has been defined under clause (xa) of section 2.

This amendment is intended to prevent the removal of the rights management information without authority and distributing any work, fixed performance or phonogram, after removal of rights management information.

As a result, "any unauthorized and intentional removal or alteration of any rights management information is a criminal offence punishable with imprisonment, which may extend to two years and fine." The rationale of the protection emanates from the practice in the digital world of managing the rights through online contracts governing the terms and conditions of use.

Section 65B: Any person, who **knowingly**,-

-**Removes or alters any rights management information** without authority, or distributes, imports for distribution broadcasts or communicates to the public, without authority, copies of any work, or performance **knowing that electronic rights management information has been removed or altered without authority**,

- Shall be punishable with imprisonment which may extend to two years shall also be liable to fine.

- Provided that **if the rights management information has been tampered with** in any work, the owner of copyright in such work **may also avail of civil remedies** provided under Chapter XII against the persons indulging in such acts."

The protection of technological measures and digital rights management information were introduced in WCT and WPPT as effective measures to prevent infringement of copyright in digital environment. The introduction of Sections 65A and 65B is expected to help the film, music and publishing industry in fighting piracy.

## Library Photocopying

The Copyright Act at 17 U.S.C. § 108 provides a set of rules regarding library reproductions. In general, a library or archive open to the public (or whose collection is available to specialized researchers other than those affiliated with the institution) will not be liable for copyright infringement based upon a library patron's unsupervised use of reproducing equipment located on its premises, provided that the copying equipment displays a notice that the making of a copy may be subject to the copyright law. The notice must appear in a specific form, as shown below. When patrons ask the library to copy text works, the warning notice must be printed within a box located prominently on the order form, either on the front side of the form or immediately adjacent to the space for the name and signature of the user. The library may make only one copy

of such works per patron. Copying a complete work from the library collection is prohibited unless the work is not available at a “fair price.” This is generally the case when the work is out of print and used copies are not available at a reasonable price. If a work, located within the library’s collection, is available at a reasonable price, the library may reproduce one article or other contribution to a copyrighted collection or periodical issue, or a small part of any other copyrighted work, for example, a chapter from a book. This right to copy does not apply if the library is aware that the copying of a work (available at a fair price) is systematic.

## Operation Mechanism of Digital Rights Management (DRM)

To maintain transparency and to protect Intellectual Property Rights (IPR), Digital Rights Management requires following the required operation mechanism as mentioned below:

- Processing of content through a series of workflow steps : To get a clear view of the IPR-situation concerning a particular work / collection, we would first of all ask you to sketch out the basic characteristics of the work(s) (e.g. legal situation, is there a license agreement or not, type of institution, …)., and what you wish to do with the work.

- Software creation to prevent copying and piracy:Threats or Opportunity might be commercial replication and private copying; illegal software distribution; misuses of license. It should be protected by the following steps to be ensured :

    - Modules are encrypted.
    - The code of internal functions is protected.
    - Protection from running the applications under debuggers (the feature works for both user and system levels).
    - Protection from running the applications on virtual machines.
    - Protection from running the applications through remote terminal sessions (protection from remote access).
    - Applications can be protected automatically (no functions are selected).
    - A custom user interface can be developed.

- Deciding on permission level – viewing, using, reproducing, printing, and trading: Security options to protect the files that you create. The security options may be controlled by two passwords: the Permission password and the Open password. The Permission password is the master password created by the owner of the file that lets you control whether a file can be printed, edited, or copied. Open password can be set to access the file.

- Making download a complex process: As a site license user, he is able to utilize the "batch processing" feature. The "batch processing" feature allows user to submit your

query directly to the server, and allows it to be executed in the background (unattended download). Once the extraction is complete, User will be notified via email and will be provided a link to download the file using ZIP format.

- Implement licenses through software controls: It is recommended to create the subscription license inside of the Licensing Server and **create a cached local license file** saved to the customer's device once they activate. This allows license **entitlements to be enforced without always requiring a connection** to the Licensing Server, and only **periodic validations are required** to check for updates to the license.

- Retrieval & Preservation of data in potentially distributable database and trading of data:To achieve data preservation in a network of cooperating archives, the concept of data trading: sites replicate their data by contacting other sites and dat trades may be proposed. In such a network, each site makes local decisions about which other sites to contact and offer trades as well as whether to accept trades offered by other sites. The result is a global peer to peer archiving network, built up from a series of locally agreed upon binary trading links.

- Mechanism for tracking access through tamper detection tools, anti-screen capture, unique-identification, water marking:When the content owners create the digital content that needs to be protected, they should specify a set of rights to the content and become the content's rights holder. When other users intend to make use of the digital content, they have to obtain adequate rights to the content through some kind of licenses or tickets issued by the rights holders.Originated from operating system's file protection mechanism, DRM is essentially a fine-grained access and usage control in the application level. Encryption and watermarking are widely used in this field to encrypt content, authenticate users and track content usage. The current DRM techniques mainly have two types of applications: (1) Systems for distributing content to consumers in a controlled way against piracy; (2) Systems for managing access to sensitive document content within an enterprise. The second application is often called Enterprise Digital Rights Management (E-DRM). E-DRM plays an extremely important role in fighting against information theft, especially the theft due to insider threat.

## Difference between Copyright and DRM

Copyright, and digital rights management (DRM), have been among the most contentious issues of the digital age.

| **Copyright** | **Digital Rights Management** |
|---|---|
| • Right over expression of ideas, invention (book narrating process of turning coal to diamond)<br>• Right is automatic | • Language is formal like mathematics or like programming code; Language that can be executed as an algorithm<br>• Not open to interpretation but precise |

| | |
|---|---|
| • "Everything that is not forbidden is permitted"<br>• Registration gives ownership over copyright<br>• Copyright law sets down a few rules about copying and performances. Rights holder has exclusive right<br>• Copyright law provides incentive to the creators to bring more works to the society and providing access for the society to that works.<br>• Copyright may exist for fifty years or more<br>• Copyright may exist for fifty years or more | through software. Ownership over digital property is established and uses are restricted by devicing mechanism<br>• Provides for an additional protection to a work, which is anyway protected by the Copyright law<br>• Payment for every digitally protected work may become enormous for a research and academic pursuit<br>• Contradictory to open library system, downloading pdf version of texts and documents may get restricted<br>• DRM in USA and EU is in serious transgression over freedom of speech, scientific research, fair use and fair dealing principles. (Electronic Frontier Foundation has recorded fairly large number of such transgression cases) |

## Problem arisen for Library and Academia

- DRM will reduce open space
- In contrary coming days will discover more digital documents in a library
- Libraries may need to introduce undue restrictions and regulatory mechanism
- Interface between Library Management and Users will require to be redefined

## DRM provision is non-compliant with today's India for the following reasons

- ***The legislation has been brought about without making proper cost-benefit analysis.***

Computer based application in India has come only recently. Email is around 20 years old. Android has come only around 5 years before. Shifting from electronic typewriter to computer happened around 20-25 years before. Pentium 1 came to the offices not before 1996-1997. Except television which came home around 1980 but with extremely limited telecast in terms of hours and number of channels.

- ***Nature of piracy is not that widespread (other than movies and songs) in India that DRM should be felt so pressing a need (internet mostly in workplace/cybercafe)***

A huge number of Indian people are yet to be computer friendly. Research and publication using digital device at such a phenomenal scale is a recent development in India. Copyright violation happened also inadvertently. And these violations often fall under the ambit of 'Fair Use' principles.

## DRM provision will rather create a 'para-copyright' regime. Several layers of protection but not copyright

Example: Preserving a copyrighted material in a locked vault. Will breaking the vault be a mere criminal act or a copyright violation? Or a document preserved digitally with a locking system. Is breaking the protection mechanism by hacking a copyright violation.

## How to administer DRM?

Fortunately, DRM in India is neither so strict nor so comprehensive yet.
For not being part of WIPO Copyright Treaty (WCT) and WIPO performance and Programme Treaty (WPPT) India does not feel under pressure to opt for a comprehensive DRM Policy. India may soon have more streamlined DRM regime.

## Escape Route & Threat

- Software of a DRM is never invincible
- DRM goes beyond territorial divide
- Taking action against copyright violator is difficult as it can happen anywhere in the world and by so many people
- Litigation may cost more than the cost of evolving new protection mechanism
- Copyright law can restrict and evolve punitive actions but cannot stop digital copying

## Disputes and Litigations in India

### *Amitabh Bachchan and Kumar Vishwas, 2017*

AAP organised a programme 'Tarpan' to pay tribute to noted Hindi poets. Kumar used Dr.HarivanshRaiBachchan's poem line, "Need kaNirmanPhirPhir". Amitabh Bachchan alleged it

was copyright infringement as this was used without obtaining prior permission. Video was deleted and Vishwas twitted to pay Rs. 32 earned from it.

### *Supreme Court Order on Privacy Right, 2017*

The Govt. of India constituted a Committee of Experts in July 2017 under justice B N Srikrishna to identify the key issues relating to data protection in India and help govt. to draft a data protection bill.

A White paper was published in last November as a first step to initiate a data protection regime to protect individuals from infringement to their privacy by govt and non-govt actors. It analyses the protection mechanisms that the data protection laws in india must adopt to safeguard right over personal data of an individual.

Personal data in this context mean health information, genetic information, religious belief and affiliation, sexual orientation, racial or ethnic origin, caste information and financial information.

### *Eastern Book Company & Ors v. Navin J Desai & Another, 2001*

Easter Book Company is a renowned publishing house publishing law books and judicial decisions and this was widely used by the legal experts. The defendant made a CD-ROM version of the Court judgements and sold at cheaper rate. The plaintiff filed suit against the defendant for infringement of copy right. The court decided that the judgments of the Supreme Court are in public domain and nobody can claim copyright therein. The respondents will be entitled to sell their CD-ROMs with the text of the judgment of the Supreme Court along with their own head notes which should not in any way be copy of the head notes and the text of the Appellants.

### *ESPN Star Sports V. Global Broadcast News Ltd. & Ors, 2008*

ESPN Star Sports obtained rights to broadcast cricket matches between India and Australia for a specific period. During that period different television broadcast companies in India telecast clippings taken from ESPN. ESPN filed suit against television companies for infringing their copy right. The defendants argued that Australian Cricket Board was having copyright and ESPN obtained only the telecasting rights. And the clips used as a relevant news valued to cover cricket event. The court upheld the defendant's right.

### *Cipla v Roche, Del HC, 2012*

Cipla, an Indian Pharma company made generic version of anti-cancer drug **Erlotinib**. Roche sued Cipla in 2008 claiming that Cipla's generic product Erlocip violates former's Indian '774 patent claiming "ErlotinibHydrocloride". Cipla argued that Tarceva corresponds to Polymorphic Form B (which is not a product of '774 patent but a '507 rejected application) and that it is Form B which is more stable and suitable for solid oral dosage form than the compound disclosed in '774 patent comprising a mixture of Forms A and B. Court sent it for meditation but upheld Cipla's argument.

# Some important Milestones in India under Intellectual Property Rights

## *Indian Patents Act, 1970 (Amended in 2005)*

The Patents (Amendment) Act, 2005 is the third of three amendments to the Patents Act of 1970, to bring India's patent regime into compliance with the WTO TRIPS Agreement. It extends the product patent protection to the areas of pharmaceuticals and agricultural chemicals.

This Act contains provisions relating to patent and traditional knowledge (see Art. 23(1)(k) & Art. 23(2)(k)), and genetic resources (see Art. 10 & 25).

Mere invention of a scientific principle or a new form of known substance is not patentable. The person has to be true or first inventor of the invention. Registration with government must.

## *(Manual of Patent Practice and Procedure India, 2005)*

## *The Trademarks Act, 1999*

An Act to amend and consolidate the law relating to trade marks, to provide for registration and better protection of trade marks for goods and services and for the prevention of the use of fraudulent marks. It protects trademarks statutorily and under the common law of passing off.

## *Geographical Indications of Goods (Registration & Production) Act, 1999*

An Act is to provide for the registration and better protection of geographical indications relating to goods. The Geographical Indications of Goods (Registration and Protection) Act, 1999 (GI Act) is a sui generis Act of the Parliament of India for protection of geographical indications in India.

"Agricultural goods, natural goods or manufactured goods as **originating or manufactured** in the territory of a country, or a region or locality in that territory. Quality, reputation or other characteristic of such goods is essentially attached to its **geographical origin**. When they are manufactured goods, either **production or processing or preparation** of the goods concerned takes place in such **territory, region or locality**.

## *Design Act, 2000*

"Design" means only the features of shape, configuration, pattern, ornament or composition of lines or colours applied to any article whether in two dimensional or three dimensional or in both forms, by any industrial process or means, whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to and are judged solely by the eye; but does not include any mode or principle of construction or anything which is in substance a mere mechanical device, and does not include any trade mark as defined in clause (v) of sub-section (1) of section 2 of the Trade and Merchandise Marks Act, 1958 or property mark as defined in

section 479 of the Indian Penal Code or any artistic work as defined in clause (c) of section 2 of the Copyright Act, 1957

## Conclusion

Copyright is a complex issue in the age of digital right management. Digital technologies would continue to evolve, and pose more challenges to the copyright regime in India. Through a plethora of enactments, policy changes and judicial decisions India has constructively addressed the issue of copyrights keeping both the creators' and the users' interests in mind. With the passage of the Copyright Amendment Act, 2012 the statutory protection available to authors to safeguard their rights both in offline and online world are further strengthened. Intellectual property rights have never been a national issue only. Its impact has always been across national boundaries. In this sense, international monitoring organizations have an important role to play to ensure that the appropriate enforcement mechanisms are in place.

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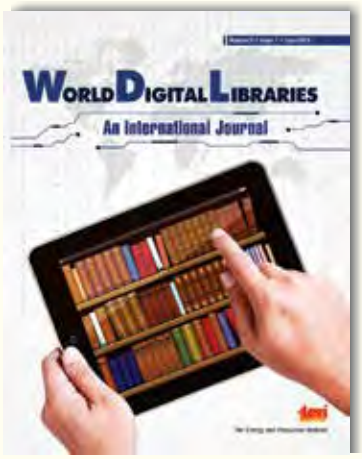


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