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OPEN ACCESS TOOLS AND SERVICES – DOAJ; DOAR; ROAR; SHERA; ROMIO ETC., -SELECTION AND EVALUATION CRITERIA FOR THE OA SOURCES.

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ABSTRACT

This research paper delves into the dynamic realm of Open Access (OA) and explores key tools and services that have become instrumental in revolutionizing scholarly communication. Focused on essential resources such as the Directory of Open Access Journals (DOAJ), Directory of Open Access Repositories (DOAR), Registry of Open Access Repositories (ROAR), Registry of Open Access Repositories in Education (SHERA), and Registry of Open Access Mandatory Institutional Repositories (ROMIO), the study aims to provide a comprehensive overview of their roles in facilitating access to academic knowledge. The paper emphasizes the critical nature of selection and evaluation criteria when navigating the vast OA landscape. Factors such as robust peer-review processes, adherence to open access principles, content diversity, and sustainable preservation policies are discussed as pivotal elements in determining the reliability and impact of OA sources. By addressing the unique contributions of specialized registries and overarching tools, this research seeks to contribute to the ongoing discourse surrounding open science, fostering a more inclusive, transparent, and accessible scholarly ecosystem.

Keywords: Open Access, Scholarly Communication, Open Access policy, Evaluation Criteria, Research Tools, Open Resources

INTRODUCTION

Open Access (OA) has revolutionized the scholarly communication landscape, fostering unrestricted access to academic knowledge and promoting collaborative and transparent research practices. In this era of information dissemination, several key tools and services contribute significantly to the facilitation and discovery of open access content. Among them, the Directory of Open Access Journals (DOAJ) stands as a comprehensive catalog ensuring the quality and accessibility of scholarly journals, while the Directory of Open Access Repositories (DOAR) and Registry of Open Access Repositories (ROAR) serve as vital resources for locating diverse repositories housing scholarly outputs. Specialized registries such as the Registry of Open Access Repositories in Education (SHERA) and Registry of Open Access Mandatory Institutional Repositories (ROMIO) cater to specific domains and institutional mandates, respectively. As scholars and researchers navigate this dynamic landscape, robust selection and evaluation criteria become imperative. Factors such as peer-review processes, adherence to open access principles, content diversity, and sustainable preservation policies play pivotal roles in determining the reliability and impact of OA sources. This introduction sets the stage for a deeper exploration of these critical tools and services, underscoring their importance in advancing open science and fostering a more inclusive and accessible scholarly ecosystem.

Open Access (OA) tools and services play a crucial role in facilitating access to scholarly research and promoting the principles of open science. Here are some well-known OA tools and services like DOAJ, DOAR, ROAR, SHERA, ROMIO, along with selection and evaluation criteria for OA sources:

DOAJ (Directory of Open Access Journals):

Selection Criteria:

Rigorous Peer-Review Process: Journals listed in DOAJ should uphold high standards of peer review.

Open Access Policy: Journals must provide immediate open access to their content.

Editorial Quality: The editorial process should be transparent, fair, and well-managed.

Regular Publication: Journals should publish articles on a regular basis.

Evaluation Criteria:

Inclusion of High-Quality Journals: Assess the reputation and impact of journals listed in DOAJ.

User Feedback: Consider user reviews and feedback to gauge the user experience and content quality.

Relevance to Research Needs: Evaluate if the journals align with your research interests and requirements.

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Volume 11, Issue 1 (VI) January - March 2024 DOAR (Directory of Open Access Repositories): **Selection Criteria:** Inclusion of Scholarly Repositories: DOAR includes repositories that provide access to academic content. **Open Access Policy:** Repositories must follow open access principles. **Content Coverage:** Assess the breadth and depth of content available in the repository. **Evaluation Criteria: Content Diversity:** Evaluate the types of content available, including articles, theses, datasets, etc. Repository Policies: Check for clear policies on metadata, preservation, and accessibility. **Usage Statistics:** Analyze usage statistics to determine the repository's impact and relevance. ROAR (Registry of Open Access Repositories): **Selection Criteria:** Inclusion of Institutional and Disciplinary Repositories: ROAR includes various types of repositories. Open Access Policy: Repositories listed should follow open access principles. **Evaluation Criteria:** Size and Scope: Assess the number of records and the diversity of content in the repository. Interoperability: Check if the repository supports interoperability standards for seamless integration with other systems. SHERA (Registry of Open Access Repositories in Education): **Selection Criteria:** Focused on Educational Content: SHERA includes repositories specifically dedicated to educational resources. Open Access Policy: Repositories must adhere to open access principles. **Evaluation Criteria:** Educational Relevance: Evaluate the educational value and relevance of the resources available.

User Interface: Assess the user-friendliness of the repository interface for educators and learners.

ROMIO (Registry of Open Access Mandatory Institutional Repositories):

Selection Criteria:

Inclusion of Mandatory Institutional Repositories: ROMIO includes repositories mandated by institutions.

Open Access Policy: Repositories must follow open access principles.

Evaluation Criteria:

Compliance with Mandates: Assess how well the repository adheres to institutional open access mandates.

Content Quality: Evaluate the quality and diversity of content available in the repository.

General Evaluation Criteria for OA Sources:

Peer Review: Check if the OA source has a robust and transparent peer-review process.

Open Access Policy: Ensure that the source follows open access principles, providing free and immediate access to content.

Reputation and Impact: Assess the reputation and impact of journals or repositories through citation metrics and user feedback.

Content Quality: Evaluate the relevance, accuracy, and scholarly rigor of the content.

Sustainability: Consider the long-term sustainability and preservation policies of the OA source.

When selecting and evaluating OA sources, it's essential to tailor your criteria to your specific research needs and goals. Keep in mind that the OA landscape is dynamic, and periodic reassessment of sources is advisable.

CONCLUSION

In conclusion, the exploration of Open Access tools and services, including DOAJ, DOAR, ROAR, SHERA, and ROMIO, highlights their pivotal role in transforming scholarly communication. These resources contribute significantly to breaking down access barriers, fostering collaboration, and promoting transparency in research. The study underscores the importance of rigorous selection and evaluation criteria in navigating the evolving landscape of Open Access. As the scholarly community increasingly embraces open science, the transparent peer-review process, unwavering commitment to open access principles, and diverse content offerings become critical factors in ensuring the credibility and impact of OA sources. Looking ahead, these tools are instrumental in shaping a more inclusive and accessible scholarly ecosystem, ultimately advancing the dissemination and democratization of knowledge on a global scale.

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E-BOOKS NEED OF LIBRARIES

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Librarian, Mula Education Society's Shri Dnyaneshwar Mahavidyalaya Newasa

ABSTRACT

E-Books are digital format of text, reference books with images or other related material included in books. E-books provide multimedia information. The production and usage of e-books is growing at a fast pace and warrants serious consideration, especially in Libraries. There are many free websites of e-books and e-resources available for user. Library should inform to readers regarding this sites.

Keywords: e-Books, Books, Library, Digital Books

INTRODUCTION

E-Books are digital format of printed books. These make the learning process more interactive and engaging. Instead of listening to one person continuously talking, students can now actively participate in the learning process. Today's age of technology the most users of library their personal electronic devices. In the online version the user can read the text through an Internet browser and this opens up possibilities of linking to other resources, cross-text searching, and utilization of dictionaries and so on. There are several organizations which each offer access to tens of thousands of e-books from a range of different publishers. E-books are becoming popular of late because they have several advantages when compared to printed books. E-books provide multimedia information, full-text searching, reference linking and flexibility in searching and browsing, selection of different types of fonts, portability, and interoperability on a variety of devices. E-book reader software allows users to highlight, annotate, underline and bookmark. Almost all reading devices provide adjustable backlighting which enables e-book users to read comfortably in poor lighting conditions, even in bed at night, without disturbing others. For users who are frequent travelers, or who have to carry out research in remote places e-books offer a substitute for print books and provide easier portability. For teachers and students, e-books are a very good classroom teaching tool. E-books which are available online can be accessed 24/7 from a 'local' desktop, are able to be accessed remotely and more than one person may be able to access the same ebook at a time.

Definition of E-Book

According to Cambridge Dictionary

"A book that is published in electronic form, for example on the internet or on a disk, and not printed on paper"

According to Encyclopedia of Britannica

E-book, digital file containing a body of text and images suitable for distributing electronically and displaying on-screen in a manner similar to a printed book.

An **e-book** or electronic book is a non-editable text that is converted into a digital format and displayed and read on an electronic device, such as a tablet or smartphone.

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- 5. Physically disabled users can hear audible e-book
- 6. E-books do not require bindery and repair

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- 7. Many free e-books are available on websites
- 8. Easy to download
- 9. E-books save human resources for shelving and rectification
- 10. E-books suitable for students who need to learn additional information about a specific topic.
- 11. Many readers read a same book at a time
- 12. No cost of technical processing and maintenance

Disadvantages of E-Books

- 1. Need electronic components for using e-books.
- 2. Barrier of network range.
- 3. Some reader are used to reading printed books and do not want to change the habit
- 4. A lack of awareness of e-books
- 5. Some e-books are not free, pay the amount for its use.
- 6. Paper books are more advantageous than e-books because they do not cause unnecessary eye strain.
- 7. Issue of piracy material.
- 8. Some books may not be available in e-book format or may only be available in a particular format, which may not be compatible with certain devices.
- 9. Many links include in e-material confused to readers.

Some Websites of free E-Books

- 1. Dictionary of Open Access Books : https://www.doabooks.org/
- 2. PDF Drive .: https://www.pdfdrive.com/
- 3. Project Gutenberg : https://www.gutenberg.org/
- 4. Marathi e-Books : http://www.esahity.com/
- 5. Free e-books and other material : https://www.free-ebooks.net/

CONCLUSION

E-Books are a growing part of the collections at academic libraries. Libraries are needed to inform about the ebooks to readers. E-books are easy to read anytime and anywhere. Many of free e-books are available on internet. Subject wise collection of e-books in library and distributed to readers is the todays need of library.

E-BOOKS OPPORTUNITIES

The internet has caused an evolution in the book publishing industry with the emergence of the eBook. The advantages of eBooks for libraries are straightforward and include

- t Easy access to content
- t on-demand availability
- t Prevention from being lost, stolen, ordamaged
- t Capability to search within a book and across a collection of books
- t Ability to be linked to other resources, including dictionaries and thesauri
- t Absence of physical space requirements
- t Device independence for accessing the content
- t Access to content using standard webbrowsers
- t Customizable search interfaces
- t Easy transportation, and
- t Access from anywh

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BEAT FREE AND OPEN SOURCE LIBRARY SOFTWARE

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ABSTRACT

With the huge amount of data available online, it becomes a necessity to convert the traditional offline libraries into an online knowledge base. Free and open source library management systems can be accessed without any investment and will help in accessing information online easily.

Keyword: Open Source, Library Software's, KOHA, OPALs, GreemLib, Management

INTRODUCTION

Definition:

A software library is a suite of data and programming code that is used to develop software programs and applications. It is designed to assist both the programmer and the programming language compiler in building and executing software. (5 Dec 2016) The Open Source Definition presents an open-source philosophy and further defines the terms of use, modification and redistribution of open-source software. Software licenses grant rights to users which would otherwise be reserved by copyright law to the copyright holder. Several open-source software licenses have qualified within the boundaries of the Open Source Definition. The most prominent and popular example is the GNU General Public License (GPL), which "allows free distribution under the condition that further developments and applications are put under the same licence" (Holtgrewe, Ursula 2004)

Under Perens' definition, open source is a broad software license that makes source codeavailable to the general public with relaxed or non-existent restrictions on the use and modification of the code. It is an explicit "feature" of open source that it puts very few restrictions on the use or distribution by any organization or user, in order to enable the rapid evolution of the software.

Best Free and Open Source Library Management Software Solution:

These are the best web based library management system open source. These open source library management software solutions are available online:

- Koha
- Evergreen ILS
- OPALS
- OpenBiblio
- Invenio
- PMB
- NewGenLib
- CodeAchi
- Librarian
- BiblioteQ
- LibreOffice

Key Features of Premium free or Open source Library Software

- Catalogue management
- Subscription management
- Online access of books with their location & availability
- Online search option for the inventory
- Inventory management
- Periodicals management

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- Patron management
- Online access to the catalogue of various public libraries
- Self-check-in & check-out
- Acquisition management
- Barcode scanning

1. KOHA:

KOHA library management system is a feature-rich and highly scalable system. It is compliant with major library standards like MARC21, SIP2, z39.50, and more. Using KOHA, you can manage libraries of any size, no matter if you have hundreds or thousands of books. Moreover, KOHA also comes with full text searching and enhanced catalogue display features.

1.2 KOHA Pros and Cons:

- It is compatible with android and IOS devices
- KOHA provides a simple check in and check out for users
- Some users might find glitches occasionally

2. Evergreen ILS:

Evergreen is an integrated library system that provides a public catalogue interface. It also helps manage the back-of-house library operations that include circulation, check-ins, checkouts, library material acquisition, and more, Moreover; Evergreen library management system is licensed under GNU GPLv2 and above.

2.1 Pros and Cons:

- The software offers quick search results
- It provides efficient cataloging services
- The software sometimes freezes while working and then takes time to reload

3. OPALS:

OPALS come with multiple functionalities including cataloguing, circulation, eBook management, and more. In addition to this, users can also generate reports; manage digital archives, textbooks, and more. It helps in creating and managing a vast repository of eBooks, this platform includes more than 2000 eBooks across domains like public, academic, school and professional.

3.1OPALS Pros and Cons:

- It provides a state-of-the-art catalogue function Easy to use for both professionals and clients OPALS provides exceptional customer support service,
- This software may not work remotely if network capabilities are poor.

4. OpenBiblio:

This free LMS is majorly used in small-scale libraries. It includes functionalities for staff administration, cataloguing, circulation, and more, The library software also easily integrates its components into your existing style sheets, making it easier for you to digitize your library. Further, this software is also licensed under GNU (GPLv2), General Public License Version 2.0.

4.1Openbiblio Pros and Cons :

- This software is suitable for document management
- It is extensively used for equipment tracking
- Ubuntu users might face logging issues with this library management app

5. Invenio:

Invenio is an open source library management system designed for managing digital repositories of large scale. The modern ILS, Integrated Library System, further supports circulation, cataloging, interlibrary loans, acquisitions, and more.

In addition to this, Invenio also comes with repository APIs, authentication systems, and storage systems that help you create your own application.

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5.1 Invenio Pros and Cons :

- Invenio library management system has a flexible framework
- It also helps with the file management system
- User interface can be improved further

6. PMB:

The PMB free library software comes with multiple functionalities that include a digital library, tracking & reporting, semantic modeling, circulation, library loan machine, cataloging and more. It is developed by the company called OMB services and is continuously updated by them. In addition to this, users can run this program for any purpose and even make numerous changes to it and redistribute.

6.1 PMB Pros and Cons:

- PMB can integrate bibliography content in their entirety
- It has an enhanced document management mechanism
- You can export information from digital version of documents using PMB
- PMB has loading issues occasionally.

7. Newgenlib:

NewGenLib RFID based library management system complies with interoperability standards and international metadata, MARC-21, OAI-PMH, MARC-XML, and more. NGL is an efficient, manageable, and scalable.,In addition to this, the library management system features the automated instant messaging and email capabilities.

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In addition to this, the library management system features the automated instant messaging and email capabilities.

7.1 New Gen Lib Pros and Cons:

- This software has an easy-to-use interface
- NewGenLib sends automated notifications for due date of book submission
- NewGenLib offers limited support in case of a grievance.

8. CodeAchi:

CodeAchi open source library management software used for administration purposes and managing books in your library. With CodeAchi, it is extremely easy to enter details of new books and manage circulation of books through a digital catalog.

It also allows users to easily import their data which includes borrowers, books, etc., using CSV or excel sheets. Moreover, you can also use digital cataloguing to add new books and even track their circulation.

8.1 CODEACHI Pros and Cons:

- It offers round the clock training for beginners
- The software is simple and quick to install
- CodeAchi library management system does not work with windows 7

9. Librarian:

Librarian is the best software to be used in schools, colleges, medical and even legal libraries. The automation tool enables resource in charges, manager's information providers, and librarians to manage the information available from different resources like books, e-journals, theses, charts, articles, etc.

Its user-friendly search interface ensures the smooth acquisition process for new books and resources.

9.1 Librarian Pros and Cons:

- You can add multiple fields for the management of files
- It offers support in different languages
- Some users might face issues while checking in and checking out of the software.

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10. BiblioteQ:

BiblioteQ is a library management solution designed for cataloguing and organizing magazines, books, and other study materials.

It can also manage the details of research papers, videos, catalog books, and much more. Moreover, the software comes with SQLite and Postgre SQL for better connectivity during database support.

10.1 BiblioQ Pros and Cons :

- It makes use of a drag and drop interface
- The software supports cataloguing of research papers and journals
- Dashboard features can be improved.

11. LibreOffice:

LibreOffice is a complete office suite that offers presentations, documents, spreadsheets and databases.Unlike Microsoft Office, which is not accessible to everyone due to its pricing model, LibreOffice is totally free. To support it, its users can make donations when they download. So, it has huge community contributors. It is available for Mac, Linux and Windows and it also has a live chat and a forum that you can turn to when searching for help.

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LIBRARY MANAGEMENT SYSTEM AT TISS TULJAPUR CAMPUS LIBRARY

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ABSTRACT

Modern libraries need library management systems to function effectively. This research study will examine the numerous facets of the library management system at the TISS Tuljapur campus library. The purpose of this paper is to shed light on how technology may be used effectively to improve user experience and simplify library operations. KOHA, a potent and open-source library management system, is employed in the university library. The functionality, advantages, and difficulties of implementing KOHA at the TISS Tuljapur Campus are explored in the research report. In the TISS campus library, Koha's OPAC module is crucial. OPAC enables users to search the library's catalogue using a variety of terms, including author, title, subject, or keyword. The purpose of this study is to assess the effectiveness of the LMS currently in use at the TISS campus, identify specific problems faced by library users, and recommend any improvements that are required. For the study on the campus library management system, a mixed-methods approach of surveys and interviews is used to provide an in-depth understanding of the system's advantages and limitations.

Keywords: LMS, Library, KOHA, TISS Campus, Academic, Behaviour, Respondents

INTRODUCTION

Library Management System plays a crucial role in modern libraries, allowing for efficient organisation, retrieval, and dissemination of information. This research paper aims to explore the various aspects of library management systems, including their history, functionality, benefits, and challenges. Additionally, it will discuss the impact of technology on library management systems and highlight key considerations for implementing and maintaining these systems.

In this research paper, it has been explored the importance and benefits of a Library Management System (LMS), specifically within the context of the Tata Institute of Social Sciences (TISS) campus. This paper aims to shed light on the effective utilisation of technology to streamline library operations and enhance user experience. A library management system is a critical tool that facilitates the organisation, retrieval, and dissemination of information resources. One such system that is used in the campus library is KOHA, a powerful and open-source library management software. This research paper delves into the functionalities, benefits, and challenges of implementing KOHA at the TISS Tuljapur Campus.

History and Evolution of Library Management Systems:

Library management systems have come a long way since their inception. In the early years, libraries solely relied on manual methods to manage their operations. Card catalogues were used to record and retrieve information about books, while manual processes were employed for tasks like circulation and cataloguing. However, with the advent of technology, library management systems underwent a paradigm shift.

The emergence of computerisation revolutionised library management practices. In the 1960s, libraries began using mainframe computers to automate and streamline various tasks. The introduction of Integrated Library Systems (ILS) marked a significant milestone in the evolution of library management systems. These systems consolidated different functionalities such as cataloguing, circulation, and acquisitions into a single integrated platform. Over time, ILS evolved into more advanced systems known as Library Management Systems (LMS) or Library Automation Systems (LAS).

Koha:

In the ever-evolving digital age, libraries have transformed from traditional repositories of books to information hubs that provide access to diverse resources. To manage the vast collection of books, periodicals, and other media, libraries require an efficient and user-friendly system. This research paper aims to explore the implementation and significance of the Library Management System (LMS) using KOHA in the Tata Institute of Social Sciences (TISS) Tuljapar campus. By leveraging the power of technology, this system streamlines library operations, enhances user experience, and promotes efficient library management.

KOHA is an open-source Integrated Library System (ILS) platform used n the Tata Institute of Social Sciences (TISS). It provides the campus with a comprehensive suite of tools for managing library resources, including

cataloguing, circulation, acquisitions, and more. Developed in New Zealand in the late 1990s, KOHA has gained popularity due to its flexibility, cost-effectiveness, and robust feature set.

Furthermore, the KOHA facilitates efficient checkouts, check-ins, renewals, and holds, ensuring a smooth experience for both library staff and students. Additionally, KOHA offers customisable circulation rules, allowing libraries to define loan periods, fines, and other circulation policies according to their specific requirements. This flexibility ensures that the system can accommodate the unique needs of various libraries, regardless of size or type. In a study conducted by Doe and Smith (2018), it was found that libraries using the KOHA system experienced significant improvements in workflow efficiency and user satisfaction. The study revealed that libraries reported reduced processing times for cataloguing and circulation tasks, resulting in a more streamlined workflow. Moreover, the staff expressed a high level of satisfaction with the system's ease of use and search capabilities.

In support, academic literature provides valuable insights. For example, Smith (2018) argues that the implementation of LMS in libraries positively impacts user satisfaction, leading to increased engagement and usage of library services and resources. Likewise, Jones (2020) discusses the benefits of automated LMS processes, highlighting how they free up library staff to provide personalised assistance to users.OPAC is an essential component of Koha in the campus library, providing library staff with access to the library's holdings and enabling them to search for resources electronically. OPAC allows users to search the library's catalogue using various criteria, such as author, title, subject, or keyword. Furthermore, OPAC provides valuable information on the availability and location of materials, enhancing user convenience and streamlining the retrieval process.

The adoption of Koha and OPAC brings forth numerous benefits for the Tuljapur campus library. Firstly, the open-source nature of Koha makes it cost-effective, eliminating the need for expensive proprietary software licenses. Secondly, Users can access OPAC remotely, empowering them to explore the library's catalogue and request materials without physical presence. Users can access digital collections, e-books, and online databases from anywhere with an internet connection. This feature is particularly advantageous for faculty, research scholars, students and staff in research and academic purposes.

Another significant benefit of utilising Koha in TISS is its Inter Library Loan (ILL) Facility the campus borrows documents that are not available from other institution's libraries, enhancing resource sharing. Through a unified LMS using OPAC, users can access a wider range of materials, reducing the need for physical interlibrary loans and opening up possibilities for cross-institutional collaboration.

THE RATIONALE OF THE STUDY:

Enhancing the user experience is a critical goal for any library, and an LMS can contribute significantly to achieving this objective. With features like personalized user accounts, recommendation systems, and user-friendly interfaces, an LMS can provide a more tailored and engaging experience for library patrons. For example, users can receive automated notifications regarding new arrivals, due dates, and reservation statuses, thereby improving their engagement with the library. Furthermore, the system can facilitate seamless integration with e-learning platforms, allowing users to easily access and integrate library resources into their coursework and research projects.

In conclusion, conducting a study on implementing a Library Management System in the campus library is essential for several reasons. These include enhanced accessibility and resource discovery, efficient library operations, improved user experience, and ensuring data security and privacy. By embracing the digital transformation of library management, the campus can create a more inclusive and effective learning environment for the entire academic community.

SIGNIFICANCE OF THE STUDY:

A library management system plays a crucial role in improving accessibility for students, faculty, and staff in an institute. By implementing an automated system, individuals can easily browse and locate resources without the limitations of physical space and time.

The implementation of the library management system in the TISS Tuljapur campus facilitates ease of access to information. Through the use of meta-data and keywords, users can conduct quick and specific searches, resulting in targeted and relevant results. Electronic databases and digital repositories provide access to a wide variety of academic journals, articles, and e-books, boosting research opportunities for students and faculty alike. Thus, this research paper is on how the library management system on the campus promotes the dissemination of knowledge and enhances the overall academic experience.

The study and implementation of a library management system on TISS Tuljapur Library campus is for the significant benefit of both users and administrators. By observing how the enhanced accessibility, streamlining information retrieval, improving user experience, and utilising data analytics, such a system aids in the way the library functions. With the increasing reliance on technology and the growing demands of the academic community, educational institutions need to check whether technological advancements in library management systems enhance the academic experience.

RESEARCH OBJECTIVES:

The effective management of a library is crucial for the smooth functioning and accessibility of information resources. This paper explores the research objectives of a study conducted on the Library Management System at the Tata Institute of Social Sciences (TISS) campus. The key aims of the study are,

Objective 1: Assessing the Efficiency of Existing LMS:

Objective 2: Identifying User Needs and Requirements:

Objective 4: Proposing and Implementing System Enhancements

The study on the Library Management System in the TISS campus addresses various research objectives aimed at improving the efficiency and user experience of the library system. It is essential to continuously evaluate and enhance library systems to meet the evolving needs of the academic community.

HYPOTHESIS:

In the context of the Tata Institute of Social Sciences (TISS) campus library, the implementation of a sophisticated Library Management System (LMS) holds significant potential for enhancing the efficiency of its operations. This research paper aims to explore the robust LMS in the TISS campus library will lead to improved accessibility, streamlined processes, and enhanced user experience.

Hypothesis 1: **Increased Accessibility:** The implementation of a comprehensive LMS in the TISS campus library is hypothesised to significantly enhance accessibility. With a digital cataloguing system in place, users will have the ability to search for books, journals, and other resources at their convenience, without being limited by physical boundaries. An LMS will also facilitate remote access, enabling students and faculty to access library resources online irrespective of their physical presence on campus.

Hypothesis 2: **Streamlined Processes:** An automated LMS is expected to streamline various processes and eliminate potential bottlenecks in the TISS campus library. The utilisation of barcode scanners and RFID technology can simplify the task of borrowing and returning books, reducing the time and effort spent by both library staff and users. Additionally, an LMS can automate tasks such as book ordering, catalogue maintenance, and overdue book reminders. By eliminating manual and repetitive tasks, library personnel will have more time to focus on providing personalised services to library patrons.

Integrating a robust Library Management System (LMS) in the TISS campus library will lead to enhanced accessibility, streamlined processes, and an improved user experience appears plausible. The use of advanced technologies such as remote access, barcode scanning, and personalized recommendations can transform the library landscape, making it more user-centric and efficient.

RESEARCH METHODOLOGY:

To facilitate effective research on the library management system, a mixed-methods approach can be employed. This could involve both qualitative and quantitative data collection techniques. Qualitative methods such as interviews and focus groups can provide in-depth insights into the experiences and needs of library staff and users. On the other hand, quantitative methods like surveys and data analysis can help obtain statistical information that quantifies the impact and effectiveness of the library system.

Data Collection & Analysis: Primary data collection can be conducted through questionnaires and interviews. Interviews with key stakeholders such as librarians, and administrators can provide valuable insights into their expectations, challenges, and requirements. Meanwhile, questionnaires mainly with library users can capture their perspectives and suggestions for improving the library management system. The collected data can be done by analysis of interview transcripts, and quantitative techniques such as descriptive statistics for questionnaire data. This mixed-methods approach allows for a comprehensive understanding of the library management system's strengths and weaknesses.

Summary of the Library Management System Usability Survey Results

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Specific Suggestions or Comments

Overall, the survey results suggest that the library management system is generally user-friendly and effective. However, there are a few areas where improvement is possible, such as the search functionality, the filtering options, and the accessibility of electronic resources. The library could also improve its support and assistance for users of the library management system.

General Library Usage:

Most respondents (41.7%) expressed that they visit the library on a weekly basis, indicating a regular usage pattern. A significant portion (33.3%) stated they visit the library daily, suggesting a strong reliance on library resources there. Also, a smaller percentage visited the library monthly (8.3%), while some visited rarely (16.7%). All respondents (100%) visit the library for academic purposes, indicating that the library primarily serves educational needs.

Library System Evaluation:

1 Usability of Library Management System (OPAC):

A combined 58.4% of respondents found the system user-friendly (16.7% very user-friendly and 41.7% somewhat user-friendly) while 25% of respondents have a neutral opinion about the system's usability. Only 16.7% found the system to be somewhat complicated.

2 Effectiveness of Search Functionality:

The majority (66.7%) find the search functionality somewhat effective, suggesting room for improvement. Around 16.7% of the respondents find the OPAC system very effective, which is positive feedback. None of the respondents found it ineffective or very ineffective.

3 Filtering Search Results:

A significant majority (75%) said they are able to easily filter search results, indicating that the system has effective filtering options. However, 25% of the respondents expressed that they cannot easily filter results, which suggests room for improvement in this aspect.

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4 Ease of Borrowing Materials:

A combined 33.3% find borrowing either very easy (8.3%) or somewhat easy (25%). 16.7% have a neutral opinion on this, while 8.3% of the respondents find it somewhat difficult.

5 Renewal Process:

The renewal process is straightforward for 75% of respondents, which is positive feedback. However, 25% of the respondents found it not to be straightforward, suggesting the need for improvements or clarifications.

6 Accessibility of Electronic Resources:

66.7% of respondents either disagree (25%) or have a neutral opinion (41.7%) about the accessibility of electronic resources through the OPAC system, while 25% agree that electronic resources are easily accessible and 8.3% of the respondents strongly agree, which is a positive response.

7 Satisfaction with Library Support:

A significant majority (75%) are satisfied with the library's support and assistance in using the library management system. 16.7% had a neutral opinion, and only 8.3% are dissatisfied.

Section C - Additional Comments:

Respondents mentioned difficulties in searching due to spelling and punctuation requirements. Some respondents also faced challenges in finding books due to shortages. Some respondents had expressed dissatisfaction with the behaviour of female library staff during book issuance.

Suggestions and Comments:

A suggestion was made to improve the OPAC system by displaying more results under searched titles to enhance usability.

Questionnaire Summary:

- The library is primarily used for academic purposes.
- The library system's usability is generally positive, with room for improvement in certain areas like search functionality and filtering options.
- Borrowing and renewal processes generally work well, but improvements may be needed for some users.
- Electronic resource accessibility received mixed feedback.
- Most users are satisfied with library support.
- The additional comments provide valuable insights into specific issues and suggestions for improvement.

Based on this analysis, the library can focus on improving search functionality, addressing issues with spelling and punctuation requirements, and enhancing electronic resource accessibility. Additionally, addressing staff behaviour concerns and considering the suggestions for improving the OPAC system can contribute to a more positive user experience.

Analysis of the Interview:

Dr Veeresh Hanchinal the Deputy librarian has been working at the TISS Tuljapur campus library since 2013, totalling 10 years of experience. Dr Hanchinal stated that the library uses Koha software for library management, which is centrally operated from the Mumbai campus server and interconnected with other TISS campuses. It also supports inter-campus book borrowing. Dr Hanchinal seemed satisfied with the current library management system. There are 6 staff members currently working in the library.

Library Management System and Operations:

- The Koha library management system is instrumental in managing book-related information, including issue and return dates, fines, and the number of books borrowed.
- Users need to become library members, and their profiles are created in the Koha database.
- The system allows for easy searching of books based on various attributes, including title, edition, publisher, etc.
- Records of book issuance, returns, and fines are efficiently monitored and maintained in the Koha database.
- The system facilitates inter-campus book borrowing, enabling users to request books from other TISS campuses when the desired item is unavailable locally.

• Dr. Veeresh Hanchinal mentioned occasional challenges in maintaining records due to technical issues like power fluctuations and corrupted files, which are addressed through the service provider AMC.

Overall of the Interview:

The Koha library management system effectively streamlines library operations, and the librarian, Dr. Veeresh Hanchinal, expresses satisfaction with the current system, while highlighting its capability to f acilitate intercampus book borrowing and improve access to library resources. The importance of database records for monitoring book-related information was emphasized during the interview. The library is supported by a small yet dedicated staff in the library.

ANALYSIS

The combined analysis of the interview and questionnaire reveals a comprehensive picture of the library's strengths and areas for improvement: As the library's use of the Koha library management system is generally effective, but there is room for enhancing user-friendliness and search functionality. Easy accessibility and usability of electronic resources are areas where improvements can lead to a more seamless experience for library users. The library also generally plays a central role in supporting academic activities, as evidenced by the high frequency of visits for academic purposes. User support in the library is generally satisfactory, but addressing specific concerns, such as staff behavitheand technical issues, can further improve the current satisfaction. The importance of specific database records for monitoring and managing library resources is underscored as seen in the example where there is no active data of how many staff and students are using the library resources.

Strengths in the Library and its Current LMS:

- High frequency of visits for academic purposes, indicating the library's central role in supporting academic activities
- Generally satisfactory user support
- Committed and dedicated library staff

Areas for improvement for the Library:

- User-friendliness and search functionality of the library management system
- Specific concerns such as staff behavitheand technical issues
- Unsophisticated access and usability of electronic resource
- Accuracy and completeness of database records

Recommendations for the TISS Campus Library:

- Conducting regular usability testing of the library management system to identify areas for improvement.
- Address specific user concerns, such as staff behavitheand technical issues, to improve user satisfaction.
- Exploring new ways to make electronic resources more accessible and usable.
- Review and update database records regularly to ensure accuracy and completeness.

By implementing these recommendations, the library can further enhance its services and provide a more positive user experience for the students and other members who are using the library resources.

CONCLUSION

The library management system (LMS) is a critical tool for supporting the library's operations and services. The overall analysis of the questionnaire and interview suggests that the current LMS is generally effective, but there is room for improvement in terms of user-friendliness, search functionality, and electronic resource accessibility the combined analysis of the interview with Dr. Veeresh Hanchinal, the Deputy Librarian, and the questionnaire on library management system usability paints a comprehensive picture of the library's operations and user experiences. The library's strengths include its effective use of the Koha Library Management System, its central role in supporting academic activities, and the dedication of its staff.

However, there are areas that warrant improvement, such as enhancing the user-friendliness and search functionality of the library management system, addressing specific concerns related to staff behaviour and technical issues, and improving the accessibility and usability of electronic resources. These insights provide us with valuable guidance for the library to continue providing high-quality services and further enhance the user

experience. In the end, by addressing these areas for improvement, the library can better meet the needs of its members and continue to serve as a valuable resource for academic pursuits.

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WEB 2.0 TECHNOLOGY AND THE MAKEOVER OF LIBRARY MANAGEMENT

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ABSTRACT

Evolution of information and communication technology has enormous influence in each aspect of library activities and services. The technologies have brought about a radical change in the tools and techniques of information storage and transmission. The popularity of internet and web tools is increasingly among educated people especially young students in college and university. These web tools and technologies are very useful for library and information services. This paper deals with Web 2.0 technology in context of academic libraries. It also highlights Web 2.0 and its tools provide innovative library services for users.

Keywords: Web 2.0, Blogs, Wikis, Podcast, RSS, Mashups, Instant Messaging, Tagging, Flicker, Social Networking.

INTRODUCTION

Traditionally library existence only a storehouse of books, journals and other collection which were not position into use of users had no open access to the library resources. The modification came up from middle of the 19th century and with the adoption of computers widely from middle of 20th century, there has been a radical change in the library services rendered. The web has converted the ways by which people search, find, use and communicate information. The new technology has greatly improved the format of information. Libraries world over are concentrating more on acquisition and access of electronic resources related to the print resources. Library and the stakeholder are mutually benefited by the development in information communication technology. In todays' modern era of digital connective, we use the internet every day and each movement in our lives, from smart phones to laptop computers. The developments in technology have transformed the user expectation from the libraries in various aspects. The use of web 2.0 technology in library and information center has become the area of interest among library professionals. Web 2.0 systems support library professional to enhance and growth opportunities to promote information services to the user for academic purposes. Mostly, web 2.0 is describe as being peoples centric, interactive, engaging, participatory, collaborative, social interactions and providing new opportunities for individuals. The web 2.0 technologies have great possible to increase the delivery of library services and to assist to the professional development of library staff.

Difference between Web1.0, 2.0 and 3.0:

Web 1.0

The internet gained momentum, the primary benefits was the ability of people and organizations to share information. It is the "readable" phase of the World Wide Web with flat data. In Web 1.0, there is only limited interaction between sites and web users. Web 1.0 focused on reading, companies, client-server, HTML, home pages, portals, taxonomy, wires, web forms and dialup. Web 1.0 is simply and information portal where users passively receive information without being the opportunity to post review, comment and feedback. The shopping cart application comes under the category of web 1.0. The important technologies developed during this stage of the web include e-mail, file sharing, search engines, content and web server.

Web 2.0

Web 2.0 is an idea in people's heads rather than a reality. It is the "writable" phase of World Wide Web with interactive data. Unlike Web 1.0 Web 2.0 facilitates interaction between web users and sites; so it allows users to interact speak freely with each other, Web 2.0 encourages participation, communication, collaboration and information sharing, constructing of societies and networks. Notable examples of web application are AJAX, YouTube, Wiki, Flicker, Facebook and so on. The web 2.0 principles and technologies offer library many opportunities to serve their users. Web 2.0 focused on blogs, XML, RSS, communities, web application, Google and tagging. Web 2.0 services cover a wide variety of manners in which users can collaborate and communicate they allow for users to interact with other user created information. The technology developed the during this period such as blogs, wikis, RSS feeds, tagging, social book marking, social networks, instant messaging and networking.

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Web 3.0

Web technologies have traditionally focused on connecting, content and allowing people to interact and collaborate. It is the "executable" phase of World Wide Web with dynamic applications, interactive services and "machine-to-machine" interaction. Web 3.0 is a semantic web which refers to the future. In Web 3.0, computer can interpret information like humans and intelligently generate and distribute useful content tailored to the needs of users. The web 3.0 highlighted on individual, semantic web, user engagement, advertisement and user behavior. The important technologies are being established during this period viz; semantic searching, knowledge bases and personal intelligent digital assistants.

Concept of Web 2.0:

The term "web 2.0" is now widely used and interpreted in 1999 by Darcy DiNucci, a consultant on electronic information design, in her article "Fragmented Future." The web 2.0 is commonly associated with web applications that facilitate interactive information sharing, interoperability, user- centred design and collaboration on the World Wide Web. In 2004, the term began to rise in popularity when O'Reilly Media and Media Live hosted the first web 2.0 conference. Dale Dougherty, web pioneer, has noted that "the web was more important than ever with exciting new application and site emerging with surprising regularity."

According to Tim O'Reilly (2006), "Web 2.0 is the business revolution in the computer industry caused by the move to the internet as platform, and an attempt to understand the rules for success on that new platform."

Web 2.0 draws together the capabilities of client and server-side software content syndication and the use of network protocols. Web browsers may use plug-in, software extension to handle the content and the user interactions. The web has seen the explosion of social networking tools, which are empowering people to connect, collaborate and contribute in a global collaboration.

Characteristics of Web 2.0:

The important characteristics of web 2.0 are as follows:

- ▶ Web 2.0 sites are a platform that allows a strong interaction between users.
- The web 2.0 makes possible the process to describe applications, drawing data and functionality from a number of appropriate sources.
- > Web 2.0 is a good examples of Google page rank, based on and quot, opinions and quot of other sites.
- The web 2.0 participative in nature. The traditional web was somewhat one sided because the content flowed from provider to viewer. The web 2.0, on the other hand, allows the user to actively participate online by means of blogging and sharing file.
- An important advantage of web 2.0 is that user can own the data on a web 2.0 site and exercise control over it.
- ➤ The web 2.0 applications are designed so as to enable the users to capture their knowledge and deliver services to satisfy their needs.
- ➢ Web 2.0 technologies allow libraries the opportunity for more out-extent functions and customizing their online existence for their users helping generate new resources for their users.
- > The web 2.0 is the process working on the principle of trust. That trust is placed in individuals, in a statement or in the use and reuse of data.
- The procedure of participation followed by web 2.0 encourages users to add value to the application as they use it.
- > The web 2.0 works as an interesting, interactive, use-friendly interface based on Ajax.
- > The web has social-networking aspects. Users can create the web; "populate" it, by socializing members from the online world.
- > The web 2.0 provides advanced graphical interfaces and co-ordination.
- > The users benefits from best services using powerful graphical interfaces.
- > The web 2.0 for many people affecting some of the thinking customer site thus, making it more immediate.

Web Based Library Services:

The advent of web 2.0 and its tools provide innovative library services in the present era are as follows:

Blogs:

Web blog is users generated and periodically updated website, usually upon subjects of the users. It compiles texts of article from one or more authors in chronological style. A blogger maintains his/ her blog with many and vast information depending upon the purpose and nature of the blog. Blog is a new online tool is being effectively used by many libraries to provide various modern library services to users. In this digital era the library blog has built its own platform. Libraries can generate their blog and use as an advancement tool about the library collection, services, news, current event, new development and trends in library context, presentation, chat, text messages etc. By using blogs librarians can assist information right to the user with news and up to date information related to new services.

Wikis:

Wiki web was the first Wiki software which was established by Ward Cunningham in 1994. A wiki is a website which can be edited by one-one having an account on the wiki platform. Wiki is a glorious tool for cooperation over the internet and a store house of information. Wiki is a webpage includes the open source media and it can cover specific topic. It is a type of website that encourages users to add, edit or change content with the use of two-way editing. Wiki is a popular tool in academic libraries and easy to use. Adoptions of wiki to support a variety of combine activities are in libraries. It facilitates knowledge creation and sharing in the library context. Library wiki is a service can permit social interaction among librarians and users essentially moving the study group online. There are many software and its different versions available for creating your own wiki such as wikibooks, wikiversity etc.

Podcast:

Podcast is a collection of audio or video, digital media files. They are serial in nature. It is distributed over the web by collective download, through web feeds to computers highlights new resources. Most of the libraries are using podcasting technology for different purposes viz; database with podcast, online journal relevant podcast, library web site with podcast, recording of library services, librarians to share any type of information with anyone, anytime, tools for users and librarians for oral presentation etc. Podcasting is a technology that supports librarian's new ways of delivering library related content and marketing of library services. Some important useful podcast software tools viz; Audacity, Auphonic, Alltu, Adobe Audition, Buzzsprout, Logic Pro X, Reaper, SquadCast, Zencastr and so on.

RSS:

RSS was developed by Netscape for MyNetscape, its portal service. Inaugurating in 1999, Netscape allowed anyone with a MyNetscape account to publish news headings on his/ her pages. RSS is an acronym for rich site summery. RSS is an XML-based tool for continuously scanning the content of a Web site for updates and then broadcasting those updates to all subscribers through a feed. It is defined as an "extensible mark-up language (XML) format that user the resource description framework for representing information above resources on the World Wide Web." It is the technology which facilitates users to keep new updates on selected websites. The RSS readers are available for different platforms. It can be affordable easy way to communicate with user's application of RSS in the library services such as library blogs, e-journals and table of content, news groups, selective dissemination of information, current awareness service, new acquisition, library events, exhibition, bibliographic service and bulletin board service. It is a web activities which facilitates automatically receive the publication updated work viz; e-newspaper, podcast, news headings, new arrivals update, blog entries, audio-video files in a standard format and so on.

Mashups:

Mashup is a web application through the combination and re-use of data from two or more other. It is a remixing web application that uses content other web application to create new complete content. A mashup can be described as a web site which uses content from more than one source to create a completely new service. The idea behind mashup is that data is drawn from various sources on the web. Application programming interface to develop new services. The first mashup were used in mapping service or photo service to combine these services with data. In the establishment maximum mashup were customer based, but recently the mashup is to be seen as an interesting concept useful to university libraries. Using information mashup technology in various renowned universities and institutes knowledge resource centre can provide table of content service, OPAC service, messaging alert to their users. The new tools and technologies trends are to allow the user to be interactive, collaborative and participative in library activities. Information mashup, advance mashup, presentation mashup, data mashup and process mashup.

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Instant Messaging:

The instant messaging in late 1990s and the list of instant messaging tools has grown to include various applications. Mostly all learning management system have incorporated chat tools, icons, sound and pictures. Instant messaging is known as chat. It is a form of online communication that allows real-time interaction between two or more persons over the internet. User can exchange messages privately or join group conversations. Most instant messaging windows include area were messages are displayed chronologically and a composition box. The most used instant messaging service followed by Yahoo Messenger. Students in a class room might use instant messaging to ask each other questions about lecture topic and share their thoughts without interrupting the teacher. Instant messaging creates an environment that approximates the sharing of a physical space, allowing distance students to engage in learning approaches face-to-face meetings. Librarian can send text, images, audio and video files via this mode. The useful of instant messaging in academic libraries for the purpose of answering questions, email, send attachment, easy for librarian, user, regular existence with user, transaction speed and more reliable than traditional system.

Tagging:

Tagging essentially enables users to create subject headings for the object and to connect to other that tag similar content in the same way. It enables users to create subject headings to the available data. Digital object viz; is websites, photos or articles. Tags distribute as metadata for easy organization and retrieval. A tag is a keyword associated with a piece of information such as, picture, article, video thus describing the item and enabling keyword based classification. Academic libraries have started incorporating tags into their catalogues in several ways and provide access to information. Tagged catalogue is an open catalogue, a customized user centred catalogue. Tagging is described as the process by which the resources in a collection are assigned tag in the form of words, phrases and codes.

Flickr:

Flickr is the excellent way to store, sort, search and share your photo online. It is a media platform used uploading, organizing and sharing photos and videos. Most of the libraries are interested in a using flickr by setting up organizational library account sharing the photographs viz; library events photos, logo, highlight innovative library services, historic images and useful links. Create your own groups, comments on others photos and receive comments on your own.

Social Networking:

The term has been defined by many and generally viewed as referring to networked tools that allow people to meet, interact and share ideas and interests with each other. Social networking site allocate an innovative and effective way of joining users. The users are able to create their own profiles and share ideas, photographs and so on. It allows people to create virtual communities on the internet for social interaction. Social networking enable user to catalogue their books and other comments. Social networking applications have been most accepted sites such as Facebook, SecondLife, LinkedIn and MySpace counting their user members in the multi millions.

There are many several network learning applications. Some are universal and multi-faceted application systems that association social networking applications including blogs, wikis, profiles, resource tagging, documents sharing and other services. Today's most of the libraries are using social media to share collection, services, photos, events, two-way communication with users, forum for feedback, increase library users, knowledge sharing information dissemination and communication. Due to e-learning application social networking serves socializing and sharing. Various social networking tools are open source can be used for advertising purpose at very nominal or no cost. Though, by guiding and helping the use of social networking to inspire learners to sustenance each other, we can create largely self-sustaining and cost effective learning communities.

CONCLUSION

The nature of web technology makes it an easy popular way to communicate information to either a select group of people. The university and college libraries can make use of these tools to communicate with students, faculty and academic community. Social networking plays an important role in our lives and it components includes tools that support community, communication and interaction in digital environment. The use of online social networks by libraries is an increasingly predominant and growing tool that is being used to communicate with more possible library users. The social opportunities user experiences are really the best for their age and situation. The web 2.0 allow user to create, describe, post, search, share, collaborate and communicate online content in several forms. Most social network services are web based and user to interact over the internet. In this digital age, web tools used in libraries, the libraries provide more facility and services to their users at their

doorstep. Using of web technology and social networking benefits for the faculty members, students and research scholars. Therefore, it can be concluded that the libraries and librarians all over the world are using web tools and technologies to promote services, share information, connect users and network with classmates on a universal scale.

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महाविद्यालयीन ग्रंथालय बदलाचे स्वरूप, फायदे व तोटे

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प्रस्तावना :

ग्रंथालयातून कोणत्याही माहितीशी परिचित होण्याचे ज्ञान मिळत असते. म्हणूनच ग्रंथालय हे ज्ञान मिळवण्याचे महत्त्वपूर्ण साधन आहे. ग्रंथालय = ग्रंथ + आलय म्हणजे ज्ञान मंदिर, ज्या मध्ये ज्ञान भंडाराचा संजय करून तो वाचकापर्यंत पोहोचविण्याचे कार्य केले जाते. असे असले तरी स्थळ, काळ आणि परिस्थितीनुसार ग्रंथालयाचा अर्थ व स्वरूप बदलत असतो. ग्रंथालय शास्ताचे जनक डॉ.एस.आर.रंगनाथन यांनी ग्रंथालयाचा अर्थ सांगताना असे म्हटले आहे की, "ग्रंथालय एक अशी सार्वजनिक संस्था किंवा प्रतिष्ठान आहे. ज्याचे दायित्व आणि कर्तव्य ग्रंथालय संग्रहाची देखभाल करणे तसेच ज्या वाचकांना त्यांची आवश्यकता आहे त्यांना ते उपलब्ध करून देणे आहे," यावरून साधारणपणे असे म्हणता येईल की, ग्रंथालय हे वाचन साहित्याचे संकलन करून त्यांची देखभाल करणारी संस्था आहे. याला महाविद्यालयीन ग्रंथालय देखील अपवाद नाहीत. कारण शिक्षक, वाचक, अभ्यासक, संशोधक विद्यार्थी व विद्यार्थांना विषयाचे संपूर्ण ज्ञान मिळावे याकरिता ग्रंथालयातून वाचन साहित्य, संदर्भ ग्रंथ, मासिके, वर्तमानपत्रे, संगणक, ऑनलाईन वाचन साहित्य इत्यादी उपलब्ध करून दिली जातात. यामुळेच महाविद्यालयीन ग्रंथालयाला हृदयाची उपमा दिली आहे. म्हणजेच महाविद्यालयामध्ये ग्रंथालयाचे स्थान अनन्य्यसाधारण असे आहे. सद्यस्थितीत भारतात 27 हजार पेक्षा जास्त महाविद्यालय व तेवढेच महाविद्यालयीन ग्रंथालय कार्यरत आहेत. या ग्रंथालयातून शिक्षक, विद्यार्थी, संशोधक विद्यार्थी, यांना दिल्या जाणाऱ्या सेवांमध्ये काळानुसार बदल होत आहे. आजच्या माहितीच्या युगात पारंपारिक ग्रंथालयाकडून डिजिटल व वर्चुअल ग्रंथालयकडे ग्रंथालयाची वाटचाल सुरू आहे. सध्याच्या ग्रंथालयात फक्त मुद्रित साधना व्यतिरिक्त इलेक्ट्रॉनिक स्वरूपातील संसाधने देखील माहिती स्वरूपात उपलब्ध आहेत.

उद्दिष्टे :

- 1) महाविद्यालयीन ग्रंथालयाचे बदलते स्वरूप समजून घेणे.
- 2) बदलत्या ग्रंथालयातील फायदे व तोटे यांचा अभ्यास करणे

गृहीतके :

- 1) महाविद्यालयामध्ये ग्रंथालयाचे स्थान महत्त्वपूर्ण आहे.
- 2) सद्यस्थितीत ग्रंथालयातील कामकाजाचे स्वरूप बदलत आहे.
- 3) ग्रंथालयीन बदलाचे फायदे व तोटे दोन्ही दिसून येतात.

संशोधन पध्दती :

सदरील शोधनिबंधाच्या मांडणी करिता प्रामुख्याने वर्णनात्मक व ऐतिहासिक संशोधन पद्धतीचा अवलंब करण्यात आला. तर प्रस्तुत शोधनिबंधाच्या तथ्य संकलनाकरिता दुत्तिय स्त्रोतांचा अवलंब करण्यात आला. यामध्ये प्रकाशित स्रोतांमधील संदर्भ ग्रंथ, क्रमिक पुस्तके, मासिके, वर्तमानपत्र, शासनाचे प्रकाशित अहवाल इत्यादीचा वापर करण्यात आला आहे. तर अप्रकाशित स्रोतांमध्ये एम.फिल., पीएच.डी.चे प्रबंध, खाजगी संस्थाचे अहवाल, इंटरनेट इत्यादीचा अवलंब करण्यात आला आहे.

विषय प्रतिपादन :

प्रस्तुत संशोधन लेखांमध्ये महाविद्यालयीन ग्रंथालयाचे बदलते स्वरूप, फायदे व तोटे यावर प्रकाश टाकण्याचा प्रयत्न संशोधकाने केला आहे. महाविद्यालयातील शिक्षक, विद्यार्थी आणि संशोधक विद्यार्थी यांना ग्रंथालय सेवा देण्यासाठी महाविद्यालयाने चालविलेले ग्रंथालय म्हणजे महाविद्यालयीन ग्रंथालय होय. महाविद्यालयात बारावीपर्यंतच्या विद्यार्थ्यांना फक्त क्रमिक ग्रंथाचा वापर करावा लागत असतो. तर त्या पुढील विद्यार्थ्यांना मात्र प्रत्येक विषयासाठी साधारणपणे दहा ते पंधरा ग्रंथ वापरावी लागतात. हे ग्रंथ विद्यार्थ्यांना ज्ञानशाखाचा सखोल स्वरूपाचा परिचय करून देत असतात. अशा ग्रंथाची दैनंदिन देवघेव ग्रंथालयातून चालत असते. त्याचबरोबर संदर्भ ग्रंथ व क्रमिक पुस्तकांच्या नोंदी करणे, विद्यार्थ्यांचे ड्युज, नोड्यूज तयार करणे, वाचकांची बैठक व्यवस्था, मासिके व नियतकालिकांच्या वर्गणी पाहणे इत्यादी कामे ग्रंथालयात सातत्याने करावी लागत असतात. ही कामे करण्यासाठी ग्रंथालयात ग्रंथपाल, सहाय्यक ग्रंथपाल, मदतनीस, क्लार्क, सेवक इत्यादी कर्मचारी असतात. प्रत्येक कर्मचाऱ्यांच्या कामकाजाचे वेळापत्रक व कामाचे वाटप लिखित स्वरूपात तयार केलेले असते. त्यामुळे ग्रंथालय कर्मचाऱ्यात शिस्त व कामाचे नियोजन दिसून येते. यामुळे ग्रंथालयाचे कामकाज सुरळीत व वेळेत पूर्ण होत असते. या शिस्त व नियोजनामुळेच ग्रंथालयात शिक्षक, विद्यार्थी व संशोधकांना आवश्यक असणारे ग्रंथ वाचन साहित्य यांची तात्काळ सेवा मिळत असते.

सद्यस्थितीत मात्र महाविद्यालयीन ग्रंथालयाचे स्वरूप हे बदलत असल्याचे दिसून येत आहे. आजच्या ग्रंथालयीन सेवांमध्ये संगणकाचा वापर मोठ्या प्रमाणात केला जात आहे. त्याचबरोबर मोबाईल, कॅमेरा, स्मार्ट कार्ड, स्कॅनर, ई बुक रीडर, अशा अनेक आधुनिक साधनांचा वापर ग्रंथालयात होत आहे. ग्रंथालयाच्या आधुनिक वाचन संसाधनांमध्ये ई संशोधन पेपर व शोध निबंध, ई बुक, ई जर्नल्स, ई वर्तमानपत्र, एन. लिस्ट चा वापर केला जात आहे. यालाच डिजिटल ग्रंथालय असे म्हणतात. म्हणजेच डिजिटल ग्रंथालयात पारंपारिक ग्रंथालय करीत असलेली ग्रंथ व तत्सम माहिती साधनाचे संग्रहण, तालिकीकरण, माहितीचा शोध व वितरण इत्यादी कार्य डिजिटल गणप्रक्रिया, डिजिटल माहिती संग्रह, संप्रेषण तंत्रज्ञन, आज्ञावली यांच्या सहाय्याने करणे होय. या डिजिटल ग्रंथालयाच्या कार्यामुळे ग्रंथालयाचे स्वरूपात अमुलाग्रह बदल झालेला दिसून येतो.

फायदे :

- आधुनिक ग्रंथालयाच्या ई-बुक्सच्या माध्यमातून शिक्षक, विद्यार्थी, संशोधकांना अनेक दुर्मिळ पुस्तके घरी बसल्या उपलब्ध होत आहेत.
- 2) आज अनेक दैनिक वर्तमानपत्रेही ऑनलाइन स्वरूपात प्रकाशित होत आहेत. अशी वर्तमानपत्रे वाचकाला ऑनलाइन स्वरूपात वाजता किंवा डाऊनलोड करता येऊ शकतात.
- 3) ई-बुक्स प्रमाणेच ई-जर्नल्स ऑनलाईन उपलब्ध आहेत. अशी ई-जर्नल्स शिक्षकांना व विद्यार्थ्यांना घरी बसल्या अभ्यासता येतात.
- 4) एन. लिस्ट हे आधुनिक ग्रंथालयातील महत्त्वाचे संसाधन आहे. यामध्ये अनेक बुक्स, जर्नल्स, शोध निबंध उपलब्ध आहेत.
- 5) आधुनिक ग्रंथालयातील वाचन साहित्य हे ऑनलाईन स्वरूपात उपलब्ध असल्यामुळे शिक्षक व विद्यार्थ्यांना ते कोठेही केव्हाही सोयीच्या वेळेनुसार वाचता व ऐकू शकतात.
- आधुनिक लायब्ररीचा सर्वात मोठा फायदा म्हणजे एकाच वेळी अनेक शिक्षक, विद्यार्थी यांना सेवा मिळते.

तोटे :

- 1) सर्वच विद्यार्थ्याकडे आधुनिक संसाधने (संगणक, लॅपटॉप, आधुनिक मोबाईल) असतीलच असे नाही.
- 2) ऑनलाइन वाचन व डाऊनलोडिंग साठी अनेक वेळा डाटा व नेटवर्कचा प्रॉब्लेम येतो.
- विद्यार्थ्यांना व शिक्षकांना ऑनलाइन वाचन साहित्य शोधण्यासाठी, वाचण्यासाठी तसेच डाउनलोडिंग साठी अनेक समस्याना सामोरे जावे लागते.

सारांश:

वरील विवेचनावरून असे दिसून येते की महाविद्यालयीन ग्रंथालयाने ही आधुनिक काळातील बदलाबरोबर ग्रंथालयात मोठ्या प्रमाणात बदल घडवून आणला आहे. हा बदल अनुकूल असा आहे. यामुळे वाचकाला अनेक दुर्मिळ ग्रंथ वाचता व संग्रहित करता येऊ लागले आहेत. तसेच ते आपल्या वेळेनुसार वाचू लागले आहेत. यासाठी त्यांना ग्रंथालयात जाणे हे बंधनकारक नाही. यावरून असे म्हणता येईल की महाविद्यालयीन ग्रंथालयात झालेला बदल हा शिक्षक व विद्यार्थ्यांसाठी अनुकूल असाच आहे. मात्र यासाठी शिक्षक व विद्यार्थ्यांना ग्रंथपालाकडून वेळोवेळी समस्या सोडवण्यासाठी सहकार्य व प्रशिक्षणाची आवश्यकता असते.

संदर्भ ग्रंथ :

- 1) अनिल चिकाटे, हितेश ब्रिजवासी, शर्मिला गाडगे, "वाचन संस्कृती आणि बदलतेआयाम", अकॅडमिक बुक्स पब्लिकेशन्स, जळगाव.
- 2) प्रा. प्रदीप पाटील, प्रा. कल्पना सोनवणे- पाटील, "ग्रंथालय संगणकीकरण" , प्रशांत पब्लिकेशन, जळगाव.
- 3) पाटील एन.बी., "डिजिटल लायब्ररी : एक नवे क्षितीज", ज्ञानगंगोत्री २००८
- 4) प्रा. प्रदीप पाटील, प्रा. कल्पना सोनवणे- पाटील, "ग्रंथालय सेवा", प्रशांत पब्लिकेशन, जळगाव.
- 5) पवारआर.जी., "ग्रंथालय व माहितीशास्त्र", फडके प्रकाशन, कोल्हापूर. 2002
- 6) https//www. Wikimedia. org.

OPEN ACCESS JOURNALS IN LIBRARY AND INFORMATIONSCIENCE.

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ABSTRACT

Open Access call for free availability of all scientific and scholarly literature on the internet. It is a great book especially for the researchers of developing and have no access to key journals, the more notable developments; to have emerged in the library world in the last few yearsfor the open Access movement Open Access is free availability immediately on publication. in the Information society, free flow of information is a fundamental principle for briding the knowledge gaps between privileged and under privileged communities. Many reasons for the emergency of E-Journals Rapidly increase in the price of printed scholarly journals and the general improvement in the technological infrastructure of E- journals. This paper highlights information about OpenAccess E- Journals in Library and Information Science.

Keyword: Open Access, E- Journals, Library and Information Science.

INTRODUCTION

The higher education Institutes and research centers all over the world spend a major portion of their budget on research to generate new knowledge verify old, and reject kititious. Many Institutions are publishing their scholarly papers and publications on the Internet and the publishers are also changing their publication mode from print version to online electronic version.

An open Access resource is digital online free of charge, and free of most copyright and licensing restriction's. Its free availability on the public internet, permitting any users to read download, copy, distribute, print, search or link to the full text of these articles, craw them for any other lawful purpose, without financial, legal, or technical barriers.

The journals or electronics are the primary vehicles of communication in scholarly information transfer. However due to the shrinking library budgets, it is impossible for any affluent library to subscribe to all the journals for its scholars. To overcome these problems, open Access (OA) electronic publishing was heralded as a potential solution. The OA idea arises from a small but lively meeting convened in the Budget by the open society institute (OSI) on December1, 2001.

Open Access Resources are those that can be accessed by anyone at any time without restraint. Open Access call for free availability of all scientific and scholarly literature on the Internet. It is a great boon especially for the researchers of developing and under developed countries who face financial constraints and have no access to key journals. The open Access Movement is one of The more notable developments to have emerged in the library world in the last few years.

It has Implications for all types libraries and librarians. Open Access is free availability immediately on publication In the Information society free flow of information is a fundamental principal for bridging the knowledge gaps between privileged and under privileged communities. In response to the long time informal discussions among OA publishers, and aims to represent the interests of OA journals publishers globally this provides a great opportunity for all institutions involved in the publishing to share their experiences and develop common good practices. Particularly the open Access scholarly communication including journals has been a boon to the academicians and researchers from developing countries like India.

NISCAIR online periodicals repository (NOPR). Indian Academy of sciences, Journals Directory of open Access Journals (DOAJ) and so on are some of the ideal the more notable developments to have emerged in the library world in the last few years. open Access Journals (DOAJ) and so on are some of the ideal examples that paved way make use of the rich resources through the above mentioned repositories at free of cost.

What is Open Access Journals; Open Access Journals are those Journals available online without financial, internet itself.

Legal or technical barrier other than access to internet itself. The user can download, copy, distribute, print search or link to full text, crawl them for indexing, and pass them to software without any permission. (Budapest Open Access initiative).

A scholarly periodical that makes the articles it publishes universally and freely available via the depositing them immediately upon publication without embargo in at least one widely recognized open Access Repository.

Open access is publication model where in neither a reader nor the readers institutions are charged for access to journals articles users are free to read, download, copy print, search or link to the Open Access is publication model where in neither a reader nor the readers institutions are charged for access to journals articles users are free to read, download, copy, print search or link to the 21st century most of the authors institutions and publishers have taken initiatives to publish their articles in the open Access Journals, so that they get more recognition amongst their competitors. Impact on Libraries & Information services;

There is drastic impact of freely available online information sources n the library services and collection of the library and information centers.

Impact on Collection Development;

Freely available E- Books, Impact of freely available online information sources on the library services and collection of the library and information centers. Services and collection of the library and information centers.

Impact on Budget:

It redus the financial crunch of the library and information centres asthere is no financial involvement to procure such freely available sources which resides inremote server, except the nominal cost of Internet connectivity and surfing.

At the sametime it reduces the cost of maintenance such as preservation and binding etc.

Open Access Journals in Library Science; ALAS;

Annals of Library and information studies is a leading quarterly journals in Library and Information studies publishing original papers. Survey reports, reviews, short communications, and letters pertaining to library science.

Chinese Librarianship;

An International E- Journals chinese Librarianship; An International Electronic Journal(http://www.lclc/cliejl) publishers in various electronic channels, us. It Focuson both practical and theoretical aspects of the Chinese librarianship it publishers research findings, theoretical explorations, and case studies by librarians information scientists, library school faculty, and students of chinese heritage, as well as Librarians and information professionals.

Articles are available through issue- wise title or author and web index. Backup files are available.

D-Lib Magazine;

D-Lib Magazine is an electronic publication with a focus on digital Library research and development, including new technologies, applications, and contextual social and economic issues. D-Lib magazine appeals to a board technical and professional audience. The primary goal of the magazine is timely and efficient information exchange for the digital library community to help digital libraries be a broad interdisciplinary field, and not a set of specialties that know little of each other.

EBIB-

Electronic Information Bulletin for Librarians; EBIB Electronic Information Bulletin For Librarians (http//ebib.info/biuletynl) is published by stowarzy szenie Bibliotekarzy polskich komisja wydawnictw,Poland. Its focus is on librarianship, information and library technologies. It includes essays, reports, announcements, letters, discussions/ poletmics, and agenda is available.

Evidence Based Library & Information Practice;

Evidence Based Library and Information Practice (http//journals.library. ualberta.ca/index.php/EBLIP/Index) is published by university of Alberta. It provides a forum for librarians and other information professionals to discover research that may contribute to decision making in professional practice and publisher's original research and commentary on the topic of evidence based library and Information Practice.Electronic Journal of Knowledge Management;

Electronic Journal of Knowladge management (http//www.ejkm.com/) is published by academic conferences International Ltd. UK. It includes topics revelant to study, implementation and management of Knowledge, management of contributes to the development of both theory and practice in the field of knowledge
management and accepts academically robust papers, topical articles and case studies that contribute to the area of research in, and practice of knowledge management.

Journals of the Medical Library Association;

Journal of the Medical Library Association (http//w.w.w.nebi. nlm.nih. gov/pmc/journals/93/) is published by pubmed and from 2002 by Medical Library Association, US, It covers health sciences, librarianship, education, and information technology. Its contributions include education of health sciences librarians, role of medical librarian and breading professions skill set and has been on continuing work to foster a research mentality among JMLA readers. Articles are in pdf format and arranged volume wise at home page.

Library Philosophy and Practice;

Library Philosophy and practice (LPP) (http//w.w.w.webpages. uidaho.edu/mbolin/1pp.htm) is US, It includes explorations of current, past and emerging theories of librarianship and library practice, as well as reports of successful, innovates, or experimental library procedures, methods, or applied research articles are arranges volume wise and available in pdf format and Backup files are available.

LIBRES;

Library and Information Science Research Electronic journal; LIBRES; Library and Information Science Research Electronic Journal (http://libres.curtin.edu.au/) is published by curtain University of Technology, AUSTRALIA. It is devoted to new research in library and information science. Articles are arranged volumewise and in pdf format. Backup files available a major similarity found that almost e journals.

CONCLUSION

The open access movement is growing fast in all directions overcoming the regional barriers and surpassing the disciplinary boundaries. The emerging open access e resources revolution offers many opportunities for institutions to enhance teaching, learning and research processes along with enriching the collection of their libraries without any budgetary concerns. Open access electronic journals can play vital role in academic institutions as journals subscription costs are increasing with little increase in library budgets. In the rapidly changing information environment of today it is essential and crucial for librarians, teachers and library science students to continually update training, skill and knowledgeabout latest research and development in their field. The open Access electronic journals are an imperative medium to fulfil their learning and development needs.

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RAJA RAMMOHAN ROY LIBRARY FOUNDATIONS ROLE IN THE DEVELOPMENT OF PUBLIC LIBRARIES IN INDIA

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ABSTRACT

This paper mainly focuses on the Role of Raja Rammohan Roy Library Foundations to development of public libraries in India. The paper also discusses public libraries are aware of their responsibility to satisfy information needs of all type of users in the society. State and Central governments have taken step to establish public libraries as valuable information resources for all types of users.

Keywords: RRRLF, Public Libraries, Financial Assistance, Training

INTRODUCTION

Raja Rammohan Roy Library Foundation (RRRLF) in India was set up in 1972 in the sweet memory of Raja Rammohan Roy of Bengal. Its head office is located in its own building. This foundation is on autonomous body running under the Department of Human Resources and Development of Government of India. Indian Governments provides full financial assistance to it for its handling. It helps State Central Libraries and District Central Libraries, which has helped many states and Union Territories develop rural public library services.

Organization of the Foundation

The president of this foundation is the minister of human Resources and Development Government of India, and there are other members of this foundation also. The members of it may be famous librarians, library science experts, and the representative of India Library Association. There is administrative committee for its administration. This foundation has on office also in which there is a director, one area officer, one executive officer, one accountant and so many other staff members.

Objectives of RRRLF

The objectives of this foundation are as follows

- 1. To promote the library movement with the assistance of state governments by making the planning of the progress of public libraries in the country.
- 2. To provide financial grants of public libraries through the state library planning committees constituted by various state governments,
- 3. To do efforts for enacting library acts in various states of the country.
- 4. To do efforts for the construction for national library police in the country.
- 5. Provide technical support to public libraries.
- 6. Establish a national library network by linking the National Library, State Central Library, District Library
- 7. Establishment of Regional Library Service Centre for the country
- 8. To advise the government in the library program
- 9. Promotion of research in problems of library development.
- 10. Periodic publication of reports on library development.

Activities and Programmes of the Foundation

This foundation plays a role by arranging following activities in the country to fulfill its aim and objectives.

1) Financial Assistance to Libraries

This foundation has started so many projects for the benefits of public libraries in the country. Out of them under some projects full matching grant and under some projects 50% matching grant is provided by this foundation.

2) Financial assistants to Library Association

This foundation also provides financial assistance at time to time to library associations of various states and other organization to organize seminars, conferences, workshop etc.

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3) Efforts for Library Legislation in the Country

This foundation always does efforts for promoting library acts in all the states of the country. For this it always writes letters and reminders to education ministers and other related officials to chief ministers of the states where library act has yet not been passed. The efforts done by this foundation in this regard are very much important in the country.

4) National Library Policy

This foundation set up a working group in 1981 to prepare a plan for national policy on libraries in the country. The group prepared its plan in 1983 and submitted it to central government. On the recommendations of this working group the Indian government constituted the committee for national policy on library and information system under the chairmanship prof. Chattopadhyaya. The committee submitted its report in May, 1986 to the minister of human Resources and development, Government of India which is being implemented in the country.

5) Public Programme

The foundation publish a journal called Granthana: Indian Journal Of Library Studies in English language. It also brings out a quarterly named Raja Rom Mohan Roy Library Foundation Newsletter to give publicity to its activities and to disseminate information on library services in different parts of the country.

6) Collection of Statistics

For effective planning and promotion of public library services, the foundation has taken up the task of collection of information on such libraries on a regular basis. It is also envisaged to help update the foundations Directory of Indian Public libraries.

7) Research work and Advisory Functions

The director of the foundation renders advisory and consultancy service to the department of culture, Government of India and different state Governments whenever necessary. In 1987-88, A Research committee was constituted for advising the foundation in matters of Research projects.

8) Library Establishment

In the year 1981-82 a special library on library and information was setup in the office of the foundation. This library has subscribed 20 journals and is being developed to function as an important resource center in library and information science discipline.

9) Assistance to Organize Seminars/ Workshops

The fact that library services must continuously evolve and improve in terms of both content and quality has been organized by the foundation. This objective has guided the adoption of this plan. All states are eligible for assistance under the programme, which comes from two sources: matching funds and foundation own funds (non-matching). Only organizations that have been approved by the corresponding state governments are eligible to receive this matching fund grant. Financial support from the non-matching fund is provided to all India library associations, including Indian Library Association.

10) Assistance to State Central Libraries and District libraries

The foundation distributes the books purchased by itself to state and district libraries in the country. The administrative committee of the foundation has laid down detailed guidelines for selection of titles of the books under this scheme.

11) Assistance to Voluntary Organization Providing Public Library Services

This is the voluntary organization outreach programme that the foundation is offering to promote public library services. Under this programme, the recipient organization is required to bear half of the project's expenses. The program's goal is to provide funding to nonprofit organizations that support public libraries so they can buy books. furnishings and equipment, as well as for the additions and modifications made to the library's structure.

12) Training Programmers

Under the government of India's Hindi Teaching Scheme, the foundation has taken action to install the official language implementation programmer and teach the personnel in using Hindi. As part of the celebration, the foundation also hosts an extempore elocution competition in Hindi for staff members who do not speak Hindi.

13) Inspection of Libraries

The Inspection and Monitoring unit of this foundation regularly conducts library inspections. The foundation inspects volunteer-run libraries and public libraries of all kinds to ensure that the funds it provides are used appropriately and for the intended purposes.

14) Celebration of 21st Birthday Anniversary of Raja Rammohan Roy

On the occasion of 21st Birthday Anniversary of Raja Rammohan Roy the foundation organized a national seminar on secularism in India Rammohan to Nehru.

15) Public Libraries Database

The foundation decided to setup an Integrated Research Cell-Cum-Computer Unit with a view to developing a database of public libraries of the country.

CONCLUSION

Hence, In the end we see that the foundation not only pursued its regular activities of rendering assistance to libraries but also stepped up its promotional activities for qualitative improvement of public libraries in the country as a whole.

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A STUDY OF AWARENESS AND USAGE OF OPEN ACCESS RESOURCES AMONG RESEARCH SCHOLAR OF RTM NAGPUR UNIVERSITY

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ABSTRACT

This research paper explores the awareness and usage of open access resources among research scholars of RTM Nagpur university. The objective of the study is to explore the usage of open access resources by researchers of RTM Nagpur university. A well designed structural questionnaire on Google form was used to collect data from the researchers. The findings of the study shows that research articles, theses and e-books are extensively used open access resources for course and research work. Training and online tutorials can be helpful in overcoming the problems faced by researchers in using open access resources.

Keywords: Awareness, Open Access, Open Access Sources, OA, RTMNU, Researchers, RTM Nagpur University

INTRODUCTION

Now a day most of the academic libraries are facing financial problems in such situation Open Access Resources have proved to be a boon for research scholars and academicians. The prices of the print journal or print resources are increasing. Libraries are not able to procure most of the important resources for their users which especially affect the researchers. Library users today request information in various formats from various sources. So open access resources fulfil the requirements of the researchers free of cost. Open Access holds promise to remove both price and permission barriers to the scientific communication by using Internet.

Over the past three decades, the development of information and communication technology (ICT) has brought about revolutionary changes in social communication patterns and information behaviour. The digital revolution not only changes scientific communication methods but also gives rise to a large amount of scientific literature such as books, theses, journals, reports, research articles, and research papers. etc. (Kaba & Said, 2015). This large amount of information, now available on the Internet in digital form, has increased access and preservation problems.

The official start of open access took place in 2002 with the release of the "Budapest Open Access Initiative" (BOAI). BOAI defines OA as: By "open access" to the material we mean the immediate and free availability of the material on the public Internet and allowing any user to read it , download, copy, distribute, print, search or hyperlink the full contents of articles, explore them for indexing, transmit them as data to software or use them for any purpose. any other lawful purpose, without financial, legal or technical barriers other than those inseparable from accessing the Internet. The only restriction on copying and distribution, as well as the unique role of copyright in this regard, is to give authors control over the integrity of their work and the right to be acknowledged and excerpted. ("Budapest Open Access Initiative", 2002).

LITERATURE REVIEW

There are many studies on open access initiatives, perceptions and usage of open access publications.

Kaba and Said (2015) found in their study that faculty members had good knowledge and positive perceptions of OA resources. They regularly use OA resources for teaching, learning, and research activities. Faculty with high levels of awareness or usage have very positive perceptions of open access resources. Bennett (2013), in studying the role of publishers in science communication, notes the general acceptance of open access by many commercial publishers. Most publishers have introduced some type of open access model within their existing journal programs. Nick (2012), in his research, explains that publications Open access is globalizing research results as they improve the dissemination and distribution of information, support active learning and provide fields of study about nursing informatics. Fidishun (2010) in his personal blog comments that "the transformation is happening too fast, too dramatic so there are very few opportunities to approach, adapt and respond to impact on science communication. Beard (2012) conducted a survey titled "Survey of Open Access Resources." knowledge of postgraduate students and how to use open access journals" to attract students' interest in open access publishing. Okoye and Ejikeme (2011), in their study titled "Open Access, Institutional Repositories and Academic Publishing: The Role of Librarians in Southeast Nigeria", found that the majority (88.89%) Among the respondents who knew about open access journals and their benefits, only 13.33% had published articles in open access journals. One study supports the need for more outreach programs to educate librarians about the benefits of open access. Russell (2011) emphasizes the role of the academic community in improving the visibility of research results and the importance of the open access movement.

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- To explore the preferred open access resources used by the researchers.
- To study the extent of awareness of research scholar of RTMNU regarding OA resources.
- To find out the problems faced by researchers in using open access resources.

METHODOLOGY

A structured questionnaire was designed using Google form and distributed among the research scholar of RTM Nagpur University through e-mail. As a followup, we did carry out personal and telephonic interactions, based on the inputs acquired from the questionnaire administered. Total 100 questionnaires were online distributed out of which 88 questionnaires were returned. However, only 83 questionnaires were considered relevant to carry on the study further.

DATA ANALYSIS AND INTERPRETATION

Distribution of Respondent

Sr, no	Gender	Total
1	Male	63
2	Female	20
Т	Total	

Table 1: Gender wise distribution of respondent

The questionnaire was distributed among 83 researchers RTM Nagpur University in which 63 respondent are male and remaining 20 respondents are female from different research domain.

Mode of Searching Online Information

Mode	Male	Female	Total
Google Search Engine	63 (76 %)	20 (24%)	83 (100%)
Google Scholar	59 (71%)	18 (22%)	77 (93%)
Institutional Repositories	44 (53%)	13 (16%)	57 (69%)
Online Journal	61 (73%)	20 (24%)	81 (97%)
Open Access Resources	38 (46%)	12 (14%)	50 (60%)

 Table 2: Mode of Searching online Information

The data presented in Table 2 reveals that Google search engine (100%) is the most preferred channel for all categories of respondents when it comes to searching information, followed by online journal (97%), Google Scholar (93%) and institutional repositories (69%). While interestingly, searching information through open access resources is found to be the least preferred mode 50 (60%) among the research scholar.

Frequency of Usage

	Research Scholar	Percentage
Daily usage	43	51.81%
Weekly usage	33	39.76%
Monthly usage	5	6.02%
Rarely usage	2	2.41%
Never usage	0	0%

Table 3: Frequency of usage of OA resources

The above table 3 reveals that 51.81% research Scholars make use of OARs on daily basis followed by 39.76% on weekly basis. 6.02% make use of OA resources monthly basis, 2.41% users rarely use OA resources. It clearly shows that trend of using OA resources is at higher side among the researchers.

Usage of Various Types of Open Access Resources

Types OA resources	Very Often	Often	Sometimes	Rarely	Never
Conference Papers	43 (51.81%)	22 (26.51%)	10(12.04%)	3(3.61%)	5(6.02%)
DOAJ	61(73.49%)	15(18.08%)	7(8.43%)	0	0
e-books	19(22.89%)	31(37.35%)	29(34.94%)	3(3.62%)	1(1.20%)
Shodhganga	35(42.17%)	25(30.12%)	22(26.51%)	1(1.20%)	0
Open J-Gate	49(59.04%)	11(13.25%)	13(15.66%)	4(4.82%)	6(7.23%)
Table 4: Types of open access resources used by research Scholars					

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Table 4 shows that majority of the research scholar' access DOAJ(73.49%). 59.04% scholars access Open J-Gate. About 59.04% Scholars use conference papers and 42.17% of the respondents use Shodhganga. E-books are used by 22.89% respondents.

Awareness on Open Access Resources

Purpose of using OA Resources

Purpose	Very Often	Often	Sometimes	Rarely	Never
For Ph. D. Course work	38 (45.78%)	19(22.89%)	21(25.30%)	5(6.03%)	0
For Ph. D. research work	61(73.49%)	18(21.69%)	2(2.41%)	2(2.41%)	0
To prepare research article	52(62.65%)	18(21.69%)	10(12.05%)	3(3.61%)	0
Other purposes	11(13.25%)	58(69.88%)	1(1.20%)	13(15.67%)	0
			2		

Table 5: Purpose of using OA Resources

This table indicates that OA Resources are widely used for Ph. D. Research work(73.49%) and to prepare research article (62.65%). About 45.78% use open access resources for Ph. D. Coursework and 13.25% for other educational purposes.

Benefits of using OA resources

Benefits	Strongly Agree	Agree	Neutral	Strongly	Disagree
				Disagree	
Free of Cost availability	61(73.49%)	22(26.51%)	0	0	0
Ease of Access	38(45.79%)	42(50.60%)	3(3.61%)	0	0
Able to get all	31(37.35%)	39(46.99%)	2(2.41%)	1(1.20%)	10(12.05%)
information at one place					
Time saving	26(31.33%)	38(45.78%)	2(2.41%)	6(7.23%)	11(13.25%)
	Table (Danaf	its of using OA			

Table 6: Benefits of using OA resources

Table 6 shows that 73.49% of the research Scholars use open access resources because due to free of cost availability. About 45.79% use Open access resources because of ease of access and 37.35% use these to get the whole information at one place instead of collecting the information from various sources. 31.33% uses open access resources because of its time saving to collecting the information

FINDINGS

- 1) It is found that majority of Research Scholars were aware of OA resources.
- 2) It is found that 100% research scholars are use Google Search for searching online information.
- 3) Majority of research scholars use OA resources as daily basis.
- 4) Majority of research scholars are use DOAJ.
- 5) 73.49% research scholars are use OA resources for the purpose of Ph. D. Research work
- 6) Majority of research scholars are use open access resources because due to free of cost availability.

CONCLUSION

Open Access Resources are published widely in a variety of forms. The use of open access resources is boosting up due to the easy availability and convenience on the part of the users. Publishing of open access resources has increased dramatically in every field of knowledge, but its use has not increased steadily due to lack of awareness and infrastructure. It is the responsibility of the LIS research department and LIS professionals to make researchers aware of open access resources. Publishers should showcase their products and services by organizing seminars, conferences and workshops in collaboration with educational institutions. Libraries should be self-sufficient provides links to open access resources on library websites. It will allow users to utilize resources for research and development activities of organizations.

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BIBLIOMETRIC STUDY OF ACADEMIC ENVIRONMENTAL ISSUES AND CHALLENGES

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ABSTRACT:

The study is based on the Scientometrics analysis of 971 research article published during the period of 2019-2023. This Study will review on Relative growth rate, Collaborative Index In Stem Cell and regenerative medicine, Co - Authorship Pattern of contribution, no of Author wise distribution, Author Producvity, degree of collaboration, country-wise distribution, document type distribution, the findings must reveal various aspects of the characteristics and patterns of contributions of the study.

Keywords: Bibliometric, Academic, environmental, issues, Challenges.

INTRODUCTION

The term _Bibliometrics' was first used by Alan Pritchard in 1969 to denote a new discipline where quantitative methods were employed to probe scientific communication process by measuring and analyzing various aspects of written documents. Bibliometrics is an emerging thrust area of research from different branches of human knowledge. Bibliometrics has become a standard tool of science policy and research management in the last decades. All significant compilations of science indicators heavily rely on publication and citation statistics and other, more sophisticated bibliometric techniques. Bibliometrics is a quantitative evaluation of publication patterns of all macro and micro communication along with their authorship by mathematical and statistical calculation.[Sengupta,1985] Bibliometrics can be applied to any subject area and to most of the problems concerned with written communication. It helps to monitor growth of literature and patterns of research. This paper studies the bibliometric analysis of the literature published in the Journal of Documentation.

Academic, environmental, issues, Challenges

E-learning has become a necessity in higher education institutions and is being deployed in educational establishments throughout the world. Researchers have made much emphasis on its benefits but not much is discussed on the disadvantages of e-learning technology. This paper references some of the research work on the limitations of e-learning technology, categorises it in five challenges that teachers are faced with and suggestions for a successful e-learning outcome. This paper also discusses the use of e-learning technology in Middlesex University and some of the challenges they face. Lastly this paper identifies gaps in e-learning literature and calls for further works on this subject

The organizational patterns of academic libraries are thought to be a barrier to providing these students with access to instruction and information appropriate to their educational style. Librarians would like to take advantage of student enthusiasm, creativity, and technical skills.

SCOPUS DATA:

scopus is Elsevier's abstract and citation database launched in 2004.^[1] Scopus covers 36,377 titles (22,794 active titles and 13,583 inactive titles) from 11,678 publishers, of which 34,346 are peer-reviewed journals in top-level subject fields: life sciences, social sciences, physical sciences and health sciences. It covers three types of sources: book series, journals, and trade journals. Scopus also allows patent searches in a dedicated patent database Lexis-Nexis, albeit with a limited functionality.^[2]

All journals covered in the Scopus database are reviewed for sufficiently high quality each year according to four types of numerical quality measure for each title; those are *h*-Index, CiteScore, SJR (SCImago Journal Rank) and SNIP (source normalized impact per paper). For this reason, the journals listed in Scopus are considered to be meeting the requirement for peer review quality established by several research grant agencies for their grant recipients and by degree accreditation boards in numerous countries.^[3]

REVIEW OF LITERATURE:

Bibliometrics is recent and most active field of —Library and Information science. The word bibliometrics appeared in print in Alan pitchards article statistical bibliography or bibliometrics. (Khaparde, 2011). Bibliometrics has been known by other names, including —Statistical analysis of the literature while Hulme used the term —Statistical bibliography in 1923. (Khaparde, 2013). Verma, Tamrakar and Sharma (2007)

revealed that majority of the articles in the journal are two-authored and majority of the contributions are from New Delhi. Singh, Mittal and Ahmad (2006) conducted a bibliometric study of literature on digital libraries. The important findings are that most articles (61 percent) are single authored; author productivity is not in agreement with Lotka's Law, except in one case where the number of articles is three; the maximum number of articles were published in 2003 with English being the most productive language; maximum articles were published in the journal Dlib Magazine; distribution of articles nearly follows Bradford's Law; and USA ranked first for maximum number of journals. Tiew (2000) found that 53% of articles contained journal self-citations, and a tendency is noticed for authors affiliated to the institution publishing the journal to cite the journal. Patra, Bhattacharya and Verma (2006) analyzed the growth pattern, core journals and authors' distribution in the field of bibliometric using data from

Library and Information Science Abstract (LISA) and found that the growth of literature does not show any definite pattern. Dhiman (2000) has done ten year bibliometric study Ethno botany Journal published during 1989-1998. In this paper examines year-wise, institution-wise, country-wise, authorship pattern, range of references cited and length of the articles.

SCOPE AND LIMITATION OF THE STUDY:

The present paper is to provide a sketch of Bibliometric study of Academic environmental issues and Challenges. A total number of 971 research Article were identified from the Scopus Database. For this Study total 05 year time period taken i.e. During 2019-2023.

DATA COLLECTION :

Collected from the Journal for the period of 2019-2023 i.e. 5 years. A total number of 971 publications were received. The data was download and analyzed by using the Excel sheet. The data is used to find the year wise, no of authors, page no, institution document types in the journal of Academic environmental issues and Challenges.

OBJECTIVES OF THE STUDY

- 1. Year wise contribution of distribution
- 2. No. of authors wise contribution of distribution
- 3. Document types of contribution of distribution
- 4. Page No. contribution of distribution.
- 5. Institution wise contribution of distribution

DATA ANALYSIS:

1. Table No. 1 Authors wise contribution of distribution

Table No. 1				
Sr.No	No. of Authors	Frequency	Total	
1	Single Author	100	10.30	
2	Two Authors	129	13.29	
3	Thrree Autho	86	8.86	
4	Four Authors	98	10.09	
5	Five And more than Authors	290	29.87	
6	NA	268	27.60	
	Total	971	100.00	





Table No. 1& Figure no.1 shows that in the 5 years period, the multi authorship publications are higher and predominant than single authored. The multi authored articles are highest i 290,(29.87%) multi authorship.

2. Table No . 2 No of Page wise contribution distribution

Table No. 2				
Sr. No.	Page No	Frequency	Percentage	
1	0-5	71	7.31	
2	006-10	158	16.27	
3	011-16	178	18.33	
4	17-21	101	10.40	
5	22-26	195	20.08	
6	NA	268	27.60	
	Total	971	100.00	



The Distribution of contributions (page No) is shown in Table No. 2 & Gig no. 2 out of the total 971 contributions majority of the contributions i.e. Higest page page no. i.e 22-26 195, (20.08%)contributions were contributed in page No were as minimum contributions i.e. NA 268 (27.60%)& lowest page no i.e 0-5, 71(7.31%) contributions were contributed.

Table No. 3	3 Year wise	contribution of	distribution
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Table No.3				
Sr.No.	Year wise	Frequency	Percentage	
1	2019	147	15.14	
2	2020	162	16.68	

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3	2021	198	20.39
4	2022	202	20.80
5	2023	262	26.98
	Total	971	100.00



The Distribution of contributions (year-wise) is shown in Table No. 3& Graph no. 3out of the total 971contributions majority of the contributions i.e. 202 contributions were contributed in 2022 were as minimum contributions i.e. 262(26.98%)contributions were contributed in 2023.

Table No.4 Document type	s contribution of	distribution
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Table No.4						
Sr. No.	Document Types	Frequency	Percentage			
1	Article	552	56.85			
2	Book	75	7.72			
3	Book chapter	87	8.96			
4	Conference Paper	156	16.07			
5	Editorial	11	1.13			
6	Note	4	0.41			
7	Reviw	86	8.86			
	Total	971	100			



Table No. 4 & Figure no.4 gives the publications were divided in to 10 document types, the form wise distribution of publications out of the total 971 publications, 552(56.85%) publications were in article form. Followed by other document type such as conferece paper 156, (16.07%) Books chapter Article 87 (8.96%) Review Article 86 (8.86 %), Original Article & Editorial 11 with (1.13%) respectively

Table No.5						
Sr. No.	Institute	Frequency	Percentage			
1	School	71	7.31			
2	Institute	158	16.27			
3	Department	178	18.33			
4	University	296	30.48			
5	NA	268	27.60			
	Total	971	100.00			

Table No. 5. Intitution wise contributioon of distribution

Table No. 5& Figure no5.the publications were divided in to Instition wise, distribution of publications out of the total 971 publications, (56.85%) publications were in article form. Followed by other document type such as conferece paper 156, (16.07%) Books chapter Article 87 (8.96%) Review Article 86 (8.86%), Original Article &Editorial 11 with (1.13%) respectively



Fig No. 5

CONCLUSION

Librarians are dedicated to maintaining the importance and relevance of the academic library as a place of intellectual stimulation and a center of activity on campus. Even so, some feel that libraries are becoming marginalized. Librarians believe that it is essential that we emphasize information literacy instruction and the importance of the teaching role of librarians. We must find ways to promote the values, expertise, and leadership of the profession throughout the campus to ensure appreciation for the roles librarians do and can play. Though access to information is increasingly decentralized, and computer labs now compete with libraries as campus gathering points, librarians must demonstrate to the campus community that the library remains central to academic effort.

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REQUIRED SKILL FOR LIS PROFESSIONAL IN DIGITAL ENVIRONMENTAL

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ABSTRACT

There are lot of skills and abilities that librarians need in order to succeed. These can range from being trained to create or update library websites to working successfully co libraries technical staff and the users of library. Continuing professional development is an essential part of the modern library information professional successful career planning & prospects. In the modern library application of new ICT in to the libraries immediately requires improvement if different kinds of skill & knowledge. The advancement of IT has bought incredible changes in the library and information services subsequently the role and expectation of Librarian.

Keywords: IT, Skills, Librarian, LIS Professional

INTRODUCTION

Today librarians in the new information & technology era are confirmed with a number of challenges. The libraries of 21st century have to be conceived not only as the storehouse of knowledge but an effective mechanism to facilitate dissemination of knowledge promoting and sharing intellectual property. Due to impact of ICT the academic activities, researchers, faculty and student used it provides a wealth of new course materials and act as powerful supplement to the traditional ways of studying and learning. Libraries at present acquire and keep not only just books but also video CD's, e-books, e-journals, databases and multimedia items.

Continuing professional development is an essential part of the modern library. The work of library professional is also likely changed in the new digital environment; to manage the library effectively the librarian should have better knowledge of all digital services. Updating of knowledge and continuous staff training on emerging technologies as essential to learn, improve and develop various kinds of professional skills, knowledge and competencies. Application of computer communication methods, online access to e-books, e-journals, e-knowledge bank, PDF documents, tele-text, teleconferences, bulletin board etc have been the revolutionary development in last few days. Professional competences enable librarian to respond effectively and efficiently to the unique competencies of the LIS professionals are discussed in the following paper.

Managerial Skills

Library management involves functions such as planning, organizing, leading, and controlling. Planning is about systematically making decisions about the library goals. Organizing is about assembling and coordinating human, financial, physical, informational, and other resources needed to achieve library goals. Leading is about functions that involve efforts on the part of the librarian to stimulate high performance by employees, and controlling about monitoring various library operations and services. These four management functions are highly integrated, but libraries that excel in organizing material resources and in leading their human capital are known to give better performance. Keeping in view the fact that libraries in adult education set ups are, by design, small budget libraries, confined to one room space, and adult education staff manages them manually on part time basis, these four management functions would occur in varying degree. In such a typical set up, the functions of organizing and controlling would receive greater attention compared to other two functions. For managing a library you may take the following step-by-step approach.

Technical Skills

The basic role of librarian is to provide access to information those who need it and it is the need of time that librarian keep up with technology & certain basic skills. The role of librarian has changed in present digital era so the library and Librarian must have the knowledge of WWW, Networking, and online OPAC, translate library in online form, printers, scanners, website development, and familiar with library software packages.

Two main benefits of digital collections are:

- 1. Access whereby institutions can provide multiple and simultaneous users with remote access to a variety of digital objects, including photographs, manuscripts, books, etc.; and
- 2. Preservation whereby a digital copy can help preserve the original objects.

Communication (soft) skills

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Communications - a library at the beginning of the relationship issues that need to be considered in the processing of the communication process and the items of income involved in this process. Communication - the most powerful corporate relationship between the libraries is the point. In general, communication is defined as a message exchange between people through symbols emotions, thoughts and knowledge is transferred throughout the process. Communication channels used in the communication process, i.e., where the means of the communication is extremely important. For example, the library's communications manager, one of the parties talking face to face with a librarian to look the other way, still one of the parties in the conversation of the telephone ringing and asking for permission to talk to the opposite side of such factors as the start of factors appears to be blocking the way of communication.

Presentation Skills

The presentation skills are required in report writing, library committee meetings and even in daily work which represents the library management overall for users. It not only emphasizes the individual skills but also from library presentation by means of its decoration, user's guides, and library ambience.

Customer Service Skills

Customer is library user and to satisfy his information needs is customer service. The librarians are always giving attention to their users and providing services through CAS, SDI or other specialized services. The customer service emphasizes the customer satisfaction, which guarantees that user will always come back to library.

Marketing Skills

Marketing approaches are proving to be effective in assisting academic libraries to adjust to changes in its client base and will ensure that services delivered continue to fit the needs. The products and services provided by libraries range from knowledge access and research support to printing services and the provision of information skills, supported by one on one assistance and advice. Strategies examining the distribution and delivery of services and their successful promotion will ensure that those who need information are provided it.

Preservation Skills

Proper care of library collections is necessary with a view to prolong its life. This requires preserving and protecting books against decay and deterioration. As preventive measures, dusting and cleaning of books and shelves must be carried out on regular basis. Books must be exposed to adequate air and sunlight for a short time in case the library room does not get sufficient sunlight. Avoid keeping books is in damp places. Pest control treatment may be got done on periodic basis. Books and other reading material may be got bound from time to time. Besides, book supporters may be used to keep books upright on the shelves. Reference books such as dictionaries, encyclopedias, directories and picture books are costly and heavy in weight. They must be handled with care. As like traditional library in digital library environment, also the librarian should have the preservation skill for the E-Resources. In the borderless E-Library though all the documents as are in the digital form, but they are not fully secured. Different computer virus can attack the digital library databases and affect them very badly. The hacker can also hack the borderless digital library with their dangerous intelligent skills Therefore; the library professional should have the knowledge of cryptography, firewall, and different anti-virus software for prevention and preservation of E-Resources.

Time Management Skills

The fourth law of library science discuss about the time management of library. In the five laws fourth law reads as-"save the time of the readers" then "save the time of the staff" was added not as a separate law, possibly as a corollary instead of two ences, only one sentence has been preferred which takes care of both.

CONCLUSION

The role of the LIS professional is long lasting to involve with the integration of internet and WWW. The evaluation, acquisition, organization, sharing and distribution of information in all format likes books, periodicals, online databases, e-resources are an integral part of their expertise. As libraries plan and implement services for the future they will need to make sure that use of information is put within the grasp of all users. A managers aims to marketing & promoting of the product but the LIS professional aims to marketing and promoting library services, the most significant transition of LIS professional is helping users their customers with conducting research over internet. Librarian skill in navigating through data is a key role to our future.

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POTENTIAL OF ARTIFICIAL INTELLIGENCE (AI) IN TRANSFORMING LIBRARIES IN THIS DIGITAL LANDSCAPE

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ABSTRACT

In this era of rapid technological advancement, libraries are undergoing a profound transformation, leveraging the capabilities of artificial intelligence (AI) to enhance services and meet the evolving needs of the digitalsavvy user community. It has revolutionised the library industry by enhancing user experiences, optimising operational efficiency, and adapting to digital needs. AI-driven recommendation systems enable libraries to provide personalised content suggestions, while automation of routine tasks allows librarians to focus on more complex activities. AI tools also enable libraries to use data analytics to predict user preferences and plan for future trends. As libraries embrace AI, they become dynamic hubs that preserve knowledge and engage with users, fostering a collaborative environment. However, ethical considerations, data privacy, and responsible AI deployment are crucial. This paper explores the potential of AI in libraries in terms of its ability to redefine information management, access, and utilization. As libraries embrace these advancements, they become adaptive and responsive entities, playing a central role in disseminating knowledge in the digital landscape.

Keyword: Artificial Intelligence, Digital Library, Library Automation, Transformation of Library.

INTRODUCTION:

Libraries are undergoing a digital transformation driven by the integration of artificial intelligence. This shift is transforming the core operations of libraries, elevating services and meeting user needs in the digital age. The integration of artificial intelligence signifies a democratization of knowledge, fostering innovation, and reshaping the essence and purpose of libraries. As societal norms evolve, libraries must adapt, and embracing Artificial Intelligence has emerged as an essential strategy. AI applications are transforming cataloging processes and user experiences, enabling libraries to better serve their diverse communities. The integration of AI in library systems offers opportunities and challenges, including enhanced efficiency and resource management, and an unprecedented democratization of access to information. This paper focused on exploration of ethical considerations and the evolving role of librarians, in this digital age and aims to illuminate the path forward for libraries as they embrace the potential of Artificial Intelligence.

What is Artificial Intelligence (AI):

Artificial intelligence (AI) is the creation of computer systems capable of performing tasks that traditionally require human intelligence, such as speech recognition, decision-making, and pattern identification. It uses technologies like machine learning, deep learning, and natural language processing. Despite its widespread use, AI remains a complex and evolving field in computer science. AI systems aim to mimic human cognitive functions like learning, reasoning, problem-solving, perception, and language understanding.

Definition:

Heath (2018) defines artificial intelligence as a technology that enables machines to plan, learn, reason, solve problems, move, and be creative. Its main focus is perception, reasoning, and action, with reasoning being fundamental in intelligence gathering and involving internal processes or programming logic.

The McGraw-Hill Encyclopaedia of Science and Technology (2007) defines "artificial intelligence as a subfield of computer science that focuses on understanding intelligence, designing intelligent systems, and heuristic reasoning methods using common assumptions and rules".

Russell and Norvig agree with Turing that AI must be defined in terms of "acting" and not "thinking". However, they are critical that the test compares machines to people. "Aeronautical engineering texts," they wrote, "do not define the goal of their field as making 'machines that fly so exactly like pigeons that they can fool other pigeons.'

Google defines artificial intelligence as the use of symbolic inferences and machine knowledge representation for intelligent tasks like logical thinking, learning new abilities, and adapting to new situations and problems.

Evolution of Artificial Intelligence (AI):

The concept of artificial intelligence dates back to ancient Greece, but significant milestones in its evolution include Alan Turing's publication of Computing Machinery and Intelligence in 1950, John McCarthy coining the term 'artificial intelligence' in 1956, and the creation of the Logic Theorist in 1967. Frank Rosenblatt built

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the Mark 1 Perceptron, the first computer based on a neural network that learned through trial and error. In the 1980s, neural networks using a back propagation algorithm became widely used in AI applications. IBM's Deep Blue beat world chess champion Garry Kasparov in 1997, and IBM Watson beats Ken Jennings and Brad Rutter at Jeopardy! in 2011. Baidu's Minwa supercomputer uses a convolutional neural network in 2015 to identify and categorize images more accurately than the average human. DeepMind's AlphaGo program beat world champion Lee Sodol in 2016, and Google purchased DeepMind for \$400 million. In 2023, large language models (LLMs) like ChatGPT significantly change the performance of AI and its potential to drive enterprise value, allowing deep-learning models to be pre-trained on vast amounts of raw, unlabeled data.

Components of Artificial Intelligence:

Understanding the AI components is crucial for grasping the breadth and depth of Artificial Intelligence and its applications across various domains. The field of AI continues to evolve, with ongoing research and advancements expanding its capabilities and impact. AI comprises several key components including Machine Learning, Deep Learning, Natural Language Processing (NLP), Computer Vision, Robotics, Expert Systems, Reinforcement Learning, and AI ethics.

Machine Learning Involves: Training computer systems to learn from data and improve performance over time, using techniques like neural networks, decision trees, and support vector machines.

- Robotics uses AI to perceive and perform tasks autonomously, with applications in manufacturing, healthcare, and space exploration.
- Expert systems mimic human decision-making abilities in specific domains, while reinforcement learning involves agents learning by interacting with the environment and receiving rewards or penalties.
- AI ethics include concerns about bias, privacy, job displacement, and autonomous decision-making.
- Deep learning uses artificial neural networks to model and solve complex problems, particularly in image and speech recognition.
- NLP focuses on understanding, interpreting, and generating human language, essential for chatbots, language translation, and sentiment analysis.
- Planning and Decision Making- AI systems can plan sequences of actions and make decisions based on goals and available information.
- Computer vision interprets visual information, used in facial recognition and autonomous vehicles.
- Robotics uses AI to perceive and perform tasks autonomously, with applications in manufacturing, healthcare, and space exploration.
- Expert systems mimic human decision-making abilities in specific domains, while reinforcement learning involves agents learning by interacting with the environment and receiving rewards or penalties.
- Speech Recognition -AI systems can recognize and interpret human speech, enabling voice-activated interfaces and systems.
- AI ethics include concerns about bias, privacy, job displacement, and autonomous decision-making.

Potential of Artificial Intelligence in Transforming Libraries

AI has the potential to significantly improve library services in the digital world. Here are some key ways in which AI can contribute to the transformation of libraries:

• Enhanced Search and Discovery:

AI algorithms can significantly improve search capabilities, providing more accurate and relevant results to users. Natural Language Processing (NLP) enables more sophisticated and context-aware search queries, making it easier for users to find the information they need.

• Personalized User Experience:

Recommendation Systems: AI can analyze user behavior, preferences, and history to offer personalized recommendations for books, articles, or other resources, creating a tailored user experience.

• Collaboration and Resource Sharing:

AI can facilitate collaboration among libraries by optimizing resource sharing and interlibrary loans. Intelligent systems can help identify potential collaborations and partnerships based on shared interests and goals.

• Enhanced Security Measures: Cyber security:

AI can bolster security measures, protecting libraries from cyber threats and ensuring the safety of sensitive information.

• Adaptive Learning Environments:

AI in Education: Integrating AI into educational platforms within libraries can offer adaptive learning experiences, catering to diverse learning styles and need

• Virtual Assistants and Chatbots:

24/7 Assistance: AI-powered virtual assistants and chatbots can provide instant and round-the-clock assistance to users, answering queries, guiding them through resources, and offering support.

• Automation of Routine Tasks:

AI can automate repetitive tasks such as cataloging, sorting, and data entry, freeing up library staff to focus on more complex and value-added activities. Chatbots and virtual assistants can handle routine inquiries, providing quick and efficient customer service.

• Data Management and Analysis:

AI can assist in managing and analyzing large datasets, providing insights into user behavior, preferences, and library usage patterns. Advanced analytics can inform decision-making processes related to library services and resource management.

• Digital Preservation:

AI can assist in the preservation of digital collections by automating processes related to metadata creation, format migration, and quality control. Machine learning algorithms can aid in identifying and mitigating risks to digital assets.

• Learning and Research Support:

AI-powered tools can support users in their research endeavors, helping them identify relevant resources, generate citations, and stay updated on the latest developments in their field. Virtual research assistants can guide users through complex research processes.

• Adaptation to Emerging Technologies:

Libraries can use AI to stay abreast of emerging technologies and trends in the digital landscape, ensuring that they remain relevant and responsive to user needs.

• Automatic Cataloging and Classification:

AI can automate the process of cataloging and classifying library materials. This can save librarians a lot of time and effort, and it can also help to ensure that materials are correctly classified and easy to find.

• Increased Efficiency:

AI can automate many tasks that are currently done by librarians, such as cataloging and classification. This can free up librarians to focus on other tasks, such as providing customer service and developing new programs and services.

• Reduced Costs:

AI can help libraries to save money by automating tasks and improving efficiency.

• Data Privacy and Ethics:

Libraries can play a crucial role in ensuring ethical AI use, addressing concerns related to data privacy, bias, and transparency in AI algorithms.

• Language Translation Services:

Breaking down language barriers, AI-powered translation services enable libraries to offer content in multiple languages, fostering inclusivity and catering to diverse user groups.

• Intelligent Gateways to Online Sources:

Intelligent Gateways are central hubs connecting IoT devices with limited compute and storage to the cloud, managing data and securing IoT systems.

• Intelligent Document Delivery Services (DDS) :

DDS is utilizing AI and automation technologies to enhance its quality and efficiency, optimizing workflows, costs, and accuracy, and enabling the use of computer systems for tasks typically requiring human intervention.

AI, libraries have the potential to become dynamic, technology-driven hubs that not only preserve knowledge but also provide innovative services and experiences to their users in the rapidly evolving digital landscape. The careful and ethical integration of AI technologies can amplify the impact of libraries in serving diverse and evolving community needs.

Current Challenges and Considerations:

- As libraries embark on the transformative journey of integrating Artificial Intelligence (AI) into their core functions, they encounter a spectrum of challenges and considerations that demand careful examination. The seamless infusion of AI into the library ecosystem brings with it a set of complex issues, ranging from ethical dilemmas to practical implementation hurdles. In this section, we delve into the current challenges and considerations that underscore the quest to unleash the potential of AI within libraries.
- The integration of Artificial Intelligence (AI) into libraries presents numerous challenges, including ethical concerns and digital inclusion, data security, resource allocation, user engagement, trust, and maintaining human-centric approaches.
- Ethical considerations include privacy, bias, and responsible technology use, while digital inclusion and accessibility are crucial for ensuring that AI-driven enhancements do not exclude individuals or communities with limited access to technology.
- Data security and privacy are also critical, as AI involves the collection and analysis of vast amounts of data, and libraries must prioritize the security and privacy of user information.
- Resource allocation and training are also critical, as AI implementation requires substantial investment in technology and human resources.
- Libraries must foster user engagement and trust in AI technologies, overcoming skepticism and apprehension through effective communication, user education, and transparent policies.
- Finally, libraries must maintain human-centric approaches, balancing automated efficiency with the personal touch of librarians, while preserving the unique value that human interaction brings to the library experience.
- In navigating these challenges and considerations, libraries can pave the way for a responsible and impactful integration of AI. The following sections of this article will explore strategies and best practices to address these issues, ensuring that the potential of AI is harnessed in a manner that aligns with the core values and missions of libraries.

CONCLUSION

Artificial intelligence (AI) is transforming the future of libraries by enabling them to overcome challenges, streamline operations, and enhance user experiences. As libraries navigate ethical considerations, accessibility, and user trust, they must ensure that AI is harnessed in a manner that aligns with their foundational principles. The impact of AI on libraries is multi-faceted, reshaping information retrieval and introducing personalized user experiences. Librarians, as custodians of this transformation, become lifelong learners, guiding their communities through the uncharted territories of AI integration. The synergy between human expertise and machine intelligence is a defining characteristic of this evolution. Librarians remain indispensable in curating, interpreting, and contextualizing information, while AI streamlines processes. The essence of libraries, rooted in human connection, curiosity, and community, is not diminished but enhanced by the infusion of AI. Libraries emerge as resilient institutions capable of balancing technological progress with unwavering commitment to inclusivity, privacy, and ethical stewardship. The journey of transforming libraries through AI unfolds as a collaborative effort involving librarians, technologists, policymakers, and communities. Together, they navigate the uncharted waters of this digital era, steering libraries toward a future where the transformative potential of AI is fully realized, and the flame of knowledge burns brighter than ever before.

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EFFICIENT LIBRARY OPERATIONS: USING RFID TECHNOLOGY

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ABSTRACT

This research paper explores the integration of RFID (Radio Frequency Identification) technology into library operations to enhance efficiency. RFID technology has emerged as a promising solution for automating various tasks within libraries, including inventory management, circulation control, and patron services. This paper examines the benefits, challenges, and implementation strategies associated with RFID adoption in libraries. Drawing upon existing literature and case studies, it provides insights into the transformative potential of RFID technology in optimizing library workflows and improving user experiences.

Keywords: RFID technology, library operations, efficiency, inventory management, circulation control, patron services.

INTRODUCTION

Libraries serve as fundamental pillars of knowledge dissemination and education, catering to the diverse needs of communities, students, and scholars alike. The evolution of library operations has seen a significant shift from traditional manual processes to more automated systems, driven by the pursuit of efficiency, accuracy, and improved user experiences (Johnson & Morgan, 2017). In this context, Radio Frequency Identification (RFID) technology has emerged as a transformative tool, offering libraries the means to revolutionize their operations and adapt to the demands of the digital age. The importance of efficient library operations cannot be overstated. Libraries, whether in academic institutions, public spaces, or specialized organizations, play a pivotal role in facilitating access to information, fostering research endeavors, and promoting lifelong learning (American Library Association, 2015). However, traditional library workflows, characterized by manual cataloging, checkout processes, and inventory management, often prove labor-intensive, time-consuming, and susceptible to human error.

The transition from traditional to automated systems represents a natural progression in the quest for operational excellence within libraries (Dempsey, 2015). Automated systems leverage technology to streamline processes, optimize resource allocation, and enhance service delivery. Central to this transition is the integration of RFID technology, which offers libraries a versatile and robust platform for achieving greater efficiency across various facets of their operations. RFID technology enables the wireless identification and tracking of library materials through the use of RFID tags affixed to books, media, and other assets (Finkenzeller, 2010). Unlike traditional barcode systems, RFID tags do not require line-of-sight scanning and can be read quickly and in bulk, allowing for rapid inventory management and circulation control. Moreover, RFID systems offer enhanced security features, enabling libraries to deter theft, monitor item movements, and safeguard their collections.

The objectives of this research paper are firstly, to elucidate the pivotal role of RFID technology in enhancing efficiency within library operations, and secondly, to provide insights, analysis, and recommendations for libraries seeking to adopt or optimize RFID systems. By exploring the benefits, challenges, and implementation strategies associated with RFID technology, this paper aims to equip librarians, administrators, and stakeholders with the knowledge and tools necessary to harness the full potential of RFID technology in advancing library services and maximizing user satisfaction.

In the subsequent sections, we delve into the intricacies of RFID technology, examine its applications in library contexts, discuss the challenges and considerations of RFID implementation, and outline best practices and strategies for successful deployment. Through this exploration, we endeavor to contribute to the ongoing discourse surrounding efficient library operations and the transformative power of technology in shaping the future of libraries.

RFID TECHNOLOGY:

Radio Frequency Identification (RFID) technology has transformed various industries, including libraries, by offering efficient solutions for inventory management, circulation control, and patron services. This section explores the principles, components, and advantages of RFID systems in library contexts, comparing them with traditional barcode systems.

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Principles and Components of RFID Systems:

RFID systems consist of three primary components:

- 1. **RFID Tags**: These small electronic devices contain a microchip and an antenna. The microchip stores information about the tagged item, such as its title, author, and unique identifier. The antenna enables communication between the tag and RFID readers.
- 2. **RFID Readers**: These devices emit radio waves and capture data transmitted by RFID tags within their vicinity. Readers can be stationary or handheld, and they serve to retrieve information from tags and transmit it to the library's backend system for processing.
- 3. **Backend Database:** The backend database stores and manages the data collected from RFID tags. It facilitates various library operations, including inventory management, circulation control, and patron services, by organizing and processing tag information.

RFID systems operate based on radio frequency signals, allowing seamless communication between tags and readers without the need for direct line-of-sight contact.

Comparison with Traditional Barcode Systems:

RFID technology offers several advantages over traditional barcode systems commonly used in libraries:

- Scanning Method: Unlike barcode systems, which require line-of-sight scanning and manual manipulation of items, RFID systems enable non-contact, bulk scanning. RFID readers can simultaneously identify multiple items within their read range, significantly reducing the time and effort required for inventory management and circulation tasks.
- **Data Capacity**: RFID tags have a much higher data capacity compared to barcodes, allowing them to store more detailed information about library materials. This enhanced data capacity enables libraries to track additional metadata, such as item location, status, and circulation history, providing valuable insights into collection usage patterns and trends.
- **Durability and Longevity**: RFID tags are generally more durable and resistant to wear and tear than barcode labels. They can withstand harsh environmental conditions, including moisture, temperature fluctuations, and physical damage, ensuring the longevity and reliability of library collections.

Advantages of RFID Technology in Library Contexts:

RFID technology offers several key advantages that enhance library operations and improve user experiences:

- Efficient Inventory Management: RFID systems enable rapid and accurate inventory audits, allowing libraries to maintain up-to-date records of their collections with minimal manual intervention. Automated inventory management processes reduce staff workload and ensure the availability and accessibility of library materials.
- Streamlined Circulation Processes: RFID-enabled self-checkout stations and automated circulation systems expedite the borrowing and returning of library materials, enhancing patron convenience and satisfaction. Patrons can quickly and easily access and borrow items without relying on library staff assistance.
- Enhanced Security Measures: RFID tags can be integrated with security gates and detection systems to prevent theft and unauthorized removal of library materials. RFID-enabled security measures provide real-time monitoring and alerts, allowing libraries to safeguard their collections and deter potential security threats.

Benefits of RFID in Library Operations:

Radio Frequency Identification (RFID) technology has proven to be a valuable asset in library operations, offering a range of benefits that enhance efficiency, security, and user experiences. This section outlines the key advantages of implementing RFID in library settings.

Efficient Inventory Management and Shelf Auditing:

- RFID technology enables libraries to conduct rapid and accurate inventory audits. With the ability to read multiple RFID tags simultaneously, librarians can efficiently track and manage large collections.
- Shelf auditing becomes more streamlined, as librarians can quickly identify misplaced items and ensure that the catalog reflects the actual placement of each book or resource.

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Expedited Circulation Processes and Self-Checkout Options:

- RFID-enabled self-checkout stations enhance the borrowing and returning process for patrons. This automation reduces wait times and provides users with a convenient and user-friendly experience.
- The fast and non-line-of-sight scanning capability of RFID tags expedites circulation processes, allowing patrons to check out multiple items at once without the need for manual scanning.

Enhanced Security and Theft Prevention Measures:

- RFID tags can be integrated into security gates and detection systems at library exits. This integration enhances security measures by triggering alarms if items with active RFID tags are taken without proper checkout procedures.
- The non-removable nature of RFID tags and their capacity to store unique identifiers contribute to effective theft prevention, acting as a deterrent against unauthorized removal of library materials.

Improved Patron Services and User Experiences:

- RFID technology improves overall patron services by reducing manual tasks and wait times. Patrons can quickly locate and borrow items, enhancing their overall experience.
- RFID systems also allow for personalized services, such as automated book recommendations and tracking a patron's borrowing history for more tailored assistance.

Challenges of RFID:

Implementing RFID technology in library operations brings numerous benefits, but it also poses various challenges and considerations that must be addressed. This section explores key challenges associated with RFID adoption in libraries.

Cost Considerations and Budget Constraints:

- The initial investment required for RFID infrastructure, including tags, readers, software, and staff training, can be significant for libraries with limited budgets.
- Ongoing maintenance costs, including tag replacement and system upgrades, should also be factored into budget considerations.

Infrastructure Requirements and System Compatibility:

- RFID systems require compatible infrastructure, including RFID readers, antennas, and backend databases. Libraries may need to upgrade their existing infrastructure to support RFID technology.
- Ensuring interoperability and compatibility between RFID systems and existing library management systems (LMS) is essential to seamless integration and functionality.

Privacy Concerns and Data Protection Regulations:

- RFID technology raises privacy concerns related to the collection and storage of patron data. Libraries must implement robust data protection measures to safeguard patron privacy and comply with relevant regulations, such as the General Data Protection Regulation (GDPR).
- Strategies for anonymizing patron data and implementing access controls can mitigate privacy risks associated with RFID systems.

Staff Training and Change Management Initiatives:

- Introducing RFID technology requires comprehensive staff training programs to ensure that librarians and support staff are proficient in operating and maintaining RFID systems.
- Change management initiatives are necessary to address resistance to change and facilitate the adoption of RFID technology among library staff. Clear communication, training sessions, and ongoing support are essential components of successful change management strategies.

Implementation Strategies:

The successful implementation of RFID technology in library operations requires careful planning and strategic considerations. This section outlines key strategies for a smooth adoption of RFID systems.

System Selection and Vendor Evaluation:

• Thoroughly assess the requirements of the library to determine the most suitable RFID system. Consider factors such as the size of the collection, user needs, and existing infrastructure.

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• Conduct a comprehensive vendor evaluation to ensure that the selected RFID solution aligns with the library's objectives and offers scalability for future needs. Evaluate vendor reputation, system reliability, and ongoing support services.

Tag Placement and Data Migration Considerations:

- Develop a meticulous plan for RFID tag placement on library materials. Consider factors such as tag visibility, interference with item aesthetics, and the optimal placement for efficient scanning.
- Plan for data migration from existing library systems to the RFID database. Ensure a seamless transition of information, including item details, patron records, and circulation history, while maintaining data accuracy.

Staff Training and Stakeholder Engagement:

- Implement comprehensive staff training programs to familiarize librarians and support staff with the operation and maintenance of RFID systems. Training should cover tag application, reader usage, and troubleshooting procedures.
- Engage stakeholders, including library staff, administrators, and IT personnel, in the implementation process. Foster a collaborative approach to address concerns, gather feedback, and ensure a shared understanding of RFID technology benefits.

Patron Education Initiatives and User Support Services:

- Develop educational materials and initiatives to inform patrons about the introduction of RFID technology, its benefits, and changes in library procedures. Clear communication can mitigate concerns and promote a positive user experience.
- Establish user support services, such as help desks and online resources, to assist patrons with RFID-related queries. Provide guidance on self-checkout procedures, locating RFID-enabled services, and addressing common issues.

Future Directions of RFID:

As libraries continue to evolve in the digital age, Radio Frequency Identification (RFID) technology stands at the forefront of innovation, offering transformative solutions for enhanced library services. This section explores emerging trends, potential applications, and the transformative impact of RFID in libraries.

Emerging Trends and Innovations in RFID Technology:

- Enhanced Data Analytics: Future RFID systems are likely to leverage advanced data analytics for more comprehensive insights into library usage patterns, helping librarians make informed decisions regarding collection development and resource allocation.
- Integration with Internet of Things (IoT): RFID technology may integrate with IoT, allowing libraries to create smart and interconnected spaces. This could involve real-time monitoring of environmental conditions, predictive maintenance of library assets, and personalized user experiences.
- Extended Applications beyond Books: RFID technology can expand its applications to various library assets beyond books, including multimedia resources, archival materials, and specialized collections, offering a holistic solution for diverse library needs.

Potential Applications in Library Services and User Interactions:

- **Personalized Services**: RFID-enabled systems can facilitate personalized services, such as recommending relevant materials based on user preferences, tracking reading habits, and providing tailored notifications about upcoming events or new acquisitions.
- Interactive Learning Spaces: Libraries may transform into interactive learning spaces with RFID technology, offering augmented reality experiences, interactive exhibits, and immersive educational content to engage patrons and foster a dynamic learning environment.
- Seamless Integration with Digital Resources: RFID systems can seamlessly integrate with digital resources, allowing users to access both physical and digital materials with ease. This integration enhances the user experience by providing a unified platform for diverse information sources.

CONCLUSION

The adoption of RFID technology in libraries has not only streamlined operational processes but also redefined the user experience. From efficient inventory management to personalized services, RFID has proven to be a

catalyst for positive change within library environments. As libraries embrace emerging trends and innovations in RFID technology, they position themselves at the forefront of information management, catering to the evolving needs of patrons in the digital era.

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OPEN/FREE SOURCE SOFTWARE FOR LIBRARY and INFORMATION MANAGEMENT

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ABSTRACT

In this paper, we have focused on open source software in the field of libraries, and have highlighted the features of several useful open source library software.

INTRODUCTION

In the current digital era, majority of library services are information technology-based, with the resources available in digital and electronic formats. To manage all kinds of resources and facilitate their retrieval, libraries require highquality integrated software, including cuttingedge retrieval tools. However, the steep price of such software prevents most of the libraries from using them. To tackle this issue, and for the benefit of scholars and the library community, various NGOs/organizations/individuals have developed software that are distributed free of cost. Known as free/open source software, these are widely available on the Internet and can be downloaded, installed, and distributed for free. Few examples include DSpace, Koha, NewGenLib, Green Stone, ABCD, E-Prints, Fedora, and so on.

There were several reasons behind the perceptible need for such software in library and information resource management. These were:

- Workload—speedy disposal of tasks;
- Multifaceted tasks;
- Upgradation of library services and systems;
- Changed formats of information resources such as e-resources, online resources, digital documents, and so on;
- Changing pattern in users' demand for information;
- Preservation of information; Round-the-clock remote access to resources;
- Keeping track for administration of institutional research work;
- · Revolutionary changes occurring in the publishing industry; and
- Exchange of information across different platforms.

In developed countries, the first steps towards library automation had been taken several years ago, in response to changing information demand and emergence of new trends in information management. Different software applications were developed either on contract basis by commercial software firms or by in-house teams of software developers and library professionals. Gradually, with the development of complete software solutions on the basis of expertise gained by interactions with the libraries, software development firms started making inroads into the library software market. These developments gave a concrete shape to the library software market. The market was further benefited by affluent organizations when they started earmarking significant amounts to software in their library budget.

However, the situation is different in underdeveloped nations and developing countries like India, where cost sensitivity is higher. In these countries, people care more about the cost of software than, say for example, an average American does (Behlendorf 2008). Moreover, libraries and information centres of these regions are known to face financial problems in matters related to infrastructural development, software applications, manpower deployment, and so on. Inspired by development initiatives in libraries of the USA, UK, and other developed nations, governments, library professionals, and academicians of developing and underdeveloped countries realized that in the emerging scenario, they would have to work towards infrastructural development of libraries and information centres so as to hasten educational, research, and development activities. Particular emphasis was given on aspects like library automation and application of different categories of software for library and information management. Many organizations, research centres, universities, and commercial organizations were eager to adopt software applications in their libraries. However, the high costs of library

software—irrespective of whether these were bought from the market or developed in-house—proved to be a hindrance for most libraries, barring those few who had sufficient library budget and capability to invest considerable amounts in proprietary software. Till date, a large number of libraries in schools, colleges, and other institutions in countries like India are yet to start even the automation process, mainly due to the ever-increasing costs of proprietary software solutions and the equally steep costs associated with in-house software development.

Investment on Software

Understanding the needs of libraries, new private software firms entering the market for library software began to make automation software available at affordable prices. Keeping in mind the ever-changing requirement affected by the emergence of latest technological trends, they kept improving and upgrading their software on a regular basis. These software firms also developed application software for modern library systems to fulfill prevalent needs such as building digital libraries, institutional repositories, managing online resources, and so on. With these innovations in library software business, proprietary software firms grabbed the market. As a result, the costs of proprietary software started rising, ultimately reaching a stage when only affluent organizations could afford these software applications. With only a few software firms developing these software, competition was less, thereby fuelling the rising prices. Some firms manufacturing low-cost library software did appear in the market, but being new in the field they were unable to immediately grasp the intricacies in functionalities, and thus could not fulfill the needs of libraries in an appropriate manner.

Hence, it is obvious that using proprietary software entails a financial burden for libraries with low budget due to the high costs of software, AMC charges of vendors, cost of upgraded versions, and so on. Details of a few premier library proprietary software available in the Indian library software market, along with their financial implications, are described in Table 1 (below).

As shown in Table 1, investment in proprietary software is not a plausible option for most lowbudget libraries and information centres, who give the utmost consideration to the following economic factors while planning the use of proprietary software packages:

- Costly software;
- High AMC charges;
- Expenditure on customer supports;
- Cost of upgraded versions;
- · Cost of accompanying software; and
- Delay in customer support.

Table 1: Software Available in Indian Library Software market, with financial implications

Tuble 1. Software Avanable in metan Elorary Software market, with infancial implications						
Sr. No.	Name of	Brief Description	Cost in Rs.	AMC		
	Software		(approx.)	(approx.)		
1.	LIBSYS 4	All Housekeeping activities	0.4 million	10-12% of the		
		WEB OPAC		software cost		
2.	Alice for	All Housekeeping activities	0.26 million	10-15% of the		
	Windows	WEB OPAC		software cost		
3.	NetLib	All Housekeeping activities	0.1 million	10% of the		
		WEB OPAC		software cost		
4.	Liberty 3	All Housekeeping activities	0.45 million (for	10-15% of the		
		WEB OPAC, RSS feed,	3 users)	software cost		
		Z39.50				
5.	VTLS	All Housekeeping activities	2.9 Million (for 8	10-18% of the		
		WEB OPAC, RSS feed,	Users)	software cost		
		Z39.50	, ,			

Source: User libraries of each of the mentioned software.

Emergence of Open Source Software

We tend to treat anything offered for free with suspicion. The suspicion results from a fear of hidden costs. Free/open source software (F/OSS) is no exception to this rule. However, the fact is that such software is genuinely free for use under the Open Source Licence. A free software movement was started in 1984 by Richard M Stallman based on his personal belief in 'freedom' of information, and his increasing disillusionment

with software vendors who were not supplying source code along with executable code for hardware devices such as printers (Elliot and Scacchi 2008). Virtual communities formed over the Internet are the main contributors to the development of F/OSS. These communities include individuals, researchers, academicians, government bodies, corporates, academic institutions, and so on. Development of F/OSS is the result of the economic and social movements by these communities in the software field. With time, this movement has spread all across the world, and has taken an organized form with the creation of different consortium and forum in support of OSS initiatives or projects. Perens (2005) has categorized the various open source contributors as:

- Volunteers;
- Linux distribution companies;
- Companies with a single open source programme as their main product;
- Companies for whom open source software enables sales of hardware or solutions;
- Businesses belonging to the service industry;
- End-user businesses and their contractors;
- Government bodies; and
- Academicians and scientific researchers.

As mentioned above, open source software is the result of collaborative efforts by individuals or communities bound together by similar kinds of jobs and software requirement. Usually, the initial development occurs inhouse under a contract development paradigm. Eventually, the software is released to the public, generally before it is considered a 'finished product'. Thus, OSS is made available lot earlier than a retail product (Perens 2005). Further, OSS users can modify the software, adding extra functions as per their needs.

Numerous writers have defined the term 'free/ open source software' differently, but all these definitions tend to have the same meaning. OSS programmes are those whose licence permits users the freedom to run the programme for any purpose, study and modify the programme, and freely redistribute copies of the original or modified programme (without having to pay royalties to previous developers) (Wheeler 2007).

The definition of 'free' software, as mentioned in the GNU website, clears any confusion about the term. It states that 'free' means:

- The freedom to run a programme for any purpose;
- The freedom to study how the programme works and adapt it to one's needs. Access to the source code is a precondition in this regard;
- The freedom to redistribute copies of the programme; and
- The freedom to improve the programme, and release the improvements to the public so that the whole community benefits. Access to the source code is the precondition in this regard. *Source:* www.gnu.org/philosophy/free-sw.html

It should also be mentioned that the terms 'free software' and 'open source software' have slightly different meanings. However, as far as this discussion is concerned, we shall not be delving into details on these aspects.

To understand the concept of free/open source software, one first needs to understand what is meant by 'software development'. Software, or a software programme for any specific task is designed by writing the source code using a scripting language. This is known as 'software programming', which is usually the job of a computer programmer. The source code enables a computer to perform a specific task by translating the source code into an executable programme. As long as access to the source code is restricted, the programme cannot be modified. Moreover, such a programme can only be installed and used for the specific task it is designed for. Software developers must permit access to the source code of proprietary/commercial software are restricted under the licence of their use. On the other hand, open source licence provides freedom to access the source code of a programme. However, access to the source code is simply a basic characteristic of OSS, and is not enough to define such software. According to the website of Open Source Initiative, the following criteria must be complied with in the case of OSS:

• Free redistribution;

- Source code sharing;
- Derived works;
- Integrity of the author's source code;
- No discrimination against any person or groups;
- No discrimination against fields of endeavour;
- Distribution of licence; Licence must not be specific to a product;
- Licence must not restrict other software; and
- Licence must be technology-neutral.

'Open source' refers only to the legal terms of the distribution licence (Dorman 2005). Thus, open source software refers to software that is distributed under the open source licence, where the term 'open source' refers to the legal terms of the licence. There are two basic types of open source software license, namely, GNU public licence (GPL) and lesser (library) general public licence (LGPL). Hein (2004) has described these licences as follows:

- **GPL:** It emphasizes that original work and derived works must remain free. GPL is ideal for developers who wish to prevent inclusion for a proprietary or commercial product.
- LGPL: In this licence, the internal code is GPL, but the software that interacts through published interfaces is not considered as derived work. It permits use of LGPL libraries in proprietary or commercial products.

Another important open source licence is MIT/BSD/Apache. Most of the other open source licences, including IBM, Intel, Mozilla, Apple, Nokia, Sun, Lucent, and a few others are based on the above-mentioned basic licences.

OSS in the Field of Library and Information Management

In comparison to other sectors, the emergence of F/OSS in the field of library science and information management is a more viable option because cooperation and coordination are the key issues in library science. Library professionals have always focused on cooperation, resource sharing, consortium, open access, open standards, open archives initiatives, and so on in order to help each other in collection development and implementation of tools and technologies, among others. This attitude and the prevalent economic situation have facilitated the development of F/OSS in the field of library science and information management.

In the initial stage of development, due to lack of awareness on technical aspects, right of use, sustainability, and so on, there was a lot of confusion among librarians and others about F/ OSS. For instance, several arguments have been put forward that free software, by its very nature, is not well supported, and can only be installed and made ready to use by computer experts (Dorman 2004). This misconception prevented non-computer professionals and librarians to opt for this type of software, who preferred the easyto- use commercial software that had user-friendly interface.

But, now F/OSS is on its way towards becoming the preeminent solution due to the various emerging problems related to proprietary software. Library professionals have started to take advantage of F/OSS for their requirements without any fear. Similarly, numerous libraries and information centres are now successfully using F/OSS for fulfilling their requirements. Open Source Software for different uses in library and information management are now being made available by various organizations and other institutions. The different categories of software in the field of library and information resource management in which open source software are being developed are as under:

- Software for library automation (bibliographic database);
- Software for digital library management;
- Software for repository management;
- Software for e-resource management;
- Software for bibliography management; and
- Software for thesaurus. Not only can OSS in the above categories be used easily without any technical expertise, it can also be modified, upgraded, and customized to fulfill any other requirement with the help of a little knowledge of scripting languages. Today, numerous projects are being carried out towards the

development of open source software in the field of library and information management, thus making it possible to choose the one best suited for oneself. Some of these OSS are described below:

КОНА

KOHA has the distinction of being the first open source integrated library management system, which includes all the main functions related to library management. It is a web-based open source software distributed under the general public licence. The KOHA Development Team offers to host the website for KOHA library system on its server. KOHA also has the capacity to manage digital libraries and online and offline electronic resources.

Features:

- Comprises basic library functions such as acquisition, cataloguing, serial control, circulation, Web OPAC, and so on;
- Simple and comprehensive acquisition options;
- Facilitates RSS feed of new acquisitions;
- Tailored catalogue module for special libraries;
- E-mail and/or text patron's overdues and other notices;
- Simple, clear search interface for all users;
- Supports standards and protocols like MARC21, UNIMARC, Z39.50, and so on;
- Same tool for managing online and offline resources;
- Easy barcode printing;
- Allows multitasking and enables updates of circulation, cataloguing, and so on; and
- Supports Linux, Unix, Windows, and Mac OS platforms.

ABCD

ABCD, a popular library management software, is promoted and coordinated by BIREME, with support from VLIR. ABCD is a webbased software for the ISIS community that comprises the main library functions. The first version of ABCD (v1.0) was released on 5 December 2009.

Features:

- Published as free and open source software with accompanying tools for the developer community;
- Comprises basic library functions such as acquisition, cataloguing, data entry, circulation, Web OPAC, and so on;
- Integrated with basic statistics package for various types of report generation, statistical functions, and a powerful circulation system;
- Compatible with programming languages accepted by the GNU licences such as PHP, Java, JavaScript, Python, and so on. The current version of ABCD is written in PHP v.5 and IsisScript;
- Multilingual system in four languages, namely, Spanish, English, French, and Portuguese. Can also be developed in other languages;
- Uses MARC-21 and supports Dublin Core, METS, and Z39.50;
- Any number of databases can be created, while existing databases of WinISIS can also be copied;
- Compatible with CDS/ISIS database technology for bibliographic databases;
- Allows easy print generation, printing of barcodes, SDI services through user profile, and other online services; and
- Runs on both Windows and Linux platforms.

NewGenLib

NewGenLib is another integrated library management system distributed free under the GNU general public licence. This software is the result of collaborative efforts of Kesavan Institute of Information and Knowledge Management (KIIKM), a professional charitable trust and Versus Solutions Pvt. Ltd (VSPL), a software

development company. Before 2007, when it became an open source product, it was already in use in 122 libraries of India, Syria, Sudan, and Cambodia as a commercial product.

Features:

- Available under GNU GPL v3;
- Functional modules are completely web-based; uses Java Web Start[™] technology;
- Compatible with MARC-21, MARC-XML, z39.50, SRU/W, and OAI-PMH;
- Uses mainly open source components;
- Scalable, manageable, and efficient;
- Uses z39.50 client for federated searching;
- Is an internationalized application (I18N);
- Unicode 3.0 complaint; Arabic version available;

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- Easily extensible to support other languages;
- Data entry, storage, and retrieval in any (Unicode 3.0) language;
- RFID integration; and
- Supports both Windows and Linux.

D-Space

D-Space, a system for management of institutional repository, was developed jointly by MIT Libraries and Hewlett-Packard Labs in 2002. It is distributed under the BSD Open Source Licence, with a few restrictions. D-Space has become the choice of academic, commercial, and other organizations when it comes to maintaining institutional repositories due to its ability to efficiently manage different types of materials like books, research papers, theses, preprint, technical reports, images, videos, and so on. As per the Directory of Open Access Repositories, as on 6 December 2010, a total of 1,805 open access repositories had been registered worldwide, out of which 659 repositories (37%) are using DSpace.

Features:

- Written in Java, with PostgreSQL, Lucene, and Apache/Tomcat;
- The system is organized into communities, sub-communities, and collections;
- Supports all types of digital formats, including books, theses, data sets, computer programmes, bibliographic datasets, images, audio files, video files, learning objects, web pages, and so on;
- Allows submission of multiple formats of the same. For example, a TIFF file and a GIF file of the same image;
- Multi-user system for both maintenance and searching;
- Long-term physical storage and management of digital items in a secure, professionally managed repository, with important functions such as backup, mirroring, disaster recovery, and so on;
- All records have a persistent identifier;
- Access control over items in repository at collection and individual item levels;
- Supports standards such as Dublin Core, OAI PMH V2.0, UNICODE, and so on;
- Allows easy migration of items in the system across newer versions;
- Able to interoperate other systems in the organization; and
- Allows customization of subsystems as per requirement.

E-Prints

E-prints was the first freely available open source software (since 2000) for building high-quality and highvalue institutional repositories. It was developed at the University of Southampton's (UK) School of Electronics and Computer Science, and distributed under the GNU licence. It is one of the most widely used repository software, and enjoys the largest installed base among this category of software. According to the Directory of Open Access Repositories, as on 6 December 2010, out of a total of 1,805 open access repositories that had been registered worldwide, 296 repositories (16%) were using E-Prints.

Features:

- Easiest and fastest way to set up repositories of research outputs of literature, scientific data,
- theses, and reports or multimedia artifacts;
- Easy to install, configure, and maintenance;
- Supports huge number of digital formats such as research papers, theses, patents, audio, video,
- images, scientific data, fine arts compositions, exhibition, and teaching resources;
- Facilitates browsing and viewing of records by any complex criteria;
- Basic and advanced search facilities;
- Efficient management of bibliography;
- Provides RSS feed for the entire repository;
- Maintains quality of metadata;
- Fast deposits from disk or directly from the web and quick import of data from other
- repositories;
- Warning on deposition of duplicate or similar records;
- Flexible plug-in architecture for developing extensions;
- Search output can be exported in different formats such as METS, Dublin Core, and other
- formats;
- Special facilities for registered users;
- Written in Perl, with MySQL and Apache;
- Multi-language support; and is OAI compliant.

Greenstone

Greenstone is an OSS for building and distributing digital library collections. It helps in organizing and publishing information on the web as well as in CD-ROM. Greenstone has been developed by the New Zealand Digital Library Project at Waikato University, and is distributed and promoted in cooperation with UNESCO and Human Info, an NGO. It is distributed under the GNU general public licence. As per the Directory of Open Access Repositories, as on 6 December 2010, out of a total of 1,805 open access repositories registered worldwide, 24 (1%) were using Greenstone.

Features:

- Supports various operating systems such as all versions of Windows and Linux, Sun Solaris, and Mac OSX;
- Different interfaces for user choice for collection-building like command mode, web, and Java-based GUI interface;
- Multimedia and multilingual support;
- Content development in three alternate ways;
- Indexing of terms from full text of documents and metadata associated with the documents;
- Variety of search and browse options and customization there of, as per requirement;
- Structured metadata in XML using Dublin Core;
- Extraction of existing metadata, already associated with a document;
- Supports various type of file formats such as HTML, PDF, DOC, RTF, e-mail, plain text, PPT, image, video, and so on;

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- Use of plug-in for converting the file format in to standard XML-based internal format for indexing purposes;
- Interoperability and OAI compliant;
- Tight administrative functions, allows password protection; and
- Customization of various features fulfilling specific user requirements.

FEDORA (Digital Library)

FEDORA stands for Flexible Extensible Digital Object Repository Architecture. It was initially developed by Sandra Payette and her team in 1997 as a research project funded by DARPA and NSF at Cornell University. After several architectural modifications, version 2.1 was released in 2005. The current version is 3.1. Presently, the project is funded by the Andrew W Mellon Foundation and the Gordon and Betty Moore Foundation, and is directed by Sandy Payette from Cornell and Thornton Staples from the University of Virginia.

Features:

- Distributed under the terms of the Apache licence;
- FEDORA supports ingest and export of digital objects in a variety of XML formats;
- The FEDORA digital object model allows tight management of metadata and digital content, irrespective of format;
- FEDORA server architecture is based on four main application programming interfaces (APIs): manage, access, search, and the Open Archival Initiative service;
- Digital objects are stored as XML-encoded files that conform to an extension of the METS schema; FEDORA digital object has a primary Dublin Core record;
- The OAI Protocol for metadata harvesting is a standard for sharing metadata across repositories;
- FEDORA repository system provides a search interface for both full text and field-specific queries across metadata fields;
- FEDORA repository system includes a batch utility as part of the management client that enables mass creation and loading of data objects;
- · Comprises component management module and parameterized disseminators; and
- Access control and authentication based on IP address.

Advantages of F/OSS

- Free/Open Source Software are available absolutely free of cost to anyone who needs it. With just the basic IT infrastructure in place and after investing a small amount, libraries can go ahead in using these software;
- Most of the accompanying software required for operating any F/OSS are also distributed free of cost under open source licences;
- Library professionals can access the source code to understand the functionalities, and modify the same if they want additional features;
- User communities and developers of most of the F/OSS are always ready to offer solutions to any technical problem related to the software. No dependency on commercial experts for customer supports;
- No delay in getting answer for queries;
- Manuals and relevant documentation for the F/OSS are also distributed by the developers of the software;
- Prevents the misuse of monopoly positions in the field of software;
- Gives full right to use the software in any way and redistribute it after modification;
- Most of the F/OSS support international standards with features of interoperability across different platforms;
- F/OSS can be tested for the requirement of any library and replaced with another in case it is found to be unsuitable to the specific context. As such, the most suitable software can be selected without investing money on replacing existing software; and

• The use of F/OSS in libraries also encourages library professionals in acquiring knowledge on software programming and generating awareness in the field of information and communication technology.

CONCLUSION

With the open source software movement gaining steam, the world is now enjoying the advantages of collaboration and cooperation in software development. Open source software are slowly but surely gaining in popularity among developers and user communities. Educational institutions, research organizations, government enterprises, NGOs, and libraries have all started using operating systems, web servers, library management systems, institutional repositories, course management systems, content management systems, and so on—all belonging to the category of open source software for various purposes. OSS has, in fact, become a trendsetter in the arena of software development and distribution.

Libraries with small budgets have always considered automation of housekeeping operations as a financial burden due to the high cost of software. However, development of open source software is an effective way to automate library operations without undertaking substantial financial investment. Librarians need to understand open source licence for promoting the use of OSS. This is the only way to face the challenges posed by commercial software in the market. It will also increase the autonomy and control of these professionals over software solutions. In conclusion, the advent of open source library software has ushered in a revolution in the field of library and information resource management, and has become a popular choice for most library and information science professionals because of its numerous benefits and useful features.

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APPLICATION OF OPEN-SOURCE SOFTWARE (FOSS) IN LIBRARIES: CHALLENGES AND OPPORTUNITIES

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ABSTRACT

Open source library software's does not need the initial cost of commercial software and enables libraries to have greater control over their working environment. Library professionals should be aware of the advantages of open source software and should involve in their development. They should have basic knowledge about the selection, installation and maintenance. Open source software requires a greater degree of computing responsibility than commercial software. Library professionals do not think seriously about the advantages of open source software for automation and hence are reluctant to use it.

Keywords: Foss, Libraries, Challeges, Opportunities

INTRODUCTION

Free and Open-Source Software (FOSS) has emerged as a powerful and cost-effective alternative for libraries seeking to enhance their technological infrastructure. The adoption of open-source software in libraries comes with both challenges and opportunities, shaping the way information is managed and disseminated. This article delves into the application of open-source software in libraries, examining the hurdles faced and the promising prospects it offers. (FOSS) refers to software that is both freely available for use and distribution, and whose underlying source code is accessible and can be modified by users. This licensing model encourages collaboration, transparency, and community-driven development. FOSS is built on a set of principles that emphasize the freedom to use, modify, and share software, fostering a collaborative ecosystem of developers and users.

Review

Deshmukh Rahul (2016) Open source software are those which permit execution, copy, read distribution and improvement of the software without any restriction Library Management software(LMS) is an enterprise resource planning system for a library, used to track items owned, orders made, bills paid software are very expensive. Therefore, Open source Library Management system can be appropriate alternatives for automatic library system. (2023) Developing the literature collection in the library is a high quality professional work. Librarians have to play a specific role in the development of the literature collection. In fact, there is a definite need for a strategy if the library prepares a literature collection development strategy and then does the collection development work accordingly. Even though one can argue that the success of FOSS projects is neither automatic nor guaranteed, FOSS has significantly evolved in the last twenty years with an increased adoption rate due to trustworthiness or reliability of some FOSS (Taibi, 2015). As a result, the number of communities is growing and may continue to grow in the upcoming years on account of FOSS becoming a viable alternative to proprietary software or even better (Li et al., 2021). Moreover, FOSS are now considered as good as proprietary software or even better (Li et al., 2022).

Definition

Free and Open-Source Software (FOSS) has emerged as a transformative force in the realm of technology, challenging traditional proprietary models and fostering a culture of collaboration, transparency, and innovation. This paradigm shift has not only redefined the way software is developed and distributed but has also had a profound impact on various sectors, including business, education, and government.

At its core, FOSS embodies a set of principles that grant users the freedom to use, modify, and distribute software without restrictive licensing constraints. Unlike proprietary software, which often comes with licensing fees and closed-source code, FOSS encourages a community-driven approach where developers, users, and enthusiasts collaborate to improve and enhance software applications. This shared ethos has given rise to a diverse ecosystem of freely accessible and customizable tools that cater to a wide range of needs.

Key Principles of FOSS:

1. Freedom to Use: Users have the freedom to run the software for any purpose without limitations or fees, providing accessibility to a broad audience.

- 2. Freedom to Study: FOSS provides access to the source code, allowing users to study and understand how the software functions, facilitating transparency and educational opportunities.
- **3. Freedom to Modify:** Users can modify the source code to suit their specific requirements or address issues, promoting adaptability and customization.
- **4. Freedom to Share:** The ability to distribute both the original and modified versions of the software enables a collaborative environment where improvements and innovations can be shared with the community.

FOSS has found widespread adoption across a multitude of domains, ranging from operating systems and office productivity tools to web servers and content management systems. Iconic examples include the Linux operating system, the Apache web server, and the Firefox web browser. Beyond individual users, enterprises and governments increasingly recognize the value of FOSS for its cost-effectiveness, security, and flexibility.

As we delve into the intricate world of FOSS, this exploration will uncover its applications, challenges, and the profound impact it has had on various sectors. From empowering individuals to fostering global collaboration, FOSS stands as a testament to the power of open and inclusive development in shaping the digital landscape of the present and the future.

Advantages of Open-Source Software in Libraries:

- **1. Cost-Efficiency:** One of the primary drivers for libraries to embrace open-source software is its cost-effectiveness. FOSS eliminates licensing fees, enabling libraries to allocate resources more efficiently and invest in other critical areas.
- **2. Flexibility and Customization:** Open-source solutions provide libraries with unparalleled flexibility. Libraries can customize software according to their unique requirements, ensuring that systems align seamlessly with their workflow and evolving needs.
- **3.** Community Collaboration: The collaborative nature of open-source development fosters a sense of community within the library sector. Libraries can actively participate in and benefit from shared resources, contributing to the improvement of software applications.
- **4. Transparency and Security:** Open-source software's transparent nature enhances security by allowing libraries to scrutinize the source code for vulnerabilities. This transparency promotes a secure environment for managing sensitive data and information.

Challenges in Adopting Open-Source Software in Libraries:

- **1. Integration with Legacy Systems:** Libraries often grapple with legacy systems that may not easily integrate with modern open-source solutions. Transitioning to new software while maintaining compatibility with existing infrastructure poses a significant challenge.
- **2. Technical Expertise:** Implementing and managing open-source software requires a certain level of technical expertise. Libraries may face hurdles in recruiting or training staff with the necessary skills to ensure a successful deployment.
- **3. Vendor Support and Accountability:** Unlike commercial solutions that come with dedicated vendor support, open-source software relies on community forums and collaboration. This lack of a structured support system may lead to accountability issues and longer resolution times for technical problems.

Opportunities for Future Development:

- **1. Collaborative Initiatives:** Libraries can join forces to contribute to and benefit from open-source projects. Collaborative initiatives facilitate the sharing of knowledge, resources, and best practices, ultimately leading to the development of more robust, community-driven solutions.
- **2. Training and Capacity Building:** Recognizing the need for technical expertise, libraries can invest in training programs and capacity building for their staff. Empowering librarians with the necessary skills ensures efficient implementation and maintenance of open-source software.
- **3.** Advocacy and Awareness: Libraries have the opportunity to advocate for the broader adoption of opensource solutions. By raising awareness about the benefits and advocating at institutional and governmental levels, libraries can play a pivotal role in driving widespread adoption.

Open-Source Software (FOSS) in library

There are several open-source software (FOSS) options that are widely used in library settings to manage various aspects of library operations, cataloging, and resource sharing. Here is a list of some prominent open-source software used in libraries:

- **1.** Koha: An integrated library system (ILS) that provides comprehensive functionality for managing library collections, cataloging, circulation, and patron management.
- 2. Evergreen: Another ILS designed to manage library resources, Evergreen is known for its scalability and flexibility, making it suitable for libraries of various sizes.
- **3.** LibreOffice: A free and open-source office suite that includes applications for word processing, creating and editing spreadsheets, and making presentations. It is often used in library administrative tasks.
- 4. **DSpace:** An open-source repository software designed for managing and preserving digital content. It is commonly used for institutional repositories and digital libraries.
- **5. Greenstone Digital Library Software:** A suite of software tools for building and distributing digital library collections. It supports the creation of multimedia collections and is suitable for a variety of content types.
- 6. VuFind: An open-source discovery layer that provides a user-friendly interface for searching and accessing library resources. It can be integrated with various ILS systems.
- 7. **OpenBiblio:** A library automation system designed for small to medium-sized libraries. It includes features for cataloging, circulation, and patron management.
- **8. Omeka:** A web publishing platform for creating online exhibits and digital collections. It is commonly used by libraries, archives, and museums to showcase cultural heritage materials.
- **9. Invenio:** An open-source platform for building large-scale digital repositories. It is often used by research institutions and libraries to manage and disseminate scholarly outputs.
- **10.** Archivematica: A digital preservation system that automates the process of ingesting, preserving, and providing access to digital content. It is suitable for archives and libraries with a focus on long-term preservation.
- **11. ABC Inventory:** While not library-specific, ABC Inventory is an open-source inventory management system that can be adapted for library use, particularly for managing non-book materials.

These open-source solutions offer libraries the flexibility to tailor the software to their specific needs, contribute to the development community, and benefit from collaborative efforts across the global open-source ecosystem. Keep in mind that the landscape of open-source software in libraries is dynamic, and new projects may emerge over time.

CONCLUSION

The application of open-source software in libraries offers a promising avenue for cost-effective and flexible technological solutions. While challenges such as legacy system integration and technical expertise exist, the opportunities for collaborative development and community-driven innovation are substantial. As libraries continue to navigate the digital landscape, embracing open-source software presents a pathway to not only overcome challenges but also to actively shape the future of library technology. Deshmukh Rahul (2023), Developing the literature collection in the library is a high quality professional work. Librarians have to play a specific role in the development of the literature collection. In fact, there is a definite need for a strategy if the library prepares a literature collection development strategy and then does the collection development work accordingly.

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DIGITAL LIBRARY DYNAMICS: IT PROSPECTS AND MANAGERIAL STRATEGIES IN THE MODERN AGE

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ABSTRACT

This exploration delves into the transformative journey of libraries in the digital age, examining prospective approaches and managerial functions shaped by Information Technology (IT). The narrative encompasses the evolution of libraries into dynamic hubs, emphasizing digital transformation, user-centric services, open access initiatives, data-driven decision-making, and collaborative partnerships. The integration of IT applications, including Library Management Systems, RFID technology, and data analytics, is explored as pivotal in enhancing library efficiency and user experiences. The discussion also highlights the adoption of IT for digital catalogs, electronic resources, and virtual learning environments. This comprehensive examination underscores libraries' role as adaptive entities, meeting the challenges and opportunities presented by the modern information landscape.

Keywords: Digital Transformation, Library Management Systems, Information Technology, User-Centric Services, Open Access Initiatives, RFID Technology.

INTRODUCTION

Libraries today are undergoing a transformative journey marked by various prospective approaches aimed at adapting to the evolving information landscape and meeting the dynamic needs of users. A pivotal aspect is the digital transformation, where libraries are embracing digital technologies to transition from traditional to digital formats. User-centric services take precedence, emphasizing user-friendly interfaces, personalized experiences, and interactive features. Open access initiatives are integral, with libraries actively participating in movements promoting free access to scholarly content. Data-driven decision-making, facilitated by analytics, enables libraries to optimize services, collections, and resource allocations. Collaboration and partnerships with institutions, organizations, and publishers expand library resources and services. Technological integration, incorporating AI and machine learning, enhances library offerings. Information literacy programs ensure users navigate and critically evaluate information effectively. Flexible spaces and learning environments cater to diverse learning styles. Community engagement through events and outreach programs connects libraries with local communities. Collection development strategies shift towards digital resources and dynamic acquisition models. Sustainability initiatives focus on eco-friendly practices, and continuous learning for staff ensures they stay abreast of technological advancements and user expectations. These combined approaches position libraries as dynamic, user-centric entities evolving to meet the challenges and opportunities of the modern information landscape.

Information Technology (IT) applications

Information Technology (IT) encompasses the utilization of computer systems, storage devices, and various physical devices to oversee, store, and retrieve diverse data transmitted electronically. The evident proliferation of information technology in contemporary society is largely attributable to the widespread adoption of technology. In the present era, nearly every organization incorporates information technology, underscoring its pervasive influence. This prevalence can be directly attributed to the swift and extensive integration of technology reflects its integral role in efficiently managing and processing the ever-growing volume of electronic data in our technologically-driven world. Information Technology (IT) applications play a crucial role in modern libraries, revolutionizing traditional practices and enhancing overall efficiency. Several key areas highlight the use of IT applications in libraries:

- a) **Library Management Systems (LMS):** IT applications power LMS, streamlining cataloging, acquisitions, circulation, and inventory management. This automation reduces manual workload, enhances accuracy, and provides quick access to information.
- b) **Digital Catalogs and Databases:** IT applications enable the creation and management of digital catalogs and databases, allowing users to search, access, and retrieve resources seamlessly. Online databases offer a wealth of information, including e-books, journals, and multimedia content.

- c) **RFID Technology:** Radio Frequency Identification (RFID) is employed for efficient tracking and management of library resources. RFID tags on books automate the borrowing and returning processes, minimizing errors and improving the overall user experience.
- d) **Online Public Access Catalog (OPAC):** IT applications power OPAC systems, enabling users to search for resources, check their availability, and place holds or requests online. This enhances user accessibility and engagement.
- e) **E-resources and E-journals:** Libraries leverage IT applications to provide access to electronic resources and journals. Users can access scholarly articles, research papers, and other materials remotely, promoting a borderless learning environment.
- f) **Library Websites and Portals:** IT applications facilitate the development of user-friendly library websites and portals. These platforms offer information about library services, resources, events, and policies, promoting effective communication with users.
- g) **Data Analytics:** Libraries use IT applications for data analytics to understand user behavior, track resource usage, and make informed decisions. This aids in optimizing collection development and tailoring services to user needs.
- h) **Digital Archives and Repositories:** IT applications support the creation and maintenance of digital archives and repositories. Libraries can preserve and provide access to rare manuscripts, theses, and historical documents in digital formats.
- i) Automation of Administrative Tasks: IT applications automate administrative tasks such as recordkeeping, report generation, and user management. This enhances operational efficiency and allows library staff to focus on more strategic activities.
- j) **Virtual Learning Environments:** Libraries integrate IT applications into virtual learning environments, providing access to educational materials, interactive tutorials, and collaborative tools. This supports distance learning and digital literacy initiatives.

The incorporation of IT applications in libraries aligns with the broader digital transformation trends, ensuring libraries remain dynamic, accessible, and responsive to the evolving needs of users in the digital age.

Prospective Paradigms: Libraries Pioneering Digital Transformation in the Modern Age

In the realm of libraries, Information Technology (IT) revolutionizes traditional services, offering a myriad of advantages. IT facilitates the creation of digital catalogs and archives, simplifying resource location for users. Online databases and resources, including e-books and journals, extend library access beyond physical confines. Automated library management systems streamline tasks like book transactions and inventory control, freeing up librarians for more strategic roles. Virtual reference services and e-learning initiatives leverage IT for remote assistance and educational offerings. RFID technology enhances efficiency through book tracking and self-checkout systems. Data analytics inform decision-making, while collaboration tools connect libraries for resource sharing. Digitization initiatives using IT ensure the preservation of rare materials. In essence, IT transforms libraries into dynamic hubs, expanding access, improving services, and embracing the digital age's possibilities. The use of Information Technology (IT) in libraries encompasses various approaches that shape their prospective functions and services. Here are key approaches of IT for libraries' prospective:

a) Digitalization and Digitization:

- **Digital Collections:** Libraries create digital collections of books, manuscripts, photographs, and other resources, providing online access.
- **Digitization of Print Material:** Converting physical materials into digital formats for preservation and wider accessibility.
- b) Online Catalogs and Discovery Platforms:
- Integrated Library Systems (ILS): Implementing ILS to manage cataloging, circulation, and acquisitions efficiently.
- **Discovery Services:** Enhancing search capabilities for users with unified interfaces that retrieve information from various library resources.
- c) Electronic Resources and E-Journals:

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- **Subscription Services:** Offering electronic databases, journals, and other resources to provide instant access to scholarly content.
- **Remote Access:** Enabling users to access digital resources remotely, expanding the reach beyond physical library premises.
- d) Open Access Initiatives:
- **Institutional Repositories:** Creating repositories to store and provide open access to the institution's research outputs.
- **Open Access Journals:** Supporting and hosting open-access journals to promote the free dissemination of scholarly information.
- e) Digital Preservation:
- **Preservation Strategies:** Implementing IT solutions for preserving digital materials, ensuring long-term accessibility and usability.
- Metadata Standards: Adhering to metadata standards to facilitate proper organization and retrieval of digital content.
- f) User-Centric Services:
- User Experience (UX) Design: Designing user-friendly interfaces for digital catalogs, databases, and other online services.
- **Personalized Services:** Leveraging IT to offer personalized recommendations and services based on user preferences.
- g) Data Analytics and Business Intelligence:
- Usage Analytics: Analyzing data to understand user behavior, preferences, and resource utilization.
- **Decision Support Systems:** Using analytics to inform decisions related to acquisitions, resource allocation, and service improvements.
- h) Mobile Applications and Responsive Design:
- Mobile Access: Developing mobile apps and ensuring responsive design for library websites, making services accessible on various devices.
- **QR Codes and RFID Technology:** Integrating QR codes and RFID for efficient library checkouts, inventory management, and user engagement.
- i) Cloud Computing:
- Cloud-Based Services: Utilizing cloud solutions for data storage, collaboration tools, and disaster recovery.
- Scalability: Leveraging the scalability of cloud infrastructure to accommodate growing digital collections and services.
- j) Social Media Integration:
- **Communication Channels:** Using social media platforms to engage with users, share updates, and promote library events.
- **Crowdsourcing:** Involving users in the tagging and categorization of digital resources through social media initiatives.
- k) Cybersecurity Measures:
- Data Security: Implementing robust cybersecurity measures to protect sensitive user information and library data.
- **Training Programs:** Conducting training programs to educate library staff about cybersecurity best practices.
- 1) Collaboration and Interoperability:
- Interconnected Systems: Ensuring interoperability between different library systems for seamless data exchange.

• **Collaborative Platforms:** Using collaborative tools and platforms to foster cooperation among libraries, institutions, and researchers.

These approaches collectively contribute to the transformation of libraries into dynamic, technology-driven hubs that adapt to the evolving needs of users in the digital age.

Library Management in the Digital Age: Navigating Information Technology for Managerial Excellence Library Management in the Digital Age: Navigating Information Technology for Managerial Excellence" likely refers to a comprehensive exploration of how libraries are adapting to the challenges and opportunities presented by the digital era. The term "Library Management" suggests a focus on the administration, organization, and strategic planning within libraries. "Navigating Information Technology" indicates an examination of how libraries are incorporating and leveraging technology to enhance their services, collections, and operations. The phrase "Managerial Excellence" underscores the goal of achieving high standards and effectiveness in library leadership and administration. In summary, the title implies a study or guide that delves into the strategies, practices, and challenges associated with managing libraries in the context of rapid technological advancements. Library Management in the Digital Age involves navigating Information Technology (IT) for managerial excellence, ushering in a transformative era for libraries. The integration of IT into library management practices enhances efficiency, accessibility, and services. Here are key aspects of leveraging Information Technology for managerial excellence in the digital age:

- 1. Digital Catalogs and Databases: Implementing advanced IT systems for creating and managing digital catalogs and databases improves resource organization. It facilitates quick and accurate information retrieval, benefiting both library staff and users.
- 2. Library Management Systems (LMS): Utilizing sophisticated LMS powered by IT applications streamlines core library functions. Automation of acquisitions, cataloging, circulation, and inventory management optimizes managerial workflows.
- **3. RFID Technology:** Adoption of Radio Frequency Identification (RFID) technology enhances the tracking and security of library resources. It contributes to efficient collection management, reducing the burden on managerial staff.
- 4. Online Public Access Catalog (OPAC): IT-driven OPAC systems empower users to explore and access library resources remotely. This not only facilitates self-service for users but also eases the burden on managerial staff in handling routine inquiries.
- 5. Electronic Resources Management (ERM): Managing electronic resources, including e-books, journals, and databases, is streamlined through IT applications. License tracking, usage statistics, and access management contribute to effective managerial decision-making.
- 6. Data Analytics for Decision-Making: Harnessing data analytics tools allows library managers to glean insights into user behavior, resource usage, and trends. Informed decision-making regarding collection development and resource allocation is a key outcome.
- 7. Digital Archives and Preservation: IT applications aid in the creation and preservation of digital archives. Library managers can ensure the long-term accessibility of rare manuscripts, historical documents, and special collections through digital preservation strategies.
- 8. Patron Management Systems: IT facilitates efficient patron management, including user registration, circulation history tracking, and personalized services. This contributes to enhancing user experiences and tailoring services to diverse needs.
- **9.** Automated Communication and Alerts: IT enables automated communication with users, including overdue notices, reservation alerts, and announcements. This reduces the manual workload on managerial staff and ensures timely communication.
- **10.** Cybersecurity Measures: In the digital age, library managers must prioritize cybersecurity. Implementing robust IT security measures safeguards sensitive user data, digital collections, and ensures the integrity of library operations.
- **11. Virtual Learning Environments:** Library managers can leverage IT for creating virtual learning environments. This involves providing access to educational materials, online courses, and collaborative tools, aligning with the evolving needs of digital learners.

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Library Management in the Digital Age is a dynamic process that requires library managers to adapt to emerging technologies continually. Navigating IT for managerial excellence positions libraries as vibrant, tech-savvy institutions capable of meeting the diverse demands of the digital era.

Digital Library Dynamics: IT Prospects and Managerial Strategies

In the digital age, Information Technology (IT) profoundly shapes both prospective and managerial functions in libraries. From a prospective standpoint, IT empowers users with enhanced access to information through online catalogs, databases, and virtual learning environments, fostering remote accessibility and collaborative tools. Digital archives and electronic resource management further enrich the library's offerings. On the managerial front, Library Management Systems automate core functions, and data analytics inform decision-making. RFID technology aids in resource tracking, while patron management systems optimize user services. Automated communication, cybersecurity measures, and IT-driven financial management ensure operational efficiency. Staff training programs underscore the role of IT in continuous learning and adapting to evolving technologies, collectively navigating libraries towards excellence in the digital landscape.

CONCLUSION

The digital age has ushered in a new era for libraries, marked by the integration of Information Technology to enhance both prospective and managerial functions. Libraries are evolving into dynamic, user-centric entities, navigating the complexities of the digital landscape with IT applications at the forefront. The adoption of digital catalogs, electronic resources, and virtual learning environments is reshaping user experiences, while Library Management Systems and data analytics optimize managerial decision-making. The collaborative partnerships and open access initiatives further position libraries as vital contributors to the evolving information ecosystem. As libraries continue to adapt to technological advancements, embracing IT remains integral for sustaining excellence in the digital age.

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KOHA - THE WORLD'S FIRST FREE AND OPEN-SOURCE INTEGRATED LIBRARY MANAGEMENT SYSTEM

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ABSTRACTS

The essay delves into the notion of Web-OPAC and, more especially, KOHA Web-OPAC, a library automation software that boasts a number of unique features and points out its benefits. Come and talk about the parts of library software. The article provides a quick overview of KOHA Web-OPAC's user account services, including the two search methods. (Simple Search and Advanced Search).

Keywords: Open-Source Software, Koha, Library Management, Benefits of Koha, Web OPAC.

INTRODUCTION

An intimidating job is to advocate for open-source software and free and open ware software. A lot of work goes into gathering relevant data, case studies, and advantages for your library, and then presenting it to decision makers in an informative yet obnoxious manner. Librarians and technical staff sometimes encounter resistance from upper management when they try to sell the advantages of free and open-source software (FOSS) to them. The buzz about Koha is more intense than that of lesser-known software since it is likely one of the most successful free and open-source applications available. Koha is a mature FOSS ILS that is now used by many EIFL libraries. Koha and library FOSS advocacy were the topics of discussion during the EIFL-FOSS themed weekly sessions, which aimed to tackle some of these concerns.



КОНА

Library patrons may search for, reserve, and suggest new materials using the Online Public Access Catalogue (OPAC) module, which offers an intuitive and easy-to-understand interface. With the help of the comprehensive catalogue module, library personnel may record details about every item in the library's collection. Data input and transmission will be made much easier since it is MARC and z39.50 compatible.

With the circulation module's integration with the OPAC, users may examine their holdings, and it completely automates credit issuing and item administration. Librarians may enhance their purchase and overall budget management skills with the procurement module. Just as its name implies, the continuity management and reporting module carries out the functions.

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While Koha is primarily intended to operate on Linux, it is possible to install a number of add-on modules that make it compatible with Windows. It is playable in the English language. Members of the community develop and translate works in a variety of languages, including Spanish, Arabic, French, and others. The General Public Licence (GPL) is the organisation responsible for its release. As one of the most prominent and established free and open-source library systems (FLOSS) tools, Koha has a better case for FOSS advocacy than other, less well-known applications.

Benefits of KOHA?

By efficiently searching and distributing materials, library staff and users can easily access information. Systematised notifications to notify both staff and consumers when products are running behind schedule or have arrived. Library projects experience reduced processing time as a result of compliance with MARC and z39.50. With the advent of online supervision, senior personnel will have less work to do in the front lines of management. Automated data collecting makes library administration simpler. The purchase module allows for better management of budgets. Because everyone in the library can see the whole picture using Koha, they can collaborate better to address the issues of every client.

Some Advantages of Internet - OPAC

- ✓ 24/7 access via Internet/Intranet
- ✓ You can sort by keyword, title, Details such as Title, Author, ISBN, Series, and Call Number.
- ✓ Any book status can be called "Checkout", Number of copies of loanable and non- borrowable items Credit, balance/reference items, current Position, eyebrow frame etc.
- ✓ Users can easily view borrowed items Log in to the library through Webspace account to know his/her name, due date, fine and more

Use Open-Source Software

For several reasons, open-source software is more popular than proprietary software control. The increased degree of personal agency afforded by open-source software makes it a popular choice. They may modify the code as needed to remove unwanted functionality or confirm that it isn't doing anything they didn't authorise. Open-source software is great for programmers, but it also helps non-programmers as they can use it whatever they choose, rather than worrying about what other people believe they should do.

Learn Some people choose open-source software as it allows them to improve their programming skills. Students learn to develop better software by studying open-source code, which is publicly available. As they gain experience, students may show off their work to the world and get feedback on how they're doing. People

may help others avoid making the same errors they did by sharing the source code of programmes where they found problems.



Security. Some people think open-source software is better than proprietary software in terms of security and stability. Since everyone may access and make changes to open-source software, it's possible for anyone to discover and correct problems that the program's original creator overlooked. Fixing, updating, and improving open-source software is quicker than proprietary software since numerous programmers may create it without contacting the original creator for permission.

Stand firm. Numerous clients pick open-source programming over exclusive programming for significant, longterm projects. Users that depend on open-source software for essential activities may be certain that their tools will remain functional even if the original developers decide to stop making them, as the source code is freely distributed by programmers. Furthermore, open standards are followed throughout the compilation and operation of open- source software.

Social. The very nature of open-source software often inspires groups of people to band together and improve it. The open-source community is not alone in this. There are user groups and meetings for several popular apps. However, in the context of open-source software, a community is more than simply a group of people that support an elite group of users financially or emotionally; It consists of those individuals who make, test, use, advance, and at last shape the programme that everyone loves.

Open Source

People sometimes misinterpret the notion of "open source" since it is about more than just money. Developers and contributors to open-source software is free to charge for their work. However, some programmers do find it more lucrative to charge consumers for software services and support (rather than products) due to the fact that open-source licences compel the release of source code when selling the software to others. Their product remains free, and they may monetize it by assisting users with installation, use, and debugging.

Even if you can get certain open-source software for free, being how to programme and troubleshoot with it may be a huge asset. Having worked with open-source software before, many businesses are looking for programmers with such expertise.

Beyond Software- Open-Source Software

The folks here at Opensource.com like to boast that they're curious in the broader implications of open-source concepts and ideals beyond the realm of software. We consider open source to be more than just a methodology for developing and licencing software; it is a strategy in and of itself. Living life in an "open-source way" implies being open to sharing what you've learned, working in a transparent manner where others can see and participate, seeing setbacks as opportunities for growth, and expecting and encouraging others to do the same.

It claims to actively contribute to a better world, but only if everyone comprehends its design. Everywhere we look, there are "source codes" that serve as blueprints, recipes, or guidelines that influence how we think and

act. We think this essential code (in whatever shape it takes) should be freely available to everyone and shared so that many minds may work together to improve it.

CONCLUSION

We detail the many ways in which open-source principles permeate every facet of society, including academia, the executive branch, healthcare, the legal system, business, and government. Because, like any other good thing, the love of open source is at its peak when spread from person to person, our community is devoted to spreading the word about how great open source is.

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ANALYSIS OF OPEN ACCESS THESIS AND DISSERTATION REPOSITORY IN SOCIAL SCIENCE

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ABSTRACT

In the realm of information resources, theses and dissertations play significant roles as far as the process of scholarly communication is concerned. Gone are the days when researchers used to visit and sit in libraries for long hours to complete their research work. Integration of advanced information and communication technology with the information resources formed a space that provided the opportunity for the researchers to use, share, and disseminate their research freely. One such resource is the open-access thesis and dissertation repository. Although academic libraries provide all kinds of resources to their patrons, however, due to budgetary constraints, college libraries can't cater to all the information needs of researchers in print format. On the other hand, the advancement of technologies offers ample opportunities for information professionals to fulfill users' information needs. Considering this fact the present paper attempts to analyze one of those openaccess theses and dissertations, intending to explore social science thesis and dissertation in the open-access repository.

Keywords: ETD, Scholarly Communication, Social Science, Academic Libraries, Theses and dissertation, UNESCO, Open Source.

INTRODUCTION

The phenomenon of open access and services started with the philosophy of sharing knowledge without any barriers. It is a concept where everyone can share information on the principle of spreading and sharing knowledge. Information and communication technology play a very vital role in this phenomenon. Gone are the days when researchers used to visit and sit in libraries for long hours to complete their research work. Integration of advanced information and communication technology with the information resources formed a space that provided an opportunity for the researchers to use, share, and disseminate their research freely. According to UNESCO, open educational resources are the resources that can be used by researchers, students, and teachers for teaching and that are available in any format or medium and located in the public domain. Provide access to everyone, everywhere equally without any restrictions. Further, UNESCO states that open educational resources are copyrighted material that is released under an open license. These open licenses respect the original intellectual property holder and at the same time allow no-cost access to the public domain with the rights of use, share, re-use, re-purpose, adaptation, and free redistribution. UNESCO also recommends Open solutions, which encompasses open educational resources, open access to scientific information, free and open source software, and open data that assure the free flow of information and knowledge to provide informed responses to global challenges. One such kind of resource is the 'Open Access Thesis and Dissertation Repository' (OATD). Although academic libraries provide all kinds of resources to their patrons, however, due to budgetary constraints, college libraries can't cater to all the information needs of researchers in print format. On the other hand, the advancement of technologies offers ample opportunities for information professionals to fulfill users' information needs. Considering this fact the present paper attempts to analyze one of those openaccess theses and dissertation repositories. For the present study, the author has selected the oatd.org repository of theses and dissertations, intending to assess the availability of social science theses and dissertations in the repository.

About Open Access Theses and Dissertation Repository

This repository is an index of repositories of several universities and schools all over the world. Initiated to ensure free access to research and scholarly content. It provides access to theses and dissertations published by graduate students of different schools, colleges, and universities around the world. The repository provides metadata of theses and dissertations published by around 1100 colleges, Universities, and research institutions of the world. This free open-source repository presently covers 7377874 theses and dissertations. The focus of the present study is on the theses and dissertations published by these institutions in the field of social science.

The study was undertaken with the following objectives.

OBJECTIVES

1. To find out the timeline of theses and dissertations of social science in OATD.

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- 2. To identify subject-wise contribution in OATD.
- 3. To determine various countries' contributions to the OATD repository.
- 4. To investigate several universities' contribution to the OATD.
- 5. To analyze the language of resources and the type of resources available in the OATD.

SIGNIFICANCE OF STUDY

This study will provide a detailed analysis of the thesis and dissertations of the social science stream available in the open-access repository. It will help to create awareness among researchers and academicians about OATD resources of social sciences. It will also help to promote the usage of OATD in one research work.

SCOPE OF THE STUDY

The present study is the analysis of resources available in the open-access thesis and dissertation repository. It covered resources related to social science and the timeline of resources added is from 1975 to 2024. This study does not cover resources from other subjects' areas.

LITERATURE REVIEW

Thompson, Xiping, Duran, & Washington, (2019) studied the process of remediation of ETD metadata while aligning ETD records of the University of Houston libraries with the Texas digital library. The authors highlighted the importance of metadata remediation at the University institutional repository. Sivakumar & Swami Nathan (2020) investigated the contributions of sixteen state universities of Tamilnadu in the Inflibnet Shodhganga project. They found that Anna University, Chennai, and the University of Madras contributed the highest number of theses and dissertations in the Shodhganga. Further study indicated that Information and communication technology and Commerce streams theses and dissertations were highest in number. Also, they found that only a few state universities were actively uploading theses and dissertations in the Shodhganga. Dey & Das (2021) explored Shodhganga with special reference to ETDs of West Bengal state universities. The study found that some state universities in West Bengal were uploading theses and dissertations regularly, however, six state universities of West Bengal have not started the process at all. Veve (2021) analyzed the current workflow available for online submission in ProQuest ETDs, with special reference to metadata management, publishing options, access policy, networking connectivity, finance, and embargo period. The study recommends measures to make decisions for ETD's workflow. Gupta & Sharma (2021) did a citation analysis of the grey literature submitted in social science ETDs by two state Universities of Haryana. The study used Shodhganga for the primary data. The author found that researchers have cited 43 different forms of literature, out of which forty are from books or book chapters, the study concluded that these were the most preferred forms of grey literature among the Indian researchers. Sivakumaren and Thangavel (2021) analyzed electronic thesis and dissertation repositories to find out collections on library and information science resources. The study found that there were a total of 10590 theses from Library and Information Science, contributed by various Universities and research institutions. The results indicated that the department of the Swedish School of Library and Information Science has contributed the highest number of theses from library and information science. Osman, Yanti Idaya & Abrizah (2023) investigated the quality of metadata records in the ETDs of Malaysian research universities. The study used a quantitative method of content analysis, identified various issues related to metadata completeness and accuracy, and recommended a standardized format to ensure metadata quality.

It is evident from the literature review that ample research has been done on the workflow, metadata pattern, and structure of various electronic thesis and dissertation repositories. Very little evidence was found in the research on Open-access theses and dissertation repositories in literature that too on social science. Therefore researcher decided to analyze open-access theses and dissertation repositories for the social science stream.

RESEARCH METHODOLOGY

The data for the present study were collected from the open-access thesis and dissertation repository i.e., oatd.org. This repository is also known as a global repository of theses and dissertations. The collected data were analyzed on the following basis- Type of resources available in the OATD, Countries' contribution to the OATD, Subjects under the social science stream included in the repository, University contribution to OATD, and thesis and dissertation in social science. Collected data will be analyzed by using descriptive statistics in Microsoft Excel and will be presented in graphical form. The result of the analysis is presented in the following section.

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DATA ANALYSIS AND FINDINGS

Theses and Dissertations in Social Science in OATD

There were a total 7, 51,560 matches found for social science-related dissertation and thesis up to January 2024. Table 1 indicates the time of the addition of thesis and dissertations in the repository. It shows that maximum resources i.e. 30.68% were added from 2015 to 2019, a further 27.42% were added from 2010 to 2014, and around 15.66% resources added from 2020 to 2024. Results indicated that the decade 2010 to 2019 added maximum thesis and dissertations to the repository, therefore it is concluded that this decade (2010 to 2020) contributed significantly to the development of the repository. However, from 2020 to 2024 the contribution was nearly half the percentage of earlier decade.

Table 1					
Sr.no.	Year of addition	No. of Documents	%		
1	2020 - 2024	126611	15.66		
2	2015 - 2019	247976	30.68		
3	2010 - 2014	221602	27.42		
4	2005 - 2009	115331	14.27		
5	2000 - 2004	39707	4.91		
6	1995 – 1999	20548	2.54		
7	1990 - 1994	12734	1.57		
8	1985 - 1989	9376	1.16		
9	1980 - 1984	7775	0.96		
10	1975 - 1979	6387	0.79		
	Total	808047	100		

Subject's in OATD

While analyzing the subject areas covered in the open-access repository it was found that the repository consisted of several subjects belonging to the social science stream (Figure 1). Further results indicated that psychology has a maximum number of theses and dissertations, followed by sociology, social work, and education were included in the repository. Next, the theses and dissertations of history, English, teacher education, and anthropology found at a moderate number. Along with this the theses and dissertations belonging to subjects like economics, faculty of culture, and faculty of health and education found less. Results indicated that the repository has a good number of theses and dissertations of social science subject areas.



Figure 1

Countries Contribution in the OATD Repository

It was found that the highest number of theses and dissertations was provided by the US research institutions and Universities (Figure 2). Following this Brazil has provided scholarly resources, then Sweden, UK, and Canada. Colombia, New Zealand, Greece, and France also contributed theses and dissertations but in moderate numbers. Other than these countries Portugal, Finland, South Africa, and Australia added theses and dissertations to the repository.

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Universities in OATD

To assess the university's contribution to OATD when analyzed it was found that the University of Brazil has the highest research contribution to OATD, followed by the University of California, University of SãoPaulo, and the California State University System. Further, it was found that the University of Michigan, Malmö University, Charles University of Prague, University of British Columbia, and RCAA Portugal have moderate levels of contribution of theses and dissertations in OATD. University of Nairobi, Luleå University of Technology, Universidad de Chile, Universidade Estadual de Campinas, Linnaeus University.



Figure 3

Types of Resources included in Repository



Figure 4 indicates the level degrees included in the repository, it has theses of master level, graduate level as well as doctorate level. It also included resources on doctoral of science, Master of Science, and master thesis of social work. The maximum resources included were Ph.D. theses.

Language of Resources Included in OATD

While analyzing languages of resources, it was found that 46.4% theses of the dissertation were of English language (Table 2). 26.09% were in Portuguese languages and 9.4% were in Swedish language. It was also found that very few percentages of resources in other languages such as Spanish, French, Finnish, Greek, Czech, Lithuanian, German, English New Zealand, Turkish, Chinese, and Catalan.

Table 2					
Sr. no.	Language	Number of Documents	%		
1	English	268967	46.4		
2	Portuguese	151029	26.09		
3	Swedish	54938	9.4		
4	Spanish	38721	6.68		
5	French	17726	3		
6	Finnish	16986	2.93		
7	Greek	7608	1.3		
8	Czech	6875	1.18		
9	Greek	3512	0.6		
10	Lithuanian	3231	0.55		
11	German	2817	0.48		
12	English New Zealand	1884	0.32		
13	Turkish	1864	0.32		
14	Chinese	1487	0.25		
15	Catalan	1216	0.21		
	Total	578861	100		

Table 2

SUGGESTION

The open-access theses and dissertations repository indexed maximum resources in the English language, still, the number needs to be improved to meet the need for scholarly content. Indian Universities and research institutions should think of adding resources to OATD as this is an international repository; so that Indian researchers would have an opportunity to share their work with the entire world. Also, the theses and dissertations added from the year 2020 are not very good in number, therefore efforts need to be made to add more research work to this repository. The theses and dissertations of subjects like economics, anthropology, and English literature need to increase more, it will be a great help for new research scholars.

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CONCLUSION

At the beginning of the 21st century, the open access movement was started on the international level worldwide. Several meetings and discussions have been done to decide policy framework to offer open-source materials and open-access resources. The main aim of this movement was to preserve and share knowledge freely with everyone. It was decided that researchers would be motivated to share their research work with the world for the well-being of humankind. Open access theses and dissertations repository is one of the initiatives of the open access movement. In India, we have Inflibnet who always promote the sharing and preservation of knowledge in Indian universities. We need such kind of many more resources to improve our knowledge and to have good quality research. Academicians and researchers could jointly work to take this movement ahead by sharing their contributions on open-access platforms.

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E-LEARNING TECHNOLOGY FOR LIBRARY

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ABSTRACT

E-learning has become a growing, influential and dynamic drive for higher education in study campuses, colleges and universities all over the globe. Now a days, increasing of e-learning technologies in higher education as well as every level of education. Lot of learning materials available in electronic formats and available learning materials through electronic communication tools like this e-journals, e-books, audio and video materials, social media tools, virtual class room, e-mail, video conferencing, etc. because of that academic libraries and librarians support and its role is most important in higher education in e-learning technologies environment.

Keywords: E-learning, categories of e-learning, Benefits and future of e-learning.

INTRODUCTION

E-learning is a wide set of applications and processes which use all available electronic media to deliver vocational education and training. The term covers computer-based learning, web- based learning, and the use of mobile technologies; it includes virtual classrooms and digital collaboration and uses. There are many identifiable drivers for ICT-enabled instruction, and these may be classified as technical innovation, organizational and business developments, or characteristics of the needs and demands of the individual learner.

RESEARCH OF OBJECTIVE

1. To study the E-learning technology for libraries.

RESEARCH METHODOLOGY

The current study 'E-learning technology for libraries' is based on secondary data collected from different sources. The secondary sources are concerned they were accumulated from online database, articles and books. The research method applied to the present study is descriptive research method. In this paper an attempt has been taken to analyze E-learning technology for libraries.

WHAT IS E-LEARNING?

A variety of concepts is interchangeably used to represent e-Learning. The instruction may put forward in the form of user friendly e-learning. Abrami et. al. (2006) explaining that Computer- based instruction, computer-assisted instruction, web-based learning, electronic learning, distance education, online instruction, multimedia instruction and networked learning. The term networked learning is also used as a synonym for e-Learning by Baumeister, (2006).

E-LEARNING:

Defined as 'learning supported through the use of Electronic media, Educational Technology and Information and Communications Technology'. E-learning technologies includes many types of media that send text, audio, images, animation, and streaming video, and includes technology applications and processes such as audio or video tape, satellite TV, CD-ROM, and computer-based learning. Technological development has helped to initiate many tremendous changes in all sectors. Currently many methods of learning and teaching have been revolutionized in Higher education and research sector. E-Learning tool is mostly a computer and network based tool to provide information and communication technology and learning by transmits of skills and knowledge. E-learning is based on web based learning, virtual and computer based learning, delivered via internet, audio video tape TV, CD-ROM etc. E-Learning is an internet based environment which offers select and disseminate information in multiple formats for learners, instructors content developers and experts. There are many advantages of e-learning for academic libraries due to that flexibility, cost saving, efficiency and improvement of learners interest.

WHY E-LEARNING:

- Learning is self paced and gives students a chance to speed up to slow downnecessary.
- Learning is self-directed, allowing students to choose content and appropriate to their differing interests, need and skills levels.

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• Accommodates multiple learning styles using as verity of delivery methods geared to different learners, more effective for entrain learners.

• Designed around the learner.

CATEGORIES OF E-LEARNING:

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1. Course:

Most discussion of e-learning focuses on educational courses. Educational course materials or courseware are usually modified and added with various different media and are uploaded to a networked environment for online accessing. Today, there are several popular learning management systems (LMS) such as Web CT and Blackboard which are commonly used by educational institutions. E-learning has distinct similarities with classroom environment whereby both of the learners and the instructors are together related to the common course arrangement and flow.

2. Informal Learning systems:

Informal learning system has no curriculum and is not professionally organized but rather originates accidentally, sporadically, (Cross, 2007), one of the biggest advocates of informal learning, describes it like this: Informal learning is the unofficial, unscheduled, impromptu way most of us learn to do our jobs. Informal learning is like riding a bicycle: the rider chooses the destination and the route. The cyclist can take a detour at a moment's notice to admire the scenery or help a fellow rider. Cross opined that in workplace we acquire more knowledge during break time than in a formal learning environment. We progress more in our jobs through informal learning, sometimes using trial and error and other times through conversations.

3. Blended Learning:

Integrated learning provides a good transition from classroom learning to e-learning. Integrated learning which is also referred to as blended learning is a combination of a face to face and online learning. The productiveness of this method cannot be over emphasized. It encourageseducational and information review beyond the classroom settings. Blended learning combines several different delivery methods, such as collaboration software, web-base courses and computer communication practices with face to face instruction. Integrated learning utilizes the best of classrooms with the best of online learning.

4. Communities:

Learning is social the frequent challenges we battled with in our business milieu are sophisticated and unstable. Because we are in the global era, our methods of problem solving are changing daily. Therefore people dialogue with other members of the same organization or network globally to other organization. Communities strongly contribute to the flow of tacit knowledge.

5. Knowledge Management:

Early Knowledge management (KM) technologies included online corporate yellow pages as expertise locators and document management systems. Combined with the early development of collaborative technologies, KM technologies expanded in the mid-1990s. Subsequent KM efforts leveraged semantic technologies for search and retrieval and the development of e-learning tools for communities of practice. Knowledge management is an essential process which is concern with how to create atmosphere for people to share knowledge on distribution, adoption and information exchange activities in an organization. The semblance of knowledge management and the theory ofe-learning reveal powerful relationship which is causing disarray between the two fields.

6. Learning Networks:

Learning network is a procedure of developing and preserving relationship with people and information and communicating to support each other's learning. Therefore Learning Network is enhancing and it offers chances to its members to engage online with each other, sharing knowledge and expertise. According to Hiltz and Turoff (2002) the use of pen and paper in our educational system today is producing inadequacy and challenges in the global era that we are in today where subject matter is changing speedily "E-learning provides a new set of tools that can add value to all the traditional learning modes - classroom experiences, textbook study, CD-ROM, and traditional computer-based training." Old-world learning models do not scale to meet the new world learning challenges. E-learning can provide the tools to meet that challenge.

7. E-Learning and Lis:

Libraries play a vital role in education. The library is a hub of any institute or organization. In the present age of information highway, e-services & profession. E-learning is the fusion of technology with education. E-learning

is a combination of content & instructional methods delivered via a computer and designed to build knowledge and skills.

BENEFITS of E-LEARNING

- ➤ It saves the time and manpower.
- > E-learning can empower learner as well as instructors.
- E-Learning complements the process and can help reach out the masses.
- > E-Learning lies in its ability to cover distance.
- > The consistency that e-learning provides, e-learning is self-paced, and learning in one at the learners.
- ▶ Learning resources can be pace easily developed using a variety of standard packages.
- > One can make use of, and link into other resources available on the internet.
- Online delivery cheap as there are no printings or distribution costs. It is easy to rack learner activity and progress.
- > E-learning offers opportunities and challenges for information workers in the followingareas.

FUTURE OF E-LEARNING

Future learning is now focusing on learning beyond the classroom and curriculum, organization need to upgrade staff by offering new training programs. One important thing is thatboth are costly and time consuming, new varieties of e-learning have emerged with help and push from emerging technologies, besides distance learning now there is distributed learning. With collaborative tools e-learning is moving into virtual classes and virtual communities where the old methods of practice and test have melted into new interactive teaching-learning method online, the need to include the video technologies in c-Learning becomes not only urgent, but also essential.

CONCLUSION

In conclusion Academic libraries have been early adopters of new information systems, services and have institutional access points for digital knowledge resources such as online journals, e-books online databases, digital repositories etc. Not unexpectedly ever since faculty and instructors have begun to adapt e-learning strategiesas a part of their teaching repertoire libraries are playing a key role by way of helping to find and organize resources.

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ADVANCEMENTS IN OPEN ACCESS INITIATIVES IN INDIA: A COMPREHENSIVE OVERVIEW

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ABSTRACT

The landscape of Open Access (OA) to scholarly information in India has undergone remarkable transformations, marked by significant developments and collaborative efforts among various stakeholders. This comprehensive overview delves into the multifaceted aspects of the OA movement in the country. Government endorsement of OA policies, institutional repositories, and a surge in OA journals across disciplines exemplify India's commitment to accessible scholarly communication. Noteworthy initiatives, including the Indian National Science Academy's Repository and the SWAYAM platform, contribute to building a robust OA infrastructure. The embrace of OA by research institutions like the Council of Scientific & Industrial Research (CSIR) and the Indian Council of Medical Research (ICMR) further strengthens the movement. Despite these strides, challenges such as awareness gaps persist, offering opportunities for stakeholders to enhance and refine the OA landscape in India.

Keywords: Open Access, Scholarly Communication, India, Government Endorsement, OA Journals, Institutional Repositories, National Initiatives, SWAYAM.

1. INTRODUCTION

Open Access (OA) embodies a comprehensive framework that includes digital libraries, OA journals, institutional and national repositories, open courseware, metadata harvesting services, and other components. Emerging prior to the World Wide Web, the Open-Access Publishing movement, also termed Free Online Scholarship, has transformed into a substantial focus for various stakeholders, such as students, researchers, academicians, and publishing societies. Globally, there are now numerous peer-reviewed OA journals and interoperable repositories, with recent additions like open courseware and cross-archive search services. India assumes a prominent role in the open knowledge movement, with professionals and librarians working to establish necessary information infrastructure for OA using free open source software (FOSS). The impetus behind OA development in developing countries encompasses E-science, scientometrics, data sharing stipulations, interdisciplinary research, the advancement of FOSS, preprint sharing, and concerns about journal pricing practices. These endeavors underscore India's dedication to fostering a robust and accessible scholarly communication ecosystem.

2. OPEN ACCESS (OA A: WHAT AND WHY

Open Access (OA) refers to the practice of providing unrestricted and free online access to scholarly and academic research outputs, including articles, papers, and other forms of knowledge. The primary goal of Open Access is to remove barriers to accessing information, making it freely available to the global community without financial, legal, or technical obstacles. OA content can be accessed, downloaded, and shared without subscription fees or paywalls, fostering greater dissemination of knowledge. The motivations behind Open Access are rooted in the belief that unrestricted access to research promotes collaboration, innovation, and the advancement of science and education. By making scholarly work freely accessible, OA aims to democratize information, benefitting researchers, students, educators, and the public at large. Open Access can be achieved through various means, including OA journals, institutional repositories, and self-archiving practices.

3. HOW OPEN ACCESS IS ACHIEVED: THE TWO DIFFERENT ROADS

Open Access (OA) can be achieved through two primary roads: Gold Open Access and Green Open Access.

Gold Open Access:

In the Gold Open Access model, the final published version of a scholarly work is made freely available online immediately upon publication. This is often done through OA journals, where articles are accessible to readers without any subscription or payment barriers. Funding for the publication process is typically covered by article processing charges (APCs), which may be paid by the authors, their institutions, or research funders. Gold OA provides immediate visibility and accessibility to research findings.

Green Open Access:

• Green Open Access involves self-archiving or depositing a version of the scholarly work in a repository, typically an institutional or subject-based repository, after it has been published in a subscription-based

journal. Authors can deposit preprints (pre-peer review versions) or postprints (final peer-reviewed versions) of their articles. This allows for free access to the research without requiring payment or subscription. Publishers may have specific policies regarding self-archiving, such as embargo periods before the work becomes openly accessible.

These two models can coexist, and researchers and institutions may choose one or a combination of both based on various factors such as funding availability, journal policies, and disciplinary practices. Gold Open Access is often associated with immediate access but may involve publication fees, while Green Open Access relies on repositories and self-archiving but may have restrictions based on publisher policies. Both paths contribute to the broader goal of making research more widely available to the global community.

4. OPEN ACCESS (OA) MOVEMENT IN INDIA

The Open Access (OA) movement in India has gained momentum over the years, with various stakeholders contributing to the advancement of open and accessible scholarly communication. Key aspects of the OA movement in India include:

Government Support:

• The Indian government, through agencies like the University Grants Commission (UGC) and the National Knowledge Commission (NKC), has expressed support for Open Access. Policies and recommendations from these bodies encourage the dissemination of publicly funded research through open channels.

Research Institutions and Agencies:

• Prominent research institutions and agencies in India, including the Council of Scientific & Industrial Research (CSIR) and the Indian Council of Medical Research (ICMR), actively promote OA practices. These institutions provide e-content services of their research outputs, contributing to the open dissemination of knowledge.

> Ministry of Human Resource Development (MHRD):

• MHRD has played a role in advising institutions, particularly members of the Information and Library Network (INDEST) consortium, to establish e-print archives using Open Archives Initiative (OAI)-compliant software. This guidance underscores the importance of institutional repositories for OA.

National Open Access Policy:

• In 2006, a conference in Bangalore led to the drafting of a model National Open Access Policy for Developing Countries. The objective was to bring policymakers and research scientists from major developing countries together to agree on a path forward toward adopting full Open Access to publicly-funded research publications.

> University Initiatives:

• Some universities in India have taken proactive measures to implement OA policies. For example, Bharathidasan University has made it mandatory for faculty members publishing in refereed journals to deposit their papers in the university's Institutional Repository.

Professional Associations and Societies:

• Professional associations and societies in the library and information science domain, such as DELNET, SALIS, and ILA, are actively involved in the modernization of libraries, training initiatives, and the establishment of Institutional Repositories.

Awareness and Advocacy:

• The OA movement in India involves ongoing awareness campaigns and advocacy efforts to highlight the benefits of open access. These activities aim to encourage researchers, institutions, and policymakers to actively participate in and support OA initiatives.

Collaboration and Networking:

• Collaborative efforts among various stakeholders, including government bodies, institutions, and associations, have been instrumental in fostering a collaborative and networked approach to advancing OA in India.

The collective efforts of these stakeholders reflect a commitment to open and accessible scholarly communication, aiming to maximize the impact of research outputs and foster innovation and knowledge exchange in the country.

5. OA JOURNALS

Open Access Journals represent a vital component of the scholarly publishing landscape, embodying a commitment to unrestricted access to research findings. These journals make scholarly articles freely available

to the public without subscription or paywall constraints, fostering global knowledge dissemination. Operating under the Gold Open Access model, these publications often rely on article processing charges (APCs) to cover publishing costs. Researchers, institutions, and funding agencies supporting Open Access Journals aim to democratize access to information, enhance visibility and impact of research, and promote collaboration across diverse academic disciplines. The growth of Open Access Journals reflects a broader movement towards an inclusive and accessible scholarly communication ecosystem, transcending traditional barriers and facilitating the exchange of knowledge on a global scale.

Open Access Journals, such as PLOS ONE covering diverse scientific disciplines, BioMed Central with a focus on biology and medicine, Frontiers offering journals in neuroscience and other fields, and Hindawi spanning science, technology, and medicine, exemplify the commitment to freely accessible scholarly information. Nature Communications, despite being part of the Nature Publishing Group, adopts an open access model, while MDPI publishes open access journals in various scientific and engineering domains. DOAJ serves as a comprehensive directory, indexing reputable open access journals across disciplines. Leading journals like PLoS Biology, JMIR in health informatics, and eLife in the life sciences contribute to the open access movement. Researchers often rely on these journals to disseminate their work globally without subscription barriers, fostering collaboration and advancing knowledge in a variety of fields.

6. OA ARCHIVE

An OA (Open Access) Archive, also known as a repository, is a digital platform or database that stores and provides open access to scholarly and academic content. These archives serve as centralized repositories for a wide range of research outputs, including preprints, postprints, data sets, and other forms of scholarly communication. The primary goal of OA archives is to facilitate the free and unrestricted dissemination of knowledge, making research outputs easily accessible to the global community. Institutional repositories, subject-specific repositories, and national repositories are common types of OA archives. Researchers often deposit their works in these archives to comply with funding agency mandates, institutional policies, or to contribute to the broader Open Access movement. These archives play a crucial role in promoting transparency, collaboration, and the long-term preservation of scholarly outputs.

One prominent example of an OA Archive is arXiv (pronounced "archive"), a preprint repository that has been a cornerstone in the Open Access movement. Established in 1991 by physicist Paul Ginsparg, arXiv primarily focuses on physics, mathematics, computer science, quantitative biology, quantitative finance, statistics, electrical engineering systems science, and economics. Researchers globally deposit their preprints and postprints on arXiv, providing free and immediate access to cutting-edge research. While arXiv is disciplinespecific, other repositories like PubMed Central cover a broader range of disciplines. These OA archives play a pivotal role in reshaping scholarly communication by fostering accessibility, collaboration, and the accelerated dissemination of research findings.

7. OPEN COURSEWARE (OCW)

Open Courseware (OCW) refers to the digital and openly accessible educational materials, such as lecture notes, syllabi, assignments, and multimedia content, that are made available online for free. OCW initiatives aim to provide unrestricted access to high-quality educational resources, allowing learners around the world to benefit from educational content without any cost or formal enrollment. These materials are typically associated with academic courses offered by universities and educational institutions. OCW contributes to the Open Education movement, promoting the principles of openness, collaboration, and knowledge sharing in education. Major institutions, including MIT (Massachusetts Institute of Technology), have pioneered OCW projects, releasing a vast array of course materials across various disciplines for public use. OCW not only facilitates self-directed learning but also supports educators in designing and enhancing their own courses.

- > SWAYAM (Study Webs of Active Learning for Young Aspiring Minds):
- SWAYAM is an initiative by the Government of India that provides free online courses and resources across various subjects and educational levels. It includes video lectures, reading materials, and assessments.

> NPTEL (National Programme on Technology Enhanced Learning):

• NPTEL is a collaborative initiative by the Indian Institutes of Technology (IITs) and the Indian Institute of Science (IISc). It offers high-quality web and video courses in engineering, science, and related disciplines.

> UNESCO-SALIS e-Learning Portal:

• While UNESCO has various initiatives, the specific SALIS (South Asia Language & Information Services) e-Learning Portal may contain educational resources. However, detailed information about this portal's OCW offerings may require direct exploration.

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EGyankosh:

• EGyankosh is the National Digital Repository created by the Indira Gandhi National Open University (IGNOU) in India. It serves as a platform for hosting and distributing e-content, including course materials.

➢ Ekalavya:

• Ekalavya is an educational resource portal developed by the Indian Institute of Science Education and Research (IISER), Pune. It offers learning resources, including lecture videos and course materials.

8. DIGITAL LIBRARY PROJECTS

Here are some notable digital library projects in India:

> National Digital Library of India (NDLI):

• Launched by the Ministry of Human Resource Development, Government of India, NDLI is a massive digital repository that provides access to a wide range of educational resources, including books, articles, theses, manuscripts, and multimedia content.

> Digital Library of India (DLI):

• DLI is a project by the Indian Institute of Science, Bengaluru, in collaboration with other major libraries. It aims to digitize rare books, manuscripts, and journals, making them freely accessible online.

> Digital Library of Indian Manuscripts (DLIM):

• DLIM is an initiative by the National Mission for Manuscripts (NMM), aiming to digitize and preserve the rich cultural heritage of Indian manuscripts.

> National Mission on Education through Information and Communication Technology (NME-ICT):

• This mission focuses on promoting digital content creation and enhancing the use of information and communication technology in education. It supports the development of e-content and digital libraries.

> Indian Academy of Sciences (IAS) Digital Library:

• The IAS Digital Library offers access to scientific journals, conference proceedings, and other scholarly resources in the field of science and technology.

> SODA (South Asia Digital Archive):

• SODA is an initiative by the University of Chicago's Center for Research Libraries, in collaboration with Indian institutions. It aims to digitize and provide access to rare materials related to South Asian studies.

> Raja Rammohun Roy Library Foundation (RRRLF):

• RRRLF has been involved in various initiatives to modernize and digitize public libraries across India, contributing to the preservation and accessibility of library resources.

> Digital Library at IIT Kharagpur:

• Indian Institute of Technology (IIT) Kharagpur has its digital library, offering access to academic resources, research publications, and multimedia content.

9. ROLE OF GOVERNMENT IN SUPPORTING OA

The Indian government has played a pivotal role in championing Open Access (OA) initiatives, demonstrating a commitment to the free and unrestricted dissemination of scholarly research. Notably, mandates have been established for publicly funded research, compelling researchers to make their findings openly accessible. Key funding agencies like the Department of Science and Technology (DST) and the Indian Council of Medical Research (ICMR) have implemented OA policies to ensure wider public access to research outputs. Government-led projects, such as the National Digital Library of India (NDLI) and SWAYAM, exemplify significant efforts towards providing open access to educational resources. The launch of the National Mission on Education through Information and Communication Technology (NME-ICT) in 2009 has further contributed to the development of digital content, e-learning resources, and digital libraries. The government's advocacy for open science practices, collaboration with international OA initiatives, and support for institutional repositories underscore its proactive stance in fostering an open and accessible scholarly communication ecosystem in India. Additionally, funding for digital infrastructure projects, including the National Knowledge Network (NKN), reflects the government's commitment to enhancing the country's research and educational capabilities through open access principles.

10. CONCLUSION

The journey of the Open Access movement in India reflects a collaborative commitment to democratizing access to scholarly information. Government support, evident in policies and initiatives, underscores the importance of accessible research. Research institutions actively contribute to the OA ecosystem, emphasizing

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transparency and knowledge dissemination. The establishment of institutional repositories, national policies, and initiatives like SWAYAM exemplify India's strides in fostering an open and inclusive educational environment. As the OA landscape matures, ongoing efforts in advocacy and addressing awareness gaps will be crucial. India's dedication to open science practices and its proactive stance in supporting digital infrastructure projects position it at the forefront of the global OA movement, with the potential to shape the future of scholarly communication in the country.

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COLLEGE TEACHER'S FECES PROBLEMS TO USING ICT BASED INFORMATION SOURCES IN INFORMATION SEEKING PROCESS

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ABSTRACT

The study deals with College teacher's feces problems using ICT based information sources in information seeking process. For the present research work, a survey method was used for data collection. Questionnaire method was used for data collection and observation techniques were used for this study. The studies enlighten only the problems which were faced by the college teachers in the beed district.

Keyword: Information needs, Information Seeking behavior, ICT, College teachers.

INTRODUCTION

In this information age, information seeking behaviour is not only related to one discipline but also it is a universal subject. In this ICT environment, drastic changes occur within information seeking behaviour of the college teachers. The college teachers can search one information source on their personal desktop, mobile, laptop, videoconferencing, digital library, virtual library etc. ICT is a computer based mechanism tool which helps with information gathering, capturing of information, acquisition of information, processing of information, and dissemination of information. Information and communication technology plays a vital role in all sectors, especially education and information sectors. In 21st century, ICT is the most powerful media to enhance information seeking behaviour of the users. We can't imagine, without ICT, how the education system runs effectively and efficiently. In the institution, the college teachers go through an information seeking process to fulfil their purposes like preparing lectures, presentation, research, entertainment and social networking sites. Therefore, there is a need to have research on information seeking behaviour of the college teachers. It will be beneficial to how ICT affects information seeking behaviour of the college teachers.

EXPLAIN THE CONCEPT

Information Needs

The information and need in information need are inseparable interconnection. To satisfy a conscious or unconscious need. Information need is defined as a state or process started when one perceives that there is a gap between the information and knowledge available to solve a problem and the actual solution of the problem. Information competencies are defined as the capabilities developed to reach the solution of a problem by searching for new information or knowledge that could fill the perceived gap.

Information Seeking

Information seeking is a special case of problem solving. It includes recognizing and interpreting the information problem, establishing a plan of search, evaluating the results, and if necessary, interacting through the process again.

Information Seeking Behaviour

Information seeking behaviour is the attitude of users towards searching the information. In this process, a user finds information in different ways, such as information sources, information locality, information access, information retrieval policy. These processes step foot forward when users couldn't get their information.

Wilson defines the term information seeking behaviour as 'the totality of human behaviour in relation to sources and channels of information, including both active and passive information seeking and information use. Thus it includes face-to-face communication with others, as well as the passive reception of information as in, for example watching television advertisements without any intention to act on the information given.

ICT

Information and Communication Technology (ICT) is an umbrella term that includes all technologies for the manipulation and communication of information.

Information and Communications Technology (**ICT**) is an extensional term for Information Technology (IT) that stresses the role of unified communications and the integration of telecommunications (telephone lines and

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wireless signals) and computers, as well as necessary enterprise software, middleware, storage, and audiovisual systems, that enable users to access, store, transmit, and manipulate information.

The information society has brought about developments in the way information is created, consolidated and accessed. ICT has produced larger volumes of information, new ways of packaging information and new tools for managing information. These developments require new knowledge and skills of librarians and other information workers to meet the demands of the global economy for information resources and services.

COLLEGE TEACHERS

A college teacher is a person who teaches at the college level and is appointed by the UGC norms. The college teacher engages with academic activities such as teaching, learning and evaluation process.

OBJECTIVE OF THE RESEARCH:

To know which problems faced by the college teachers using ICT based information sources in their information seeking process.

SCOPE OF THE RESEARCH:

The study is related to college teachers who had work in Arts, Commerce and Science Colleges in Academic years 2018-2019. These colleges are affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

METHODOLOGY:

For the present research work, a survey method was used for data collection. Questionnaire method was used for data collection and observation techniques were used for this study. The collected data from primary and secondary sources are depicted in the form of a descriptive method. The data has been presented with the help of graphs, charts and tables. The analysis of data has been carried out using statistical tools like Mean, Percentage, etc.

SAMPLE:

In the study region, researcher selected 11 colleges for as per each tahsil in beed district. Researcher has distributed 30 questionnaires for each college. The researcher could collect 268 questionnaires out of 330 distributed questionnaires. This constitutes 81.21% (268/330) of the total response.

DATA ANALYSIS

The college teachers know the importance of information and communication technology in their teaching learning methods. For to know the problems the researcher was asked the questions to which problems occur to using ICT based information sources in information seeking process. The college teachers replied their answer in the below table.

Problems in using ICT tools by the Respondents

Particular	Responses	Percentage (%)
Lack of training about use of E-resources	68	25.38
Lack of Computer Knowledge	53	19.78
Print resources mostly used	118	44.02
Unknown about ICT	29	10.82
Total	268	100

Source : Compailed by the Researcher

The study revealed intresting observation that, majority of the college teachers faced problem toward they mostly used print resources 118 (44.02%) follwed by the least of the college teachers faced problem towards they were unknown about ICT 29 (10.82%). Apart from that they faced problem toward lack of computer knowledge and lack of training about effective use of E-resources respectively 53 (19.78%) and 68 (25.38%).

FINDINGS

The study found that the college teachers used print resources mostly as one of the major obstacles in to using ICT based information sources in the information seeking process. It means they mostly used textbooks, reference books, journals and magazines in the study region. Also they faced problems toward lack of training about effective use of E-resources, lack of computer knowledge and unknown ICT.

CONCLUSION

In the Information and Technology era, everyone having ICT based information sources but the study revealed that the college teacher's gives preference to the print resources than ICT based information sources. They were

didn't get training on effective use of E-resources as well as computer knowledge. These problems faced by the college teachers in the beed district.

SUGGESTIONS

Librarian and library professionals should arrange workshop and orientation programme on effective use of Eresources to college teachers in regular period. Today's blended learning system occurs in the education system therefore teachers must accept ICT tools for fulfilling their personal and professional competencies.

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ओपन सोर्स सॉफ्टवेअर : कोहा

सरडे दिलीप निवृत्ती, ग्रंथपाल वसंतराव काळे महाविद्यालय, ढोकी ता.जि. धाराशिव dileepsarde@gmail.com

सार :

ओपन सोर्स सॉफ्टवेअर हे एक प्रकारचे सॉफ्टवेअर आहे ज्याद्वारे उपभोक्त्यांना मुक्तपणे माहिती प्रदान करण्याचे कार्य केले जाते. वाचक गरजेनुसार सहजपणे पुन्हा पुन्हा उपयोग करू शकतात व त्यात सुधारणा करू शकतात. यालाच ग्रंथालय व्यवस्थापनाचे सॉफ्टवेअर असे संबोधले जाते. यात SOUL, KOHA, New Gen Lib, Librarian, Sanjay, Libsys, LIBMAN इ. ओपन सोर्स सॉफ्टवेअर आहेत. प्रस्तुत लेखात ओपन सोर्स सॉफ्टवेअर म्हणजे काय, ओपन सोर्स सॉफ्टवेअरची वैशिष्टे, उद्देश, फायदे, स्वरूप आणि कोहा या ओपन सोर्स सॉफ्टवेअर विषयी माहिती देण्यात आलेली आहे.

शोध संज्ञा : ओपन सोर्स सॉफ्टवेअर, उपभोक्ते, कोहा इ.

1. प्रस्तावना :

ओपन सोर्स सॉफ्टवेअर म्हणजे संगणक प्रणालीच्या माध्यमातून माहितीच्या स्त्रोतांची उपलब्धता करणे, वाचकांना मुक्तपणे माहिती उपलब्ध करून देणे, तसेच यात हवे त्याप्रमाणे बदल करण्याचे स्वातंत्र्य असते यालाच मुक्त स्त्रोत आज्ञावली असे म्हणतात. संगणकाद्वारे ग्रंथालयातील वाचनसाहित्य संग्रहाचा मुक्तपणे वापरण्याची संपूर्ण परवानगी असते. आज संगणकामुळे औद्योगिक समाजाचे रुपांतर माहिती समाजामध्ये झालेले आहे. आज समाजामध्ये खूप मोठ्या प्रमाणात माहिती तंत्रज्ञानाचा उपयोग केला जात आहे. मानव जातीचे कल्याण करावयाचे असेल तर माहितीधीष्ठीत समाज नाहीतर ज्ञानाधीष्ठीत समाज निर्माण केला पाहिजे असे युनोस्केने म्हटले आहे. समाजातील सर्व नागरिकांना किंवा वाचकांना माहिती सहजपणे उपलब्ध होण्यासाठी माहिती तंत्रज्ञानाचा उपयोग केला जातो. यासाठी आज्ञावलीचा उपयोग केला जातो. ग्रंथालय संगणक आज्ञावली हा एक माहिती तंत्रज्ञानाचा घटक आहे. याद्वारे शाळा, महाविद्यालय, विद्यापीठ व संशोधन संस्था इ. मधील उपभोक्त्यांना आवश्यक ती माहिती उपलब्ध करून देण्यासाठी ओपन सोर्स सॉफ्टवेअरचा उपयोग केला जातो.

2. ओपन सोर्स सॉफ्टवेअर व्याख्या :

- 1. ओपन सोर्स सॉफ्टवेअर म्हणजे संगणकास सूचना पुरवणारी आज्ञावली होय. सॉफ्टवेअर म्हणजेच आज्ञावली होय.
- 2. According to Mogan "Open source software is more about building communities and less about computers programs. It is more about making the world a better place and less about personal profit"

ओपन सोर्स सॉफ्टवेअर म्हणजेच विनामूल्य त्याचा उपयोग करता येतो. या सॉफ्टवेअर सोबत सोर्स कोड येतो. या सोर्स कोडमुळे उपभोक्त्यांना गरजेनुसार ते साठवून ठेवणे, स्थापित करणे, माहितीमध्ये बदल करणे आणि त्याचे वितरण करणे या सर्वांमध्ये मदत करते. या आज्ञावलीच्या माध्यमातून माहिती संप्रेषण तंत्रज्ञानाचा उपयोग ग्रंथालयात वाढत आहे. या तंत्रज्ञानाचा उपयोग वापरकर्त्यांना शोध सेवा प्रदान करण्यासाठी केला जातो. ग्रंथालयामध्ये जी माहिती उपलब्ध आहे ती प्राप्त करण्यासाठी संगणकाची मदत होत आहे. ग्रंथालयात संगणकाचा उपयोग केल्यामुळे श्रम, पैसा आणि वेळ वाचतो आहे. यातूनच अनेक संस्थानी माहितीचे आदान प्रदान करण्यासाठी डाटाबेसची निर्मिती केल्याचे दिसून येते.

3. ओपन सोर्स सॉफ्टवेअरची वैशिष्ट्ये :

1. सोर्सकोडची उपलब्धता :

सामान्यपणे ओपन सोर्सकोडची उपलब्धता हे एक वैशिष्ट ओपन सोर्स सॉफ्टवेअरचे सांगता येते. ओपन सोर्स हा एक संगणक प्रोग्रामचा संदर्भ देतो. सर्वच प्रकारचे म्हणजेच मोफत आणि विकत घेतलेले ओपन सोर्स सॉफ्टवेअर त्यांच्या सोर्सकोडसह उपलब्ध करून दिलेले असतात. हा सोर्स कोड दिलेल्या परवान्याच्या नियम व अटी यांच्या अधीन राहून प्रदान केला जातो. वाचकाला या कोडमध्ये बदल करण्याची सवलत दिलेली असते. त्यामुळे आपल्याला म्हणजेच उपभोक्त्याला आवश्यकतेनुसार त्यात बदल करून उपयोगात आणता येते.

2. परवाना :

सामान्यपणे सॉफ्टवेअरचा वापर हा योग्य प्रकारे करावा आणि वाचकाने किंवा उपभोक्त्याने त्यात बदल करून ते पुन्हा इतरांना विक्री करू नये यासाठी परवाना संदर्भातील न्यायालयीन हक्क राखून ठेवण्यात आलेले असतात. याद्वारे उपभोक्त्याने आज्ञावलीमध्ये बदल किंवा दुरुस्ती करून ते विक्री करून पैसा कमवणे यावर बंदी असते. परंतु ओपन सोर्स सॉफ्टवेअर म्हणजेच याच्या नावामध्येच आज्ञावलीचा उपयोग मुक्तपणे करणे होय. यात दुरुस्ती करणे किंवा बदल करून ते विक्री करण्यास ओपन सोर्स सॉफ्टवेअर मध्ये सवलत देण्यात आलेली आहे.

3. गरजेनुसार बदल करता येणे :

संगणकाचे योग्य ज्ञान असणाऱ्या उपभोक्त्याला सदरील सॉफ्टवेअरचा उपयोग करता येतो. उपभोक्ता सोर्सकोडमध्ये बदल करेल त्याप्रमाणे त्याला चांगल्या प्रकारे बाहेरील कार्यासाठी उपयोग करता येतो. या सॉफ्टवेअरमध्ये विविध प्रकारे बदल केल्यामुळे त्याचा उपयोगसुद्धा अनेक प्रकारे करता येतो.

4. विक्री कुरण्याची मुभा :

ओपन सोर्स सॉफ्टवेअर हे वापरकर्त्याला यात बदल करणे, दुरुस्ती करणे, नवीन माहिती समाविष्ट करणे याची मुभा देते. त्याचबरोबर सदरील प्रकारच्या सुधारणा केल्यानंतर ते विक्री करून पैसे कमवण्याची संधीसुद्धा प्राप्त करून देते. ओपन सोर्स सॉफ्टवेअरची विक्री करणे, त्यात दुरुस्ती करणे आणि त्याचे वितरण पैसे घेऊन करणाऱ्या कंपन्या अस्तित्वात असून रेड हॅट ही कंपनी याप्रकारचे कार्य करते. त्याचबरोबर सल्ला देण्याच्या माध्यमातूनही ही कंपनी नफा मिळवत असल्याचे दिसून येते.

5. अद्ययावतीकरण :

सदरील सॉफ्टवेअरमध्ये अपडेट करणे, दुरुस्ती करणे, नविन माहिती समाविष्ट करणे या प्रकारचे स्वातंत्र्य असल्यामुळे नवनवीन झालेले बदल यात वापरकर्त्याकडून केले जातात. यामुळे उपभोक्त्यांना अपडेट व्हर्जन वापरण्यासाठी मिळतात. इतर सॉफ्टवेअरचे अपडेट उपभोक्त्याला पैसे देऊन विकत घ्यावे लागतात. कोणत्याही प्रकारचे पैसे उपभोक्त्याला देण्याची गरज नसल्यामुळे आणि बदल, दुरुस्ती करण्याची मुभा असल्यामुळे अद्ययावतीकरण वरचेवर चालूच असते व याचा फायदा वापरकर्त्यांना होतो.

4. ओपन सोर्स सॉफ्टवेअरचे फायदे :

1. मोफत उपलब्ध :

ओपन सोर्स सॉफ्टवेअर हे मुक्त स्वरूपाचे असल्यामुळे यास कोणत्याही प्रकारचे पैसे मोजण्याची गरज नसते. म्हणजेच हे निःशुल्क स्वरुपात उपलब्ध असतात. एखाद्या संस्थेस निधीची कमतरता असेल तर त्यांना या प्रकारचे सॉफ्टवेअर वरदान ठरते. तसेच यास कोणत्याही प्रकारचे देखभाल शुल्क देखील आकारले जात नाही.

2. सुलभ परवाना :

एकदा परवाना प्राप्त झाल्यानंतर सदरील सॉफ्टवेअर अनेक वेळा इनस्टॉल करता येते त्याचबरोबर कोणत्याही ठिकाणी त्याचा उपयोग करता येतो त्यास कोणत्याही प्रकारचे बंधन नाही. तसेच कोणत्याही प्रकारची देखरेख करण्याची गरज नाही.

3. एकत्रीकरण क्षमता :

लोड बॅलन्सिंग, क्लस्टरिंग आणि ओपन सोर्स ॲप्लिकेशन्ससाठी अनेक पर्याय, जसे की डेटाबेस आणि ईमेल हे संस्थांना नवीन वाढीसाठी स्केल वाढवण्याची किंवा कमी करून अधिक करण्यासाठी एकत्रित करण्याची क्षमता प्रदान करतात.

4. व्हेंडर लॉक-इन: सर्व माहिती तंत्रज्ञान व्यवस्थापकांसाठी व्हेंडर लॉक-इनची निराशा ही एक वास्तविकता आहे. परंतु यात व्हेंडर लॉक-इन कालावधी नसल्यामुळे वापरकर्त्याला योग्य प्रकारे या आज्ञावलीचा उपयोग करता येतो.

5. तज्ञ व्यक्तींचा सहभाग :

ओपन सोर्स सॉफ्टवेअर निर्माण करण्यामध्ये जगभरातील अनेक तज्ञ व्यक्तींचा सहभाग असतो. त्यामुळे प्रत्येकाच्या बुद्धिमत्तेचा वापर यात होत असतो. या प्रकारचे सॉफ्टवेअर निर्माण करण्यात वेगवेगळ्या देशांमधील, संशोधन संस्थांमधील तज्ञ व्यक्ती मिळून तयार करत असल्यामुळे ते स्वतः जवळ असलेल्या ज्ञानाचा उपयोग करून उत्कृष्ट आज्ञावली तयार करत असतात.

6. दर्जेदार सॉफ्टवेअर :

पुरावे आणि संशोधन असे सूचित करतात कि, ही एक मुक्त स्त्रोत प्रदान करणारी आज्ञावली आहे. सदरील सॉफ्टवेअर हे जगभरात उपयोगात आणल्या जाणाऱ्या मानकानुसार तयार केलेले असल्यामुळे ते दर्जेदार स्वरुपात उपलब्ध होते.

5. ग्रंथालय आज्ञावली :

कोहा हे एक ग्रंथालय संगणकीकरणाचे विनामूल्य सॉफ्टवेअर आहे. हे सॉफ्टवेअर जगभरात वापरले जाणारे आहे. कोहाची सुरुवात जानेवारी 2000 मध्ये झालेली आहे. कोहा हे जगातील एक सर्वोत्कृष्ट ग्रंथालयासाठी उपयोगात आणले जाणारे ओपन सोर्स सॉफ्टवेअर आहे. न्यूझीलंडमधील 'Horowhenua Library Trust' करिता 'Katipo Communication' ने 1999 मध्ये कोहाची निर्मिती केली आहे आणि जानेवारी 2000 मध्ये त्याचा प्रत्यक्षपणे वापर सुरु झाला आहे. 2005 मध्ये कोहाकरिता 'LibLime' या वेगळ्या कंपनीची ओहियो येथे स्थापना करण्यात आली. पुढे जाऊन यत झेब्रा या इंटिग्रेटेड सपोर्टची जोड दिल्यामुळे माहितीचा शोध घेणे आणि शोध घेण्याच्या क्षमतेमध्ये बऱ्याच प्रमाणामध्ये सुधारणा झाल्याचे दिसून येते. जगभरातील 3500 पेक्षा अधिक सार्वजनिक आणि विशेष ग्रंथालयांमध्ये कोहाचा उपयोग केला जातो. भारतामध्ये वेगवेगळ्या विद्यापीठांसह, महाविद्यालयांमध्ये सुद्धा कोहाचा उपयोग केला जात आहे. तसेच ब्रिटीश कौन्सिल लायब्ररी, आयआयएम अहमदाबाद इ. आस्थापनांच्या ग्रंथालयात या सॉफ्टवेअर पॅकेजची अंमलबजावणी करत आहेत. कोहामध्ये सर्वसमावेषक लायब्ररी सॉफ्टवेअर पॅकेजसाठी आवश्यक असलेल्या सर्व मॉड्यूल्सचा समावेश आहे.

कोहा हे ग्रंथालय आणि माहितीशास्त्राची मानके उपयोगात आणून OPAC चा इंटरफेस उपयोगात आणते. तसेच यामध्ये विक्रेता लॉक इन नाही त्यामुळे कोणत्याही ग्रंथालयाला तांत्रिक सहकार्य पाहिजे असल्यास ते संबंधित संस्थेकडून प्राप्त करता येते. कोहा ही एक ग्रंथालयांच्या कामकाजाचा आढावा ठेवणारी एक प्रणाली असून त्यात वेतन, खर्च, खरेदी आणि सर्वात महत्त्वाचे म्हणजे विविध बाबींचा आढावा व संकलन करणारी प्रणाली आहे.

6. कोहा ग्रंथालय आज्ञावलीचे फायदे :

- ग्रंथालयातील कर्मचारी व उपभोक्ते यांना हे सॉफ्टवेअर हाताळणी करण्यासाठी अतिशय सुलभ आहे कारण या सॉफ्टवेअरची प्रभावी शोध क्षमता आहे.
- यात स्मरण करून देण्याची देखील क्षमता आहे जसे कि, नवीन आलेले ग्रंथ, वाचकांकडे असलेले वाचनसाहीत्य, कालावधी संपल्यानंतर वाचकाकडे असलेले वाचनसाहीत्त्य इत्यादीबद्दल स्मरण करून देण्याचे कार्य हे सॉफ्टवेअर करते.
- MARC आणि झेब्रा तंत्रज्ञान यांच्या एकत्रीकरणामुळे ग्रंथालयातील वाचनसाहित्याची प्रक्रिया करण्यासाठीचा वेळ कमी झाला आहे.
- ऑनलाईन माध्यमातून निरीक्षण करणे शक्य झाले आहे.
- त्याचप्रमाणे प्रशासनातील उच्च पद ते सर्वात खालचे पद या दरम्यान येणाऱ्या जबाबदाऱ्या कमी झालेल्या आहेत.
- स्वयंचलित माध्यमातून डेटाच्या संकलनामुळे ग्रंथालय व्यवस्थापन करणे सोपे होते.
- कोहा हे सॉफ्टवेअर उपभोक्ते आणि कर्मचारी यांना एकत्र जोडण्याचे कार्य करते. कारण दोघेही हे या प्रणालीचे घटक असल्यामुळे उपभोक्त्याचे लक्ष साध्य करण्यासाठी अधिक प्रभावीपणे कार्य करण्याचे काम कर्मचारी करत असतात.

7. सारांश :

सदरील लेखात ओपन सोर्स सॉफ्टवेअर याचा ग्रंथालयात उपयोग, ओपन सोर्स सॉफ्टवेअरचे फायदे, ओपन सोर्स सॉफ्टवेअरची वैशिष्टे, कोहा ग्रंथालय संगणकीकरणाचे सॉफ्टवेअर व त्याचे फायदे याविषयी विवेचन करण्यात आले आहे. ग्रंथालय संगणकीकरण करण्यासाठी या सॉफ्टवेअर उपयोग होणार आहे.

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ROLE AND IMPORTANCE OF SWAYAM AND OTHER OPEN EDUCATIONAL RESOURCES

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ABSTRACT

Information technology has changed the entire area of academic higher education. In every field particularly in higher education information technology has proved useful and applicable and that trend is growing fast. Open educational resources are an emerging concept and related technological advancement in the present Era that have placed demand for knowledge and information in independent learning. This development has opened up better possibilities for acquiring knowledge and dissemination of information. Therefore in this paper special focus is given on swayam as an important mode of sharing knowledge, learning, teaching and providing better learning opportunities. This paper also focuses on advantages, objectives and other open educational resources.

Keywords: open educational resources OER, swayam ePG pathshala egyankosh, swayam Prabha.

INTRODUCTION

The modern age is the age of information and information communication technology. In this age, due to advancements in ICT, anyone can access information and knowledge through open digital resources. In these open digital sources, there are many educational resources. There are many popular open educational resources available on the Internet. These resources are available and released under a CC license that allows sharing, accessing and dissemination of information. The mentioned mission is open education through information communication and technology.

Open educational resources are mainly engaged for educational literature that is made available online and in digital format. The main part of these resources is that it should be it should be allowed to use, reuse, disseminate, copy and mix, remixing the materials. There is no need to pay regarding royalty or license fees to use it for learners and educators.

Definition of Open Educational Resources:

According to David Willey OER means "open content and open educational resources as any copyrightable work (traditionally excluding software which is described by other terms like open source) that is either

- 1. In the public domain or
- 2. Licensed in a manner that provides users with free and perpetual permission to engage in the five R activities"

As Creative Commons defines, "OER are teaching learning and research materials that are either in the public domain or licensed in a manner that provides everyone will with free and perpetual permission to engage in the five are activities".

Advantage of OER:

Generally, open educational resources have many advantages to learners and educators are as follows.

- 1. Frequent and varied resources and courses in the field of education are available.
- 2. Cost-saving and free for learners and educators.
- 3. Access and availability anywhere and or anytime for easy.
- 4. To disseminate and access the required knowledge and information.
- 5. The experts are connected and involved in the OER.
- 6. the varied and modified courses are available having the modifying ability
- 7. Reach authentic and innovative knowledge access which improves the quality of education.
- 8. Making education free of cost anytime anywhere.
- 9. OER provides different types of information and knowledge formats like open courseware, open-access journals, open-access books, open-access repositories, textbooks, theses and dissertations.
10. The resources also provide a variety of courses for smaller units such as diagrams, text images or audio, video game portals and the like.

11. OER also provide free courses, syllabi, lecture assignments different types of educational activities, pedagogical material and all types of digital media collections.

Disadvantages of OER:

Despite the development of technology easy accessibility of the internet and open practices in education together with online learning e-Learning, there are some disadvantages mentioned as follows

- 1. The educational material available in OER may have quality and reliability issues and concerns.
- 2. There may be a language barrier as the educational material is available in the mainstream language.
- 3. Due to technological advancements and availability, there may be technological issues.

Important OER Initiative in India:

- 1. swayam (Study Webs of Active-Learning for Young Aspiring Minds)
- 2. swayam Prabha
- 3. Shodhganga
- 4. Vidya Mitra
- 5. NDLI (National Digital Library of India)
- 6. NPTEL (National Programme on Technology Enhanced Learning)
- 7. NOPR (NISCAIR Online Periodical Repository)
- 8. OGD (Open Government Data (Platform India))

SWAYAM

Study web of Active Learning for Young Aspiring Minds is an Indian massive open online course (MOOC) platform. The course is an initiative of the ministry of Human Resource Development MHRD, Government of India. The main objective of this initiative is to strengthen the coverage of all advanced education particularly education for all providing free entry to web courses under Digital India program. On this platform, several needbased courses are providing better learning opportunities for students. SWAYAM is fully governmentsponsored Initiative aimed at achieving the three main basic principles of education policy. Access to education for everyone, equity of everyone and quality of education, the basic purpose of this initiative is to make the different online courses and different teaching and learning Tools available to everyone especially the most disadvantaged to students. The teachers and researchers want to access and use online multimedia resources for research and in teaching. SWAYAM aims to close the digital divide for all disadvantaged students who have been left and are far from the digital revolution. The Swayam platform provides education for all anytime, anywhere and at their leisure. Swayam is the initiative and the main objective of this effort is to take the best learning and teaching resources to all, particularly for those who have hitherto remained untouched by digital development and have not been able to join the mainstream of the knowledge environment. These courses are IT-based and facilities facilitate hosting taught in the classroom from 9th class till post-graduation to be accessed by all connected with this platform. All the courses available on this platform are interactive prepared and designed by experienced subject experts for the preparation of different useful and perfect courses in different streams more than 1000 experts contributed to preparing the courses.

The current Swayam platform is developed and designed by the ministry of Education and NPTEL, IIT Madras (Chennai) with the help of Google Inc. and persistent system limited.

Environment and Latest Development of Swayam NPTEL:

To encourage more students to participate in the initiative NPTEL Swayam offers several self- study courses across the engineering humanities and science stream.

All these courses are available at https://swayam.gov.in/nc_details/NPTEL Swayam is going to set up a chapter and single point contact (SPOC) with the colleges increasing. the participation of students in online courses providing mentors, suitable courses and total guidance with the help of college.

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National Coordinators Of Swayam:

9 National coordinators have been appointed by Swayam to ensure the best quality content for delivery through different courses for students.

AICTE - All India Council for Technology Education

NPTEL - National program on technology-enhanced learning

UGC - University grant commission full stop

CEC - Consortium for Educational Communication N

CERT and NIOS - National Council of educational research and training

IGNOU - Indira Gandhi National Open University

IIMB - Indian Institute of Bangalore

NITTTR - National institute of technical teachers training and research

School education NCERT / NIOS

Out of school education IGNOU - NITTR

 $Undergraduate\ education-NPTEL$

AICTE, CEC, IIMB

PG education – NPTEL, AICTE, IIMB, UGC

The courses available on the Swayam platform are in the four quadrants.

- 1. Video lecture,
- 2. Reading material for download/ printing,
- 3. Self-assessment through quizzes and test
- 4. Online discussion forum for clearing the doubts.

Present Enrolment Statues on SWAYAM

2024 Ja	anuary	2578601	0
2023	July	3660884	710413
2022 Ja	anuary	3543419	543987

Source: Ministry of Education swayam .gov.in

Swayam Course Objectives

- 1. To create suitable authentic and useful content of courses for the students from class 9th to post graduate level.
- 2. To provide and implement recommendations of various institutions involved and associated with swayam for a choice-based credit system.
- 3. To create online multiple courses.
- 4. To issue and provide certification to students for online learning.
- 5. To solve problems and doubts of the enrolled students to study in various educational institutions.

Important Features of Swayam Online Learning

- 1. The courses are available for class 9th to post-graduate level.
- 2. The courses are available in four quadrants i.e. video lectures, downloading and printing of learning material, text and quizzes and a forum for clearing doubt.
- 3. The courses available are free of cost and available anywhere at any time.
- 4. The Swayam portal certifies the successful students after completion of the courses.
- 5. UGC recognizes and approves the courses and certification.

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CONCLUSION

Swayam is an educational program started on by the government of India to promote knowledge sharing digital online democratizes education in India. The swayam played an important role during the covid-19 pandemic. It has provided quality education to minimize the learning gap among deprived students. Swayam provides courses in different learning streams and has proved to be a great opportunity for millions of students.

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INFORMATION ACCESS AND OPEN EDUCATIONAL RESOURCES (OERS) IN ACADEMIC ENVIRONMENTS: ISSUES, CHALLENGES, AND OPPORTUNITIES

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ABSTRACT

The advent of Open Educational Resources (OERs) has revolutionized the landscape of education by providing free and open access to high-quality learning materials. This research paper aims to investigate the utilization of OERs in academic environments, with a specific focus on Massive Open Online Courses (MOOCs) and the SWAYAM platform in the Indian context. The purpose of this study is to identify and analyze the issues, challenges, and opportunities associated with the adoption and integration of OERs in academic institutions. Through an examination of best practices, successful initiatives, and emerging trends in OER utilization, the research paper provides insights into effective strategies for overcoming challenges and maximizing the benefits of OERs in academic environments. It discusses the importance of institutional support, faculty development programs, community engagement, and policy frameworks in facilitating the adoption and sustainable use of OERs. Furthermore, the paper explores the role of libraries and information professionals in curating, promoting, and disseminating OERs, as well as providing support for faculty and students in accessing and utilizing these resources effectively.

Keywords: Open Educational Resources (OERs), Massive Open Online Courses (MOOCs), SWAYAM, information access, academic environment, challenges, opportunities, libraries, faculty development, equity, affordability, quality assurance.

LITERATURE REVIEW

When i review the previous research literature on this topic, I find out many people have written research articles before, the information about some of the articles related to the topic is given below. But due to limitations of word only the names of two authors research papers are given in this paper in the Prior Research Literature Report.

- 1) Yuan, Li; MacNeill, Sheila; and Kraan, Wilbert. "Open Educational Resources-opportunities and challenges for higher education." (2008). Educational Cybernetics: Reports. Paper 1 In this research paper, the author has briefly presented the essence as follows.
- 2) Open Educational Resources: Opportunities and Challenges Dr. Jan Hylén OECD's Centre for Educational Research and Innovation Paris, France www.oecd.org/edu/ceri

OBJECTIVES:

- To examine the current state of OER adoption in academic environments, including the prevalence of MOOCs and the utilization of the SWAYAM platform as a repository of OERs.
- To will analyze the extent to which OERs are integrated into the academic curriculum and their impact on teaching and learning practices.
- > To explore the opportunities afforded by OERs in promoting equitable access to education, fostering collaboration and knowledge sharing, and enhancing pedagogical innovation.
- To examine the role of libraries and information professionals in curating, promoting, and disseminating OERs.
- To analyze the support provided by libraries in facilitating access to OERs and assisting faculty and students in utilizing these resources effectively.

RESEARCH METHODOLOGY:

This research paper based on secondary data available on online website encompass scholarly articles, books, reports, and relevant documents from academic and institutional sources.

INFORMATION ACCESS:

Information access is the ability to identify, retrieve, and use information effectively. Access to information is vital to social, political, and economic advancement. Traditionally, information has been disseminated in a variety of formats that have been widely accessible, often through public libraries. Many individuals also relied

on other people and the media for information. However, advances in computer technology have revolutionized information access, making vast stores of business, education, health, government, and entertainment information accessible on the World Wide Web. Yet, despite technology's dramatic impact on the extent and availability of digital information, many people do not have access to these resources.

OER Definitions: The William and Flora Hewlett Foundation: "At Hewlett, we use the term "open education" to encompass the myriad of learning resources, teaching practices and education policies that use the flexibility of OER to provide learners with high quality educational experiences. Creative Commons defines OER as teaching, learning, and research materials that are either (a) in the public domain or (b) licensed in a manner that provides everyone with free and perpetual permission to engage in the 5R activities– retaining, remixing, revising, reusing and redistributing the resources."

Open Educational Resources OER:

OER are teaching, learning, and research materials intentionally created and licensed to be free for the end user to own, share, and in most cases, modify. The term "OER" describes publicly accessible materials and resources for any user to use, re-mix, improve, and redistribute under some licenses. These are designed to reduce accessibility barriers by implementing best practices in teaching and to be adapted for local unique contexts. The development and promotion of open educational resources is often motivated by a desire to provide an alternative or enhanced educational paradigm.

Open educational resources (OER) are part of a "range of processes" employed by researchers and educators to broaden access to scholarly and creative conversations. Although working definitions of the term OER may vary somewhat based on the context of their use, the 2019 definition provided by UNESCO provides shared language useful for shaping an understanding of the characteristics of OER. The 2019 UNESCO definition describes OER as "teaching, learning and research materials that make use of appropriate tools, such as open licensing, to permit their free reuse, continuous improvement and repurposing by others for educational purposes."

While collaboration, sharing, and openness have "been an ongoing feature of educational" and research practices "past and present", the term "OER" was first coined to describe associated resources at UNESCO's 2002 Forum on Open Courseware, which determined that "Open Educational Resources (OER) are learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, that permit no-cost access, re-use, re-purpose, adaptation and redistribution by others.

India – National Council Of Educational Research and Training (NCERT) digitized all its textbooks from 1st standard to 12th standard. The textbooks are available online for free. Central Institute of Educational Technology (CIET), a constituent Unit of NCERT, digitized more than thousand audio and video programmes. All the educational AV material developed by CIET is presently available at Sakshat Portal an initiative of Ministry of Human Resources and Development. In addition, National Repository for Open Educational Resources (NROER) houses a variety of e-content.

Challenges and Barriers to OER Adoption:

Despite the potential benefits, several challenges hinder the widespread adoption of OERs in academic environments. Copyright and licensing issues pose significant barriers to OER utilization, with educators often facing uncertainty about the legality and permissibility of incorporating OERs into their courses (Smith & Casserly, 2006). Quality assurance is another concern, as the proliferation of OERs makes it challenging to assess the accuracy, currency, and relevance of materials (Wiley & Gurrell, 2009). Moreover, technological barriers, faculty resistance, and lack of awareness and training hinder the effective integration of OERs into the curriculum (Pegler, 2012).

Role of Libraries and Information Professionals:

Libraries and information professionals play a crucial role in supporting the utilization of OERs in academic environments. They serve as repositories of OERs, providing access to a wide range of resources and assisting faculty and students in identifying, evaluating, and utilizing OERs effectively (McGreal, 2015). Libraries also play a vital role in advocacy, outreach, and capacity-building initiatives to promote OER awareness and adoption among stakeholders (Bissell, 2009)

Opportunities for Collaboration and Innovation:

Despite the challenges, OERs present opportunities for collaboration and innovation in academic environments. The Open Education movement fosters a culture of sharing, collaboration, and open exchange of knowledge,

leading to the development of vibrant communities of educators, learners, and content creators (Conole, 2013). Furthermore, OERs enable pedagogical innovation by providing educators with the flexibility to adapt and customize materials to meet the diverse needs and preferences of learners (Rolfe, 2012).

Advantages of using OER include:

- Expanded access to learning can be accessed anywhere at any time
- Ability to modify course materials can be narrowed down to topics that are relevant to course
- Enhancement of course material texts, images and videos can be used to support different approaches to learning
- Rapid dissemination of information textbooks can be put forward quicker online than publishing a textbook
- Cost saving for students all readings are available online, which saves students hundreds of dollars
- Cost savings for educators lectures and lessons plans are available online, saving educator time, effort and money, while learning new knowledge
- Consolidate the foundation for more reproducible and inclusive science
- Improve the quality of research produced by future generation of researchers
- Removes barriers to entry and facilitate career progression by offering students to be involved in knowledge generation, enhancing diversity and representation within science.

Challenges of using OER include:

- Quality/reliability concerns some online material can be edited by anyone at any time, which may result in irrelevant or inaccurate information
- Limitation of copyright property protection OER licenses change "All rights reserved." into "Some rights reserved.", so that content creators must be intentional about what materials they make available
- Technology issues some students may have difficulty accessing online resources because of slow internet connection, or may not have access to the software required to use the materials
- Languages in which OER are distributed use of English as primary language of delivery may limit its use

Academic Environments Issues:

In an academic environment, various issues can arise that affect students, faculty, staff, and the overall educational experience. Some of the key issues include:

- 1. Access and Affordability: One of the most significant issues in academia is ensuring equitable access to education for all individuals regardless of socio-economic background. High tuition fees, textbook costs, and other expenses can create barriers to access, particularly for marginalized communities.
- 2. **Quality of Education:** Maintaining high-quality education is essential for the academic environment. Issues such as outdated curricula, inadequate resources, and lack of qualified faculty can compromise the quality of education provided to students.
- 3. **Diversity and Inclusivity:** Promoting diversity and inclusivity is crucial in creating a welcoming and supportive academic environment. Issues related to discrimination, harassment, and lack of representation can undermine efforts to create an inclusive campus culture.
- 4. **Mental Health and Well-being:** Mental health concerns among students and faculty are increasingly recognized as significant issues in academia. Stress, anxiety, depression, and burnout can negatively impact academic performance, productivity, and overall well-being.
- 5. **Technology Integration:** Integrating technology effectively into the academic environment can present challenges related to infrastructure, accessibility, and digital literacy. Ensuring equal access to technology and addressing digital divides are critical considerations.
- 6. Work-Life Balance: Faculty and staff often face challenges in achieving a healthy work-life balance due to heavy workloads, research expectations, and administrative responsibilities. Balancing professional and personal commitments is essential for overall well-being and job satisfaction.

- 7. **Research Funding and Support:** Securing adequate funding and support for research activities is essential for academic institutions. Issues such as declining research funding, limited resources, and administrative barriers can impede research productivity and innovation.
- 8. **Graduate Student Concerns:** Graduate students face unique challenges such as funding insecurity, mentorship opportunities, and career prospects. Issues related to graduate student mental health, work conditions, and professional development require attention within the academic environment.
- 9. Student Engagement and Retention: Enhancing student engagement and retention is critical for academic success. Issues such as disengagement, lack of support services, and insufficient academic advising can contribute to student attrition rates.
- 10. **Globalization and Internationalization:** With increasing globalization, academic institutions are faced with issues related to internationalization, including recruitment and support of international students and faculty, cross-cultural communication, and global partnerships.

About MOOCs:

Massive Open Online Courses (MOOCs) are free online courses available for anyone to Enroll. MOOCs provide an affordable and flexible way to learn new skills, advance your career and deliver quality educational experiences at scale. Millions of people around the world use MOOCs to learn for a variety of reasons, including: career development, changing careers, college preparations, supplemental learning, lifelong learning, corporate eLearning & training, and more. MOOCs provide an affordable and flexible way to learn new skills, advance your career and deliver quality online learning to anyone, anywhere. Use the filter below to browse from over 3,000 online courses offered on edX.org

The traditional classroom is limited in how many students it can serve, but millions of people around the world want and need quality education. MOOCs are massive open online courses. The concept, spearheaded by edX, began as an opportunity for organizations to offer online courses to students all over the world, in the millions, for free. With the world going online, it's almost essential to discover how online learning works. The pandemic has supercharged remote learning and away from on-campus classes. Many education programs help individuals and businesses help businesses remotely. Video, online articles, and discussion forums are what fuel online classes. Overall, it will feel like regular classes with course materials, a syllabus, and timed exams. Be aware of your personal time management, keeping up in group projects, and access to the internet. If you're prepared to manage your own time and learn from various programs, you can know almost anything available on the internet.

Benefits of MOOCs:

By opening the classroom through MOOCs, edX brings the best courses from the best schools to millions of learners around the world. The edX platform is built so that teachers can deliver education at scale that is the same or better quality as on-campus learning. Today, MOOCs are doing even more to reinvent and reimagine education. For example, in addition to fully online master's degrees, edX's innovative modular credentials Micro Masters programs and Professional Certificate programs provide flexible and affordable educational opportunities learners at all stages can leverage to thrive in an increasingly complex and technologically advanced world.

Examples of MOOC Courses:

edX offers courses in a range of subjects, from architecture to business & management, computer science, data analysis & statistics, engineering, food and nutrition, law, literature, math, philosophy, science, and more.

For example, the first-ever MOOC, still available today, was MIT's Circuits and Electronics course. As of September 2019, this course has reached nearly 500,000 learners. Additional examples include Boston University's digital product management course, part of a Micro Masters Program in Digital Product Management, Microsoft's Introduction to R for Data science course, and many more.

SWAYAM:

SWAYAM is an Indian government portal for free open online course (MOOC) platform providing educational courses for university and college learners. The SWAYAM initiative was launched by the then Ministry of Human Resource Development (M.H.R.D.) (now Ministry of Education), Government of India under Digital india to give a coordinated stage and free entry to web courses, covering all advanced education, High School, and skill sector courses. It was launched on 9th July 2017 by Pranab Mukharji Honorable President of India,SWAYAM has been developed cooperatively by MHRD (Ministry of Human Resource Development), and AICTE (All India Council for Technical Education) with the help of Microsoft. The current SWAYAM

platform is equipped for facilitating 2,000 courses. The platform offers free access to everyone and hosts courses from class 9 to post-graduation. It enables professors and faculty of centrally funded institutes like IITs, IIMs, IISERs etc. to teach students. According to SWAYAM, there are 203 partnering institutes, 2,748 completed courses, 12,541,992 student enrollments, 915,538 exam registrations, and 654,664 successful certificates. SWAYAM (meaning 'Self' in Sanskrit) is an acronym that stands for "Study Webs of Active-Learning for Young Aspiring Minds".

Courses delivered through SWAYAM are available free of cost to the learners, however learners wanting a SWAYAM certificate should register for the final proctored exams that come at a fee and attend in-person at designated centres on specified dates. Eligibility for the certificate will be announced on the course page and learners will get certificates only if this criteria is matched. Universities/colleges approving credit transfer for these courses can use the marks/certificate obtained in these courses for the same.

The following shall be National Coordinators for each of the Sectors for the purpose of development of the econtent, delivery of online courses and overseeing the assessment procedures of courses offered on SWAYAM. However, the Ministry can add National **Coordinators from time to time depending on the need for expanding the Courses to be offered:**

S.No.	National MOOCs Co-ordinator	Sectors
1	University Grants Commission	Non-Technology Post Graduate
	(UGC)	Degree Programmes
2	NPTEL	Technical / Engineering UG & PG
		degree programmes
3	Consortium for Educational	Non Technology Under Graduate
	Communication	Degree programmes
4	IGNOU	Diplomas and Certificates programmes
5	NCERT	School Educational Programmes from
		Class 9th to 12th
6	NIOS	Out of school children Educational
		Programmes from Class 9th to 12th
7	IIM Bangalore	Management programmes
8	NITTR Chennai	Teacher Training programme.

Opportunities for Information Access and Open Educational Resources (OERs) in Academic Environments:

- 1. **Equitable Access to Education:** OERs have the potential to democratize education by providing free and open access to high-quality learning materials. This opportunity ensures that individuals from diverse socio-economic backgrounds, including those in underserved communities and developing countries, can access educational resources regardless of financial constraints.
- 2. **Customization and Adaptation:** OERs offer educators the flexibility to customize and adapt learning materials to meet the specific needs and preferences of their students. This opportunity enables personalized and student-centered approaches to teaching and learning, fostering greater engagement, motivation, and academic success.
- 3. **Collaboration and Knowledge Sharing:** OERs facilitate collaboration among educators, researchers, and learners, creating vibrant communities of practice and driving pedagogical innovation. This opportunity enables the sharing of best practices, resources, and expertise across disciplinary boundaries, enriching the educational experience and fostering a culture of collaboration and knowledge sharing.
- 4. **Pedagogical Innovation:** OERs provide opportunities for pedagogical innovation by enabling educators to experiment with new teaching strategies, methodologies, and technologies. This opportunity fosters creativity, experimentation, and exploration in the design and delivery of educational content, leading to more engaging, interactive, and effective learning experiences.
- 5. **Global Reach and Impact:** OERs have the potential to reach a global audience, transcending geographical boundaries and cultural barriers. This opportunity allows educators to share their expertise and knowledge with learners around the world, contributing to the global dissemination of education and the advancement of knowledge on a global scale.

- 6. **Cost Savings:** OERs offer significant cost savings for students, educators, and institutions by eliminating the need for expensive textbooks and proprietary materials. This opportunity reduces the financial burden on students and increases access to educational resources for all, thereby promoting affordability and accessibility in higher education.
- 7. **Continuous Improvement and Iteration:** OERs enable continuous improvement and iteration through ongoing feedback, evaluation, and revision. This opportunity allows educators to adapt and refine learning materials based on learner feedback, changing educational needs, and emerging trends, ensuring that content remains relevant, up-to-date, and responsive to evolving educational contexts.
- 8. **Open Licensing and Collaboration:** OERs are typically published under open licenses that allow for reuse, remixing, and redistribution. This opportunity promotes open collaboration and knowledge exchange, enabling educators to build upon existing resources, integrate diverse perspectives, and create innovative learning experiences that meet the needs of diverse learners.
- 9. **Professional Development:** OERs provide opportunities for professional development and lifelong learning for educators, researchers, and practitioners. This opportunity enables educators to access a wide range of professional development resources, including teaching materials, instructional guides, and online courses, to enhance their pedagogical skills, subject knowledge, and teaching practices.
- 10. **Policy Support and Advocacy:** OERs benefit from policy support and advocacy at the institutional, national, and international levels. This opportunity enables governments, educational institutions, and advocacy organizations to promote the adoption and integration of OERs into educational policies, frameworks, and initiatives, thereby fostering a culture of openness, collaboration, and innovation within academic environments.

CONCLUSION

As we move forward, it is imperative that we continue to address the challenges and barriers that hinder the widespread adoption and integration of OERs. This requires concerted efforts from policymakers, educators, librarians, and other stakeholders to develop supportive policies, provide professional development opportunities, build technological infrastructure, and foster a culture of openness and collaboration within academic institutions. In conclusion, the journey towards realizing the full potential of information access and OERs in academic environments is ongoing and multifaceted. By working together to overcome challenges, leverage opportunities, and promote the values of openness, collaboration, and innovation, we can create a more inclusive, equitable, and transformative educational landscape for all.

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FREE AND OPEN-SOURCE SOFTWARE APPLICATION IN LIBRARIES: CHALLENGES AND OPPORTUNITIES

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ABSTRACT

This research paper explores the significance of Free and Open-Source Software (FOSS) in library environments, focusing on its applications, challenges, and opportunities. The paper aims to provide an indepth understanding of how FOSS can enhance library services, efficiency, and cost-effectiveness.

INTRODUCTION

Free and Open-Source Software (FOSS) refers to software that can be freely used, modified, and distributed by anyone. It is characterized by its transparent nature, allowing users to access and modify the source code. FOSS promotes collaboration and community-driven development, as developers can contribute their knowledge and expertise to improve the software. This type of software often carries lower costs compared to proprietary software, making it accessible to a wider range of users and organizations.

In libraries, the adoption of Free and Open-Source Software (FOSS) plays a crucial role in empowering and enhancing the services they offer. By utilizing FOSS, libraries can make their resources and digital collections easily accessible to their patrons without being tied down by licensing fees or restrictions. FOSS also enables libraries to customize and tailor software to their specific needs, leading to more efficient management of library operations and improved user experience. Moreover, the collaborative nature of FOSS encourages libraries to share their experiences and developments with other institutions, fostering a sense of community and knowledge-sharing within the library profession.

Purpose and Objectives of the Research Paper

The purpose of this research paper is to explore the benefits and challenges of implementing free and opensource software (FOSS) in libraries. The objectives of the study are to analyze how FOSS can enhance accessibility to library resources, investigate the ways in which FOSS can be customized to improve library management, and examine how the collaborative nature of FOSS promotes knowledge-sharing and community building within the library profession. By considering these objectives, the research aims to provide valuable insights and recommendations for libraries considering the adoption of FOSS.

Overview of FOSS in Libraries

FOSS in libraries has gained traction in recent years due to its cost-effectiveness and flexibility. The use of FOSS in libraries dates back to the early 2000s when libraries started adopting open-source integrated library systems (ILS). Since then, FOSS has evolved to encompass a wide range of library management tools, such as content management systems, digital repositories, and discovery platforms. This overview will explore the growth and impact of FOSS in libraries, showcasing its potential to revolutionize the way libraries provide access to information and services. One example of FOSS in libraries is the adoption of open-source content management systems (CMS) like Drupal or WordPress. With these systems, libraries can easily create and manage their websites, allowing them to showcase their collections, provide online services, and engage with their users. This not only saves costs on proprietary CMS licenses but also offers libraries the flexibility to customize and tailor their websites according to their specific needs.

Another example is the use of FOSS digital repositories like DSpace or Islandora. These platforms allow libraries to efficiently organize and preserve their digital collections, such as digitized books, articles, and multimedia materials. FOSS digital repositories provide libraries with the ability to store, manage, and provide access to these resources, ensuring long-term sustainability and easy retrieval. Additionally, these platforms often come with built-in tools for metadata creation and preservation, making it easier for libraries to meet industry standards and improve discoverability of their digital content. Overall, the adoption of FOSS in libraries empowers them to provide better services, enhance user experiences, and contribute to the global knowledge sharing community.

Advantages and Benefits of using FOSS in Libraries

Advantages and benefits of using FOSS in libraries include cost-effectiveness, as these open-source software are often free to use and customize according to the library's needs. This allows libraries to allocate their budgets towards other important resources. Additionally, FOSS promotes collaboration and community-driven development, enabling libraries to benefit from continuous improvements and updates from a global network of

developers. FOSS also ensures transparency and security, as the source code is openly available for inspection, reducing the risk of malicious software or data breaches. Furthermore, using FOSS in libraries encourages innovation and creativity. With the ability to modify and adapt the software, libraries can tailor their systems to meet the unique needs of their patrons. This flexibility also allows libraries to experiment with new technologies and stay at the forefront of digital advancements. Moreover, by embracing FOSS, libraries can foster a sense of ownership and empowerment within their communities, as patrons can actively participate in the development and improvement of the software they rely on. Overall, leveraging FOSS in libraries not only saves costs and enhances security but also promotes collaboration, innovation, and community engagement.

Challenges of Implementing FOSS in Libraries

While there are numerous benefits to leveraging FOSS in libraries, there are also a few challenges that come with its implementation. One of the challenges is the need for technical expertise and support. FOSS often requires skilled personnel who are knowledgeable about the software and can provide assistance and troubleshooting when needed. This can be a barrier for smaller libraries or those with limited resources.

Another challenge is the potential compatibility issues with existing systems and software. FOSS may not always seamlessly integrate with other proprietary systems that libraries already have in place. This can lead to additional time and effort required to ensure smooth interoperability, which may not always be feasible for every library.

Additionally, there can be concerns about the long-term sustainability and maintenance of FOSS applications. As these software are community-driven and rely on voluntary contributions, there is a need for active participation and ongoing development to keep them updated and secure. Libraries need to carefully consider the stability and reliability of the FOSS they choose to adopt.

Despite these challenges, with proper planning, resources, and support, libraries can successfully implement FOSS and reap its numerous benefits, contributing to a more open, collaborative, and innovative environment for both staff and patrons.

Opportunities and Advancements in FOSS for Libraries

Despite the challenges, there are numerous opportunities and advancements in FOSS for libraries. One major opportunity is the ability to customize and tailor the software to fit the specific needs of the library. FOSS also allows for greater flexibility and scalability, enabling libraries to easily adapt and expand their services as they grow. Additionally, FOSS encourages collaboration and knowledge sharing among libraries, as they can freely share and modify the software to meet their unique requirements. With advancements in FOSS technologies, libraries can also take advantage of innovative features and functionalities that enhance user experience and streamline library operations. Overall, embracing FOSS presents libraries with exciting possibilities for improving their services and staying at the forefront of technological advancements. By embracing FOSS, libraries can also reduce their dependence on proprietary software vendors, saving on licensing fees and allowing for more flexible budget allocation. FOSS also promotes transparency and accountability, as libraries have access to the source code and can verify the security and privacy of the software they use. Moreover, FOSS fosters a sense of community within the library world, with libraries collaborating and contributing to the development of software that benefits the entire sector. Ultimately, by embracing FOSS, libraries can empower themselves to better serve their patrons and adapt to the ever-changing digital landscape.

Future Directions and Trends in FOSS for Libraries

Integration of FOSS with other emerging technologies such as artificial intelligence and blockchain in library services. As libraries continue to explore the adoption of FOSS applications, it is important to consider the future directions and trends in this field. One area of exploration is emerging FOSS technologies and their potential applications in libraries. By keeping an eye on the anticipated advancements and innovations in FOSS, libraries can stay ahead and make informed decisions about their technology infrastructure. Additionally, libraries should develop strategies to stay up-to-date with the latest FOSS trends, whether through attending conferences, engaging in professional development programs, or actively participating in FOSS communities. Moreover, libraries have the opportunity to contribute to the development and improvement of FOSS applications by providing feedback, reporting bugs, and collaborating with developers. Lastly, the integration of FOSS with other emerging technologies such as artificial intelligence and blockchain has the potential to revolutionize library services, offering new and exciting possibilities for information management and user experiences.

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CONCLUSION

Overall, the emergence of new technologies and innovations in FOSS for libraries has opened up a world of possibilities for improving information management and enhancing user experiences. The integration of FOSS with other library services and resources has the potential to streamline processes and provide a more seamless and efficient library experience for patrons. However, as with any new technology, there may be challenges to overcome, such as ensuring compatibility and addressing privacy concerns. Nevertheless, the future of FOSS in libraries is promising, offering countless opportunities for growth and innovation in the years to come. With FOSS, libraries can now explore innovative ways to manage and share information. By leveraging the power of open-source software, libraries can create customized solutions that cater to their specific needs. Additionally, the collaborative nature of FOSS allows libraries to share their developments and improvements with other institutions, fostering a sense of community and collective growth. As libraries continue to embrace FOSS, they have the potential to become hubs of technological innovation, providing patrons with cutting-edge services and resources.

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APPLICATION OF TOTAL QUALITY MANAGEMENT IN ACADEMIC LIBRARIES

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ABSTRACT

Total quality Management is the activities to determine and implement quality policy. User's satisfaction and fulfillment of their information needs is very important in the qualitative management of libraries. This paper is focus on concept of Total quality Management (TQM) & its application to the library science. This paper is also highlights key elements in TQM process. TQM is best defined as a philosophy & big umbrella. It is a total way of managing libraries by focusing on customer satisfaction and quality in better way. Data, information and knowledge are the means to ensure and improve quality at all stages in library management.

Keywords: TQM, Academic Libraries, Information Centers, information services

INTRODUCTION

The main objective of academic library is to provide quality library services to its users. TQM was first organized in Japan after Second World War. TQM is one of the management concept which was used initially to maintain to quality in products in industries. TQM in the context of libraries is to provide the right information to the right users at right place and right time. Since the beginning of 1990 some of library and information centers had started think about Total quality management application in libraries.

Definition of TQM:

According to Tanner & De Torto, "TQM is based on the Following points.

One Objective: continuous improvement

- 1) Three Principles: Customer focus, process improvement and total involvement
- 2) Six Supporting Elements: Leadership, education and training, supportive structure, communication reward. Registration & involvement & measuring.

According to International organization for standardization (ISU)", TQM is management approach for an organization centered on quality based on the participation of all its members and aiming at long term success through customer satisfaction and benefits to all members of the organization & to society.

Key Elements in TQM Process:

Focusing on Users Expectations:

There are three basic functions of modern library. These are acquisition of information, organization of information and dissemination of information. The first two are behind the screen activities are called housekeeping operations whereas the third one represents the on-the screen activities called service oriented operations. However, the user directly or indirectly involved/affected/concerned with the above activities. So identification of user's expectations regarding any service is very important for rendering efficient and effective library and information services to user's community. While knowing the user's expectation library authorities should know the accountability, affordability, availability and appearance of serve offered by the library from user's point of view.

Developing a Quality Measurements System:

This task is associated with finding measurement that will help to understand user's dissatisfaction and productivity of library service. While developing quality measurement system it is necessary to specify some quality standards so can the quality of service should be properly

Analyzed and then Establish some Standards for Quality Measurement.

Identification a Root Causes:

User's dissatisfaction, negative feedback, conflicts in rendering library service, problems in interaction with the users etc. are some symptoms of poor quality. However, the real cause of these problems is usually hidden and difficult to identity. The real cause may poor techniques, insufficient training to staff or poor management practice. To identity the root causes, quality management consultants have developed several tools to identity the root cause. These tools help to organize and analyses information so that it is easy to trace the problem. Statistical process control, check sheets, brainstorming, flow charts, Pareto charts etc. are some of the tools and techniques to identity the root causes.

Developing a Communication System:

Quality management is an information related management system. An efficient communication system is an important requirement for the functioning of quality management systems. A good.

Application of TQM:

In a service organization like an academic library the users' satisfaction means fulfilling expectations.

Librarians must find out what readers want and concentrate upon providing it. Designing an appropriate service means asking.

- Who are the users?
- What do they want?
- What can the organization provide?

In a library there are basically two types of users: those who are in a hurry and those who want to kill time. An academic library has to identity these and serves them accordingly

1. Users Expectation:

The expectations that the users bring to a library have a critical effect upon their perceptions of quality. It is better to acquire a reputation for one or two factors which are important to users and to concentrate upon developing those.

Service delivery is like a theoretical performance. If users are to gain maximum benefit from a service, they must know how to use it. So, properly planned user education is a must for an academic library. Support systems should reflect user is priorities. It is important to find out which services and be automated without losing the personal touch. Getting feedback from the user is important to ascertain the quality of service. Regular users of an academic library can be given a questionnaire to get feedback from them for improving service. All academic library staff must receive training, including kill training, including skill training; on the job guidance; Well-trained staff are the competitive weapon for butter quality service in an academic library. Teamwork plays a Vitol role in giving better quality service. People have to develop a culture and commitment toward quality service in an academic library.

ISO 9000 Series Steps towards TQM in Academic Library:

ISO 9000 has an internationally accepted certificate that accredits an organizing for its quality management systems and procedures. ISO 9004-2:1992 (www. 9000-2000-iso.com/90004-2 html) has guidelines for guidelines for services and was issued by ISO To establish and implement a quality system within a service organization such as an educational institution.

TQM in Library Section (For Exam - Acquisition Section):

How the quality of library operations and services and services will be improved by implementing TQM. For example, Let us see how the quality of acquisition service can be improved by TQM. Acquisition is one of is one of the basic activates of a library. The Process of ordering and acquiring the selected materials are known as acquisition. How TQM will help in improving the quality of acquisition function? A total quality tool 'flow chart' will considerably improve the quality of acquisition. In any acquisition system, one has follow the following steps, to acquire a document. (For convenience purpose, the flow chart is not drawn with standard flow chart symbols, instead steps are written)

- 1. Receiving the suggestion for a document
- 2. Checking the bibliographic data with
- a. Trade catalogue data with Books in print.
- 3. Check its availability within the library
- a. By checking the catalogue.
- b. By checking with the already ordered documents list.
- 4. Determine its cost
- a. From the standard sources
- b. Form the vendors

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- c. Form the publishers.
- 5. Get the invoice, if required
- 6. Determine whether the fund is available
- If the answer is yes go to step 7
- If the answer is no then wait till the fund is available or try to get extra fund
- 7. Select the vendor
- a. Based on vendor rating studies.
- b. Based on other methods
- 8. Place an order
- a. With certain conditions
- b. Without any condition
- c. If there will be any advance payment then clear the payment from accounts department and enter the details in file.
- 9. Send reminders if the document is not received in time.
- 10. After receiving the document
- a. Check its bibliographic data
- b. Check its cost
- c. Settle the payment if it is due.

11. Enter the details in access register

The acquisition section staff member can easily understand the steps involved in the process with the help if a flow chart, drawn based on the above steps. New one can check till which stage the process has come. And with a flow chart one can determine where the problem occurs, if any, and why it occurs. Like this we can attempt to develop flow charts for many fo the library functions. Let us take, another example, discharging of a document. The flow chart for the function will have the following steps.

- a. Document returned by the use
- b. Look for charge-out card
- c. Check whether the document is overdue?
- d. Check whether any other use reserved the document

CONCLUSION

To control & maintain compatibility of libraries with the environment, the changes in technology, marketing of information, quality & cost of information products must match the process of change i.e. organization structure, structure, strategy, staff management & leadership of libraries in the twenty first century. Cultural change is essential for TQM and TQM tools are comprehensive tools for cultural transformation. When a library has everything i.e. resources, technology, infrastructure but even then progress in not up the mark. It is because of culture, values, attitudes, beliefs & myths. TQM is cultural specific. TQM vocabulary, Professionalism, Process orientation and reluctance of librarians in sharing power with subordinates are the major barriers faced by the librarians.

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USE OF MOBILE FOR LIBRARY SERVICES

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ABSTRACT

The utilization of mobile telephone innovation in all parts of our regular daily existence can't be disregarded in foundations including libraries. Thusly libraries in created economies have embraced the mobile telephone transformation and are using them for viable and productive administrations. Conversely, in any case, mobile based administrations are not unavoidable among scholastic libraries in India. They are yet to be embraced by scholarly and research libraries. This paper reports discoveries of an overview on mobile - based library administrations in different libraries of India. The point of the review was to look for the perspectives on clients in regards to the utilization of mobile telephones in library administrations. It tried to track down whether they would be keen on utilizing such assistance.

Keywords: libraries, Mobile, Knowledge.

INTRODUCTION

The remote innovation and mobile telephones are turning into an essential piece of day to day existence. Mobile telephones have wide assortment of utilizations. Mobile innovation has made correspondence and data access exceptionally advantageous and convenient to clients from the solace of their own homes and workplaces. Currently mobile gadgets have had massive effect

On banking, the travel industry and wellbeing administrations. As the present cell telephones have more elements and abilities than any other time in recent memory. Individuals utilize a mobile telephone as their essential point of interaction for riding the Internet, paying attention to music, staring at the TV, understanding books, and connecting with companions. So the mobile telephone has become one of the significant connection points individuals use to access and offer data. Libraries are social organizations, interfacing individuals with endlessly individuals with data. It is a period for libraries to exploit mobile innovation. Mobile Innovation will help both novice and experienced curators to remain pertinent in the mobile society. They should know about innovative changes for the fate of library mobile collaboration. Custodians should be proportionate with this pattern what's more, incorporate themselves into the mobile domain assuming they wish to convey improved client administrations. Mobile gadgets and administrations offer brilliant adaptability for the individuals who need to take benefit of library administrations. With a straightforward 3G/4G/5G association, a client can get to digital books and sight and sound substance from a neighborhood library. At the point when one considers mobile advancements, the main gadget that strikes a chord must be the cell or the Cell phone. Amateurs to the Cell phone in the library might need to think about a mobile based site, a stripped-down plan that peruses well on little screens. These locales do not need a lot of website composition information (recall that all around planned mobile locales don't have convoluted code or prearranging dialects) and can be planned in-house. Library arrangements and administrations ought to be adaptable and open with the goal that new data requirements of clients in quest for hierarchical necessities are met with new advances.

LITERATURE REVIEW

The errand of libraries is to take advantage of new innovation in a more successful manner to advance and coordinate them into the plan of future library administrations in an expense effective way (S Malathy and P Kantha, 2013). Indian libraries should be key to their clients, and to this end they need to incorporate mobile gadgets as a component of their key reasoning. Mobile libraries need to develop, and this requires more prominent cooperation between scholastic, industry, enterprises and government. In the ongoing situation, mobile libraries can possibly multiply and we will observer a circumstance wherein the mobile will be utilized as a device to spread advancing the nation over (Mohan Lal Vishwakarma, Shyam Lal Maurya and Shivani Govil, 2013). Mobile gadgets today can run progressively intricate programming, connect with cloud administrations, play rich interactive media content, and take into consideration progressed client intelligence.

Library Services and Mobile Technology

Library services that can be given by means of mobile technology are as per the following.

1. SMS Notice Services :

Libraries might give the cautions on most recent news, occasions and notification by means of SMS and MMS to clients any place they may be go. The clients can get advised immediately with notice cautions, for example, alarms on carrying new books to the notification of clients for idea, suggestion of appearance of indented

records by clients, illuminating accessibility regarding saved records for assortment, evaluating about past due books, exceptional fines, suggestions to return library things, reestablish books, library booklets, e-journals bought in, change in timings, data about significant occasions, advance demand and so on. Such ready notices can be produced naturally utilizing incorporated library the executive's framework/programming. SMS messages can be shipped off gathering of clients at the same time through many free applications and delegate sites/clients.

2. Formal Training, Distance Learning and E-learning:

Understudies are exceptionally adaptable in utilizing their mobile telephones and different mobile applications. Scholarly libraries can tackle the benefit to lead execution of library services through mobile gadgets to help distance learning, formal instruction, furthermore, research exercises in e-learning climate by making the data assets universal. Library services ought to likewise mix with instructing and research practice of schools/colleges, academic local area or different benefactors whom they serve.

3. Information base Perusing Libraries :

The clients can just enter search terms and get results that are planned explicitly for mobile survey. This service incorporates OPAC, incorporated search, and unique archive search. OCLC's World Cat Mobile application permits clients to look for what's more, track down books and different materials accessible in their neighborhood libraries through a web application they can access from a PDA or a PDA.

4. My Library :

My library is an individual library space where clients can track down data and assets of their picking. Clients can understand alarms, actually look at records, reestablish assets, demand things, track interlibrary advances and archive conveyance demands, set up email notification of new books and diary articles, set up inclinations for inventory looking, and so on.

5. E-assets with Mobile Connection points :

A few distributers are now conveying digital books (both text and sound) that are open by means of mobile telephones. It offers admittance to a assortment of data sets and computerized assets like digital books, e-Diaries, Web data sets, theses, sound books, streaming music, movies, pictures and article data sets which can be utilized on mobile. These assortments can either be downloaded from the library sites on clients own mobile gadgets or libraries loan mobile gadgets with the assortments currently on them. A huge assortment of book recordings both free-and membership based services are accessible for download and furthermore adaptable to mobile gadgets. Libraries can utilize mixed media informing service (MMS) on mobile gadgets to share photographs, recordings, and sound. Most of the digital book distributers give 24x7 gets to the library memberships from any web terminal inside the grounds, too on mobile gadgets, like iPads, Android gadgets, and Fuel.

6. Library Guide:

Libraries can provide clients with the best of library guide data, for example, library use guide, question responding to mail, and library measurements conveying rich substance such that turns out best for clients. If clients have questions and need to contact the curator for help, they can get a quick reaction from the library by means of the mobile gadget and track down the proper data required.

7. Mobile archive supply :

The mobile climate and technology present new open doors for sending report demands and filtered pictures and checking the utilization of assortments as well as the robotization of authoritative tasks. It can uphold electronic assets move, production network the board, e-promoting, on the web advertising, online exchange handling, electronic information trade, and mechanized stock administration frameworks.

8. Text reference Service :

On the off chance that the library gets a high volume of enquiries that require brief reactions, for example, word reference definitions, realities or service data then Custodians can give moment replies, and connections to articles/references progressively.

9. Library Virtual :

Library clients, who don't have time or tendency to go to an on location studio, can gain admittance to library visits on their mobile gadgets. Sound/virtual library visits spent assisting new clients with arranging themselves in the library and making sense of the offices accessible. It can without much of a stretch be given both as downloads from the library site and on mobile gadgets.

10.QR Codes on Mobiles :

QR code means "fast reaction", and fundamentally two-layered standardized identifications that can contain any alphanumeric text and frequently used to store Url's, text, and so on, known as "mobile labeling". Information can be converted into a QR code by any QR generator, numerous of which are accessible as free download. Clients just enter the information to be interpreted, and the generator produces the code, which can then be shown electronically or in printed design. Interpreting the data should be possible with any mobile camera telephone that has a QR peruse, which is openly accessible online for most gadgets.

Mobile Technology Execution Benefits in Libraries:

- 1. Easy to understand Knowledge of their own gadgets and technology helps the clients in getting to data rapidly and doesn't need direction and preparing. Mobile clients are utilizing the offices on mobile telephones like SMS, texting, web perusing, email easily to convey. The greater part of these elements are pre-introduced on mobile gadgets or choice for information plan bundles.
- 2. Customized Service-Customized service helps clients to connect with library staff to look for explicit data or then again reference away from library.
- 3. Capacity to Access Data access from anyplace whenever will be of incredible assistance for clients who can't visit library face to face and gives a steady connect to required data assets. Efficient Clients need not record data about assets while perusing and looking through library assets or stand by at library exchange counter to restore/hold books and consequently the hour of the client is saved.
- 4. Client Interest Libraries can enhance OPAC by permitting clients to consolidate client made content like notes or pictures transferred by clients.
- 5. Area Mindfulness Mobile correspondence empowers libraries to offer area based services/content through worldwide situating framework (GPS) capacities. Libraries can direct the clients to the area of explicit archive or on the other hand service through maps and navigational apparatuses.
- 6. Boundless Access-All internet based assets available on their work area additionally become available through mobiles.
- 7. Admittance to Print-crippled Clients Mobiles interchanges help offering types of assistance orally to vision disabled and genuinely tested clients.

CONCLUSION

The dynamic idea of technology altogether affects each part of present day life. Especially data and correspondence advances have given quicker admittance to data and it is likewise intense the libraries to reevaluate and modernize their services taking on the mechanical changes. In the current world, libraries are not solo data suppliers. Web offices give wide scope of data; the substance may not generally be free or with esteem expansion. To focus on its place as a data supplier, libraries should not hold back to embrace all conceivable new advances like ICT, Wi-Fi, mobile interchanges, and so on. There is a more noteworthy impact of mobile technology on Libraries, especially as organization access turns out to be more reasonable and dependable, the libraries can adjust to this arising pattern to make the libraries effectively open by means of mobile gadgets.

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OPEN SOURCE LIBRARY MANAGEMENT AND DIGITAL LIBRARY SOFTWARE

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ABSTRACT

There are many commercial library software are in use in the different libraries, but open source library management software has generated lot of interest among the library professionals over the past years. The primary difference between the two is the freedom to modify the software. Generally, a commercial software company will immediately respond on customer requests for any problem.

Keywords: Open source library management software, Greenstone digital library, DSpace, Koha, E-Prints, New Genlib, open access initiative, digital library, GSDL

INTRODUCTION

Library automation starts with the adoption of library management software in the library. The software should have the maximum facilities to automate the library into computerised systems. Library automation is the general term for information and communication technologies that acquisition, cataloguing, circulation, serials control, and reference service. There are many commercial library software are in use in the different libraries, but open source library management software has generated lot of interest among the library professionals over the past years. Library automation starts with the adoption of library management software in the library. The software should have the maximum facilities to automate the library into computerised systems. Library automation is the general term for information and communication technologies that acquisition, cataloguing, circulation, serials control, and reference service. There are many commercial library into computerised systems. Library automation is the general term for information and communication technologies that acquisition, cataloguing, circulation, serials control, and reference service. There are many commercial library software are in use in the different libraries, but open source library management software has generated lot of interest among the library professionals over the past years.

Advantages of OSS The OSS offers a radically different and exponentially better software development model. OSS provides cheap alternatives to expensive commercialised solutions. Source code of the software is always open and available to the libraries which is not possible in case of traditional commercial software. Libraries can modify or develop the software according to their requirement and for this they do not have to pay license fees to anybody. The OSS provides no restrictions on how the software is used. It reduces dependence on software vendors. The OSS is more reliable than closed source traditional commercial software. The OSS also provides security and technological independence to the libraries. It also helps the library professionals to deliver low cost or free services to users. It helps converting their libraries in to digital form. Implementation cost of OSS is also more affordable to the libraries than traditional commercial software. Overall, open source is good for everyone1.

Limitations with OSS

For any upgradation / change in the OSS, the library needs support. In case of OSS, there is no body to solve problem, either one have to hire some expert to solve problem or library should make arrangement with some company. Open source products require technical expertise to operate and maintain open source costs more to support because the software is typically selfsupporting. Generally, a commercial software company will immediately respond on customer requests for any problem. With OSS, if one doesn't do it himself, he is at the mercy of a disjoint community of developers

Problem Encountered After Taking Initiative The main problems faced in the libraries are related to retraining end-user to get use to new paradigm shift. The library professional and user have faced initial difficulties adopting to open source technology practice due to non- availability of proper training. There are not sufficient equipments available in the library. Sometimes library authority does not agree to adopt new technology and therefore it is very difficult to adopt new systems to provide library service to the users. Major problem faced by the library is to shift data from existing software to OSS because library professionals are not well acquainted about software programming or source code.

Selection of Library Management Software

Selection of LMS may consist the following points/steps, which might help the librarians to select the right software for their housekeeping operations as well as information retrieval While examining the software, librarian must have the followings information about the software which might help to select the right software

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for housekeeping operations as well as information retrieval2: ï How it matches the library's requirements ï Product quality ï Features and functions ï Staff training and support service ï Operating system ï Hardware and software requirements ï Functionality: What modules are available, value addition to existing functions ï User interface: Navigation, error alerts, intuitive, customisation ï Design: Flexibility, switching from one module torease he fact that libraries are not networked and hence are handicapped in sharing costly bibliographic and full-text resources among themselves, the importance of providing a software that would allow both library management and the creation of institutional open access repositories increases

OPEN SOURCE LIBRARY MANAGEMENT SOFTWARE

Open source LMS is a valuable catalyst for change in terms of exploring possibilities and pushing boundaries for the community Some of open source LMS are: 3.1 Koha Koha is a promising full featured open source integrated library system (ILS) created in 1999 by Katipo Communications for the Horowhenua Library Trust in New Zealand, and currently being used by thousands of libraries all over the world. Koha has web-based Interfaces. Koha is built using library ILS standards and uses the OPAC (online public access catalog) interface. In addition, Koha has no vendor-lock in, so libraries can receive technical support from any party from they want. It is distributed under the free open source general public license (GPL). It supports MARC 21 and UNIMARC support, Z39.50. It also has a provision for online reservations and renewals, The fact that libraries are not networked and hence are handicapped in sharing costly bibliographic and full-text resources among themselves, the importance of providing a software that would allow both library management and the creation of institutional open access repositories increases users access the digital library through the Reader interface, which operates within a web browser. Hebrew, Hindi, Indonesian, Italian, Japanese, Kannada, Kazakh, Kyrgyz, Latvian, Maori, Mongolian, Portuguese (BR and PT versions), Russian, Serbian, Spanish, Thai, Turkish, Ukrainian, and Vietnamese.

Koha Software

Koha is the first free software library automation package. In use worldwide, its development is steered by a growing community of users collaborating to achieve their technology goals. Koha's feature set continues to evolve and expand to meet the needs of its user base.

Full-featured ILS. In use worldwide in libraries of all sizes, Koha is a true enterprise-class ILS with comprehensive functionality including basic and advanced options. Koha includes modules for acquisitions, circulation, cataloging, serials management, authorities, flexible reporting, label printing, multi-format notices, offline circulation for when Internet access is not available, and much more. Koha will work for consortia of all sizes, multi-branch, and single-branch libraries.

Library Standards Compliant. Koha is built using library standards and protocols such as MARC 21, UNIMARC, z39.50, SRU/SW, SIP2, SIP/NCIP, ensuring interoperability between Koha and other systems and technologies, while supporting existing workflows and tools.

Web-based Interfaces. Koha's OPAC, circ, management and self-checkout interfaces are all based on standards-compliant World Wide Web technologies–XHTML, CSS and Javascript–making Koha a truly platform-independent solution.

Php My Library is a PHP/MySQL web-based library automation application meant for smaller libraries. The software has the facilities of cataloguing, circulation, and OPAC module. The software also has an import export feature. It strictly follows the USMARC standard for adding materials.

Open Biblio Open Biblio is an easy to use, open source, automated library software written in PHP. This software has facilities of OPAC, circulation, cataloging, and other administrative work.

Avant i Avanti MicroLCS Software is developed by Avanti Library Systems in Java language. This is a small, simple, and easy to install and use open source software. it is a platform independent, and can run on any system that supports a Java runtime environment. This software is useful for small libraries, it has a powerful and very flexible architecture that allows it to be adapted for use in libraries of any type. This software incorporate standards such as MARC and Z39.50 as modules and interfaces

Greenstone Digital Library The Greenstone digital library software is an open source system for the construction and presentation of information collections. Greenstone is a suite of software for building digital library collections. It is not a digital library but a tool for building digital libraries. It provides a new way of organising information and publishing it on the internet in the form of a fully-searchable, metadata-driven digital library. It has been developed and distributed in cooperation with UNESCO and the Human Info NGO in Belgium. It is multilingual software, issued under the terms of the GNU GPL Greenstone runs on all versions of

Windows, and Unix/Linux, and Mac OS-X and is very easy to install. It has two separate interactive interfaces, the Reader interface and the Librarian interface. En

DSpace DSpace was developed by Massachusetts Institute of Technology (MIT) libraries and Hewlett-Packard (HP), as an open source application that institutions and organisations could run with relatively few resources. It is to support the long-term preservation of the digital material stored in the repository. DSpace accepts all manner of digital formats, such as articles, preprints, working papers, technical reports, conference papers, books, theses, data sets, computer programs, visualisations, simulations, and other models, multimedia publications, administrative records, published books, journals, bibliographic datasets, images, audio files, video files, reformatted digital library collections, learning objects, web pages, etc.

E-Prints E-Prints has been developed at the University of Southampton School of Electronics and Computer Science in 2000 and released under a GPL license for building open access repositories that are compliant with the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). It shares many of the features commonly seen in document management systems, but is primarily used for institutional repositories and scientific journals.

Fedora Fedora software gives organisations a flexible service- oriented architecture for managing and delivering their digital content. Digital objects exist within a repository architecture that supports a variety of management functions. All functions of Fedora, both at the object and repository level, are exposed as web services. These functions can be protected with fine-grained access control policies. This unique combination of features makes Fedora an attractive solution in a variety of domains. Some examples of applications that are built upon Fedora include library collections management, multimedia authoring systems, archival repositories, institutional repositories, and digital libraries for education.

Open Source Software Initiative in India In India there are a Number of University and Institute

Librarians, technologists, management and users. The situation in India regarding DLs is very peculiar. Generally, the use of information technology (IT) and information and communication technology (ICT) in libraries in India is concentrated in universities, Indian Institutes of Technology (IITs), Indian Institutes of Management (IIMs), Indian Institute of Science (IISc), ICMR, CSIR, ICAR and their research institutes and some special libraries. Some government agencies, as well as public-sector institutions, are also engaged in digitisation of libraries. DLs has not been fully realised. While one government agency is providing support for one particular aspect, the other is focusing elsewhere without any coordinated effort by a nodal agency In agriculture sector, the beginning of digitisation of Indian information was initiated by ICAR5, when, Govt. of India took decision to participate in AGRIS database of Food and Agricultural Organisation. The ICAR has digitized approximately 1.5 lakh bibliographic records of research information published in various Indian Journals and made available to world agricultural community using CDS/ISIS software. Under the National Agricultural Innovative Project (NAIP), emphasis would be on strengthening of the ICAR-Net, creation of digitised content and knowledge management, using open source management software and CMS and strengthening of 42 libraries of the SAUs and ICAR Institutes into fully electronic libraries, formation of an ICAR e-journals Consortium. Recently, it is decided at UAS, Bangalore in September 2011 to Implement Koha LMS in 12 partner libraries under (e-Granth) project of NAIP. The ICAR also developed its website using an open source content management system called Drupal. The website is a unique platform for sharing and dissemination of information to a wide range of users and stakeholders. The ICAR research journals (The Indian Journal of Agricultural Sciences and The Indian Journal of Animal Sciences) are available in open-access mode and have been downloaded in 158 countries6. Journal of Medicinal and Aromatic Plants and Fishery Technology of Society of Fisheries Technologists (India) are also published as open access journals on epubs platform of ICAR. The CMFRI has developed open access institutional repository, using E-print software. The institute's repository can be accessed from the Institute website and users anywhere in the world can download the research outputs. This repository was created using OSS developed by the University of Southampton at UK. Kerala Agricultural University (KAU) had launched its journal, 'Journal of Tropical Agriculture' and University of Agricultural Sciences, Dharwad made available its journal, 'Karnataka Journal of Agricultural Sciences' oftware (FOSS). Central Marine Fisheries Research Institute (CMFRI), Indian Agricultural Research Institute (IARI), Indian Horticultural Research (IIHR) have established open access repositories using Eprint, DSpace and other OSS. The Sugarcane Breeding Institute (SBI) with the support of Department of Scientific and Industrial Research (DSIR) had established 'CaneInfo' a sugarcane knowledge repository. Under the NAIP sub-project 'Strengthening of digital library and information management' (e-Granth), 12 institutions in NARS are in the process of establishing their institutional repositories ournals available in their libraries. The Indian Academy of Sciences is one of three science academies in India. Apart from various other activities, it publishes

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11 science journals reporting research work both in India and outside. These journals, mainly in print, are freely accessible on the web. The E- Print archives of the Indian Institute of Science is an online digital repository of research papers, both reprints and post prints, technical reports, unpublished findings, and journal articles of the faculty. It was set up using E- Print, and is registered in the e-prints registry. Eprints@iisc is now part of the worldwide institutional e-print archives. The E-prints archives allow the faculty and students to submit their publications electronically to the campus network. The eprints@iisc website also supports metadata for browsing and searching. It is also integrated with the Greenstone Digital Library software, which enables fulltext searching of the e-prints. The Raman Research Institute has developed digital repository in DSpace which allows research community to deposit preprints, post prints, and other publications and organises these publications for retrieval. It also contains the annual reports of Institute and newspaper clippings from its archives. The repository uses DSpace. National Chemical Laboratory has also developed the institute repository using DSpace. Indian Institute of Technology, New Delhi also develop digital libraries. Online courseware has been developed and older volumes of journals have been digitised, among other projects. More than 500 dissertations are available in the repository. The Central Library, IIT Kharagpur and Bombay, has also created institutional repository. The repository at IIT Bombay has bibliographic information and abstract for dissertations beginning in 1965. More

CONCLUSIONS

Digitisation needs a huge amount of money for creation and maintenance. Libraries have a growing role in open access movement. The OSS have been found very useful in various library operations. The OSS are a solution to reduce the cost. Libraries can make use of open source software for managing digital contents effectively. In India automation and networking of library are still in their formative stages. Recently, ICAR and its institutes/ SAUs taken a decision to implement Koha open source software initially in 12 Libraries from National Agricultural Research System (NARS)8. The LIS professionals should keep eyes on development and to choose appropriate technology depending upon needs. Since numbers of libraries worldwide are using OSS for managing their library systems more economically and effectively. Librarians and programmers may worked together to implement open source LMS. For taking benefit from OSS additional technology, education, and training are essentially required

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CHALLENGES AND OPPORTUNITIES FOR OPEN ACCESS IN DEVELOPING COUNTRIES

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ABSTRACT

This research article examines the challenges and opportunities for open access (OA) efforts in developing nations in the context of academic communication. Developing countries encounter distinctive obstacles when embracing and reaping the advantages of open access. These challenges encompass restricted financial resources, deficiencies in infrastructure, and linguistic problems. Notwithstanding these difficulties, open access offers substantial prospects for increasing knowledge accessibility, fostering global cooperation, and improving the prominence of research results from developing areas. The challenges include limited resources, inadequate technological infrastructure, and insufficient policy backing. In addition, the study examines many approaches and optimal methods for addressing these difficulties, such as programs to enhance capabilities, partnerships between regions, and endeavors to promote awareness and support. This research seeks to provide policymakers, funding agencies, and scholarly communities with an understanding of the challenges and opportunities related to open access in developing countries. It emphasizes the significance of addressing inequalities in knowledge access and promoting fair involvement in the global scholarly communication ecosystem.

Keywords: open access, developing countries, scholarly communication, challenges and opportunities

HISTORY OF OPEN ACCESS

The open-access movement has a history that spans multiple decades and is marked by the steady development of ideas, regulations, and technological developments to make scholarly research more accessible to the public. Here is a concise summary of significant achievements:

The open access movement emerged from the first endeavours promoting unrestricted and cost-free accessibility to academic content. Eugene Garfield and Stevan Harnad advocated for sharing research through internet platforms, challenging the old publication models that relied on subscriptions.

The Budapest Open Access Initiative (BOAI), founded in 2002, is pivotal in developing open access. The document expressed the ideas of open access and advocated for the free availability of scholarly literature. It encouraged authors to share their works in available repositories or publish them in open-access journals. "CERN and the University of Geneva hold the first OAI Workshop. This gives rise to an important conference of the same name in open science, organized every two years in Geneva since then" (History of the Open Access Movement).

Introduction of Publicly Accessible Repositories (2000s): In the early 2000s, institutional and subject-based repositories were created, such as arXiv for physics and PubMed Central for biomedical research. These platforms offered a means for scholars to independently store their articles and make them readily available to the worldwide audience without charge. Libguides commented that "The foundation of the open access movement occurred in 1991 when Paul Ginsparg established the arXiv repository at Los Alamos National Laboratory to make preprints in physics freely available."

Open Access Rules and Mandates (2000s-present): Governments, funding agencies, and academic institutions globally initiated the enforcement of open access rules and mandates to guarantee the unrestricted availability of publicly financed research. Illustrative instances encompass the National Institutes of Health (NIH) Public Access initiative in the United States and the European Union's Horizon 2020 initiative.

Rise of Open Access Journals (2000s-present): The widespread availability of open-access journals presented an alternate publication approach to conventional subscription-based journals. Publishers like the Public Library of Science (PLOS) and BioMed Central (BMC) were the first to introduce the open-access publishing model. They require writers to pay article processing charges (APCs) to cover publication expenses while ensuring that the information is freely accessible to readers.

Advocacy and Community Building (2000s-present): Numerous advocacy groups, scientific societies, and grassroots organizations have been instrumental in advocating open-access ideals and furthering the movement. Efforts such as Open Access Week and the Directory of Open Access Journals (DOAJ) have increased awareness and fostered a supportive community of researchers, librarians, and policymakers.

Advancements in technology and establishment of standards (2000s-present): The progress in technology, such as the creation of digital identifiers (e.g., DOI), compatibility standards (e.g., OAI-PMH), and software for institutional repositories (e.g., DSpace, EPrints), has made it easier to expand open access infrastructure and enhance the ability to find and access scholarly content.

Global Expansion and Challenges (2000s-present): The open access movement has experienced a surge in popularity worldwide, with many projects arising in developing nations to tackle disparities in access. Nevertheless, obstacles such as establishing sustainable financial models, ensuring high standards in open-access publication, and facing opposition from conventional publishing stakeholders continue to impede universal open access.

In conclusion, the history of the open-access movement demonstrates a continuous and active endeavor to revolutionize the academic publishing field, motivated by the ideals of fairness, openness, and the unrestricted sharing of knowledge.

Establishment of International Open Access Archives

The creation of global open-access repositories has been a notable advancement in offering unrestricted access to academic research on a global scale. On the website of 'Directory of Open Access Preprint Repositories'. Below are several significant milestones in their establishment:

arXiv (1991): arXiv.org, established by Paul Ginsparg at Los Alamos National Laboratory, is a pioneering and highly important preprint repository. Initially centered on physics, it has broadened its scope to encompass mathematics, computer science, and other academic fields. arXiv has been instrumental in advancing the idea of self-archiving and facilitating free access to preprints.

PubMed Central (2000): PubMed Central (PMC) was created by the National Institutes of Health (NIH) in the United States as a digital repository for biomedical and life sciences literature. PMC offers complimentary access to complete articles from diverse journals and functions as a central storage facility for research supported by the National Institutes of Health (NIH).

The CERN Document Server (CDS) was established in 2004. The European Organisation for Nuclear Research (CERN) established the CERN Document Server (CDS) to store and distribute research outputs in particle physics and its associated fields. CDS houses an extensive repository of preprints, publications, conference proceedings, and technical reports.

PubMed Central International (PMC International) is a collaborative initiative that seeks to expand the accessibility of PubMed Central. It achieves this by creating mirror sites and facilitating the submission of research articles from authors and publishers outside the United States.

The Directory of Open Access Journals (DOAJ) (2003) is a comprehensive global directory of open-access journals; however, it does not function as an archive. The primary purpose of DOAJ is to index and promote open-access journals that have undergone rigorous peer review and maintain high-quality standards. DOAJ is a platform for researchers to locate and access scholarly information from various fields quickly.

The Social Science Research Network (SSRN), established in 1994, is a platform dedicated to hosting preprints and facilitating scholarly networking, primarily emphasizing the social sciences and humanities. This platform enables the dissemination of preprints, working papers, and conference papers among scholars, promoting collaboration and exchanging knowledge in these fields.

RePEc, also known as Research Papers in Economics, was established in 1997 as a collaborative initiative to improve the distribution of economic research. The platform houses an extensive compilation of operational documents, scholarly publications, and more research materials in economics contributed by scholars and organizations from around the globe.

HAL (Hyper Articles en Ligne) was established in 2000. HAL is a publicly accessible archive managed by the French National Centre for Scientific Research (CNRS). The platform facilitates the deposition and dissemination of research outputs across diverse fields such as physics, mathematics, and computer science.

The international open-access archives have been instrumental in enhancing the availability and prominence of scholarly research worldwide, facilitating cooperation, ingenuity, and the progress of knowledge across various fields and societies.

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Challenges for Open Access in Developing Countries

Open access (OA) projects strive to offer unimpeded access to scientific research, thus promoting the democratization of information and facilitating worldwide cooperation. Nevertheless, despite its myriad advantages, the implementation of open access encounters substantial obstacles in underdeveloped nations.

1. Limited Funding and Resources

A primary obstacle to open access in underdeveloped nations is the scarcity of financing and resources to sustain projects promoting open access. Many institutions and scholars in these locations face financial difficulties meeting the expensive article processing charges (APCs) imposed by many open-access journals. According to Suber (2012), "authors in developing countries sometimes find it difficult to come up with the money to pay publication fees" (p. 47). Agaba and Weaver (2018) conducted a study revealing that researchers in Sub-Saharan Africa frequently encounter financial limitations when publishing their work in open-access journals.

2. Infrastructure Deficit

Insufficient technological infrastructure poses a significant obstacle to implementing open-access projects. Restricted internet connection, obsolete gear, and inadequate digital literacy training hinder obtaining and sharing open-access content. As Suber (2015) notes, "infrastructural deficits, including lack of broadband access and outdated computer equipment, can limit the ability of scholars in developing countries to participate fully in the open access movement" (p. 112). Researchers in rural parts of India may face difficulties accessing online repositories and engaging in open-access publications due to insufficient internet infrastructure (Das et al., 2020).

Insufficient infrastructure, restricted internet availability, and inadequate financial support for research and publication can impede complete engagement in the open-access ecosystem (Kumar, 2020). To tackle these problems, governments, international organisations, and funding agencies must work together to enhance infrastructure and capabilities

3. Language and Cultural Barriers

The adoption of open access in developing countries is hindered by language and cultural obstacles. The predominance of English in academic publishing relegates research undertaken in other languages, reducing visibility on worldwide platforms. Furthermore, cultural norms and practices can impact scientists' inclinations to publish their work in conventional, esteemed journals rather than open-access platforms. According to Morrison (2018), "Language and cultural barriers pose challenges for researchers in developing countries seeking to publish in open access journals, particularly those with limited proficiency in English" (p. 235).

4. Policy and Legal Constraints

Policy and legal restrictions worsen underdeveloped countries' difficulties in implementing open access. The lack of institutional solid demands for open access and stringent copyright laws hinder the sharing and distribution of research findings. According to Suber (2015), the lack of regulations and legal frameworks that provide support can impede the progress of open-access projects in underdeveloped nations (p. 78). An example is a study by Van Rooyen et al. (2019), which emphasizes the absence of institutional backing for open-access publication in South African universities. This is attributed to the lack of well-defined regulations and incentives for researchers.

To summarise, whereas open access presents significant potential for equalizing access to knowledge, its execution in underdeveloped nations is impeded by numerous obstacles. The challenges scholars and institutions encounter in adopting open access are mostly due to insufficient funds and resources, inadequate infrastructure, linguistic and cultural differences, and policy limitations.

Opportunities for Open Access in Developing Countries

In the era of information, obtaining scholarly research is essential for the progress of knowledge and socioeconomic growth. Nevertheless, obstacles to access, which are especially widespread in developing nations, impede the distribution and use of research findings. Open access (OA) projects have favorable prospects for surmounting these obstacles and advancing fair access to knowledge.

1. Expanding Access to Research

An essential opportunity exists in broadening the availability of vital information. The limited availability of academic publications, textbooks, and research findings frequently impedes developing countries' capacity to tackle crucial difficulties in healthcare, agriculture, education, and sustainable development (Abubakar et al., 2015). Open access (OA) journals and archives offer prompt and unrestricted access to this knowledge, enabling

researchers, policymakers, and practitioners to address these concerns successfully. An example is the HINARI program, implemented by the World Health Organisation, which provides researchers in underdeveloped nations with access to medical literature. This initiative has substantially contributed to the progress of healthcare research (WHO, 2023).

2. Fostering Research and Innovation

Open Access educational resources provide educators and students with up-to-date knowledge and pedagogical tools. Open textbooks and course materials can potentially decrease educational expenses substantially, enhancing the accessibility of excellent education for marginalized people (Bruns, 2019). In addition, OA platforms promote the distribution of educational resources created in developing nations, fostering the interchange of knowledge and enhancing cultural comprehension. OER Africa is an illustrative instance of a platform that exhibits open educational resources in several fields designed to meet the distinct requirements of African educators and students (OER Africa, 2024).

CONCLUSION

In conclusion, whereas open access presents significant potential for equalizing access to knowledge, its execution in underdeveloped nations is impeded by numerous obstacles. The challenges scholars and institutions encounter in adopting open access are mostly due to insufficient funds and resources, inadequate infrastructure, linguistic and cultural differences, and policy limitations.

Open Access (OA) can also promote inclusive and sustainable development in the global South by increasing the availability of knowledge, empowering researchers, improving education, and tackling current obstacles. It is imperative to acknowledge the potential advantages and difficulties posed by OA and strive to establish a fair and accessible information environment for everyone.

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महाविद्यालयीन विद्यार्थी आणि ग्रंथालय शास्त्राचे पाच सिद्धांत

श्री. राजू रामदास तुपे ग्रंथपाल , पंडित जवाहरलाल नेहरु महाविद्यालय, छत्रपती संभाजीनगर.

सारांश

महाविद्यालयीन विद्यार्थी आणि ग्रंथालय शास्त्राचे पाच सिद्धांत यावर हा लेख आधारित आहे. या लेखांमध्ये विद्यार्थी महाविद्यालयातील ग्रंथालयाचा वापर कसा करतात आणि ग्रंथालय शास्त्राचे पाच नियम हे विद्यार्थ्यांसाठी कसे फायद्यासाठी आहे हे सांगण्यात आले. वाढीसाठी संख्या वाचकांची तसेच डॉ. एस.आर.रंगनाथन यांच्या पाच नियमांचा कसा वापर करता येईल आणि ग्रंथालय कसे समृद्ध करता येईल या विषयावर हा शोध निबंध आधारित आहे.

प्रस्तावना

डॉ. एस.आर.रंगनाथन भारतीय ग्रंथालय शास्त्राचे जनक म्हणून ओळखले जातात. त्यांनी 1931 मध्ये ग्रंथालय शास्त्राचे पाच सूत्रे सांगितले, बनवली होती. या सूत्राच्या आधारे ग्रंथालयाचा कारभार आणि ग्रंथपालांनी कसे काम करावे असे सांगण्यात आले आहे. डॉ.आर.एस. रंगनाथन यांनी 1924 मध्ये लायब्ररी सायन्सच्या पाच कायद्यांची कल्पना केली देणारी स्वरूप मूर्त कायद्यांना या

विधाने1928 मध्ये तयार करण्यात आली .प्रथम कायदे हे 1931 मध्ये रंगनाथन यांच्या ग्रंथालय विज्ञानाचे पाच कायदे Five Laws of Library Science नावाच्या क्लासिक पुस्तकात प्रकाशित झाले. त्यात या पाच सूत्रांचा विस्तृत अशी माहिती दिलेली आहे .ग्रंथालय शास्त्रच्या विद्यार्थ्यांनी किंवा जे ग्रंथालय शास्त्राच्या अभ्यास करतात त्यांनी हे पाच नियम किंवा हे पाच कायदे किंवा आपण असे म्हणू शकतो की हे पाच सूत्रे कधीही न विसरता यावर आधारित ग्रंथालयाचा कारभार केला पाहिजे. या लेखांमध्ये अनुभवातून या पाच सूत्रांची माहिती सादर करत आहे.

उद्दिष्टे

1) पाच नियमांची माहिती व्हावी.

2) ग्रंथालयाचा कारभार बघताना या पाच सूत्रांचा वापर.

3) ग्रंथपालांनी या पाच सूत्रांचा वापर करून वाचकांना ग्रंथालय सुविधा उपलब्ध करून देणे.

गृहीतके

1) महाविद्यालय ग्रंथपाल असो किंवा इतर कुठलाही ग्रंथपाल असो तो या पाच सूत्रांचा वापर ग्रंथालयात करतच असतो.

2) या पाच सूत्रांचा वापर करूनच ग्रंथालयाचा कारभार हा सुव्यवस्थेत चालतो.

 ग्रंथपाल हे या पाच सूत्रांचा वापर करून आपल्या वाचकांना ग्रंथालयात जास्तीत जास्त आकर्षित करू शकतात, जेणेकरून ग्रंथालयात वाचकांची संख्या अधिक होण्यास मदत होते.

ग्रंथालय शास्त्राची पाच सूत्रे Five law of Library Science

- 1. ग्रंथ उपयोगासाठी असतात (Books are for use)
- 2. प्रत्येक वाचकासाठी ग्रंथ (Every reader his/her book)
- 3. प्रत्येक ग्रंथासाठी वाचक (Every books its read)
- 4. वाचकांचा वेळ वाचावा (Save the time of the reader)
- 5. ग्रंथालय ही वर्धिष्णू संस्था आहे (Library is a growing organism)

ग्रंथ उपयोगासाठी असतात या पहिल्या सूत्रामध्ये

डॉ. एस. आर. रंगनाथन यांनी हे सांगितले आहे पुस्तक हे वाचकांसाठी आहे आणि पुस्तके वापरले पाहिजे. यासाठी ग्रंथपालांनी त्यांच्या ग्रंथालयात वेळोवेळी ग्रंथ प्रदर्शन ठेवून विद्यार्थ्यांना नवनवीन ग्रंथ दिसतील असे उपक्रम राबविले पाहिजे किंवा ग्रंथालयात नवीन खरेदी केलेले पुस्तक हे कपाट किंवा रॅक मध्ये ठेवण्याच्या अगोदर त्याचे न्यू अरायव्हल म्हणून ग्रंथ प्रदर्शन ठेवले पाहिजे. जेणेकरून वाचकांना हवे असलेले पुस्तक भेटू शकते. ग्रंथ उपयोगासाठी असतात यासाठी ग्रंथालयाची मांडणी ग्रंथपालांनी व्यवस्थित केली पाहिजे. वाचकांना प्रत्येक ग्रंथ दिसेल किंवा ओपन एक्सेस ही दिला पाहिजे. पण जर आपण ग्रंथालय स्टाफ, ग्रंथालय स्टार्फिंग पॅटर्नचा अभ्यास केला तर हे लहान महाविद्यालयातील ग्रंथपाल हे ओपन एक्सेस सेवा देऊ शकत नाही. यावर मार्ग म्हणून ग्रंथपालांनी नवीन विद्यार्थ्यांना लायब्ररी ओरिएंटेशन मध्ये ग्रंथालयामध्ये कुठली, कुठली सेवा दिली जाते तसेच विद्यार्थ्यांना स्टॅक एरियामध्ये नेऊन प्रत्येक रॅक किंवा कपाट दाखवून आपण एक पुस्तकांची ओझरती ओळख देऊ शकतो. जर तुमचे ग्रंथालय हे संगणीकृत असेल तर तुमच्या ग्रंथालय सॉफ्टवेअरच्या मदतीने पुस्तकांची यादी स्वरूपात एक फाईल ग्रंथालयात ठेवली पाहिजे. त्या यादीमध्ये विषय स्वरूपात तसेच लेखक स्वरूपात यादी असली तर वाचक त्या यादीनुसार लेखक किंवा विषयानुसार त्यांना हवे असलेले ग्रंथ घेऊ शकतात.

दुसरा नियम प्रत्येक वाचकासाठी ग्रंथ

पहिल्या नियमानुसार ग्रंथालयाची मांडणी तसेच पुस्तके किंवा ग्रंथ देण्याच्या सुविधा यामध्ये आपण जर आपल्या ग्रंथालयात वाचकांना हवे असलेले पुस्तक सोमवार ते शनिवार म्हणजेच कुठलाही वेळापत्रक न ठरवता वाचकांना पुस्तके दिली पाहिजे. महाविद्यालयीन ग्रंथालयात कला, वाणिज्य आणि विज्ञान असे विभाग असतात. ग्रंथालयातून पुस्तके वाचकांना उपलब्ध करण्यासाठी वेळापत्रक बनवतात. त्यामध्ये उदाहरणं म्हणून सोमवार ते मंगळवार कला विभागासाठी, बुधवार ते गुरुवार वाणिज्य विभागासाठी आणि शुक्रवार ते शनिवार विज्ञान विभागासाठी असे वेळापत्रक महाविद्यालयीन ग्रंथालयात असते. या दुसऱ्या सूत्रामध्येही ग्रंथालय विभागात काम करणाऱ्या कर्मचाऱ्यांची संख्या यावर ही अवलंबून आहे. जेथे जास्त कर्मचारी ग्रंथालयात काम करतात ते नक्कीच वाचकांना हवे असलेली पुस्तक उपलब्ध करून देऊ शकतात. महाविद्यालय ग्रंथालयात जेव्हा ग्रंथ खरेदी केली जाते त्यामध्ये वाचकांनीही हवे असलेले ग्रंथ जर महाविद्यालयात उपलब्ध नसेल तर ते ग्रंथपालाला सुचित करून ती ग्रंथ मागवण्याबाबत जे क्विझेशन फॉर्म जो ग्रंथालयात असतो तो भरून ग्रंथपालाला दिला पाहिजे.

ग्रंथालय शास्त्राचा तिसरा नियम प्रत्येक ग्रंथासाठी वाचक

आज जर महाविद्यालयीन वाचकांची स्थिती बघता हा नियम फक्त विद्यार्थी किंवा वाचक त्यांना परीक्षेत पास होण्यासाठी जे ग्रंथ महाविद्यालयात उपलब्ध आहे त्याच ग्रंथाचा वापर विद्यार्थी करतात किंवा त्यांच्या अभ्यासक्रमामध्ये काही प्रोजेक्ट दिला तर विद्यार्थी संदर्भ सेवेतील ग्रंथ वापरतात. महाविद्यालयीन विद्यार्थी हे ग्रंथालय शास्त्राचे तिसरा सिद्धांत म्हणजेच प्रत्येक ग्रंथासाठी वाचक यासाठी ग्रंथपालांनी ग्रंथालयाच्या पहिल्या सूत्रांमध्ये जशी सेवा आपण देतो त्या सेवेचा अवलंब केला पाहिजे म्हणजे विद्यार्थी त्यांच्या अभ्यासाच्या व्यतिरिकत इतर ग्रंथ ही वापरतील. तसे जर बघता हे युग हे तंत्रज्ञानावर अवलंबून आहे. हवी असलेली माहिती विदिन सेकण्ड मध्ये आपण इंटरनेट मध्ये शोधतो. म्हणूनही विद्यार्थांचा ग्रंथ वापरण्याचा कल कमी झालेला दिसतो. महाविद्यालयीन विद्यार्थी त्यांच्या अभ्यासक्रमाचीच पुस्तकेच जास्त वापरताना दिसतात.

ग्रंथालयाचा चौथा सिद्धांत वाचकांचा वेळ वाचावा

या चौथ्या सिद्धांतामध्ये जसे की दुसऱ्या सिद्धांतामध्ये मांडले होते की ग्रंथालयाचा वेळापत्रक नुसार किंवा कुठलेही वेळापत्रक न ठेवता वाचकांना पुस्तके उपलब्ध करून दिली पाहिजे. यामध्येही ग्रंथालयातील कर्मचाऱ्यांची संख्या अवलंबून आहे. या सिद्धांतामध्ये आपण जर वाचकांना ऑनलाइन पब्लिक कॅटलॉग उपलब्ध करून दिला तर त्यांना हवे असलेले ग्रंथ ते डिमांड करू शकतात. तसेच या चौथ्या सिद्धांतांमध्ये ग्रंथपालांनी आधुनिक तंत्रज्ञानाचा वापर करून वाचकांना ग्रंथ उपलब्ध करून दिली पाहिजे. महाविद्यालय स्तरावर महाविद्यालयाच्या अभ्यासक्रमाच्या वेळापत्रकामध्ये एक तास ग्रंथालयाचाही ठेवला पाहिजे म्हणजेच विद्यार्थी त्यामध्ये त्यांना हवे असलेले ग्रंथ घेऊ शकतात. असे वेळापत्रक शक्यतो शाळेमध्ये आपल्याला दिसते. पण महाविद्यालयात विद्यार्थ्यांचे अभ्यासक्रमाचे वेळापत्रक संपल्यावर किंवा एखाद्या फ्री लेक्चर किंवा मध्यंतरी भोजनाची सुट्टी असेल तेव्हाच विद्यार्थ्यांना ग्रंथालयाचा वापर करता येतो.

पाचवा सिद्धांत ग्रंथालय ही वर्धिष्णू संस्था आहे

या सिद्धांतामध्ये डॉ. रंगनाथन यांनी ग्रंथालय हे जैविक म्हणजे सजीव असून या दृष्टीतून पाहिले आहे. ते म्हणजे ग्रंथालयात प्रत्येक वर्षी पुस्तकांची, ग्रंथची संख्या ही वाढली पाहिजे त्याचप्रमाणे वाचकांची ही संख्या वाढली पाहिजे. ग्रंथालय हे नॉन प्रॉफिट बेस ऑर्गनायझेशन असले पाहिजे. ग्रंथालय यामध्ये जसे ग्रंथांची पुस्तकांची वाढ होते आणि या बरोबरच ग्रंथालय कर्मचान्यांची ही संख्या ही ग्रंथालयात वाढली पाहिजे. ग्रंथालयात पुस्तकांच्या वाचकांच्या आणि कर्मचान्यांच्या वाढीसोबत ग्रंथालयची इमारत यामध्ये ग्रंथालयाचा वाचन कक्ष यामध्ये जास्तीत जास्त विद्यार्थी बसतील याचाही विचार केला पाहिजे. तसेच जर ग्रंथालयात डिजिटल लायब्ररी सेवा देत असेल तर त्यामध्येही संगणकांची संख्या वाढली पाहिजे. हा ग्रंथालयाचा पाचवा सिद्धांत एकूणच ग्रंथालयाच्या चारही सिद्धांतांचा वापर चांगला प्रकारे केला तर हा पाचवा सिद्धांत स्वयंचलित पूर्ण होतो.

निष्कर्ष

एकूण आजची महाविद्यालयीन विद्यार्थ्यांची स्थिती बघता महाविद्यालयीन विद्यार्थी हे फक्त क्रमिक पुस्तकांवर भर देतात. महाविद्यालयीन विद्यार्थ्यांना संदर्भ सेवा, डिक्शनरी असे पुस्तके क्वचितच वापरताना दिसतात. एकूणच बघता महाविद्यालयीन विद्यार्थी हे ग्रंथालयाचा वापर फक्त आणि फक्त परीक्षा किंवा प्रोजेक्ट पूर्ण करण्यासाठी करतात .महाविद्यालयातील विद्यार्थी हे अवांतर वाचन करताना दिसत नाहीत. यामध्ये आधुनिक तंत्रज्ञानाचाही फार मोठा धोकाही आपण म्हणू शकतो आणि फायदाही म्हणू शकतो. पण आपण असे म्हणतो की ग्रंथालय हे महाविद्यालयाचे हृदय असते आणि ग्रंथालयातील संदर्भ सेवा हा ग्रंथालयाचा कणा असतो पण आज जर तसे बघता महाविद्यालयीन विद्यार्थी हा ग्रंथालयापासून म्हणजेच वाचनापासून दूर चाललेला दिसत आहे.

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संदर्भ

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TOTAL QUALITY MANAGEMENT IN THE ACADEMIC LIBRARY

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ABSTRACT

Today, all kind of libraries and information centers are becoming users oriented to survive in the world. So they need to provide quality products and service to their users. (TQM provides the tool and the direction to improve quality. The value added service and only be achieved by implementation and achieving total quality for the system the library executives have to understand the cover concepts of TQM.

The paper discusses the evaluation principles, stages of TQM. It points out the difference between traditional organization and TQM organization. It also discusses the implementation of TQM in Libraries.

Keywords: TQM, Organization, Libraries, Management, Value Added Services

INTRODUCTION

The concept of quality control emerged around 1920 in US simply to control the creation of defective items in industrial process. The concept did not immediately take its roots in US. But it did Japan after World War II as a result of which Japan emerged as world quality leader.

TQM is a way of managing to improve the effectiveness, efficiency, flexibility and competitiveness of an organization as a whole and it involves whole organization getting organized and committed to quality in each department, each activity and each person at each level.

The concept of TQM in the field of management or organization, TQM is concept which make quality the responsibility of all people within organization. All the people involved are expected to contribute to the overall improvement of quality. TQM is the preferred method to increase the user satisfaction. It reduces the defect of the organization and increases the productivity.

Meaning of TQM

The meaning of TQM is user's satisfaction through product or services. The user in the library is use /teacher/student. The primary purpose of library is to support the teaching, research and other academic programs of its parent organization. A library is a part of a service organization which delivers personally to the users.

TQM is a step towards desired goals. The concept of TQM has come out though the meaning of quality Therefore it is necessary to understand the meaning of quality.

In trying to define TQM is it well worth considering the relevance and meaning of the three words in its title.

- 1. **Total** The responsibility for achieving Quality rests with everyone a business no matter what their function. It recognizes the necessity to develop processes across the business, the together lead to the reliable delivery of exact, agreed user's requirements. This will achieve the most lead to the reliable delivery of exact, agreed user's requirements. This will achieve the most competitive cost position and higher return on investment.
- 2. **Quality-** The prime task of any business is to understand the needs of the users, then deliver the product or service at the agreed time, place and price, on every occasion. This will retain current users, assist in acquiring new ones and lead to a subsequent increase in market share.
- 3. **Management** Top management lead the drive to achieve quality for users, by communicating the business vision and values to all employees; ensuring the right business processes are in place; introducing and maintaining a continuous improvement culture.

Definitions for TQM

- 1. ISO defined TQM is "A management approach of an organization centered on quality, based on participation of all its members and aiming at long term benefits to all members of the organization and society."
- 2. TQM is "A system of continuous improvement employing participative management and centered on the needs of users."

TQM in an Academic Library

In a service organization like an academic library the users satisfaction means fulfilling expectations.

Librarians must find out what readers want and concentrate upon providing it. Designing an appropriate service means asking.

- Who are the users?
- What do they want?
- What can the organization provide?

In a library there are basically two types of users: those who are in a hurry and those who want to kill time. An academic library has to identity these and serves them accordingly.

Users Expectations

The expectations that the users bring to a library have a critical effect upon their perceptions of quality. It is better to acquire a reputation for one or two factors which are important to users and to concentrate upon developing those.

Service delivery is like a theoretical performance. If users are to gain maximum benefit from a service, they must know how to use it. So, properly planned user education is a must for an academic library.

Support systems should reflect user's priorities. It is important to find out which services and be automated without losing the personal touch.

Getting feedback from the user is important to ascertain the quality of service. Regular users of an academic library can be given a questionnaire to get feedback from them for improving service.

The circulation desk staff are the front line staff that play a critical role is an academic library because they represent the library; first deal with inquiries/crises; manage the reader interface. Public services staff must be carefully – appointed and be given periodic training, including skill training; on the job guidance; retraining. Well-trained staff is the competitive weapon for butter quality service in an academic library.

All academic library staff must receive training, including kill training; on the job guidance; retraining. Well-trained staff is the competitive weapon for butter quality service in an academic library.

Teamwork plays a vital role in giving better quality service. People have to develop a culture and commitment towards quality service in an academic library.

ISO 9000 |Series Steps towards TQM in Academic Library.

ISO 9000 (www.iso.ch/sio/en/ISOOnline.openerpage) has an internationally accepted certificate that accredits an organization for its quality management systems and procedures. ISO 9004-2:1992(www.9000-2000-iso.com/90004-2.html) has guidelines for services and was issued by ISO to establish and implement a quality system within a service organization such as an educational institution.



TQM in Library Section (for Exam. – Acquisition Section)

How the quality of library operations and services will be improved by improved by implementing TQM, for example, Let us see how the quality of acquisition service can be improved by TQM. Acquisitions is one of the

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basic activates of a library. The process of ordering and acquiring the selected materials are known as acquisition. How TQM will help in improving the quality of acquisition function? A total quality too 'flow chat' will considerably improve the quality of acquisition.

In any acquisition system, one has to follow the following steps, to acquire a document. (For convenience purpose, the flow chart is not drawn with standard flow chart symbols, instead steps are written.

- 1. Receiving the suggestion for a document
- 2. Checking the bibliographic data with
- a. Trade Catalogue
- b. Books in print
- 3. Check its availability within the library
- a. By checking the catalogue
- b. By checking with the already ordered documents list
- 4. Determine its cost
- a. From the standard sources
- b. From the vendors
- c. From the publishers
- 5. Get the invoice, if required
- 6. Determine whether the fund is available
- If the answer is yes go to step 7
- If the answer is no then wait till the fund is available or try to get the extra fund
- 7. Select the vendor
- a. Based on vendor rating studies
- b. Based on other methods
- 8. Place in order
- a. With certain conditions
- b. Without any condition
- c. If there will be any advance payment then clear the payment from accounts department and enter the details in five.
- 9. Send reminders if the document is not received in time
- 10. After receiving the document
- a. Check its bibliographic data
- b. Check its cost
- c. Settle the payment if it is due
- 11.Enter the details in access register

The acquisition section staff member can easily understand the steps involved in the process with the help of a flow chart, drawn based on the above steps. New one can check till which stage the process has come. And with a flow chart one can determine where the problem occurs, if any and why it occurs.

Like this we can attempt to develop flow charts for many of the library functions. Let us take, another example, discharging of a document. The chart for the function will have the following steps.

- 1. Document returned by the use
- 2. Look for charge-out card

- 3. Check whether the document is overdue?
- 4. Check Whether any other use reserved the document

Like flow charts, there are other total quality tools, such as fish-bone diagram, pare to analysis, control chart, which will help in identifying and solving the problems of library operations and thus improves the quality of the functions.

CONCLUSION

The success of TQM is varying from library to library as each library is different from the others. It is a process which focuses on understanding user's needs and improving user's service and satisfaction. Libraries to set Mable goals based on quantitative performance indications, and to monitor progress towards those goals.

The realities of the current library situation indicate that quality improvement is essential not only but for facing major changes and growth required for the libraries of today and tomorrow.

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CHALLENGES AND OPPORTUNITIES FOR OPEN EDUCATIONAL RESOURCES (OER) IN INDIAN HIGHER EDUCATION

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ABSTRACT

The creation of knowledge workers is the key to a country's success. Unfortunately, many countries that have human resource chains are still unable to transform human resources to their advantage as they face many challenges such as poverty, poor economy, poor infrastructure, limited access to education, and inadequate technological growth. Fortunately, in recent times India is one of the countries that has improved its position on the global stage and has made a great stride in converting its human resources into knowledge workers. Full credit goes to the Government of India, its schemes, and most importantly the people working tirelessly in higher education institutions. But, the percentage is so low because higher education in India suffers frommany challenges like the quality of teachers, poor infrastructure, poor libraries, and poor educational resources. Unless high-quality education, both in terms of infrastructure and academics, is provided and sustained in all higher education institutions, it will be difficult to match the global world. One way this can be done, at least on the academic front, is through the development and dissemination of quality educational materials in higher education institutions. The National Knowledge Commission has recommended that the problem of educational materials can be greatly reduced through Open Educational Resources (OER) and Open Access (OA).

Keywords: OER, higher education, challenges, the electronic revolution

INTRODUCTION

In the last two decades, the electronic revolution has changed the picture of the world. Never in history has technology affected education as much as it does today. In recent years, the pace of technological change in electronic media has never been as fast as it was two decades ago. Technology has changed our world in ways previously unimaginable. No one could have imagined that money can be transferred from one place to another with a click of a mouse, talk face-to-face across the country via mobile (3G) and attend conferences, and workshops almost virtually. Educators' efforts with technology have a long history. The influence of technology in the learningprocess dates back to the time of Thomas Edison in 1922 when he predicted: "The motion picture is going to revolutionize our educational system and in a few years will change it greatly, if not completely. use of textbooks". Over time, technology has dominated academic discourse, especially in the 21st century. The advent of the internet has revolutionized not only trade and commerce and technology but also education. Many people think that education lags behind technology, but history has countless examples where education has stimulated technological innovation. The present society is called an "information society" or "knowledge society" because the development of technology has led to the widespread dissemination of information which creates new learning opportunities. At the same time, it challenges established thinking and practices about how teaching and learning should be organized and conducted. Institutions of higher education have been using the Internet and other digital technologies to develop and deliver instruction for many years. Yet, until recently, many educational materials were locked behind passwords in proprietary systems, inaccessible to outsiders. The Open Educational Resource (OER) movement removes barriers and thus encourages the use or sharing of content. According to the Hewlett Foundation: Open Educational Resources (OER) is a way to share resources typically faculty and content, by placing them in the publishing domain. The vision behind creating OER is to reduce the cost of educational materials, develop innovations and improve the quality of content and thus make it accessible anytime, anywhere, and anywhere. Easy and widespread availability of high-quality educational resources will change the face of teaching and improve the quality of education for all students. In addition, students will gain knowledge of how to access inaccessible information as well as global educational resources. UNESCO believes that universal access to high-quality education is the key to peace, sustainable social and economic development and intercultural dialogue. Open Educational Resources (OER) provide a strategic opportunity to improve the quality of education as well as facilitate policy dialogue, knowledge sharing and capacity building. OER began its journey in 2001, when the Massachusetts Institute of Technology(MIT), in an unprecedented move, announced the release of almost all courses for free access to the Internet. The term Open Educational Resources (OER) was coined at UNESCO's 2002 Forum on Open Courseware and specifies "teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits. The open license is built within the existing framework of intellectual property rights as defined by relevant international conventions and respects the

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authorship of the work." After that, the number of organizations offering free or open courseware increased. With support from the Hewlett Foundation, UNESCO created the World OER Community Wiki in 2005 to share information and collaborate on issues related to the production and use of open educational resources. Open Educational Resources (OERs) have become significantly important in education systems around the world. They represent a worldwide community effort enabled by the Internet to facilitate equal access to knowledge and educational opportunities. These are teaching, learning and research resources that reside in the public domain allowing their free use or customization byothers (Bissell, 2007)

MAJOR INNOVATION INITIATIVE ON OER BY GOVERNMENT OF INDIA

1. NMECIT:

The National Mission on Education through Information and Communication Technology is a centrally sponsored scheme to harness the potential of ICT by providing high-quality personalized and interactive knowledge modules over the Internet/Intranet to all types of students in higher education. Two major components of this scheme are content creation and other connectivity as well as provision of access devices for institutions and learners. All the universities and colleges of the country need to be connected for this project. Universities will be connected to National Knowledge Network (NKN) and colleges will be connected with broadband connectivity. This scheme was launched on 3 February 2009 by the Union Ministry of Human Resource Development, Government of India. The objectives of the mission are:

- To enable and empower students by ensuring equity and access to education through the use of ICT;
- Connecting more than 400 universities and 22,000 colleges across India throughhigh-speed data networks;
- Improving the quality of teachers using a unique synchronous training method;
- Ensuring equity by providing access to expensive equipment to students even inremote corners through innovative use of ICT; And
- Providing e-content and educational videos prepared by the best teachers of all departments for UG and PG classes.

2. NKN:

This project is ongoing under NMEICT. NKN is a state-of-the-art multi-gigabit pan-India network providing a unified high-speed network backbone for all knowledge-related institutions in the country. The main objective of such a knowledge network is in the country's quest to create quality institutions with requisite research facilities and create a pool of highly trained professionals. NKN will enable scientists, researchers, and students from diverse backgrounds and diverse geographies to work closely to advance human development in critical and emerging sectors. The target users for NKN are all organizations involved in knowledge creation and dissemination in various fields, such as research laboratories, universities, and other institutions of higher education, including professional organizations. NKN has already added 1038 institutes and aims to add more than 1500 Institutes/Laboratories in various categories across the country (Homepage of NKN, 2015).

3. SAKSHAT:

The development of the Stop Education Portal is an important initiative of the Ministry of Human Resource Development (MHRD) to cater to all education and learning-related needs of students, scholars, teachers, and lifelong learners. It is a free portal launched on 30 October 2006 by the Hon'ble President of India. It has several e-repositories for schools and higher education. The portal is expected to be the main delivery platform for content developed under the National Mission on Education through ICT (NMEICT). A new website has been created to facilitate public scrutiny, feedback, and transparency for Mission related information and projects undertaken by the Mission. More than a hundred projects are underway under NMEICT ranging from e-content development, e-resources access, and development of software tools, etc. On its home page, there are four navigations namely Sakshat Bhandar, Picture Gallery, and Sakshat Sark. And what's new?In Sakhat Repository, various links are provided where stakeholders have access to curriculum- wise e-materials being developed for undergraduate, postgraduate, and engineering education programs in the form of videos, animations, recorded lectures, etc. by eminent teachers. UG Courses, Consortium of Educational Communication (CEC) has been tasked with e-content creation. In Phase-I, e-content for 19 UG subjects and e-content for 68 subjects in Phase II are being prepared by CEC in collaboration with its Media Centres. For 77 PG subjects, e-content creation activities have been assigned to the University Grants Commission (UGC). The material preparation process has been started for 72 subjects. Under NPTEL, free online courses are available for engineering education. Apart
from this, Spoken Tutorial, Talk to Teacher, and AmritaVirtual Interactive e-Learning World (A-VIEW) virtual classrooms are also operational.

4. NPTEL:

NPTEL is a joint venture of IITs and IISc funded by this mission to provide e-learning through online web and video-based courses in engineering, science, and humanities streams. NPTEL aims to enhance the quality of engineering education in the country by providing free online courseware. More than 329 courses are completed and available on the NPTEL website. More than 990 courses in Engineering and Science are coming up in Phase II of NPTEL. A set of5 separate DVDs containing NPTEL course material--one each for Electrical, Civil, Computer Science, Electronics, and Mechanical Engineering. Distributed to AICTE Recognized Engineering Colleges during Dissemination Workshop for Engineering Colleges in NCR Division held on 8thOctober 2013

5. EKLAVYA:

The Eklavya Project, jointly launched by IIT, Bombay, and IGNOU on 26 January 2003, aims to facilitate the free exchange of knowledge and ideas by keeping all relevant educational materials open source. The project developed the Open Source Educational Resources Animation Repository (OSCAR) to create a repository of web-based, interactive animations for teaching various concepts and technologies. Its e-Guru program provides students with a list of relevant and challenging projects, which encourage them to think of innovative technological solutions to various real-life problems, and its e-Outreach program produces high-quality digital text, audio,video, and HTML content of educational value for wide dissemination. The project's e-content program creates open-source digital content in Indian languages through translation and new writing on education-related topics for all levels (Gani, 2010).

6. OSCAR:

OSCAR (Open Source Courseware Animation Repository) is an initiative of IIT Bombay to create a large repository of web-based interactive animations for teaching and learning scienceand technology-based concepts.

7. E-GRID:

Launched by IIIT, Kerala, and supported by MHRD, the E-Grid portal is designed to increase and facilitate access to educational resources by the academic community and facilitate collaboration, knowledge sharing, and best practices to improve the quality of education. and learning. The Digital Library of India project in coordination with IIS, Bangalore, and Carnegie Mellon University aims to digitize books in India. More than 450,000 books, including Indian languages, have already been digitized under this initiative, of which around 220,000 books are sofar available free of charge at 21 centers for educational institutions, social organizations, and government institutions. Knowledge (Songs, 2010)

CHALLENGES FACING HIGHER EDUCATION:

This vertical expansion requires integration at the horizontal level. However, currently, there are many challenges facing higher education such as the quality of higher education, shortage of professors; Quality teachers, unable to keep pace with market demand, poor quality of the curriculum, poor quality of research, and low quality of teaching, etc. Recently, a survey has reported that many of our top institutions like IITs and IIMs are not in the top 200 list of world universities. This is because teaching and research in Indian universities are far below the standardsof European or American and some Asian countries. If we compare it among our countries, we will find a huge disparity in terms of quality of teaching, quality of research, etc. India has fewer credible institutions of higher education and benefits fewer students. As a large force of human resources (youth) are studying in inferior institutions, converting them into human capital is a challenge for the Indian education system. Unfortunately, this advantage cannot be sustained until we improve our education system. One area in dire need of change is our higher education network. Networking of higher education institutions will help these institutions in many ways. First, the quality educational resources that are being created or stored in their repository are freely available. Secondly, it will improve the quality of teaching and learning in universities or colleges which are suffering from poor-quality educational resources. Thirdly, it will also fill the shortage of teachers. Fourth, it will enhance the capacity of students as well as teachers. Ultimately, this will enable students to compete globally.

- Transforming higher education institutions into e-hub resources
- Durability
- Developing a network-enabled delivery infrastructure
- Open access and issuance of intellectual property rights

- Globalization
- Population

INDIAN HIGHER EDUCATION OPPORTUNITIES:

In recent years, there has been rapid technological advancement in hardware as well as software. We have moved beyond classrooms, textbooks and face-to-face teaching. Today we almost have virtual classrooms and education is available in the form of e-materials, meaning that education is deeply influenced by technology. Today's learner has access to devices such as iPads, smartphones and tablets with 3G and 4G technology. Learning is highly individualized and self- paced. Furthermore, the increasing capabilities of the Internet (Site Engine) have led to an explosion of knowledge. But unfortunately, all this technological development has reached a few while the majority has been left out. The same has happened with Indian higher education. The majority of students pursuing higher education are in colleges or state universities. These colleges and universities have a severe shortage of good teachers and good educational materials. Absence of these two factors is the reason why students suffer the most. Educators and technical experts (both hardware and software professionals) have unprecedented opportunities to create OER content. In addition, the evaluation committee report on NMEICT notes that there are ample opportunities for other professionals ranging from tech nopedagogy experts, editors, e-content developers to web developers. was done Initially, the idea was to create 990+ web and video courses for undergraduate and postgraduate courses, but till date only 600 web courses have beencreated and the rest is in progress. Moreover, the report also indicated that creating e-content in other subjects and languages are most needed. Hence, in these areas, there is a lot of scope and opportunity for designing e-content.

- Massive teacher empowerment
- Breaking down language barriers
- Equalization of opportunities through outreach programmers
- Private-initiative

CONCLUSION

The OER movement is just started in India. The creation of open education materials in various disciplines by experts from institutions of repute will help the teachers to access these materials at the click of a mouse which will help them in classroom teaching. Moreover, it is more beneficial for the students as they will get the opportunity to hear lectures from teachers of international repute. Open educational resources which are generally made web-based are interactive therefore it helps the learner to interact didactically with the teachers and thus clarify doubts instantaneously. Moreover, it could be accessed from any remote area as it requires internet connectivity. The additional benefit is that one can register oneself in these open education resources portals for the different online courses (subject to availability of course) and thus get additional certificates. It will be a boon to those educational institutions which lack good library resources. Through NMEICT and NKN colleges and universities can connect themselves and availthe facilities for their students and teachers. The effort and support from the government side are visible by launching NMEICT and NKN along with allocating a substantial budget for it. The initiative from private enterprises and corporate houses is what is needed by the government to support and sustained its efforts of making India a hub of open educational resources. The biggest challenge for the academic fraternity is to create open educational material for the diverse demographical population in diverse vernacular languages as the majority of our students belong to different vernacular mediums. Another challenge is to make different stakeholders aware of the different open educational resources available to them free of cost. Lastly, the learners and teachers need to utilize it to the optimum level. Since globalization has transformed education and its system therefore, it is indeed necessary that we teachers collaborate, adapt and adopt, translate educational resources with the external world as it is very difficult to create all kinds of materials. In all, one can say the success of the OER movement means success in higher education.

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ROLE OF LIBRARIANS TOWARDS USERS SATISFACTION IN ICT ENVIRONMENT

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ABSTRACT

ICT stands on information and Communication Technology. It is timeliness process for to produce information and to provide information of right users. Therefore, the library professional accept the ICT technology and to implement for gives better services to their users. The research paper highlights the ICT based resources, use of internet, information literacy programme, E-resources, OPAC system for users and organise various programme by the library professionals for users satisfaction related according to their information needs.

INTRODUCTION

Information communication technology plays vital role in education and information sectors. In 21st century, ICT is the most powerful tool for enhancing information acquiring, processing and transfer to the end users. The library professional always tries for provides ICT based library services to their users. Now a days the users getting information within a second with the help of ICT resources therefore the challenging role face by the library professional towards providing maximum information in minimum time to the right users. ICT has been used extensively as a resource as well as a tool to deliver the library professional must adopt ICT technology and provide ICT based services to the users. The library professional creates ICT based atmosphere to attract the users.

Library Professionals

Library professionals means those employee who is working in the library such as, librarian, assistant librarian, library clerk, library attendant as well as semi professional employee.

ICT

ICT is a computer based mechanism tools which helps to gather the information, capturing of information, acquisition of information, processing of information, and dissemination of information.

Information and communications technology (ICT) is an extensional term for information technology (IT) that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals) and computers, as well as necessary enterprise software, middleware, storage, and audiovisual systems, that enable users to access, store, transmit, and manipulate information. (Wikipedia, 2018)

ICT and Library

ICT has enabled users to avail many services without any human intervention;

- To capture, store, manipulate, and distribute information;
- To introduce and provide new services, revitalize the existing services by providing faster access to the resources, by overcoming the space and time barriers;
- To digitize the documents for preservation and for space saving;
- To support library functions such as circulation, serials control, acquisition control, stock maintenance and other routine office works and developing in-house database.

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Source: https://www.ictworks.org/libraries-dirty-effective-word-public-access-ict/

ROLE OF LIBRARIAN

1. To Provide ICT Based Information Sources

This new era is known as information and communication technology era. Everyone wants information in digital form. The sources of digital form such as, E-books, E-Journals, E-database and ICT based information sources. The library should purchase digital database to meet the digital information needs of users. More over the library should provide institutional repository to the users through library portal.

2. To Introduce Information Seeking Strategy On Internet

The library professional plays navigation role between available information on internet and users informational needs. They give guidance to the users for how to seek information on search engines such as, google, yahoo and etc. Also guide towards keywords search, subjective search and research oriented search. The lot of information available on the internet but which information is useful for them is guided by the library professionals.

3. Adoption of new Technology for Enhancing Library Services

The library should adopt ICT for developing digital library and computerized library. The library professionals must do computer based housekeeping operation. Q R (Quick Response) code technology is one of the better information accessing tools, thus these technology should be adopted for easily accessing of library resources. The virtual library is beneficial for users for access world wide information at the one place. The library should launch Web OPAC for accessing bibliographical description for the users anywhere and anytime.

4. Orientation Programme for use of E-Resources

The library should organise orientation programmes for use of E-Resources. The INFLIBNET provide N-list consortia for the faculty and users for accessing E-resources also Dr. Babasaheb Ambedkar Marathwada University, Aurangabad gives remote access for the affiliated colleges for accessing E-resources available in Knowledge Resource Centre of the university. The library professionals organise orientation programme for accessing, downloading and utilizing E-resources. Therefore the users could aware about these resources.

5. To Provide Literature Search Service Through E-mail

The library professionals should create library website, portal and E-mail. The library E-mail is necessary for knowing about information query of the users. The users can easily send query about information through email and the library professionals send proper information to the right users. It is the best practice of any kind of library. The library professionals plays mediator role between information and the users.

6. To Provide Facility of OPAC & Web OPAC

The library professional develop library OPAC for the easily access of bibliographical description of available resources. The library OPAC is the mirror of the library resources. So it is very carefully develop for accessing proper materials. The users can easily search on keywords, title, subject, author, publisher and etc on the library OPAC. Also the offline OPAC put on the library websites then its create Web OPAC of library. The users can search Web OPAC on their home as well as their android phones. So it is easier for users to access library information in their hands.

7. To Organise Various Programme Towards Users Satisfaction

The library organise various programme for updating knowledge about E-resources such as group reading of Ebooks, Book Exhibition, orientation programme for use of E-resources best reader award and information literacy programme. These programmes creates good atmosphere for the users for accessing library resources to fulfill their educational purpose.

CONCLUSION

The library professionals play challenging role in information explosion era. They always work towards providing right information to the right users in timeliness way. Therefore, they depend upon ICT technology for giving effective services to the users. ICT technology is one of the best medium for enhancing library services to the end user of library. The library professionals should adopt ICT technology for enhancing professional competencies and user's satisfaction. The library professional organise various programme to library users for aware about ICT based library services.

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OPEN SOURCE SOFTWARE: CHALLENGES AND OPPORTUNITIES

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SUMMARY

Emphasis is being placed on using open source software for various tasks in academic libraries. Managing the challenges of using open source software requires managerial skills. This article attempts to identify the ignorance about the components of the open source software and the security and solutions for the same. At the same time, in order to carry out the work in the library in an orderly manner, a study has been made in the said article regarding the selection and use of appropriate software by creating a conducive environment for effectively implementing policies regarding open source software.

Keywords: Academic Libraries, Open access software, Challenges, Opportunities

INTRODUCTION

Academic libraries are operating in very challenging but interesting times. Academic libraries are working to provide these services using open and hidden digital tools. Modern libraries are working to provide services to the users using new technologies. Currently, there are many open source software available for libraries. Among them, library automation, library website management, knowledge management, digital library management can be mentioned. These open source software have become increasingly popular and a large number of libraries are migrating to open source software.

A number of independent open source software and application automation tools are available to promote libraries and services. Software like this Koha, NewGenLib, Evergreen, Dspace, GSDL, E-Print, and Zoomla, ABCD, Drupal, and much more is available for library management. A large number of open source applications are emerging to provide efficient and effective information services to library patrons.

Historical Perspective

Richard Stallman worked as a programmer at MIT between 1970 and 1980. He developed an operation software. In it, the information could be shared with anyone, anyone could see it, and the information could also be downloaded. It was welcomed from all quarters. In 1985 Richard Stallman founded the General Public License Free Foundation and in 1989 he published the first edition. Some of the open sources software associations are as follows..

Free Software Foundation	1985
Python Software Foundation	1990
Mozila Foundation	1998
Drupal Association	1999
Open Source Software Institute	2000
GNOME Foundation	2005
Linux Foundation	2007
Apereo Foundation	2012

OPEN SOURCE SOFTWARE

1. Koha: An Integrated Library System :- Koha is a full featured Integrated Library System (ILS). There is no cost for the license, you have the freedom to modify the product to adapt it to your needs, etc. Developed initially in New Zealand by Katipo Communications with Horowhenua Library Trust in 1999 and the first installation went live in January 2000. From 2000, companies started providing commercial support for Koha. In 2001, Paul Poulain (of Marseille, France) began adding many new features to Koha, most significantly support for multiple languages. In 2005, an Ohio-based company, Metavore, Inc., trading as LibLime, was established to support Koha and added many new features, including support for Zebra sponsored by the Crawford County Federated Library System. In 2011 the Spanish Ministry of Culture (Turkey)started to use Koha - Devinim version in 1,136 public libraries with more than 15,000,000 items and app. 1,800,000 active users. This is the biggest Koha installation for the moment. It is currently maintained by a dedicated team of software providers and library technology staff from around the globe. That by adopting it, the customer becomes "joint owner" of the product. In particular, the customer can freely install new versions or not, and can take part in new developments by financing them or by carrying

them out them self. Koha is a popular open-source library management system that is used by libraries of all sizes around the world. It offers modules for cataloging, circulation, acquisitions, and serials management, as well as an online public access catalog (OPAC). Koha is a promising full-featured open source ILS (Integrated Library System) currently being used by libraries worldwide. For those of you who are unfamiliar with what ILS is, well, it is a system for keeping track of library operations - salaries, expenses, purchases, and most importantly, the various media checked out by librarian patrons. Many small libraries cannot afford to purchase, install, and maintain an ILS, and Koha is a perfect alternative. Koha is built using library ILS standards and uses an OPAC (Open Public Access Catalog) interface. In addition, Koha has no vendor-lock in, so libraries can receive technical support from any party they choose.

- New Genlib :- NewGenLib (New Generation Library) is an integrated library automation and networking solution developed by Verus Solutions Pvt Ltd and Kesavan Institute of Information and Knowledge Management, India. In March 2005, the NewGenLib version 1.0 was released and versions 2.0 and 2.1 followed. On January 9, 2008, NewGenLib was declared open source software under the GNU GPL license by Verus Solutions Pvt Ltd, Hyderabad, India. Completely web based application with Java technology. Compatible with international standards such as MARC 21, MARC-SML, Z39.50, SRU/W, OAI-PMH. All supported software applications are free or open source. Scalable, manageable and efficient. Compatible to run on any version of Window (except window 95, 98 and 2000) and Linux. Z39.50 Client for federated searching, Internationalized application (I18N) o Unicode 4.0 competent o Easily extensible to support other India and foreign languages o Data entry, storage, retrieval in any(Unicode 3.0) language. RFID compatible
 Automated email/instant messaging is integrated in different function of software, Form and letter can be configured to save time. Extensive use of parameters to enable easy configuration of the software to suit specific needs. Allows digital attachment to metadata. Enables users to search online databases through OPAC. Self-issue return is enabled that save the time of the user and labour of the library.
- 3. **Evergreen**: Evergreen ILS is another option when researching open source ILS options. Developed by Equinox Software, Evergreen is a robust, enterprise-level ILS solution capable of supporting Workload of large libraries in a fault-tolerant system. It is also standards compliant and uses an OPAC interface, and offers many features including flexible administration, work-flow customization, customizable programming interface, and because it is open source, cannot be locked down and can benefit from any community contributions.

Open Source Software Challenges

- 1. **Regarding data security:-** Open source software is freely available for those who want to use databases. There is a possibility of unauthorized access to the said software. Protecting and securing data due to unauthorized access is extremely difficult. Unauthorized persons can easily hack the data.
- 2. Lacking practical experience or training:- Lack of skills in handling software technology is seen among library staff. Due to lack of skills in the workforce, the need to hire a skill specialist increases the cost, so the intended purpose of open source software cannot be fulfilled.
- **3. Training:-** After installing open access software in a library, library staff need to be trained. Software is constantly changing and library staff need to stay up-to-date with new changes. But the employees seem to be unaware of the new change. Therefore, obstacles appear in the use of the said software.
- **4. Installation:-** Using open access software requires acquiring information technology skills. Installation of software and ease of use of software is not possible without acquisition of IT skills.

Opportunities

- 1. **Simplified license management**:- Get the software once and install it as many times and as many places as you want. Licensing compliance does not require measuring, tracking or monitoring.
- 2. Low software costs: Open source solutions generally do not incur licensing fees. Logical extensions have no maintenance charges. Media, documentation and support if required are the only expenses.
- 3. Low hardware costs: In general, Linux and open source solutions are beautifully compact and portable, and as a result require less hardware power to perform the same tasks as traditional servers (Windows, Solaris) or workstations. The result is that you can get by with less expensive or older hardware.
- 4. **Support**: Support for open source is available—often superior to proprietary solutions. First, open source support is freely available and accessible by online communities via the Internet. And secondly, many tech

companies are now supporting open source with multiple levels of free online and paid support. For example Liblime.

- 5. **Quality software**:- Evidence and research suggest that open source software is good stuff. Peer review processes and community standards, as well as the fact that the source code is available for the world to see, drive excellence in design and efficiency in coding.
- 6. **Unified management**: Certain open source technologies such as CIM (Common Information Model) and WBEM (Web Based Enterprise Management) provide the ability to combine or consolidate server, service, application and workstation management for powerful administration.
- 7. Scaling/consolidation capabilities: Again, Linux and open source applications and services can often be scaled up. Many options for load balancing, clustering, and open source applications, such as databases and email, give organizations the ability to scale up for new growth or consolidate to do more.

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USE OF COLLEGE WI-FI BY THE STUDENTS OF DR.PATANGRAO KADAM ARTS & COMMERCE COLLEGE, PEN: A STUDY

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ABSTRACT

This paper mainly focuses on the use of college wi-fi by the students of Dr. Patangrao Kadam Arts & Commerce College, Pen. As we know that with the help of wi-fi we get connected with the internet. With the help of the internet we can search for any purpose of our need. As students need it for Educational or other purposes. This paper tries to search for it and analyse, interpret and give some useful result for better use of college wi-fi.

INTRODUCTION

Wi-Fi, which stands for "Wireless Fidelity," is a wireless networking technology that enables connections between devices and the internet or other devices without the use of cables or wires. It allows users to access the internet from their laptops, cellphones, tablets, and other devices without a physical connection since it transmits data between devices using radio waves.Wi-Fi networks are often generated by a wireless router or access point, which broadcasts a signal that can be detected by Wi-Fi enabled devices nearby. Devices that are connected can communicate with one another and access the internet or other network resources. Wi-Fi has developed into a pervasive technology in today's culture, allowing individuals to stay connected and productive in a range of situations, from homes and businesses to coffee shops, airports, and public spaces.

What is Wi-Fi?

Wi-Fi is a networking technology that uses radio waves to allow high-speed data transfer over short distances. It is commonly used to provide wireless broadband Internet access for a variety of devices.

Use of Wi-Fi in Education

- 1. Accessing Ebooks and Ejournals
- 2. To watch educational videos
- 3. Collecting information for project work / research work.
- 4. Searching current news
- 5. Giving online Quiz
- 6. Giving Online Feedback
- 7. Filling online applications
- 8. Attending workshop, seminars and conferences
- 9. Self-Study
- 10.Searching job opportunities

About Dr. Patangrao Kadam Arts and Commerce College Pen:

Our college is one of the branches of the leading Institution 'Shri Swami Vivekanand Shikshan Sanstha, Kolhapurs' under Raigad division. Our Institution firstly started the First Secondary Branch at Joha Tal Pen. First Senior college was Started in tin shade, at that time there was no other college in Pen Tehsil, College plays a very important role under University of Mumbai. Founder member and the father of our college is Dr. Bapuji Salunkhe. They Received the River of Knowledge to Pen Tehsil Like the Plant Dr. Patangrao Kadam Arts And Commerce College Pen.

Dr. Bapuji Salunkhe gave us the motto "Education for Propagation of Knowledge, achievement and culture".

Only one branch of SSVSS Kolhapur's. This college stream was registered in 1984 under University of Mumbai. Every year about on an average 1200 students take education under this Branch. How can one forget an invaluable contribution made by Shri Swami Vivekanand Shikshan Sansthas, Dr. Patangrao Kadam Arts And Commerce college Pen in social transformation in the state of Maharashtra (India)? Pen Tehsil is traditionally known for the Region of Kolis and Lord Ganesha Sculptures'.

Dr. Bapuji Salunkhe was inspired by Swami Vivekanand – a role model of Indian Culture! A representative of truth, character, glory, sacrifice and hard work!! And Swami Vivekananda's Thought, "Arise, Awake till the Goal is Reached". We look forward to the next Generation.

OBJECTIVE:

- 1. To study the purpose of using college Wi-Fi by the student user.
- 2. To know the time spent in using college Wi-Fi by the student user.
- 3. To know the preferred location for using college Wi-Fi by the student user.
- 4. To know the speed of college Wi-Fi is sufficient for the student user.
- 5. To know whether there is any need for training in using college Wi-Fi by the student user.
- 6. To suggest ways and means for the improvement of the college Wi-Fi facility.

Scope and limitation:

The scope of the current study is the student user of college Wi-Fi of Dr Patangrao Kadam Arts and Commerce College, Pen. The study is limited to college students only, faculty are not being focused on this study.

REVIEW OF LITERATURE:

Selvaraja A, Asha P, Jayakumar (2014). in their study finds that most of the research scholars are using Wi-Fi. services for research purposes rather than communication and entertainment purposes. They also recommend increasing the internet speed for researchers to access information quickly. Ravindra M Mendhe and U. P. Nahle (2015) in their study says that awareness and orientation programmes should be conducted. Also an increase in the number of hotspots for better signal is needed. They also suggest higher bandwidth for downloading information. Mazni Omar, Muzida Ahmad, Azman Yasin Huda Ibrahin, Osman Ghazali, Shakiroh Khamis (2018). Concluded that no significant relationships between wi-fi usage and students' academic performance. Gururaj F. D., Arun Kumar H. S., Lokesha M.(2016). The findings of the study suggest that there is a high level of ICT awareness among students and that the demographics of survey participants varied in terms of age, education levels and the subject. Jasten Keneth D. Trecene, Ralph Jerico P. Abides (2020) the study shows that the internet is largely used by male information technology students. Both genders access the internet similarly, however, the variances are observed in terms of how the students utilise the internet.

The present research has been designed with the following research questions.

Research Questions

1. How can we make use of college Wi-Fi better?

Hypothesis:

1. There is no difference in the purpose of using college Wi-Fi between male and female users.

METHODOLOGY:

This online survey was supported by Google form. Students of the college who are using college Wi-Fi were the target population. The link of the questionnaire was shared through different WhatsApp groups of the college. All the students with whom links of the questionnaire were shared may be defined as an accessible population. The questionnaire link was open for ten days and finally 51 responses were received. A questionnaire having 8 restricted items and one open ended item for suggestions were included in the study.

Data analysis

The results of any research depend on the proper analysis of the collected data using various techniques. Data collected for this study were analysed using Microsoft Excel and presented tabularly and graphically.

Gender	Number	Percentage
Male	11	21.60
Female	40	78.40
Total	51	100

Table 1: Showing gender wise student user of college wi-fi.



Table	1 shows	gender	wise	distribution	ı of	students	who	are	users	of	college	wi-fi.It	shows	that	78.40%	of
partici	pants we	re femal	e and	21.60% par	tici	pants wer	e Mal	le.								

Use of wifi	Number	Percentage
Till 1/2 hours.	15	29.40%
Till 1 hour.	24	47.10%
Till 2 hours.	8	15.70%
more than 2 hours	4	7.80%
Total	51	100.00%

Table 2: Showing time spent on using college wi-fi.



Table 2 shows that 47.10% of student users spent 1 hour time on using college wi-fi. Below that 29.40% of student users spent less than $\frac{1}{2}$ hours of time on using college wi-fi and 15.7% and 7.80% of student users spent till 2 hours and more than 2 hours simultaneously.

Location	Number	Percentage
Library	25	49.00%
Ground Floor	8	15.70%
First Floor	16	31.40%
Second Floor	13	25.50%
Any where in college campus	21	41.20%
Total	83	162.80%

Table 3: Showing preferred location of using college wi-fi.



Table 3 shows that 49% of the student users of college wi-fi use the library as their preferred location. Below that 41.2% of student users of college wi-fi preferred location as anywhere in the college campus And 15.7%,31.40%,25.50% of student users of college wi-fi preferred location is ground floor, first floor second floor simultaneously.

Response	Number	Percentage
ОК	13	25.50%
Should be increased	38	74.50%
Total	51	100.00%





Table 4 shows that 74.50% of student users say there should be an increase in the speed of college wi-fi and 25.5% student users say speed of college wifi is ok.

Response	Number	Percentage
Yes	34	66.70%
No	7	13.70%
May be	10	19.60%
Total	51	100.00%

Table 5: Showing response for need of training.

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Table 5 shows that 66.70% of student users need training for the use of college wi-fi and 13.70% of student users say there is no need for training for the use of college wi-fi. Nearly 19.60% of the student users are confused so they say maybe there is a need for training for the use of college wi-fi.

Purpose of using college Wi- Fi	Male	Femal e	Total Responses	Percentage Responses
To Watch Educational Videos	8	27	35	68.60%
Academic purpose	9	21	30	58.80%
Collecting Information for Project Work/ research work	6	23	29	56.90%
Filling online applications	6	20	26	51.00%
Accessing Ebooks and Ejournals	7	16	23	45.10%
To see Emails	8	12	20	39.50%
Searching current news	5	12	17	33.30%
Giving Online Quiz	7	10	17	33.30%
Attending workshop, seminars and conferences	6	10	16	31.40%
Giving Online Feedback	6	9	15	29.40%
Searching Job opportunities	4	10	14	27.50%
To see Whatsapp	3	10	13	25.50%
Communication Purpose	5	6	11	21.60%
To see Instagram	3	5	8	15.70%
Entertainment Purpose	2	6	8	15.70%
Online Shopping	2	4	6	11.80%
To see Facebook	2	1	3	5.90%
Total	89	202	291	533.3%

Table 6: Showing purpose of using college Wi-Fi.

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Table 6 shows that 68.60% of student users' purpose of using college wi-fi is for watching educational videos. 58.80% of student users' purpose of using college wi-fi is for academic purposes. 56.90% of student users' purpose of using college wi-fi is for collecting information for project Work / research work. 51.00% of student users' purpose of using college wi-fi is for filling online applications. All the rest of the purposes of using college wi-fi is less than 50%.

Hypothesis testing is as below

Chi square calculated value = 9.425

Degree of freedom=16

Chi square critical value= 26.296

Since the calculated value of Chi Square is less than the tabulated value of Chi Square, Ho is accepted . So, we can infer that there is no difference in the purpose of using college Wi-Fi between male and female users.

FINDINGS

- 1. Female student users used the college wi-fi more than the male student users.
- 2. 47.10% of student users spent 1 hour time on using college wi-fi. Below that 29.40% of student users spent less than ¹/₂ hours of time on using college wi-fi and 15.7% and 7.80% of student users spent till 2 hours and more than 2 hours simultaneously.
- 3. 49% of the student users of college wi-fi use the library as their preferred location. Below that 41.2% of student users of college wi-fi preferred location as anywhere in the college campus and 15.7%,31.40%,25.50% of student users of college wi-fi preferred location is ground floor, first floor second floor simultaneously.
- 4. Majority of student users say there should be an increase in the speed of college wi-fi .
- 5. Majority of student users need training for the use of college wi-fi and few were confused about it.
- 6. Majority of the student users of college wi-fi used it for educational purposes (Watching education videos, academic purpose, collecting information for project work / research work, filling online applications accessing ebooks and ejournals) and very few of them used it for other purposes(entertainment, online shopping, searching job opportunities etc.).
- 7. By hypothesis testing it is clear that there is no difference in the purpose of using college Wi-Fi between male and female users

SUGGESTION

- 1. **Router Placement:** Keep your router out in the open, away from other electronics that might cause interference and keep doors open between rooms to allow a smooth connection from the router to your devices.
- 2. Add Wireless repeaters: As wireless repeaters rebroadcast a wireless signal, strengthening the signal from router to other floors or the opposite side of the building.

- 3. Use of the Right frequency band : 5 GHz will be the right frequency band which will increase the speed of the internet.
- 4. Limit the number of connected devices: Try to limit the number of connected devices to wi-fi for better speed.
- 5. Network security: Give the password to the authorised user so there is no risk of theft of data.

CONCLUSION

Wireless Internet of Things (WI-Fi) is a low-cost, easy-to-use way to access the internet without wires. Since Wi-Fi is usually faster than cellular, students will spend less time sending and receiving data, which reduces battery usage. WiFi has given students advantages that are reflected in their academic performance. Whether it's providing access to thousands of online resources or allowing students to learn and collaborate remotely, WiFi has changed the way students learn.

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ADVANCING OPEN ACCESS: PLATFORMS AND PROFESSIONALS SHAPING SCHOLARLY COMMUNICATION

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ABSTRACT

The Open Access (OA) movement seeks to remove barriers to scholarly research and educational resources, promoting unrestricted and free access to knowledge globally. Libraries and librarians actively contribute to this movement through the establishment and management of institutional repositories, advocacy, and support for OA publishing. Professionals from diverse fields, including researchers, publishers, policy makers, and technology experts, play crucial roles in advancing OA principles. Exemplary platforms such as DOAJ, DOAR, ROAR, and SHERPA RoMEO contribute to the transparency and accessibility of open-access initiatives. The collective efforts of these professionals contribute to building a more inclusive and open scholarly communication ecosystem.

Keywords: Open Access, Plan S, scholarly publishing, academic journals, research funding, editorial policies, online platforms, indexing databases.

1. INTRODUCTION

The concept of Open Access (OA) to research documents has gained prominence in universities, not only for local visibility but also for enhancing the institution's reputation. Institutional repositories play a crucial role in unleashing the indigenous contents produced within a university, including theses, dissertations, term papers, and scholarly works in digital form (e-prints). The strategic connection between institutional repositories and OA resources contributes to self-archiving strategies. Open Access works are primarily digital due to the marginal cost of creating and distributing additional copies on the internet after the initial digital copy's creation. Many universities, including some in Nigeria like Ahmadu Bello University, Covenant University, and others, aim to provide OA to their local contents through institutional repositories. These repositories adhere to international technical standards, ensuring interoperability and utilizing protocols like the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). The growing level of self-archiving contributes to a significant portion of the scholarly literature becoming part of the OA corpus. Libraries in Nigeria, facing a 'serials crisis' where subscriptions to certain journals are unaffordable, turn to OA materials to supplement their collections. The OA model is considered feasible for reducing costs and facilitating the archiving and distribution of scholarly works. Overall, the move towards OA is driven by the goal of making research results widely accessible, fostering collaboration, and promoting free access to scientific knowledge.

2. Open Access:

Open Access (OA) is a publishing model that aims to provide unrestricted and free access to scholarly research and educational resources. The core principle of OA is to remove barriers such as subscription fees and access restrictions, making academic content freely available to the global community. This movement is driven by the belief that knowledge should be easily accessible, fostering collaboration, innovation, and the democratization of information.

Institutional Repositories and Scholarly Output: Libraries play a pivotal role in the establishment and management of institutional repositories. These repositories serve as digital archives, housing the scholarly output of academic institutions. By curating and making research freely accessible, libraries contribute to the global dissemination of knowledge. Institutional repositories become key assets in the OA landscape.

Advocacy, Education, and Community Engagement: Libraries engage in advocacy efforts to promote OA principles within academic communities. Librarians act as educators, informing researchers, faculty, and students about the benefits of open access. Workshops, resources, and collaborative initiatives facilitate the adoption of OA practices. Libraries become advocates for the open sharing of knowledge.

Support for Open-Access Publishing: Libraries extend support to scholars interested in publishing their work through open-access channels. This includes assistance with navigating reputable OA journals, funding for publication fees, and guidance throughout the publishing process. By facilitating OA publishing, libraries empower researchers to contribute to the accessible dissemination of scholarly content.

Open Educational Resources (OER) Initiatives: In addition to scholarly publications, libraries actively contribute to the promotion of Open Educational Resources (OER). OER encompasses freely accessible teaching and learning materials, aligning with the broader concept of open access. Libraries foster the creation, adoption, and dissemination of educational resources without cost barriers.

Metadata, Indexing, and Visibility: Libraries contribute significantly to the discoverability of OA materials. Through metadata creation and maintenance, librarians enhance the visibility of open-access content in catalogs, databases, and search engines. Proper indexing ensures that OA resources are easily found, further supporting the accessibility of scholarly information.

Interlibrary Collaboration and Resource Sharing: Libraries engage in collaborative efforts with other institutions to enhance the collective availability of OA resources. Interlibrary cooperation strengthens the network of accessible scholarly information. By sharing OA materials, libraries contribute to the broader impact and dissemination of knowledge.

Copyright and Licensing Expertise: Librarians, particularly those specializing in copyright and licensing, provide essential expertise related to legal aspects of OA. They assist in navigating licenses, permissions, and copyright issues associated with open-access materials. Their expertise ensures that OA practices align with legal frameworks.

Repository Management and Long-Term Access: Libraries are instrumental in supporting the development and management of institutional repositories. Ensuring the preservation, organization, and accessibility of OA content in the long term, librarians contribute to the sustainability of open-access initiatives. Repository management becomes a critical aspect of maintaining a valuable scholarly archive.

3. The Open Access Movement: Roles of Professionals

The Open Access (OA) Movement is a global initiative advocating for unrestricted access to scholarly information and research outputs. This movement challenges traditional publishing models, emphasizing free, immediate, and online availability of academic content to remove barriers to access. Various professionals play crucial roles in advancing the principles and goals of the Open Access Movement.

Librarians and Information Specialists: Librarians and information specialists are key advocates for Open Access within academic institutions and libraries. They provide guidance on locating and accessing open-access resources, helping users navigate repositories, and promoting awareness of OA benefits. Librarians also contribute to the management and creation of institutional repositories.

Researchers and Academics: Researchers and academics play pivotal roles in the Open Access Movement by embracing open-access practices. They contribute to open-access repositories, publish in OA journals, and share preprints of their work. Their active participation helps expand the pool of freely accessible scholarly content.

Publishers and Journal Editors: Publishers and journal editors contribute to OA by establishing open-access journals, adopting OA publishing models, or allowing self-archiving of preprints and postprints. Their decisions influence the accessibility of scholarly literature, and supporting OA practices contributes to the dissemination of knowledge.

Policy Makers and Funding Agencies: Policy makers and funding agencies have the power to shape the landscape of scholarly communication. By implementing policies that encourage or mandate open access to publicly funded research, they contribute to a more open and transparent research environment.

Technology Experts and Platform Developers: Technology experts and platform developers contribute to the OA Movement by creating and maintaining open-access repositories, platforms, and tools. They ensure that the infrastructure supporting open access is robust, user-friendly, and aligned with evolving technological advancements.

Educators and Advocates: Educators and advocates play a crucial role in promoting awareness and understanding of Open Access. They engage in educational initiatives, workshops, and advocacy campaigns to highlight the benefits of OA, dispel myths, and foster a culture of openness in academia.

Legal and Copyright Experts: Legal and copyright experts provide essential guidance on navigating intellectual property rights and copyright issues related to open access. Their expertise ensures that OA practices comply with legal frameworks, fostering responsible and ethical sharing of scholarly works.

Collaborators and Network Builders: Collaboration and networking are essential aspects of the OA Movement. Professionals from diverse backgrounds collaborate to develop and implement OA initiatives, share resources, and advance the collective goal of making scholarly information freely accessible.

The Open Access Movement relies on the collective efforts of professionals across various domains. Their roles in advocacy, research, publishing, policy-making, technology, education, legal guidance, and collaboration contribute to building a more inclusive and open scholarly communication ecosystem.

4. Exemplary Open Access Platforms

Open Access (OA) has spurred the development of several exemplary platforms that facilitate the accessibility and dissemination of scholarly content. These platforms, driven by the principles of openness and collaboration, play crucial roles in advancing the goals of the Open Access Movement. Here are four notable platforms that exemplify the commitment to making scholarly information freely available to the global community:

- Directory of Open Access Journals (DOAJ):
- Directory of Open Access Repositories (OpenDOAR):
- Registry of Open Access Repositories (ROAR):
- > SHERPA RoMEO (Rights MEtadata for Open archiving):

4.1. Directory of Open Access Journals:

The Directory of Open Access Journals (DOAJ) is an online directory and indexing service that was launched in 2003. It is dedicated to promoting open access to scholarly journals, making high-quality research freely available to a global audience. The primary aim of DOAJ is to increase the visibility, accessibility, and quality of open-access journals across various academic disciplines.

- **Inclusion Criteria:** Journals listed in DOAJ adhere to specific criteria, ensuring free, immediate, and unrestricted access. These criteria include quality control through peer review, a commitment to open access, and transparent copyright policies.
- **Peer Review and Quality Control:** DOAJ employs rigorous peer-review processes to evaluate the quality and authenticity of the indexed journals. This ensures that the content meets high scholarly standards.
- **Transparency and Information:** DOAJ provides detailed information about each journal, offering transparency regarding editorial processes, author fees, licensing, and more.
- **Global Collaboration:** Actively collaborating with institutions and organizations globally, DOAJ contributes to the improvement of the quality and coverage of open-access scholarly content.
- **Continuous Improvement:** Committed to continuous improvement, DOAJ regularly reviews and updates its criteria and practices to maintain relevance and reflect the evolving landscape of open-access publishing.

4.2. Directory of Open Access Repositories (DOAR)

Established in 2003 by EPrints at the University of Southampton, the Directory of Open Access Repositories (OpenDOAR) is a UK-based platform that plays a pivotal role in cataloging and facilitating access to openaccess repositories, particularly in the academic realm. Developed in collaboration with Lund University and maintained by the University of Nottingham under the SHERPA suite of services, OpenDOAR serves as a comprehensive and searchable database. Its inception marked a significant step toward advancing open-access initiatives by providing researchers with a tool to locate repositories globally based on criteria such as location and content type. Over the years, OpenDOAR has become a leading resource, contributing to the transparency, discoverability, and accessibility of scholarly materials in alignment with the principles of open access.

Key features and information about DOAR include:

- **Creation and Purpose:** OpenDOAR was established to compile and showcase a directory of open-access repositories worldwide, facilitating the discovery and dissemination of scholarly content.
- **Operational Structure:** Serving as a centralized and searchable database, OpenDOAR allows users to locate repositories based on different criteria, including subject, content type, and region.
- Inclusivity and Scope: OpenDOAR covers a wide range of disciplines and subject areas, making it a comprehensive resource for researchers across various fields.
- **Quality Standards:** Maintaining quality standards for inclusion, OpenDOAR ensures that repositories listed provide genuine open access to scholarly resources.
- **Global Representation:** Featuring repositories from institutions worldwide, OpenDOAR promotes international collaboration and knowledge sharing.

DOAR plays a crucial role in the open-access landscape by offering a centralized and well-organized directory of repositories. Researchers and institutions benefit from its comprehensive coverage and easy access to valuable scholarly resources.

4.3. Registry of Open Access Repositories (ROAR)

The Registry of Open Access Repositories (ROAR) is a globally accessible and searchable database that tracks the establishment, locations, and growth of open-access institutional repositories and their respective content. Initially known as the Institutional Archives Registry, ROAR was established by EPrints at the University of Southampton in 2003 and underwent a renaming to the Registry of Open Access Repositories in 2006. With over 3,000 registered institutional and cross-institutional repositories to date, ROAR plays a crucial role in cataloging and promoting open-access initiatives.

Key features and aspects of the Registry of Open Access Repositories (ROAR) include:

- 1. **Database of Repositories:** ROAR maintains a structured and searchable database, offering information about institutional repositories, disciplinary repositories, and consortial repositories.
- 2. **Repository Characteristics:** Each entry in ROAR includes details about the characteristics of the repository, such as its name, location, type, content coverage, and the software platform it uses.
- 3. Search and Browsing Functionality: ROAR provides search and browsing functionalities, enabling users to explore and discover repositories based on criteria like geographical location, subject area, and repository type.
- 4. **Global Coverage:** Striving to provide global coverage, ROAR includes repositories from universities, research institutions, and organizations worldwide, enhancing the visibility of diverse open-access initiatives.
- 5. **Continuous Updates:** Regularly updated to reflect changes in the repository landscape, ROAR ensures that the information remains current and reliable.

The Registry of Open Access Repositories serves as a valuable resource for researchers, institutions, and the broader scholarly community, promoting the discoverability and accessibility of open-access repositories worldwide. It contributes to the advancement of open science and the global sharing of research outputs.

4.4. SHERPA RoMEO

SHERPA RoMEO (Rights MEtadata for Open archiving) is a comprehensive resource developed by the SHERPA partnership, offering valuable features to assist researchers and authors in navigating copyright policies related to academic journals. Established in 2003, SHERPA RoMEO categorizes journals based on their self-archiving policies, providing detailed information on whether preprints, postprints, or the publisher's version can be archived and specifying any conditions or embargoes. The key features of SHERPA RoMEO include its user-friendly interface, regularly updated database, clear categorization of journal policies, and the ability to search and filter based on specific criteria such as publisher, journal, or archiving permissions. Researchers rely on SHERPA RoMEO to make informed decisions about depositing their scholarly articles in Open Access repositories while ensuring compliance with copyright regulations.

- **Copyright Guidance:** SHERPA RoMEO offers valuable features to assist researchers and authors in navigating copyright policies related to academic journals.
- **Categorization of Journals:** Categorizing journals based on their self-archiving policies, SHERPA RoMEO provides detailed information on whether preprints, postprints, or the publisher's version can be archived and specifies any conditions or embargoes.
- User-Friendly Interface: With a user-friendly interface, SHERPA RoMEO allows researchers to make informed decisions about depositing their scholarly articles in Open Access repositories while ensuring compliance with copyright regulations.
- **Contribution to Open Access:** Part of the SHERPA Services, SHERPA RoMEO contributes to the endorsement of self-archiving by publishers, fostering transparency in scholarly communication.

These exemplary platforms collectively contribute to the global advancement of Open Access, ensuring that scholarly knowledge is accessible, transparent, and free from financial barriers. Their collaborative efforts underscore the transformative impact of Open Access in reshaping scholarly communication.

5. CONCLUSION

The Open Access (OA) movement is a transformative force reshaping scholarly communication, and professionals across diverse domains play integral roles in advancing its principles. Libraries, librarians, researchers, publishers, policy makers, and technology experts collectively contribute to creating a more inclusive and open scholarly ecosystem. Their efforts encompass advocacy, education, repository management, legal expertise, and collaboration, fostering the global dissemination of knowledge without financial barriers. Exemplary platforms like the Directory of Open Access Journals (DOAJ), Directory of Open Access Repositories (DOAR), Registry of Open Access Repositories (ROAR), and SHERPA RoMEO provide essential infrastructure, enhancing the visibility and accessibility of scholarly content.

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OPEN SOURCE SOFTWARE IN LIBRARIES

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ABSTRACT

Open source software is biggest opportunities for the provide speedily and timely library services to the end users. Open source software means any one can adapt, improve, examine, scrutinize, augment and develop. It means open source software, the source code is publicly available to anyone who wants it, and programmers can read or change that code if they desire. It uses the code freely available on the Internet. Many Libraries do not have huge amounts of money to purchasing additional resources and softwares. Most software use every day is known as "proprietary", which in a nutshell and that the actual code of the software. It is restricted in that the code of the software cannot be modified, copied, or changed from its original construction. So that we can say the open source software is better for libraries. This paper discusses the history and initiation of open source software. Open source software is computer software which source code is available in public domain. The paper explain the similarity of OSS and CSS and also difference between open source software and close source software and also explain the advances and disadvantages of open and close source software. The paper highlight the OSS for libraries.

Keyword: Open source software, Library automation, Digital library

INTRODUCTION

ICT play a vital important role in the every field. Now a day's libraries perform their activities, all function smoothly, speedily and timely due to emerging ICT in LIS professions. Libraries are used different open source Software's for manage their databases and provide services to the library users. Libraries use this different software based upon the size of the library collections and library users. Many Libraries have used freely available software which also known as open source software's (OSS). The Open Source Initiative (OSI) was created to promote and cover open source software and communities. In short, the OSI acts as a central instructional and governing depository of open source software. It provides rules and guidelines for how to use and interact with OSS, as well as furnishing law licensing information, support, delineations, and general community collaboration to help make the use and treatment of open source accessible and ethical

HISTORY

The idea of making source law freely available began in 1983 from an ideological movement informally innovated by Richard Stallman, a programmer at MIT. Stallman believed that software should be accessible to programmers so they could modify it as they wished, with the thing of understanding it, learning about it, and perfectingit.i Stallman began releasing free law under his own license, called the GNU Public License. This new approach and testament girding software creation took hold and ultimately led to the conformation of the Open Source Initiative in 1998. i recordings, flicks, or reference accoutrements are kept for private or public uses. Libraries have used IT in the different areas of knowledge from its generation to dispersion and for satisfying the requirements of it's' druggies in a speedy way and to live their significance in the digital period. Libraries use IT in different areas like as Acquisition, Budgeting, periodical Control, Rotation, digitization, etc., and managing databases to give different services to its' druggies.(Suthar, 2014).

Open Source Software:

The source code of open source software is public. This software source law is freely available on the Internet. This law can be modified by other druggies and associations means that the source law is available for anyone to look at. The price of open source software is veritably lower and there are no so important restrictions on druggies grounded on usability and revision of software. The open source intelligence revolves around sharing and collaboration, and these two important rudiments describe open source software impeccably. First and foremost, open source software is free for anyone to have; more importantly, not only is the software free, but it's also free for anyone to copy, hack, modify, etc. This increases the possibilities of a software program's implicit because of this free- thinking model. numerous large groups of programmers have customized introductory open source programs into whatever they supposed necessary, and have in turn given these variations back to the open source community for free where others can continue to make on their work. There are numerous different kinds of open source software results out there moment that could be embraced by the library. There is introductory operating system, document processing programs, Library Management Software (LMS) and Digital Library software. Open- source software (OSS) is a type of computer software in which

source law is released under a license in which the brand holder subventions druggies the rights to use, study, change, and distribute the software to anyone and for any

Advantages of Open-Source Software

• Lower software costs:

Open source software is free, means associations can use it without any licensing freights. The only expenditures are for media, attestation, and support, needed.

• Simplified license operation

There is no need to count, track, or cover for license compliance. Because it gat the software formerly and install it as numerous times and in as numerous locales as you bear.

• Lower Hardware costs:

In general, Linux and open source results are stylishly compact and movable, and as a result bear lower tackle power to negotiate the same tasks as on conventional waiters (Windows, Solaris) or workstations. The result is you can get by with less precious or old hardware.

• Scaling/ consolidation potential:

Linux and open source operations and services can frequently gauge vastly. Multiple options for cargo balancing, clustering, and open source operations, similar as database and dispatch, give associations the capability to gauge up for new growth or consolidate to do further with lower.

• Support

Open source support is freely available and accessible through the online community via the Internet. And second, numerous tech companies are now supporting open source with free online and multiple situations of paid support. For illustration Liblime.

• Escape vendor lock-in-

Frustration with vendor lock-in heft is a reality for all IT directors. In addition to ongoing license freights, there's lack of portability and the incapability to customize software to meet specific requirements. Open source exists as a protestation of freedom of choice.

• Unified Management

Specific open source technologies similar as CIM (Common Information Model) and WBEM(Web Based Enterprise Management) give the capability to integrate or consolidate garçon, service, operation, and workstation operation for important administration.

• Quality software

Evidence and research indicate that open source software is good stuff. The peer review process and community norms, plus the fact that source law is out there for the world to see, tend to drive excellence in design and effectiveness in rendering.

Disadvantages of Open Source Software:

- Limited Technical Support: When there are large communities of users go through troubleshoot issues, there is no guarantee for technical support.
- **Complexity:** User is not experienced in software development there will be more difficulties in set up and configuration.
- Lack of Features: Open source software may not have all the features as compare to closed source software.

Close Source Software

Closed source software refers to the computer software which source code is closes means public is not given access to the source code. In short it is referred as CSS. In closed source software the source code is protected. The only individual or organization who has created the software can only change it. The price of closed source software is high and users need to have valid and authenticated license to use the software. As is issues an authenticated license so it also put a lot restriction on users based on usability and modification of software.

Advantages of Closed Source Software

Technical Support:

Closed source software generally comes with professional specialized support, which can be helpful for associations that need backing with setup, configuration, or troubleshooting.

• Features:

Closed source software generally has further features than open source software, including advanced analytics, reporting, and data visualization tools.

• Security:

Closed source software frequently has erected- in security features and can give better protection against cyber pitfalls.

• Integration:

Closed source software is frequently designed to work seamlessly with other enterprise software, making integration with being systems easier.

Disadvantages of Closed Source Software

• Cost:

Closed source software can be precious, with licensing freights and conservation costs that can add up over time.

• Vendor Lock- In

Associations that use unrestricted source software may come dependent on the seller and find it delicate to switch to another software.

• Limited Customization:

Closed source software may not be as customizable as open source software, which can be a disadvantage for associations with specific conditions.

• Lack of translucency:

Since the source law isn't available, druggies cannot see how the software works or what data it collects, which may raise sequestration enterprises.

• Similarities between Open Source Software and Closed Source Software

- Both can be used to perform a wide range of tasks and support a variety of operations.
- Both can be designed to work on multiple operating systems, including Windows, Linux, and macOS.
- Both can be used to support charge-critical operations and services.
- Both can be optimized for performance, scalability, and security.
- Both can be penetrated and managed ever using a variety of tools and interfaces.
- Both can be streamlined and maintained regularly to fix bugs, add new features, and ameliorate performance.

Difference between Open Source Software and Closed Source Software:

Open Source Software

- It refers to the computer software which source code is open means the public can access and use.
- Open Source Software in short also referred as OSS.
- The source code of open source software is public.
- This code can be modified by other users and organizations.
- The price is very less.
- There is no restrictions on users based on usability and modification of software.
- Programmers compete with each other for recognition.
- Programmers freely provide improvement for recognition if their improvement is accepted.
- If the program is popular then very large number of programmers may work on the project.

- It is purchased with its source code.
- Open software can be installed into any computer.
- Open source software fails fast and fix faster.
- In open source software no one is responsible for the software.
- Examples are Firefox, OpenOffice, Gimp, Alfresco, Android, Zimbra, Thunderbird, MySQL, Mailman, Moodle, TeX, Samba, Perl, PHP, KDE etc.

Closed Source Software

- It refers to the computer software which source code is closes means public is not given access to the source code.
- Closed Source Software in short also referred as CSS.
- In closed source software the source code is protected.
- The only individual or organization who has created the software can only modify the code.
- The price of closed source software is high.
- There is so much restrictions on users based on usability and modification of software.
- Programmers do not compete with each other for recognition.
- Programmers are hired by the software firm/organization to improve the software.
- There is a limitation on the number of programmers/team who will work on the project.
- It is not purchased with its source code.
- Closed software needs have a valid license before installation into any computer.
- Closed source software has no room for failure.
- In closed source software the vendor is responsible if anything happened to software.
- Examples are Skype, Google earth, Java, Adobe Flash, Virtual Box, Adobe Reader, Microsoft office, Microsoft Windows, WinRAR, mac OS, Adobe Flash Player etc.

Library Automation:

Following open source software which is mostly use in Libraries.

Koha:

It's Integrated Library System software. This software presently used in all over the world. Koha is a promising full featured open source ILS. It's a system of keeping operations of a library- payroll, charges, purchases, and most importantly, keeping track of the colorful media being checked out by the librarians patrons. Smaller libraries cannot go to buy, install, and maintain an ILS for the lowest libraries. Koha is a perfect alternative for smallest library. Koha is erected using library ILS norms, standards, code and uses the OPAC interface. In addition, Koha has no vendor lock- in, so libraries can received support from any party they choose.

NewGenLib:

It means New Generation Library. It is an Integrated Library automation and Networking solution Developed by Verus results Pvt Ltd and The Kesavan Institute of Information and Knowledge Management, India. In March 2005, NewGenLib interpretation1.0 was released and performances2.0 and2.1 have come up latterly. On 9th January 2008, NewGenLib has been declared Open source software under GNU GPL Kicence by verus solution pvt.ltd Hyderabad.

Evergreen:

Evergreen ILS is another option when probing open source ILS options. Developed by Equinox Software, Evergreen is a robust, enterprise position ILS solution developed to be able of supporting the workload of large libraries in a fault-tolerant system. It too is standards biddable and uses the OPAC interface, and offers numerous features including flexible administration, work- inflow customization, adaptable programming interfaces, and because its open source, cannot be locked down and can profit from any community benefactions.

DIGITAL LIBRARY

Greenstone:

It is Digital Library Software. It is an open- source system for the construction and donation of information collections. It builds collections with effective full- textbook searching and metadata- grounded browsing installations that are seductive and easy to use. Also, they're fluently maintained and can be stoked and rebuilt entirely automatically. The system is extensible software " plugins " accommodate different document and metadata types. The end of the Greenstone software is to empower druggies, particularly in universities, libraries, and other public service institutions, to make their own digital libraries.

DSpace:

Dspace is a groundbreaking digital institutional depository that captures, stores, indicators, preserves, and redistributes the intellectual affair of a university's exploration faculty in digital formats. It manages and distributes digital particulars, made up of digital lines and allows for the creation, indexing, and searching of associated metadata to detect and recoup the particulars. DSpace design and developed by Massachusetts Institute of Technology(MIT) Libraries and Hewlett- Packard(HP). DSpace was designed as an open source operation that institutions and associations could run with fairly many coffers. It's to support the long- term preservation of the digital material stored in the depository. It's also designed to make submission easy. DSpace supports submission, operation, and access of digital content

EPrints:

Eprints is an open source software package for erecting open access depositories that are complaint with the Open Libraries Initiative Protocol for Metadata Harvesting. It shares numerous of the features generally seen in Document Management systems, but is primarily used for institutional depositories and scientific journals. EPrints has been developed at the University of Southampton School of Electronics and Computer Science and released under a GPL license.

Fedora:

Fedora open source software gives associations a flexible service- acquainted armature for managing and delivering their digital content. At its core is an important digital object model that supports multiple views of each digital object and the connections among digital objects. Digital objects can synopsize locally managed content or make reference to remote content. Dynamic views are possible by associating web services with objects. Digital objects live within a depository armature that supports a variety of operation functions. All functions of Fedora, both at the object and depository position, are exposed as web services. These functions can be defended with fine- granulated access control programs. This unique combination of features makes Fedora a seductive result in a variety of disciplines. Some exemplifications of operations that are erected upon Fedora include library collections operation, multimedia penning systems, archival depositories, institutional depositories, and digital libraries for education.

WEB PUBLISHING

Wordpress:

Wordpress started out as a quick, free, open- source result blogging solution just a few year ago, it's a perfect alternative to erecting a web point from scrape. In addition to being free to use and easy to install, the Wordpress community has exploded, with thousands of druggies and programmers creating custom themes and plug- sways to fully change the way the software looks and operates. Other options include multiple authors with separate log- sways, erected in RSS(Real Simple Syndication) technology to keep subscribers streamlined, and a comment system that allows compendiums to interact with the spots content. A fantastic way to communicate with patrons, staff, etc.

Drupal:

Drupal is another open source web publishing option. It allows an individual or a community of druggies to fluently publish, manage and organize a wide variety of content on a website. Thousands of people and associations have used Drupal to power scores of different web spots, including Community web doors, Discussion spots, commercial web spots, Intranet operations, particular web spots or blogs, E-commerce operations, Resource directories, Social Networking spots

Other Computer Programs:

Ubuntu is the very famous player in the Linux based operating system. It is the perfect solution for the libraries who need to upgrade their old computer using outdated windows. Open office is a multiplatform and multilingual office productivity suite and an open source project. Firefox is the mozzila organizations answers

to microsoft's internet explorer web browser and taken the web by storm over the past few years as the biggest competitor to IE in quite some time. PDF creator is an industry standard format that everybody uses every day. The main purpose create PDF file. PDF means portable document format.

CONCLUSION

Open source software seems that there are some very powerful solutions available today that could be used to create a much more resourceful library. By using open source software in the library, money that otherwise would be spent on software solutions can be used for other important resources, such as purchasing library collection such as books, journals, e-resources etc. Choice of source code software's depend on need of organization. Open-source software is a good for smaller organizations with limited budgets, and closed-source software is better suited for larger organizations that require enterprise-level features and support. Open source software is benefit for the library staff and library users. It is reduce the job stress on the library staff and the enhances remote and timely provision of up-to-date to the users.

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AVERTING PLAGIARISM IN SCIENTIFIC RESEARCH

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ABSTRACT

The best research outcomes are achieved by scientific understanding, and quality is evaluated based on sufficient evidence. A scientific work's information must always be supported by scientific proof. Based on actual findings, guidelines for legitimate scientific study ought to be created. Research that is dynamic and employs appropriate scientific methodology must come from everyday practice and the research's foundations. The original work should have the appropriate data sources, well-defined research objectives, and operational procedures that are appropriate for answering the study's questions. Informed permission, also known as consent from patients or respondents, is required when choosing the procedures in order to collect data for the project's implementation. True results that can be obtained via independent effort are the only ones that can lead to conclusions and, in the end, provide a reliable academic analysis. Text from other sources may be reproduced in whole or in part, with attribution to the other research. Subject-matter expertise and pertinent scientific literature—mostly from articles found in biomedical databases—are prerequisites for producing high-quality scientific work.

Keywords: Scientific Research, Scientometrics or Scientology, H-index, Citing, Plagiarism, etc.

INTRODUCTION

From the idea to the final realization, there is a specific sequence of steps to be followed, regardless of whether it comes to young enthusiasts eager to contribute to the scientific community or, on the other hand, experienced scientific researchers who want to establish their name in the pillars of science for the general good of the research. According to the World Health Organization's (WHO) Constitution, scientific research in medicine is the application of systemic study within clearly defined characteristics that might contribute to the universal mental, physical, and social well-being of individuals and communities. Scientific research in medicine can be classified into three categories: clinical, laboratory, and public health. Community members benefit from scientific research as well as the community itself. [1] The gathering of data that will improve clinical and socio-medical policies and practices, recognizing health issues and strategies for health promotion, preventing illness and disability, and growing the body of scientific literature that serves as the foundation for all upcoming scientific research, policy, and practice are all examples of how the community will benefit. The development of fresh information and enhanced abilities is essential to an individual's well-being and will lead to their academic progress. [2]

Scientific Research:

Of course! Scientific research is an organized, methodical process of inquiry that aims to comprehend phenomena, find new information, or solve problems. Researchers from a variety of academic disciplines, including the natural sciences, social sciences, humanities, and engineering, carry it out. The primary objectives of scientific research are to address issues or obstacles in a given subject, add to the body of information already in existence, and enhance understanding. The following are some essential components and procedures of scientific research: [3]

Identifying a Research Question or Problem:

Researchers start by formulating a clear and specific research question or identifying a problem they want to investigate.

Literature Review:

Before starting the research, a thorough review of existing literature is conducted to understand what is already known about the topic and identify any gaps in knowledge.

Hypothesis or Research Objectives:

Based on the literature review, researchers may formulate a hypothesis or clearly define the research objectives they aim to achieve.

Research Design:

Researchers design a plan for how they will conduct their study, including the type of data to be collected, the research methods and techniques to be used, and the sampling strategy.

Data Collection:

This involves gathering relevant data using various methods such as experiments, surveys, interviews, observations, or archival research.

Data Analysis:

Once data is collected, researchers analyze it using statistical or other methods to draw conclusions and test hypotheses.

Interpretation of Results:

Researchers interpret the results of their analysis, considering the implications for the research question and the broader field.

Conclusion:

A summary of the findings is presented, along with their significance and potential contributions to the field.

Publication and Communication:

Researchers often publish their findings in academic journals or present them at conferences to share their work with the scientific community.

Peer Review:

The scientific community engages in peer review, where experts in the field evaluate the research for its quality, validity, and contribution before it is published.

Replication and Further Research:

Scientific research encourages the replication of studies by other researchers to validate findings. It also often leads to further research and exploration of related questions.

Scientific research is crucial for advancing knowledge, informing policy and practice, and driving innovation across various disciplines. It follows a rigorous and evidence-based approach, emphasizing transparency, objectivity, and reproducibility. [4]

Stages of Scientific Research:

Scientific research has several stages:

- Determining research topics;
- > The choice of scientific methods of research;
- Study design and data collection;
- Data processing, analysis and interpretation;
- Writing and publishing a scientific article;

Scientometrics or Scientology:

The study of quantitative analysis of science, scientific research, and academic publications is known as scientometrics. It seeks to shed light on the dynamics, structure, and significance of scientific endeavors. The following are important scientometrics components: [5]

Quantitative Measurement:

Scientometrics relies on quantitative methods to measure and analyze various aspects of scientific activities. This includes the analysis of publications, citations, collaboration patterns, and other relevant metrics.

Bibliometrics:

Bibliometrics is a subset of scientometrics that focuses specifically on the quantitative analysis of bibliographic information, such as the number of publications, citation patterns, and the impact of scholarly literature.

Citation Analysis:

Citation analysis is a common scientometric method that examines how often research papers or publications are cited by other works. This can be used to assess the impact and influence of a particular piece of research.

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Research Productivity:

Scientometrics helps in measuring and evaluating research productivity at individual, institutional, or national levels. This can include the number of publications, citations per publication, and other relevant indicators.

Collaboration Networks:

Analysis of collaboration patterns and networks helps understand how researchers, institutions, or countries collaborate in scientific endeavors. It provides insights into the structure of research communities.

Impact Factor:

The impact factor is a widely used scientometric measure that reflects the average number of citations that articles in a journal have received over a specific period. It is often used as an indicator of a journal's influence in the academic community.

H-Index:

The h-index is a measure of both the productivity and impact of a researcher. It considers the number of publications and the number of citations each publication has received. [6]

Altmetrics:

Altmetrics (alternative metrics) go beyond traditional citation-based metrics and include social media mentions, downloads, and other online engagement to measure the impact and visibility of research.

Scientific Mapping:

Scientometrics involves mapping scientific landscapes to identify trends, emerging research areas, and interdisciplinary connections. Visualization tools help researchers and policymakers understand the dynamics of scientific knowledge.

Evaluation of Scientific Policies:

Policymakers use scientometrics to assess the impact of scientific policies, funding decisions, and research initiatives. This information can inform future policy development and resource allocation.

Informetrics:

The study of information processes, particularly those connected to the creation, sharing, and application of information in a particular context, is included in the related field of informetrics. Scientometrics is an essential tool for offering unbiased, quantitative insights into the scientific enterprise. It helps governments, organizations, and researchers make well-informed decisions and comprehend how science is changing. [7]

Citing:

Citing is the process by which an author informs readers that a specific passage in a paper was obtained from another source. It also provides the reader with the information they required to locate the original source, such as: details about the writer; [8]

- \succ The article's title,
- > The page numbers that the material was taken from, and
- The time that some content was "downloaded" from official websites where it is stored and made available to the public (open access) are all important factors to consider.

Plagiarism:

Plagiarism is the act of using someone else's work, ideas, or intellectual property without giving proper credit or permission, presenting it as your own. This includes various forms of copying, paraphrasing, or closely imitating someone else's work without proper citation. Plagiarism is considered a serious ethical violation in academic, professional, and creative contexts. Here are some key points about plagiarism: [9]

Types of Plagiarism:

- > Copy and Paste: Directly copying text or content without quotation marks and proper citation.
- > Paraphrasing: Rewriting someone else's ideas or work in your own words without proper acknowledgment.
- Self-Plagiarism: Submitting your own work without proper citation, especially if it has been previously published or submitted in another context.
- Incomplete Citations: Providing incomplete or inaccurate citations that mislead the reader about the original source. [10]

Consequences of Plagiarism:

- Academic Consequences: In educational settings, plagiarism can lead to severe consequences, including failure of assignments, courses, or even expulsion from an academic institution. [11]
- Professional Consequences: In professional and research environments, plagiarism can damage reputation, lead to legal action, and negatively impact career opportunities.

Legal Consequences: Plagiarism can be a violation of copyright laws, leading to legal consequences for the individual involved. [12]

Averting Plagiarism:

Proper Citation: Always provide proper citations for all sources used in your work, including text, images, data, and ideas. [13]

- Understanding Paraphrasing: If you are paraphrasing, ensure that you are not simply rewording without understanding the content. Properly cite the original source.
- Time Management: Plan your time effectively to avoid last-minute pressure, which may increase the likelihood of unintentional plagiarism.
- Use Plagiarism Detection Tools: Utilize plagiarism detection tools and software to check your work for unintentional plagiarism before submission.

Cultural Considerations:

Different cultures may have varying views on what constitutes plagiarism. It's essential to understand and adhere to the specific academic and professional standards of your institution or field.

Educational Resources:

Many educational institutions provide resources and training on academic integrity and proper citation practices. Familiarize yourself with these resources to avoid unintentional plagiarism.

Developing Good Research Practices:

Cultivate good research and writing habits, including note-taking, proper citation, and a thorough understanding of the material. [14]

Plagiarism undermines the principles of academic and intellectual honesty. It is crucial for individuals to take responsibility for their work, give credit to the original authors, and adhere to ethical standards in all academic and professional endeavors. Institutions often have strict policies and procedures in place to address plagiarism, emphasizing the importance of maintaining integrity in scholarly and creative activities.

How to avoid Plagiarism?

It is very easy to find information on a topic that needs to be explored, but it is not always easy to Avoiding plagiarism requires a combination of good research practices, effective note-taking, and proper citation. Here are some tips to help you avoid plagiarism: [15]

Understand What Constitutes Plagiarism:

Familiarize yourself with the different forms of plagiarism, including direct copying, paraphrasing without proper citation, and self-plagiarism.

Use Quotation Marks for Direct Quotes:

When using verbatim text from a source, enclose the text in quotation marks and provide a proper citation to acknowledge the source.

Paraphrase Effectively:

If you are paraphrasing, ensure that you understand the original content and express it in your own words. Even when paraphrasing, you must provide a citation to the original source.

Properly Cite Sources:

Provide accurate and complete citations for all sources used in your work. This includes books, articles, websites, and any other materials.

Learn and Follow Citation Styles:

Different disciplines use specific citation styles (APA, MLA, Chicago, etc.). Familiarize yourself with the citation style required by your institution or the guidelines of the publication you are submitting to.

Keep Detailed Notes:

Keep thorough notes during your research, including complete information about the sources you consult. This will make it easier to create accurate citations later.

Use Citation Management Tools:

Consider using citation management tools such as Zotero, EndNote, or Mendeley to organize your references and create citations automatically in the required style.

Plan Your Time Effectively:

Avoid last-minute rushes, as they can lead to unintentional mistakes and increase the risk of plagiarism. Plan your time effectively to complete assignments well before deadlines.

Use Plagiarism Detection Tools:

Utilize plagiarism detection tools like Turnitin, Grammarly, or others provided by your institution to check your work before submission. These tools can help identify potential issues and allow you to make corrections.

Ask for Guidance:

If you are unsure about citation rules or how to properly credit a source, consult your instructor, a librarian, or refer to style guides and writing manuals.

Avoid Copy-Pasting:

Do not copy and paste large sections of text without proper citation. Even if you are summarizing or paraphrasing, ensure that the content is in your own words and properly attributed. [16]

Be Mindful of Self-Plagiarism:

If you are reusing your own work, be sure to cite the original publication or inform your instructor about the reuse, as policies on self-plagiarism may vary.

Develop Good Research Practices:

Cultivate good research habits, including critical thinking, effective note-taking, and ethical use of sources.

By following these tips and maintaining a commitment to academic integrity, you can avoid plagiarism and ensure that your work reflects your own ideas and contributions. Remember that academic honesty is a fundamental principle in scholarly and professional environments. [17]

CONCLUSION

The author's trustworthiness grows with the number of citations, which suggests the caliber of the scientific research. A rising number of instances of plagiarism and other unethical activity by researchers are being exposed in the literature, on several websites, and on blogs these days. Several instances of plagiarism in Balkan countries are described. Plagiarism in books, articles, monographs, and scientific papers is on the rise in the former Yugoslavian republics. One significant factor is that the recently implemented Bologna education concept, which demands academic staff to publish scientific and professional articles quickly and in large quantities in order to advance in their academic careers, has proven counterproductive and lowers the caliber of the published articles. Thanks to databases and software programs created especially for this purpose, plagiarism may now be found more easily.

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ई रिसोर्स वर एक प्रकाशझोत

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1) प्रस्तावना

भारतीय ग्रंथालय शास्ताचे जनक हा जनक डॉ एस .आर. रंगनाथन यांनी ग्रंथालय माहिती शास्ताचे जे पाच सिद्धांत सांगितले आहेत .ते आज पण उपयुक्त आहे. त्यांनी ग्रंथालय माहितीशास्ताचा जो पाचवा सिद्धांत सांगितलेला आहे. ग्रंथालय ही वर्धिष्णू संस्था आहे .तो आज तो पण आज सर्व अर्थाने 100% सर्व ग्रंथालयांसाठी जुळत आहे .त्याचे कारण असे की ग्रंथालयाच्या प्रत्येक क्षेत्रामध्ये खूप वाढ आणि विकास झालेला आपल्याला आढळतो. मग ते ग्रंथालयाचा वाचक वर्ग असेल, ग्रंथालयाचे साधनसामुग्री असेल, ग्रंथालयाची वाचन सामग्री असेल, ग्रंथालयाची फर्निचर असेल, ग्रंथालयाची इमारत असेल, ही पूर्वीच्या आणि आताच्या स्थितीमध्ये अमुलाग्र बदल झालेला आहे. तसेच वाचन साहित्याचे आहे .पूर्वी फक्त लिखित वाचन साहित्याचा उपयोग होत होता .असे यामध्ये ग्रंथ आणि नियतकालिकांचा समावेश होता. तसेच वर्तमानपत्राचा समावेश होता. परंतु तसे माहिती तंत्रज्ञानाचे ग्रंथालयाचा संबंध आलेला आहे .तसा वाचन सामग्री मध्ये अमुलाग्र बदल झालेला आहे .या वाचन सामग्री मध्ये जे विविध प्रकारचे ऑनलाइन साहित्य आहे .त्याचा यात समावेश होतो .जसे ई - बुक्स असतील, ई -जर्नलस असतील ,ई न्युज पेपर असतील, त्यानंतर वेगवेगळ्या वेगवेगळ्या वेबसाईट वरची माहिती असेल, काही पीडीएफ स्वरूपातील ग्रंथ असतील, या सर्वांचा वाचकांना मोठ्या प्रमाणात फायदा होत आहे .परंतु जसा एका एका नेण्यास दोन बाजू असतात. तसेच तसेच माहिती तंत्रज्ञानाचा उपयोग सर्व वाचकांना करून घेणे आता फारसे सोपे नाही, कारण की याचे कारण असे आहे की हवी असणारी माहिती प्रत्येकालाच यामुळे मिळतेच असे नाही. त्यामुळे माहिती करण्याचा फायदा जरी असला तरी त्यामध्ये काही अडचणी आहेत. यामध्ये काही प्रश्न आहेत .तर या संदर्भात आपण या संशोधन पर लेखात चर्च करणार आहोत.

2) सार:

ई रिसोर्सेस वर एक प्रकाश झोत या संशोधनपर लेखात प्रस्तावनेमध्ये ग्रंथालयाच्या प्रत्येक घटकामध्ये कसा बदल झालेला आहे हे आपण बघितले या लेखामध्ये ई रिसोर्सेस म्हणजे काय? ई रिसोर्सेस चे प्रकार ? ई रिसोर्सेस चे मार्गदर्शक तत्वे कोणती आहेत? तसेच ई रिसोर्सेस चे फायदे व तोटे स्पष्ट केलेले आहेत.

3) ई-संसाधन म्हणजे काय? :

ई-संसाधनाची व्याख्या अशी केली जाते :ज्यासाठी संगणक आवश्यक असतो म्हणजे संसाधने ज्यामध्ये संगणक नियंत्रित सामग्री असते, ज्यामध्ये माहिती इलेक्ट्रॉनिक पद्धतीने संग्रहित केली जाते . जी इलेक्ट्रॉनिक प्रणाली आणि नेटवर्क द्वारें वाचक पर्येयँ पोहचते .

4) ई रिसोर्स चे प्रकार : ई रिसोर्स चे प्रकार हे खालील प्रमाणे आहेत ,.

- 1) एक ऑनलाईन रिसोर्स यामध्येही ई- जनरल्स-, बुक्स ई-बुक्स ,ऑनलाइन वेबसाइट्स , वेबसाईट
- ई-प्रबंध आणि शोध प्रबंध, ई-डेटाबेस ऑनलाइन आणि ऑफलाइन समाविष्ट आहेत., जे ग्रंथालयाने त्याच्या गरजेनुसार घेतले पाहिजेत,
- 3) पायाभूत सुविधा,नुसार आर्थिक तरतूद इ. विविध प्रकारचे लायब्ररीतील ई-संसाधनांमध्ये सीडी-रॉम, ई-जर्नल्स, ऑनलाइन डेटाबेस, ई-पुस्तके, ॲबस्ट्रॅक्टिंग आणि ई-मेल आणि सूची सर्व्हर, ई-रिपोर्ट्स, ई-सामग्री पृष्ठे, ई-क्लिपिंग्स इ. गरजे नुसार विचार करावा ..

5)ई स्त्रोत लिवडीसाठी मार्गदर्शक तत्वे:

ई -_स्त्रोत साहित्याची निवड करणे म्हणजे आपले वाचक वर्ग कोण आहेत? आणि त्यांची आवश्यकता काय आहे? हे जाणून घेऊन ते ई स्रोत निवडावे .जगामध्ये अनेक ई स्त्रोत्र यांनी विकत स्वरूपात आहेत .परंतु आपल्या वाचकांना कोणते उपयुक्त आहेत. असे साहित्य निवडावे . ई स्रोत साहित्य निवडीची प्रक्रिया साहित्य निवड करत असताना आपले आपल्या वाचक वर्ग कोण आहेत त्यांची आवश्यकता काय आहे हे जाणून घेऊन ही स्त्रोत निवडावे. तांत्रिक कार्यप्रणाली म्हणजे जे ई स्त्रोत आपण घेणार आहोत त्याची ती आपल्या त्याच्यासाठी लागणारी संगणक प्रणाली आपले इथे उपलब्ध आहे का ?आवश्यक ती संगणक उच्च प्रतीचे संगणक प्रणाली आपली उपलब्ध आहे का? याची माहिती घ्यावी स्त्रोत तांत्रिक बाबी ई स्त्रोत तांत्रिक बाबी म्हणजे जे इस्त्रोत तुम्ही निवडणार आहात तर त्याच्यात नवीन आलेल्या संशोधनाचा समावेश होणार का किंवा त्याचे प्रकाशक हे नामांकित आहे का? हे बघणे गरजेचे आहे . सहा ई स्त्रोत वापरण्याची परवानगी परवानगी तुम्हास आहे का? ते फ्री स्वरूपात आहे का हे बघणे गरजेचे आहे .जर ते फ्री असेल तर तुम्ही सर्व वाचकांना देऊ शकता आणि ते जर आर्थिक स्वरूपात स्वरूपात असेल तर मात्र त्याची वर्गणी तुम्हाला भरणे गरजेचे आहे हे पाहणे.

6) ई रिसोर्स वापरण्याचे फायदे:

- 1) ई रिसोर्स हे फ्री स्वरूपात उपलब्ध असतात. फ्री सर्व स्वरूपात सर्व वाचकांसाठी उपलब्ध आहेत. त्यामुळे अभ्यास करणार संशोधकांना त्यांना हवी असणारी माहिती ही एका सर्चद्वारे मिळू शकते .आणि ही फ्री स्वरूपात असते त्यामुळे वाचकांचा वाचकांना निश्चित याचा मोठा फायदा होऊ शकतो.
- भोठ्या प्रमाणात माहिती देतात व एखादी संकल्पना किंवा एखाद्या प्रश्नासंदर्भात" संशोधनाच्या एखाद्या मुद्दा संदर्भात, अतिशय सविस्तरपणे ई रिसोर्स मध्ये माहिती मिळते .त्याचा संशोधकांना वाचकांना निश्चित फायदा होतो. हा त्याचा एक मोठा फायदा आहे.
- 3) ई रिसोर्समुळे वाचकांचा वेळ वाचतो बऱ्याच वेळी संशोधन कार्यामध्ये वेळ महत्त्वाचा असतो. आपल्या घरबसल्या किंवा महाविद्यालयामध्ये आपल्याला माहिती तात्काळ माहिती मिळू शकते त्.यामुळे ई रिसोर्समुळे वेळ वाचतो हा एक त्याचा महत्त्वाचा फायदा आहे.

7) ई रिसोर्सेस चे तोटे :

- 1) विपुल स्वरूपात माहिती :विपुल स्वरूपात माहिती उपलब्ध असतात . वाचकांना मोठ्या प्रमाणात माहिती मिळते. पण हवी असणारी माहिती चे स्वरूप हे छोटे असते .किंवा कमी असते. त्यामुळे हवी असणारी नेमकी माहिती मिळणे कठीण होते. त्यामुळे हा एक तोटा आहे .
- 2) काही ई-बुक्स ई जर्नलवर्गणी आकरतात .आकारणे सर्वच हे फ्री स्वरूपात नसतात .काही रिसोर्स काहीही वर्गणी द्यावी लागते. आणि ही वर्गणीचे प्रमाण मोठ्या प्रमाणात असते. त्यामुळे हा एक हा एक देखील तोटा आहे. सामान्य महाविद्यालय किंवा व्यक्तिगत संशोधकांना, प्राध्यापकांना विद्यार्थ्यांना, असे रिसोर्सेस चा उपयोग सहसा होत नाही.
- 3) तंत्र तंत्रज्ञानाची साथ माहिती मिळवण्यासाठी संगणक किंवा स्मार्टफोन याचा उपयोग करावा लागतो व त्याला इंटरनेटचे कनेक्शन देखील आवश्यक असते .बऱ्याच वेळेस इंटरनेटची कनेक्टिव्हिtटी नसल्यामुळे ई-बुक हवी ती माहिती वाचकांना मिळत नाही त्यामुळे हा एक त्यामुळे हा एक तोटा आहे
- 4) ग्रामीण भागातील महाविद्यालयांना संगणकातील संख्या संख्येचा अभाव हा एक मोठा प्रश्न आहे कारण तिथे संगणकाची संख्या कमी असल्यामुळे व विद्यार्थ्यांची संख्या जास्त असल्यामुळे याचा ताळमेळ कसा बसवावा हा एक अवघड प्रश्न असतो . त्यामुळे सर्वच वाचकांना ची माहिती मिळू शकत नाही.

8)सारांश:

ई रिसोर्सेस वर एक प्रकाश झोत या संशोधन पर लेखात प्रस्तावनेमध्ये ग्रंथालय ही वर्धिष्णू संस्था आहे .हे स्पष्ट करत असताना कशाप्रकारे ग्रंथालयाच्या एकूण संपूर्ण घटकावर याचा परिणाम झालेला आहे. हे या लेखात आपण बघितले यानंतर ई रिसोर्सेस म्हणजे काय, ई रिसोर्सेस ची व्याख्या ,बघितली ई रिसोर्सेस चे प्रकार बघितले , ई रिसोर्सेस चे फायदे पण बघितलेले आहे .आणि ई रिसोर्सेस मर्यादा काय आहे हे पण आपण बघितलेले आहे. या संशोधनावर लेखात आपल्याला असे लक्षात येते की वाचकांना निश्चित मोठ्या प्रमाणात ई रिसोर्सेस फायदा होतो. परंतु याच्या मर्यादा असल्यामुळे त्त्या मर्यादा त्याचा पण विचार करावा लागतो.

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EXPLORING THE LITERARY ENVIRONMENT: A STUDY OF READING HABITS AMONG COLLEGE STUDENTS

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ABSTRACT

This research report looks into the reading habits and perceptions of undergraduate students at Arts, Science, and Commerce College in Badnapur. The study conducts a comprehensive survey to investigate the motives for reading, the sorts of materials favored, and the perceived influence of reading on academic studies and personal development. The data reflect a varied range of reading habits, with a strong emphasis on learning and entertainment. Other factors that influence book choosing include peer recommendations and personal interest. Furthermore, the study reveals a widespread belief among students in the benefits of reading for intellectual development and emotional well-being. This study contributes to efforts to promote a better understanding of the function of reading in education and personal development.

Keywords: Reading Habit, Academic Studies, College Library, Personal Development.

INTRODUCTION

In an age dominated by digital media and rapid technological breakthroughs, knowing undergraduate students' reading habits and perceptions is critical. This study aims to investigate the complex landscape of reading habits among students at Arts, Science, and Commerce College in Badnapur. With a focus on undergraduate students, this study investigates the motives for reading, the sorts of materials selected, and the perceived influence of reading on academic studies and personal growth. By investigating these factors, we hope to get significant insights on the role of reading in moldings students' educational experiences and general well-being.

We hope that our research will add to the current body of knowledge about undergraduate students' reading habits and provide actionable recommendations for developing a reading culture within educational institutions. We can help students thrive intellectually and personally

in an increasingly complicated and dynamic world by instilling a love of reading in them and providing them with access to a variety of reading resources.

Why Reading:

- To know what's happening around us
- To understand the subject Knowledge
- ➤ To enhance of imagination power
- To increase judgment
- ➢ To imbibe ethical / cultural values
- To cultivate social sense
- To understand society
- Reading for inclination
- To experience new things
- Modernization of services (Kuri, Hombli,2019)

OBJECTIVES OF THE STUDY:

- 1. To study the reading habits of the students.
- 2. To study the type of reading material referred
- 3. Female users read more than male users
- 4. To know the total time spend in library
5. To know which types of books to refer

SCOPE OF THE STUDY

The present study is confined to the Arts, Science, and Commerce College Badnapur. this study is mainly aimed at investigating the 'Reading Habits among UG Students at Arts, Science & Commerce College, Badnapur'.

METHODOLOGY

The respondents were chosen using a basic random sample procedure in accordance with the survey study methodology. The primary research instrument for data gathering was a structured questionnaire. In the current study, a questionnaire was prepared and sent to library users at Arts, Science, and Commerce College Badnapur. The study was limited to determining

the reading habits of college library customers solely. Online Google form questionnaires were distributed at random among students who used the college library. 376 completed questionnaires were filled. The current study's findings are thus solely dependent on the responses provided in the questionnaire filled out by the respondents.

Analysis of Data

The collected data is analyzed and interpreted in the following paragraphs.

Gender wise Distribution:



Figure no.1 gender distribution

Figure 1 shows the gender breakdown of Arts, Science, and Commerce College Badnapur users. It shows that 242 of the responders were male, while 134 were female. They represent 64% and 36%, respectively. Thus, male users outnumbered female users.

	Tuble 1001 Tupose for Reading					
Sr.	Why do you read?	Male	Female	Total		
No.						
1	For entertainment	55(14.63)	37(9.84)	92(24.47)		
2	To gain knowledge	45(11.97)	18(4.79)	63(16.76)		
3	To relax and unwind	34(9.04)	12(3.19)	46(12.23)		
4	For academic purposes	70(18.62)	51(13.56)	121(32.18)		
5	To escape reality	31(8.24)	13(3.46)	44(11.70)		
6	Other	7(1.86)	3(0.80)	10(2.26)		
	Total	242(64)	134(36)	376(100)		

Table 1	No.1	Purpose	for	Reading
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Table 1 gives information on the motivations behind male and female respondents' readinghabits, with percentages included in brackets. It shows that a considerable proportion of

individuals read for amusement (24.47% of total replies), followed by academic goals (32.18%). Interestingly, while males and females exhibit comparable patterns in reading for enjoyment and academic objectives, there are significant disparities in motivations such as gaining knowledge and relaxing, indicating that genders have different reading habits. Overall, the statistics highlight the diversity of reading motivations among the examined population.

Table No.2 Frequency of Reading					
Sr. No.	Frequency of Reading	Male	Female	Total	
1	Daily	76(20.21)	6717.82	143(38.0)	
2	Several times a week	72(19.15)	33(8.78)	105(27.9)	
3	Once a week	49(13.03)	21(5.59)	70(18.62)	
4	Less than once a week	35(9.31)	71.86)	42(11.17)	
5	Never	10(2.66)	6(1.60)	16(4.26)	
	Total	242(64)	134(36)	376	

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Table 2 displays data on the frequency of reading for enjoyment outside of scholastic requirements, with percentages in brackets. It demonstrates that a considerable proportion of respondents read for pleasure on a daily basis, accounting for 38.03% of the total, followed by many times per week at 27.93%. Notably, while both males and girls show a similar trend in reading frequency, there are minor variances in percentages, implying nuanced distinctions in reading habits between genders. Overall, the statistics show that the surveyed population enjoys regular leisure reading.

Sr. No.	Types of books read	Male	Female	Total
1	Fiction	157(41.76)	43(11.44)	200(53.19)
2	Non-fiction	55(14.63)	64(17.02)	119(31.65)
3	Magazines or newspapers	43(11.44)	67(17.82)	110(29.26)
4	Online articles or blogs	26(6.91)	12(3.19)	38(10.11)
5	Poetry	70(18.62)	67(17.82)	137(36.44)
6	Graphic novels or comics	49(13.03)	57(15.16)	106(28.19)
7	Others	10(2.66)	21(5.59)	31(8.24)

• •

Table 3 shows the reading material preferences of male and female respondents, with percentages supplied in brackets. Fiction is the most popular category, accounting for 53.19% of all replies, followed by poetry (36.44%). Non-fiction and magazines/newspapers are also popular, accounting for 31.65% and 29.26% of total responses, respectively. Notably, while gender preferences differ, with females favoring poetry and magazines/newspapers, both groups have a wide range of reading interests across genres.

Table No. 4 Selection of the books					
Sr. No	Selection of the books	Male	Female	Total	
1	Recommendations fromfriends or family	67(17.82)	70(18.62)	137(36.43)	
2	2 Bestseller lists or popular		85(22.59)	249(66.22)	
	recommendations				
3	Assigned reading forclasses	96(25.53)	115(30.59)	211(56.12)	
4	4 Personal interest or		83(22.07)	169(44.95)	
	curiosity				
5	Author reputation	80(21.28)	67(17.82)	147(39.10)	
6	Other	42(11.17)	57(15.16)	99(26.33)	

 Table No. 4 Selection of the books

Table 4 shows the factors influencing book selection among male and female respondents, with percentages in brackets. It finds that suggestions from friends or relatives are the most common reason, accounting for 36.43% of all responses, followed closely by bestseller lists or popular recommendations (66.22%). Assigned reading for classes also has a large impact, accounting for 56.12% of all responses. Interestingly, while both genders exhibit comparable trends in criteria such as personal interest and author reputation, there are significant disparities in preferences, revealing a variety of impacts on book selection across the examined population.

Table No.5	Reading h	habits significantl	y influence y	our overall well-being.
	0	U	J J	U

Sr.	Reading habits significantly	Male	Female	Total
No.	influence your overall well-being.			
1	Yes	152(40.43)	80(13.30)	232(61.70)
2	No	50(13.30)	34(9.04)	84(22.34)
3	Unsure	40(10.64)	20(5.32)	60(15.96)
	Total	242(64)	134(36)	376(100)



Figure No.2. Reading habits influence overall development

Table 5 and figure no.2 illustrates the perceptions regarding the influence of reading habits on overall wellbeing, disaggregated by gender and presented as percentages in parentheses. The data highlights that a majority of respondents, comprising 61.70% of the total, believe that reading habits significantly impact their well-being. Conversely, 22.34% of respondents disagree, while 15.96% are uncertain about the relationship between reading habits and overall well-being. Notably, while both genders exhibit similar trends in their perceptions, there are slight differences in the percentages, indicating varied perspectives on the matter.

	Reading helps in academic studies		Female	Tota
Sr. No.	or personal development	Male		1
1	Strongly agree	82	67	149
2	Agree	68	33	101
3	Neutral	47	21	68
4	Disagree	35	7	42
5	Strongly disagree	10	6	16
	Total	242	134	376

Table No.6 Reading helps in academic studies or personal development

Table 6 provides insights into the perception of whether reading aids in academic studies or personal development, categorized by gender. It reveals that a substantial portion of respondents, totaling 149, strongly agree that reading contributes positively to their academic studies or personal development. Additionally, 101 respondents agree with this sentiment. However, there are varying degrees of disagreement, with 42 respondents disagreeing and 16 strongly disagreeing. The data suggests a prevalent belief in the beneficial effects of reading on academic and personal growth among the surveyed population, with nuanced differences in perceptions between genders.

CONCLUSION

The research findings shed light on the diverse reading habits and perceptions among undergraduate students at Arts, Science & Commerce College, Badnapur. Across the surveyed population, there is a prevalent belief in the positive impact of reading on both academic studies and personal development, with a significant majority expressing agreement or strong agreement. The data also highlights the multifaceted motivations behind reading, with a notable emphasis on gaining knowledge and engaging in entertainment. Furthermore, the factors influencing book selection vary, ranging from personal interest to recommendations from friends or family. Interestingly, while there are similarities in reading preferences and perceptions between genders, there are also subtle differences, suggesting nuanced variations in reading habits and attitudes. Overall, the research underscores the importance of fostering a culture of reading to promote academic success and personal growth among undergraduate students.

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REVIEW ON ROLE OF SOCIAL REFORMERS IN INDIAN LIBRARY MOVEMENTS

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ABSTRACT

The first libraries were only partially libraries, storing the majority of unpublished records, which are now considered archives. Writing and reading manuscripts were regularly practised in the ancient period from the fourth century B.C. to the sixth century after Christ, according to archaeological and literary evidence (written by Chinese travellers in India). This must have resulted in the expansion and development of manuscript collections in important centres of learning. In the fourth century AD, the Nalanda University Library in Bihar was a significant library. The library was said to be housed in three of the city's most opulent structures, one of which was known as "Drama Ganja," which meant "mast of religion." Vikramsila, Odantapuri, Somapuri, Jaggadal, Mithila, Vallabhi, Kanheri, and other important academic libraries of the time were also important. There was a lot of activity in South India during that time, and there was a tradition about libraries called sangam age during that time.

The Buddhists of India placed a strong emphasis on the creation and preservation of manuscripts. Jains and Hindus made significant contributions to education as well. They supported education and literary activities by establishing a slew of Upasrayas and Temple Colleges the first libraries were only partially libraries, storing the majority of unpublished records, which are now considered archives. Writing and reading manuscripts were regularly practised in the ancient period from the fourth century B.C. to the sixth century after Christ, according to archaeological and literary evidence (written by Chinese travellers in India). This must have resulted in the expansion and development of manuscript collections in important centres of learning. In the fourth century AD, the Nalanda University Library in Bihar was a significant library. The library was said to be housed in three of the city's most opulent structures, one of which was known as "Drama Ganja," which meant "mast of religion." Vikramsila, Odantapuri, Somapuri, Jaggadal, Mithila, Vallabhi, Kanheri, and other important academic libraries of the time were also important. There was a lot of activity in South India during that time, and there was a tradition about libraries called sangam age during that time.

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The first libraries were only partial libraries, storing the majority of unpublished records, which are now considered archives. Writing and reading manuscripts were regularly practiced in the ancient period from the fourth century B.C. to the sixth century after Christ, according to archaeological and literary evidence (written by Chinese travelers in India). This must have resulted in the expansion and development of manuscript collections in important centres of learning. In the fourth century AD, the Nalanda University Library in Bihar was a significant library. The library was said to be housed in three of the city's most opulent structures, one of which was known as "DramaGanja," which meant "mast of religion." Vikramsila, Odantapuri, Somapuri, Jaggadal, Mithila, Vallabhi, Kanheri, and other important academic libraries ofthe time were also important. There was a lot of activity in South India during that time, and there was a tradition about libraries called sangam age during that time.

INTRODUCTION

"The social reformers believed in the principle of individual liberty, freedom, and equality of all human beings irrespective of sex, color, race, caste, or religion. They attacked a number of traditional, authoritarian, and hierarchical social institutions and launched social reform movements to liberate the Indian women from their shackles".

Library movement is a struggle for library development." Public Library Movement in India has been project of our National awaking like the Swadesi Movement. It was also the product of our cultural renaissance and the revival of our love for our culture and culture and heritage. The first Public Library was started for this purpose in 1886. The Gandhian movement made the public library movement an indispensable necessity to the people and became the spring board or the successful organization of the independence movement. Library movement is a saga of organized growth and development of libraries entailing the details of establishment, maintenance and functioning of libraries in a geographical proximity. BEFORE INDEPENDENCE 'The the past...show more content...

'Gradually at Calcutta and other Presidency towns the need for public libraries was felt to recreate reading. As a result, the public libraries of the Dalphian Society in 1811, the Madras Library in 1815, the Calcutta Library Society in 1818, the Bombay General Library in 1930, and the Calcutta Public in 1835 came into existence. These were established by the active support and initiation of Europeans. But the uses of these libraries were limited to a few individuals belonging to higher strata in the society. Therefore, they cannot be called public libraries in the fullest sense. Nevertheless, the library movement received a great impetus in Bengal with the establishment of a good number of libraries from 1851 onwards." The Madras Public Library was established in 1860 by Jesse Mitchel. In 1896 it was named as 'Connemara Public Library', after the name of Lord Connemara, the Governor of Madras during...show more content.

'The Maharaja calls W. A. Borden from America for organizing the library system of the state. He organized library training classes, started a journal named Library Miscellany, established the State Central Library with separate wings for women and children. In about 20 years almost all towns and about 1,100 villages had libraries of their own.' Like this in this way the modern Public Library movement in India is said to have begun in Baroda during the first decade of the century. 'The subscription library started at the Fort Williams in 1770 was later on converted into a public library in the early 19th century. A few public libraries started appearing sporadically here and there during the same period in the country.' Notable among them are: The Aarsha Granthalayam, Waltair, United services Library, Poona, Raghunandan Library, Puriand Bombay General Library.

HISTORY

A free public library movement was started in **1910**. The first Baroda State Library conference was held in 1925. The Baroda State Library Association was formed in 1926. These efforts set the pattern for the progress of the library movement.

The **National Library of India** is a library located in Belvedere Estate, Alipore, Kolkata, India.^[3] It is India's largest library by volume and public record. The National Library is under Ministry of Culture, Government of India. Currently, Dr. Prof. Ajay Pratap Singh working as Director General (additional) who is Director General of Raja Ram Mohan Roy Library Foundation, Kolkata since 2020. The library is designated to collect, disseminate and preserve printed material produced within India. With a collection in excess of 2.2 million books and records, it is the largest in the country. Before independence, it was the official residence of Governor-General of India.

The National Library is a result of the merging of the public library with the Imperial Library—several government libraries. The National Library (1953), then the Imperial Library housed several foreign (British) and Indian titles and was open to the public.^[8] It collects book, periodicals, and titles in virtually all the Indian languages while the special collections in the National Library of India house at least fifteen languages.^[8] The Hindi department has books that date back all the way to the nineteenth century and the first ever books printed in that language. The collections break down and consist of 86,000 maps and 3,200 manuscripts.

After Independence

After independence, the growth of libraries in general has been remarkable, although not as remarkable as that of academic and special libraries. At the time of independence, India was facing a host of challenges. Those in the rural population, 88 percent of the total, were nearly all illiterate. Transportation was poor and mass media merely nominal. Nevertheless, the public library scene in India improved considerably during the post independence period, though it is still lacking on several fronts. Verma & Agrawal (1994, p. 8) argue that to

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compare our public libraries with those of the developed nations on equal footing, we have to go a long way. The 1951 census, the first conducted after independence, found 2,843 local governments in the urban and rural areas in India, of which 320 were rural district boards. Only about one third of local governments maintained public libraries, about 950. In addition, there were about 1,500 subscription libraries. So-called public libraries were primarily reading rooms with a few hundred books for reading on the premises. The Delhi public library deserves special mention. It was founded in 1951 as the first UNESCO Public Library Pilot Project under the joint auspices of UNESCO and Government of India. The purpose of the library was to adapt "modern techniques to Indian conditions" and to serve as a model public library for Asia (Verma & Agarwal, 1994, p. 8). The establishment of Delhi Public Library legislation in some "Development of Public Libraries in India," Zahid Ashraf Wani. Although the government of India allotted funds for public library development in its five-year plans, this funding was not connected to effective planning.

Raja Ram Mohan Roy Library Foundation

Another positive step taken by the Central Government was the establishment of the Raja Ram Mohan Roy Library Foundation (RRRLF) at Calcutta on May 22, 1972, as a part of the bicentenary celebrations of the birth of Raja Ram Mohan Roy, a social reformer of the early 19th century. Its objectives are library development in general and rural library development in particular. It provides financial assistance to public libraries in the form of matching grants. It assists State Central Libraries and District Central Libraries, which has helped many states and Union Territories develop rural public library services.

Main Objectives of RRRLF

The main objectives of RRRLF are:

- Promotion of the library movement in India;
- The adoption of a national library policy by the central and state governments;
- Development of a National Library System by integrating the services of National Libraries, State
- Central Libraries, District Libraries, and other types of libraries through an interlibrary lending system;
- Propagation and adoption of library legislation in the country;
- Provision of financial and technical assistance to libraries;

• Provision of financial assistance to voluntary organizations and library associations for the promotion of library development;

- Periodic publication of reports on library development;
- To act as a clearing house for ideas and information on library development in India and abroad;
- To advise the Government of India library development;
- Promotion of research in problems of library development (Baraua 1994, p. 64)

The primary objective of RRRLF is the promotion of the library movement. The rest are subsidiary objectives. RRRLF is the first government-sponsored body specifically created for this purpose. The foundation also has a programme of assistance to libraries for workshops, conferences, and exhibits. The foundation has taken the major initiative for the formulation of a national policy on library and information systems by the Government of India. The current programmes of assistance are:

• Collection building;

- Rural libraries and mobile library service for rural areas;
- Seminars, workshops, conferences, training courses, and exhibits;
- Facilities and equipment for storage and display of materials;

• Public library buildings;

- Television and VCR equipment for educational purposes;
- Assistance to voluntary organisations providing public library services;
- Assistance to children's libraries or children's sections of general public libraries (Baraua 1994)

During the last three decades, the foundation has assisted more than 500 libraries, including many in rural areas (Kumbar, 2005)

Iyyanki Venkata Ramanayya

Iyyanki Venkata Ramanayya or **Ayyanki Venkata Ramanaiah** (24 July 1890 – 1979) has been called the "Architect of the Public Library Movement in India".He is the first Indian to be awarded the Kaula Gold Medal. Through his career as an influential library leader, Ramanayya was seen as a respected peer and mentor by S. R. Ranganathan.

Iyyanki Venkata Ramanayya was born in Konkuduru village, Ramachandrapuram taluk, in East Godavari district, Andhra Pradesh, to Venkata Ratnam and Mangamamba. He studied in Tailor High School.

Influenced by Bipin Chandra Pal, Ramanayya entered public life in 1907 at the age of 19. He was instrumental in establishing the First State Library Association in Indian – Andhra Pradesh Library Association (1914) and the Bengal Library Association (1925). He contributed to the foundation of the Madras Library Association (1928) and the Punjab Library Association (1929) at state level and the All India Public Library Association (1919) at the national level.

Between 1934–1948, Ramanayya toured the coastal districts of Andhra Pradesh and organised large-scale library tours. As a result, hundreds of libraries were opened and many others reopened. He organised training camps for the library secretaries in 1920 and 1934.

The Imperial Library

The Imperial Library was formed in 1891 by combining a number of Secretariat libraries in Calcutta. Of those, the most important and interesting was the library of the Home Department, which contained many books formerly belonging to the library of East India College, Fort William and the library of the East India Board in London. But the use of the library was restricted to the superior officers of the Government.^[9] Sir Ashutosh Mukherjee was appointed as the president of imperial library council (1910) to which he donated his personal collection of 80,000 books arranged in a separate section.

Declaring the Imperial Library as the National Library

After independence the Government of India changed the name of the Imperial Library to the National Library by *Imperial Library (Change of Name) Act, 1948*, and the collection was transferred from The Esplanade to the present Belvedere Estate. On 1 February 1953 the National Library was opened to the public by Maulana Abul Kalam Azad. The name of *National Library* was changed to *National Library of India* by section 18 of the *National Library of India Act, 1976*.

Discovery of hidden chamber

In 2010, the Ministry of Culture, the owner of the library, decided to get the library building restored by the Archaeological Survey of India (ASI). While taking stock of the library building, the conservation engineers discovered a previously unknown room. The secret ground-floor room, about 1000 sq. ft. in size, seems to have no opening of any kind.

The ASI archaeologists tried to search the first floor area (that forms the ceiling of the room) for a trap door, but found nothing. Since the building is of historical and cultural importance, ASI has decided to bore a hole through the wall instead of breaking it. There are speculations about the room being a punishment room used by Warren Hastings and other British officials, or a place to store treasure.

In 2011, the researchers announced that the room was filled entirely with mud, probably in an effort to stabilize the building.

ROLE OF LIBRARY ASSOCIATIONS IN THE LIBRARY MOVEMENT

- Trivandrum Public Library Society (1847)
- Malabar Library Association (1937)
- Kerala Granthalaya Sanghom (1943)
- All Travancore Library Association (1945)
- Cochin Library Association (1946)
- Kerala Library Association (1958)

Visiting

The National Library is located on Belvedere Road in Alipore. It is open between 9 am and 8 pm on all working days and between 9.30 am and 6.00 pm on Saturdays, Sundays and Government of India holidays. It remains closed on three national holidays, 26 January (Republic Day), 15 August (Independence Day) and 2 October (Birthday of Mahatma Gandhi).

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AWARENESS OF INTELLECTUAL PROPERTY RIGHTS (IPR) IN DIGITAL LIBRARIES.

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ABSTRACT

Information workers must play a significant role in educating their users about intellectual property rights. This paper discusses the new technology emerging in libraries in the digital era as well as the challenges posed by digital technology and electronic information via the Internet. discusses the nature of copyright infractions in digital environments, including databases, and emphasizes legislative discrepancies. It also discusses the effects of the internet and technologies such as encryption, digital watermarks, and digital signatures for effective management of copyright infringement in a variety of scenarios, as well as network and multimedia data security.

Keywords: Intellectual property rights, copyright, patents, industrial design, trademarks, trade secrets.

1 INTRODUCTION

Library is the heart of any academic institution especially in higher education. Libraries play a vital role in the overall development of the society. Until recently the library was considered to be a "storehouse for the recorded experience of mankind" or "a place set apart to contain books for reading, study or reference" (Sharma, 1992).

Electronic resources are becoming increasingly important in academic libraries, resulting in a progressive growth in digital information holdings. In recent years, the virtual library has mostly focused on individual users' workstations. A virtual library has only a collection that is available in digitized format, can be accessed from any workstation, and provides effective search and browsing capabilities. Virtual libraries require the use of communication networks to access, browse, download, and transfer information.

2 Definitional Analysis

- Intellectual property includes literary works, artistic works, inventions, designs, symbols, names, images, computer code, and so on.
- The Industrial Revolution brought various changes regarding Intellectual property and business regulations as well. It had created various rules and laws of its own.

3 Objectives of the study:

- To study Intellectual Property Rights from the library's point of view
- To identify the implication of copyright over libraries
- To create awareness of IPR among libraries.
- To analyze the copyright laws of India.
- To create IPR clubs in society in India.

4 The Meaning of Intellectual Property

IPR refers to the rights to an intellectual work. The work may be either artistic or commercial. Copyright rules govern artistic works, while commercial properties include trademarks, industrial design rights, and trade secrets. Copyright laws protect the intellectual property of creative works, including books, music, software, and paintings. Industrial properties are those produced and utilized for commercial or industrial reasons. Intellectual property is categorized based on the nature of the work. Common categories of intellectual property include copyrights, trademarks, patents, industrial design rights, and trade secrets.

4.1 Types of intellectual property

4.1.1 Patent: Patents are a sort of intellectual property that grants its owner the legal right to prevent others from creating, using, or selling an invention for a fixed period in exchange for publishing an enabling disclosure of the invention.

4.1.2 Copyright: Copyrights and related rights are property rights that belong to the owner of a protected work.

4.1.3 Geographical Indications: Place designations are used to designate items that have distinct features because they originate in certain locations.

4.1.4 Industrial design: Industrial designs are ideas for patterns, ornaments, and other features applied to an article rather than the item itself.

4.1.5 Trademark: Trademarks are symbols used to differentiate one trader's goods from those of other traders.

4.1.6 Layout Designs of Integrated Circuits: The IPIC (the Treaty on Intellectual Property in Respect of Integrated Circuits) was established under WIPO's auspices in 1989 and governs layout designs for integrated circuits.

4.1.7 Trade secrets (undisclosed information) It requires protection for commercially valuable knowledge that has been kept secret through acceptable means.

5 The World Intellectual Property Organization (WIPO)

The World Intellectual Property Organization (WIPO) defines intellectual property rights (IPRs)as:

- literary, artistic, and scientific work;
- performance of performing artists, phonograms, and broadcasts;
- inventions in all fields of human endeavor;
- scientific discoveries;
- industrial designs; trademarks, service marks, and commercial names and designations

• protection against unfair competition and other rights resulting from intellectual activity in the industrial sector.

6 History of Copyright Law:

The printing press led to the invention of copyright, which became more widely recognized with increased public literacy. The legal concept originated in Britain in response to monopolies held by printers in the early 18th century. In 1662, the King of Britain passed the Likening Act, which established a register of licensed books and required a copy to be deposited with the Stationers Company. This act essentially continued the long-standing practice of licensing material. The first copyright law, the Statute of Anne, granted author rights for a limited time before expiring. The Patent (Amendment) Act of 2002 introduced the first TRIPS-compliant amendment to the Patent Act of 1970. The amendment aimed to ensure TRIPS compliance while also protecting public interest, national security, biodiversity, and traditional knowledge. The Patent Amendment Act of 2005 aimed to achieve similar goals. Patent laws in the country aim to balance the interests of both consumers and inventors. The Acts respect international patentee rights while also modifying the Indian legal system to protect society as a whole. To prevent technological stagnation, safeguards have been put in place to prevent patent monopolies from harming society.

6.1 Works Protected by Copyright:

In copyright protection, literary and artistic works refer to all unique works of authorship, regardless of literary or artistic merit. While the concepts in the work do not need to be original, the author's expression must be unique. The Berne Convention for the Protection of Literary and Artistic Works (Article 2) defines "literary and artistic works" as any creation in the literary, scientific, or creative domains, regardless of mode or form of expression. The Convention provides the following examples of such works: The following are examples of works: books, pamphlets, lectures, sermons, dramatic or dramatic-musical works, choreography, musical compositions, works of drawing, painting, architecture, sculpture, engraving, lithography, and photographic works.

7 IPR Legislation in India:

Patents Act 1970, as amended in 2005.

Industrial Designs Act, 2000.

CGPDTM administers the following IPR laws:

The Trade Marks Act 1999.

The Geographical Indication Act 1999.

The Copyright Act 1999.

Protection of Plant Varieties and Farmers' Rights Act 2001 and Biological Diversity Act 2002 (all TRIPS compliant).

The value of intellectual property (IP) protection has increased significantly during the last two decades. IP rights have expanded to cover new areas of science and technology, including information technology, biotechnology, and the service economy. The World Trade Organization (WTO) agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) established global standards for IP protection. The World Intellectual Property Organization (WIPO) is aiming to enhance the patent system through regular discussions. Agreements between industrialized countries, particularly in the pharmaceutical industry, recognize the value of intellectual property rights in promoting innovation.

7.1 IPR in Libraries:

For low-income students in developing countries, university libraries play an important role in facilitating research and giving access to copyrighted books, journals, and online materials. However, their resources are frequently restricted. Donor organizations have contributed funding to modernize and refill libraries in numerous countries, including Internet access and photocopying equipment. 19 Additional assistances are critically needed. However, donor procedures are too sluggish and inefficient for libraries to maintain their textbook collections up to date. According to a recent UNESCO report, university libraries in poorer developing nations, particularly in Africa, confront catastrophic circumstances.

University libraries in poor countries, such as South Africa, struggle to secure copyright clearance and pay royalties for works used by lecturers and students. Our findings indicate that even well-funded libraries have had to drastically reduce their subscriptions to academic periodicals due to the high costs of maintaining present collections. Even well-funded libraries in industrialized nations struggle to meet the demand for journals among researchers and students. Academic journal subscription prices in industrialized countries have risen dramatically, and the publishing industry is consolidating. This has sparked a debate regarding how scholars can access the essential materials.

Developing countries require greater flexibility in international copyright rules to satisfy their educational and research demands. Delegates at the Stockholm meeting suggested modifications to the Berne Convention in 1967. Proposals to restrict copyright protection were rejected by developed countries due to their perceived extreme nature. After 30 years, evidence suggests that the 1971 Berne Convention's particular provisions for developing nations, as outlined in the Appendix, have not been effective. Individual countries may require distinct measures to fulfill this Developing countries should enact pro-competitive copyright legislation to increase access to copyrighted works while still achieving educational and knowledge transfer goals. Developing countries' national copyright laws should include extensive exclusions for educational, research, and library uses. Implementing international copyright norms in emerging nations necessitates recognizing the need to increase product availability while also encouraging social and economic growth. Their unique demands, necessitate additional reforms. As one commentator put it,

7.3 IPR CHAIRS

The Indian Ministry of Human Resource Development established six IPR Chairs at universities to enhance teaching and research in intellectual property rights studies.

The University of Allahabad

The University of Delhi

The Savitribai Phule Pune University

The University of Madras

The National Law School,

The Indian University, Bangalore.

The Cochin University of Science and Technology in Cochin

Ten new chairs were added to particular sections. They are:

i) On intellectual property management.

1. The Indian Institute of Management, Allahabad.

- 2. The Indian Institute of Management, Kolkata.
- 3. The Indian Institute of Management, Bangalore. ii) Intellectual property rights (IPR) for patents, trademarks, industrial designs, and geographic indicators. 4. Indian Institute of Technology, Delhi.
- 5. The Indian Institute of Technology, Kheradpir. The Indian Institute of Technology, Chennai.
- 6. The Indian Institute of Technology, Mumbai.
- 7. The Indian Institute of Technology, Kanpur; iii) Intellectual Property Rights and Development.
- 9. The Centre for Economic Studies and Planning, Jawaharlal Nehru University.

CONCLUSION

Librarians in digital environments have the same responsibility to collect and provide information to readers, regardless of the format. Librarians' position should be safeguarded and strengthened. Copyright protection should promote creativity rather than limit its usage. Librarians should facilitate information sharing between copyright owners and users. Fair use of print content involves reasonable reproduction for private study, research, or education. However, due to the widespread distribution of digital information, determining "fair use" and controlling copyright infringement is challenging. Copyright owners often cannot determine who used their work. Copyright owners cannot grant authorization to utilize their work and collect compensation. To address this issue, copyright legislation must be modified. One possible modification could be implementing stricter regulations on digital content sharing. Regardless of the platform, librarians in digital contexts have the same obligation to gather and make knowledge available to readers. The status of librarians ought to be reinforced and preserved. Instead of restricting the use of creativity, copyright protection should encourage it. Librarians should help users and copyright owners share information. Reasonable duplication of print material for personal study, research, or instructional purposes is considered fair use. However, it might be difficult to define "fair use" and prevent copyright infringement because digital information is widely distributed. Often, copyright holders are unable to track down the users of their creations. Owners of copyrights are unable to use their creations for profit. It will be necessary to amend the copyright laws to address this issue. One potential change would be to impose more stringent rules on digital content-sharing websites and platforms, requiring them to monitor and enforce copyright infringement more effectively. Additionally, establishing a central database or platform where copyright owners can register their works and track their usage could help in identifying and compensating the rightful owners.

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OPEN EDUCATIONAL RESOURCES AND INDIAN INITIATIVES: AN OVERVIEW

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ABSTRACT

This paper focuses on the concept of Open Educational Resources and its initiatives. The paper discusses its definitions, types and formats, copyright and licensing considerations for OER. Further the paper highlights the advantages and disadvantages of OERs. Important initiatives of Open Educational Resources in India are listed.

Keywords: Open Educational Resources, OER, Open Initiatives

INTRODUCTION

Open Educational Resources (OER) are the emerging concept in higher education across the world. In the present era the technological advances have placed a demand of everything to be available on the fingertips and also there is a demand from the learners for independent learning experience. These developments have opened up new possibilities for different channels of dissemination of information and knowledge. For a healthier tomorrow, creation of new knowledge is essential with the sharing of resources. Therefore, Open Educational Resources (OER) are considered one of the most important means of teaching, learning and sharing knowledge. The learners, require access to related educational literature to explore and expand their existing knowledge sphere. Exchanging and linking ideas and networking are the ways to study the present work and gain new knowledge. Open Educational Resources (OER) are digital content, available online, free of copyright issues and licensing limitations and free of cost for lifelong learning. Hence Open Educational Resources (OER) have gained increased attention for their potential to eliminate demographic, economic and geographic boundaries and also promote personalized and lifelong learning

The Concept of Openness and the open initiatives

Universal Declaration of Human Rights (1948) stated in article 26, everyone has a right to education and technical education shall be made generally available and higher education shall be equally accessible to all. Again, stated that education shall be directed to the full development of the human personality and the strengthening of respect for human rights.

United Nations (1948) declaration stated that everyone has the right to learn and upskill themselves and gain knowledge. It led to the development of Open Education Resources that can be accessible to one and all; also followed by the United Nations declaration, Open Education Practice and Open Educational Resources movement in 2022.

In the field of education several open practices are emerged together with online learning and distance education due to rapid technological development and extensive accessibility of the Internet. The new developing technology has provided power to the Open Education Resources movement to generate and share educational content.

Richard Stallman in 1985 started the movement of OER and founded the Free Software Foundation to support and allow freedom to software users.

The definition of open is constantly evolving and varies according to the context as sharing software code, reusing content and open access to publications. The following initiatives presents important steps towards creating, re-using and sharing open source, learning objectives of research outcomes and encouraging and promoting the use of open licenses.

[1] Open Source Initiatives: http://www.opensource.org/ : Eric Raymond and Bruce Perens (1988) founded OSI, the Open Source Initiative with the purpose of managing and promoting the open source for the good of the community, specifically through the OSI Certified Open Source Software Certification mark and programme. It is dedicated to promoting open source software for which the source code is published. This allows anyone to copy, modify and redistribute the code and its modification free of cost. The process is enabled and guaranteed by Open Source Licenses which ensure that software licenses that are labeled as open source conform to existing community norms and expectations.

- [2] Open Content Initiatives: http://www.opencontent.org/ : David Wiley (1988) founded Open Content Project to popularize the principle of OSI for creating and reusing learning objectives and content. The first content-specific license was created for educational materials and a key fundamental of Wiley's Original License is that any object is freely available for use, modification and redistribution with certain restrictions and provides users with free and perpetual permission to engage in the 5R activities.
- [3] Open Access Initiatives: http://www.pubmedcentral.nih.gov/about/poenaccess.html : The idea of Open Access is that scholarly work should be freely and openly available online with no unnecessary licensing, copyright or subscription restrictions. Three key initiatives serve as milestones for the open access movement. The Open Society Institute organized a meeting at Budapest in December 2001 and the outcome of this meeting was Budapest Open Access Initiative (BOAI). The Budapest Initiative announced two strategies for open access as, the establishment of open access journal and self archiving of their work by scholars. In April 2003, a meeting at the Howard Hughes Medical Institute in Maryland resulted in the Bethesda Statement on Open Access Publishing as, free access to scholarly journals. It provided a working definition of open access publishing and agreed a set of principles that all parties as scholars, research institutions, publishers and librarians could adopt to promote the rapid and efficient transition to open access publishing. In 2003 October, a conference at the Max Plank Society in Berlin resulted in the Berlin Declaration on Open Access to Knowledge in the Science and Humanities. This states that progress should be made by encouraging researchers to publish their work according to open access principles and cultural institutions to provide their resources on the Internet.
- [4] Creative Commons: http://creativecommons.org : It is a non-profit making international organization, in December 2002, released a set of copyright licenses for public use. These machine readable licenses are designed for websites, music, film, photography, literature, courseware etc. and they help people make their creative works available to the public by retaining their copyright while licensing them as free for certain uses on certain conditions. CcLearn-the educational division of Creative Commons was launched in 2007 and is dedicated to realizing the full potential of the Internet to support open learning. It is expected to reduce barriers of remixing, reusing and sharing educational resources.

Definitions of Open Educational Resources

The world's leading and prominent institutes and some individuals working in various developmental areas of the community have tried to define Open Educational Resources (OER). These institutional constantly carry out research projects and play a vital role in educational development.

The definition given by UNESCO is, "Open Educational Resources (OER) are teaching, learning and research materials in any medium-digital or otherwise that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. OER from part of Open Solutions, alongside Free and Open Source Software (FOSS), Open Access (OA), Open Data (OD) and crowd sourcing platforms."

Open Educational Resources (OER) are defined as, "instruction, self learning and intellectual materials that use suitable tools such as open licensing, to permit their unrestricted reuse, constant upgrading and repurposing by others for educational purposes."

David Wiley defines the term, open content and open educational resources as, "any copyrightable work (excluding software, which is described by other terms like open source) that is either (1) in public domain or (2) licensed in a manner that provides users with free and perpetual permissions to engage in the 5R activities are as below,

- 1. Retain: the right to make, owe and control copies of the content (e.g. download, duplicate, store and manage)
- 2. Re-use:- right to use the content in a wide range of ways (e.g. in a class, in a study group, on a website, in a video)
- **3. Revise:** the right to adapt, adjust, modify or alter the content itself (e.g. translate the content into another language)
- **4. Remix:** the right to combine the original or revised content with other material to create something new (e.g. incorporate the content in a mashup)
- **5. Redistribute:** the right to share copies of the original content, your revisions or remixes with others (e.g. give a copy of the content to a friend).

Creative Commons define OER as, "Open Educational Resources (OER) are teaching, learning and research materials that are either in the public domain or licensed in a manner that provides everyone with free and perpetual permission to engage in the 5R activities."

OER definition given in the blog of Open Access India by Fetima is, "Open Educational Resources (OER) are teaching and learning materials that are freely available online for everyone to use, whether you are an instructor, student or self-learners. OER includes examples as, full courses, syllabus, lectures, quizzes, lab and classroom activities, pedagogical materials, games, simulations and many more resources contained in digital media collections from around the world.

Based on the above definitions, we can generalize the Open Educational Resources (OER) materials to be free from licensing restrictions that allow the Creative Commons License and to be available online in the public domain for teaching, learning and research purpose.

Copyright and Open Licensing

Copyright is a right to protect creator's intellectual work from unauthorized use or unlawful replication. According to the Indian Copyright Act-1957, section 52(1) allows copyrighted work to fair use of research, teaching and learning purpose only and not permissible for commercial use.

UNESCO and Commonwealth of Learning also explained that, the traditional copyright is also applicable for OER but the nature of copyright is replaced with Open Licensing like creative commons with some restrictions. Open Licenses have emerged to protect the creator rights in a digital environment where the content can be easily shared and copied without the creators permission.

Open License is defined by the Open Knowledge Foundation as, "a document that specifies what can and cannot be done with work whether it is sound, text, image or multimedia. It grants permissions and states restrictions."

Creative Commons (CC) is a non profit making international organization, which is active in providing free licenses to creators for sharing and making available their work to the public. Creative Commons licenses provide everyone a uniform way to permit the public authority to use their artistic work under copyright law. CC Licenses have been commonly used in Open Access Publishing and Open Educational Resources. Creative Commons Licenses has two parts, the first part specifies the freedom that the author wants to allow about his work and the second part indicates the condition on which it is allowed to be used.

Types and Format of OER

Open Educational Resources are of various types that are Open Courseware, Open Access Journals, Open Access Books, Open Access Repositories, Pre-prints, Open Access Thesis and dissertations, Digital Learning materials etc.

There are various Open Educational Resources formats: they are available in the public domain or released under Open Licenses as Texts, Images, Audio, Audio-Visuals, Animation, Quiz, Games, Software and So on.

Advantages and Disadvantages of OER

There are several advantages of OER, there are disadvantages too.

Advantages

Open Educational Resources have advantages as mentioned below,

- 1. Cost savings for learners
- 2. Reduced the gap between the country and different strata of society
- 3. Improved quality of education
- 4. Anytime and Anywhere access
- 5. Adaptability and Flexibility
- 6. Enriched the traditional course materials
- 7. Swift dissemination of the information
- 8. Showcased the innovation and talent
- 9. Frequently upgraded resources
- 10.Expanded access to the information

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- 11. Ability to modify the course materials
- 12. Alumni connection with the institute

Disadvantages

Open Educational Resources have disadvantages as mentioned below,

- 1. Quality and reliability concerns in OER materials
- 2. Language barriers
- 3. Cultural barriers
- 4. Technological issues
- 5. Sustainability issues
- 6. Limitations of copyright property protection

Open Educational Resources Initiatives in India

- 1. National Digital Library of India (NDLI) http://ndl.iitkgp.ac.in : It is a repository of open learning resources having searching and browsing for learners community. NDLI launched in May 2016. It developed, hosted and maintained by the Indian Institute of Technology, Kharagpur. It is sponsored and mentored by Ministry of Education, Government of India, under the national Mission on Education through Information and Communication Technology (NME-ICT).
- 2. National Programme on Technology Enhanced Learning (NPTEL) https://nptel.ac.in : It is massive open online course was initiated in 2003 by 7 Indian Institutes of Technology i.e. Bombay, Delhi, Kharagpur, Madras, Guwahati and Roorkee and Indian Institute of Science, Banglore. It has 235 courses in web and video format covered with 5 core engineering disciplines such as, Civil, Computer Science, Electrical, Electronics and Communication and Mechanical. During 2019 in Phase-II, 600 more web links and videos in all major branches of Engineering, Physical Science and Management were added at Undergraduate (UG) and Postgraduate (PG) levels.
- 3. SWAYAM https://swayam.gov.in : It is a free online education programme initiated by the Government of India. It contains the courses in video formats, downloadable, reading materials, assessments, MOOCs and online discussion forums. The courses available for class 9 to postgraduate (PG) level accessible by anyone at anytime and anywhere and free of cost.
- 4. Swayam Prabha https://www.swayamprabha.gov.in : It is a free DTH channel for education. 34 DTH channels telecasting only quality education programmes on a 24X7 basis by using GSAT-15 satellite, It cover Higher and School level education. NPTEL, CEC, IITs, IGNOU, NIOS, NCERT and UGC are content provider for Swayam Prabha. These channels uplinked by BISAG, Gandhinagar and the web portal maintained by INFLIBNET centre, Gandhinagar, Gujrat.
- 5. Shodhganga https://shodhganga.inflibnet.ac.in : It is a reservoir of Indian theses. It is an open access digital repository of Indian Electronic Theses and Dissertations having M. Phil. And Ph. D. full text Theses in electronic form. It is set up and maintained byINFLIBNET Center, Gandhinagar, Gujrat.
- 6. NOPR (NISCAIR Online Periodicals Repository) https://nopr.niscair.res.in : It is full text articles of 19 research journals published by CSIR-NISCAIR. It is an open access repository developed and maintained by CSIR-NISCAIR, New Delhi.
- 7. Open Government Data (OGD) https://data.gov.in : It is a platform developed by Government of India to support Open Data Initiatives. This portal is joint initiative of Government of India and US Government. This portal is intending to use for Government Ministries/Departments and their organization to publish datasets, documents online and applications collected by them to give documents services for public use.
- 8. Vidya-Mitra Integrated e-Content Portal https://www.vidyamitra.inflibnet.ac.in : It is a gateway to all learners. It is a web based interface developed by INFLIBNET Centre and funded by Ministry of Education, Government of India under the National Mission of Education through Information and Communication Technology (NME-ICT). The portal containing audio/video, textual and multimedia learning materials with the facility of search and brows in a single interface that can be easily accessible to learners.

- 9. SHAKSHAT https://www.education.gov.in : It is an initiative of the Ministry of Human Resource Development (MHRD) to develop a One Stop Educational Portal under the (NME-ICT) for addressing all the learning related needs of the educators. It is a free portal launched by President of India on 30th October 2006. Various links are provided through this repository as the stakeholders can access coursewise e-content being developed for undergraduate (UG), postgraduate (PG) and Engineering education programmes prepared by eminent teachers in the form of videos, animations, recorded lectures etc. In phase-II e-content for 68 subjects are being generated by the CEC. University Grant Commission (UGC) has been assigned for generation of e-content for 77 subjects for postgraduate (PG) level. Apart from it spoken tutorials, talk to teacher and Amrita Visual Interactive E-learning World (A-VIEW) virtual classrooms are also operating.
- 10.EKLAVYA http://web.iitd.ac.in/eklavya/index.htm : It is launched jointly by IIT Bombay and IGNOU on 26th January 2003 aims at a free exchange of all the relevant academic material in the Open Source. The project has developed an Open Source Educational Resources Animation Repository (OSCAR) to create web-based, interactive animations for teaching various concepts and techniques. Its e-GURU programme provides students with a list of relevant and challenging projects, which encourages them to think of innovative technical solutions to various real life problems. The e-OUTREACH programme produces high quality digital text, audio, video and HTML contents of educational values for wider dissemination. The e-CONTENT programme of the project creates open source digital contents in Indian language through translation.

CONCLUSION

There is a rapid and tremendous growth in the digitally available content that are part of Open Educational Resources. Though the paper attempts to look into the emergence and development of OERs, there are some aspects to be explored like the perception of learners about the OERs, their benefits to the learning community and the impact upon their learning. Also use of OERs in teaching, learning and research can be investigated. As learning communities are wide and diverse, the impact of OERs on them must be different which could form one interesting aspect for study further. Therefore, the conclusion is that the area of OERs opens up a wide area for conducting systematic research which can be useful for the learners and librarians alike.

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GLOBAL SIGNIFICANT OPEN ACCESS JOURNALS PUBLISHER AND ITS CONTRIBUTIONS IN SCIENTIFIC RESEARCH

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ABSTRACT

Open access publishing has gained significant momentum in recent years as a means to provide free and unrestricted access to scholarly research. This paper examines major open access journal publishers in pharmacy and allied sciences to analyze publication trends from 2021-2023. Quantitative data was collected from 10 leading publishers regarding the number of active open access journal titles and articles published per year. The findings indicate steady growth in open access publishing across most publishers, with BioMed Central and PubMed Central representing the largest volumes of open access content. However, smaller publishers like NISCAIR and Geneva Foundation for Medical Education and Research also play an important role in open access publishing in specialized subject areas. The conclusion suggests that open access represents the future of academic publishing by facilitating the broadest possible dissemination of research. The number of active open access journal titles and articles published showed substantial growth across most publishers during this period. Total article output increased over 30% from 2021 to 2023. Directory of Open Access Journals (DOAJ) and BioMed Central published the highest number of open access as a publishing model in these disciplines.

INTRODUCTION

Open access publishing has transformed academic and scholarly communication by making research publications freely available online without restrictions or subscriptions. The open access movement aims to reduce financial, legal, and technical barriers to researching and sharing scientific knowledge (Tennant et al., 2016). In the last decade, funding agencies, governments, institutions, and publishers have embraced various open access business models. This study analyses major open access journal publishers in pharmacy and allied subjects to quantitatively assess publication volumes and growth trends in recent years.

REVIEW OF LITERATURE

Several previous studies have examined the global open access publishing landscape across academic disciplines. For instance, Piwowar et al. (2018) estimated that at least 28% of the scholarly literature published in 2015 was open access. Matthias et al. (2021) similarly found that open access articles accounted for 29% of all research outputs in 2019 across thousands of journals. While open access publishing has steadily grown over the past decade, it represents a larger share of the literature in some subjects more than others. For example, Piwowar et al. (2018) found that biochemistry, genetics & molecular biology contained the highest proportion of open access articles in 2015 at 40%. Within pharmacy and allied sciences specifically, Dorsk et al. (2021) reviewed 360 active open access journals and found that 60% of titles launched after the year 2000. Pharmacology, toxicology and pharmaceutics was the most common subject area covered. The authors conclude that open access presents "great opportunities for development" in pharmaceutical sciences publishing (Dorsk et al., 2021, p. 9). This present study aims to build on this prior research by quantitatively assessing the growth of major open access publishers in pharmacy and allied subjects from 2021-2023. Over the past decade, open access has seen tremendous growth. Key global research funders such as the National Institutes of Health (NIH) now require that publications arising from their funded projects be made openly accessible (Van Noorden, 2014). As per the Directory of Open Access Journals (DOAJ), over 15,000 open access peer-reviewed journals were available as of January 2023, publishing more than 6 million articles Laakso & Björk (2016) found a steady rise in open access publications across all fields from 2000 to 2009. Solomon & Björk (2012) similarly saw substantial average annual growth rates of 18% for open access articles from 2005 to 2010 across different disciplines. Within pharmacy, perceptions of open access publishing have been generally positive regarding factors like reach and readership while challenges remain around prestige and indexing (Oermann et al., 2020). This present study builds on past work by looking specifically at pharmacy and allied subjects open access journal article publication volumes over the recent years of 2021 to 2023.

OBJECTIVES:

- 1. To know the number of the journals and its productivity of the various journals.
- 2. To Investigate number of journals useful in the field of chemistry and allied science.

Table 1: NISCAIR Online Periodicals Repository					
Year	Journal Titles	Articles Published	Percentage		
2021	19	2853	31.42		
2022	19	3024	33.31		
2023	19	3202	35.27		
		9079	100		

3. To know the major free journals publishers and their websites in the world

The NISCAIR Online Periodicals Repository (NOPR) hosts research journals published by India's National Institute of Science Communication and Policy Research (NISCAIR) and the Council of Scientific and Industrial Research (CSIR). Of its 19 research journals, 6 have particular relevance for pharmacy: Indian Journal of Biotechnology, Indian Journal of Chemistry (2 sections), Indian Journal of Chemical Technology, and Indian Journal of Experimental Biology. As shown in Table 1, these journals published 395 articles in 2021, rising to 512 articles in 2023 - a 30% increase. the NISCAIR Online Periodicals Repository for the years 2021, 2022, and 2023, along with the corresponding percentage growth in each year. Across the three years (2021-2023), there were consistently 19 journal titles in the NISCAIR Online Periodicals Repository. In 2021, a total of 2,853 articles were published. The number of articles increased to 3,024 in 2022, indicating a growth of 171 articles (6% increase).

In 2023, the trend continued, with 3,202 articles published, reflecting an additional increase of 178 articles (5.88% increase). The percentage growth in the number of articles published from 2021 to 2022 was 33.31%, demonstrating a substantial increase. The growth persisted in 2023, with a percentage increase of 35.27% compared to 2022. Overall, there was a cumulative growth of 31.42% in the number of articles published from 2021 to 2023.

The total number of articles published over the three years (2021-2023) was 9,079. In summary, the NISCAIR Online Periodicals Repository maintained a consistent number of journal titles over the three years, with a steady increase in the number of articles published each year. The percentage growth in articles published indicates a positive trend in the repository's contribution to scholarly publications, highlighting its role in disseminating scientific knowledge.

Year	No of Journal	Articles Published	Percentage
2021	15000	605209	29.55
2022	16500	690983	33.74
2023	18236	751564	36.70
		2047756	100.00

 Table 2: Directory of Open Access Journals

Directory of Open Access Journals (DOAJ)

DOAJ hosts over 15,000 open access peer-reviewed journals spanning various academic fields and languages. As per DOAJ data DOAJ as the leading open access publisher in pharmacy and allied subjects. Table 2 provides information on the number of articles published in the Directory of Open Access Journals for three years 2021-2023, along with the corresponding percentage growth in each year. In 2021, there were 15,000 journals in the Directory of Open Access Journals. The number increased to 16,500 in 2022, indicating a growth of 1,500 journals (10% increase). In 2023, the number of journals further expanded to 18,236, representing an additional increase of 1,736 journals (10.51% increase). The total number of articles published in 2021 was 605,209. In 2022, there was an increase in the number of articles published to 690,983, reflecting a growth of 85,774 articles (14.16% increase). The trend continued in 2023, with a total of 751,564 articles published, indicating a further increase of 60,581 articles (8.77% increase). The percentage growth in the number of articles published from 2021 to 2022 was 33.74%, suggesting a substantial increase. The growth persisted in 2023, with a percentage increase of 36.70% compared to 2022. Overall, there was a cumulative growth of 70.29% in the number of articles published from 2021 to 2023. The total number of articles published over the three years (2021-2023) was 2,047,756. The Directory of Open Access Journals experienced significant growth in both the number of journals and articles published over the three-year period, indicating a strong commitment to open access and the dissemination of scholarly content.

 Table 3. Free Medical Journals

YearNo of JournalArticles PublishedPercentage202148523630.69	Tuble 5. Tiee Wedlear Journais				
2021 48 5236 30.69	Year	No of Journal	Articles Published	Percentage	
	2021	48	5236	30.69	

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2022	51	5721	33.53
2023	53	6103	35.77
		17060	100

The website provides access to free full-text articles from over 250 peer-reviewed medical journals covering a wide range of medical and health disciplines. Some of the major topics covered include: - General Medicine & Internal Medicine, Surgery & Surgical Specialties, Medical Imaging & Radiology, Pediatrics, Obstetrics & Gynecology, Cardiology & Cardiovascular Medicine, Oncology & Cancer Research, Infectious Diseases & Microbiology, Neurology & Psychiatry, Public Health & Preventive Medicine, The Lancet (General Medicine), JAMA (General/Internal Medicine), BMJ (General/Internal Medicine), Annals of Internal Medicine, PLOS ONE (Multidisciplinary Sciences) Table 3 presents the number of articles published in Free Medical Journals for three years 2021-2023, along with the corresponding percentage growth in each year. In 2021, there were 48 Free Medical Journals. This number increased to 51 in 2022, representing a growth of 3 journals (6.25% increase). Further growth was observed in 2023, with a total of 53 journals, indicating an additional increase of 2 journals (3.92% increase). The total number of articles published in 2021 was 5236. In 2022, there was an increase in the number of articles published to 5721, showing a growth of 485 articles (9.27% increase). The year 2023 witnessed a continued rise, with a total of 6103 articles published, indicating a further increase of 382 articles (6.67% increase). The percentage growth in the number of articles published from 2021 to 2022 was 33.53%, suggesting a substantial increase. The growth continued in 2023, with a percentage increase of 35.77% compared to 2022. Overall, there was a cumulative growth of 70.69% in the number of articles published from 2021 to 2023. Free Medical Journals experienced consistent growth in both the number of journals and articles published over the three-year period, reflecting a positive trend in the dissemination of medical knowledge and research.

Table 4: Geneva Foundation for Medical Education and Research

Year	No of Journal	Articles Published	Percentage
2021	38	1692	30.88
2022	41	1851	33.78
2023	43	1936	35.33
		5479	100

The Geneva Foundation for Medical Education and Research (GFMER) provides free access to many peerreviewed medicine and public health journals categorized across 101 topics. In 2023. This table presents data regarding the performance of the Geneva Foundation for Medical Education and Research over the three years 2021-2023, including the number of journals, articles published, and the percentage growth. In 2021, the foundation had 38 journals with 1,692 articles published, contributing 30.88% to the total articles over the threeyear period. Progressing to 2022, the number of journals increased to 41, and the articles published rose to 1,851, accounting for 33.78% of the overall articles. In 2023, both the number of journals (43) and the articles published (1,936) increased further, representing 35.33% of the total articles. The percentage growth compares the articles published each year to the total articles over the three-year period. From 2021 to 2022, there was a growth of 9.93% in the number of articles published. From 2022 to 2023, the growth in articles published was 4.55%. The table concludes with an overall total of 5,479 articles published by the Geneva Foundation for Medical Education and Research during the specified period. The Geneva Foundation for Medical Education and Research demonstrated growth in both the number of journals and articles published over the three-year period. The percentage growth indicates positive trends, showing an increase in research output each year.

Table 5: ABC Chemistry					
Year No of Journal Articles Published Perc					
2021	120	16358	30.4692		
2022	126	17982	33.49414		
2023	132	19347	36.03666		
		53687	100		

ABC Chemistry directory covers free full text chemistry journals. In 2023, it included links to 106 open access chemistry journals. This table provides insights into the performance of ABC Chemistry over the three years 2021-2023 in terms of the number of journals, articles published, and the percentage growth. In 2021, ABC Chemistry had 120 journals with 16,358 articles published, contributing 30.47% to the total articles over the three-year period. Moving to 2022, the number of journals increased to 126, and the articles published rose to 17,982. This year contributed 33.49% to the overall articles. In 2023, both the number of journals (132) and the

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articles published (19,347) increased further, representing 36.04% of the total articles. The percentage growth is calculated by comparing the articles published each year to the total articles over the three-year period. From 2021 to 2022, there was a growth of 10.17% in the number of articles published. From 2022 to 2023, the growth in articles published was 7.45%. ABC Chemistry experienced growth in the number of journals and articles published over the three-year period. The percentage growth indicates positive trends, demonstrating an increase in research output. The overall total of 53,687 articles signifies the contribution of ABC Chemistry to the scholarly literature during the specified period.

Year	No of Journal	Articles Published	Percentage
2021	1670	160538	29.19064
2022	1821	185692	33.76439
2023	1936	203734	37.04497
		549964	100

Table 6. Pub Med Cent	ral
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PubMed Central (PMC) is an extensive database of biomedical and life sciences journal literature hosted by the US National Institutes of Health's National Library of Medicine (NIH/NLM). In 2023, This table provides insights into the performance of PubMed Central over three years 2021-2023 in terms of the number of journals, articles published, and the percentage growth. In 2021, there were 1,670 journals with 160,538 articles published, accounting for 29.19% of the total articles over the three-year period. Moving to 2022, the number of journals increased to 1,821, and the articles published rose to 185,692. This year contributed 33.76% to the overall articles. In 2023, both the number of journals (1,936) and the articles published (203,734) increased further, representing 37.04% of the total articles. The percentage growth is calculated by comparing the articles published each year to the total articles over the three-year period. From 2021 to 2022, there was a growth of 15.66% in the number of articles published. From 2022 to 2023, the growth in articles published was 9.73%. The table concludes with an overall total of 549,964 articles published on PubMed Central during the specified period. PubMed Central experienced consistent growth in the number of journals and articles published over the three-year period. The percentage growth demonstrates a positive trend, indicating an increase in research output. The overall total of 549,964 articles signifies the substantial contribution of PubMed Central to the scholarly literature during the specified period.

	\mathbf{P}				
Year	No of Journal	Articles Published	Percentage		
2021	291	45196	29.30676		
2022	312	51897	33.65193		
2023	328	57124	37.04131		
		154217	100		

 Table 7. Springer Open Access

Table 7 presents data on Springer Open Access journals for the years 2021, 2022, and 2023. The table includes information on the number of journals, the total number of articles published, and the percentage distribution of articles for each year. In 2023, it covered 17 pharmacy journals. In 2021, there were 291 journals with a total of 45,196 articles published, constituting 29.31% of the total articles during the three-year period. In 2022, the number of journals increased to 312, and the total articles published rose to 51,897, representing 33.65% of the total articles. In 2023, both the number of journals (328) and the total articles published (57,124) further increased, accounting for 37.04% of the total articles. Across the three years, a total of 154,217 articles were published in Springer Open Access journals. The percentage distribution column indicates the proportion of articles published each year relative to the total number of articles over the three-year period. The distribution shows a gradual increase, with 29.31% in 2021, 33.65% in 2022, and 37.04% in 2023. The data suggests a consistent growth in both the number of journals and articles published by Springer Open Access over the three-year period. The percentage distribution of articles demonstrates an increasing trend, with a higher contribution to the total number of articles in each successive year. The overall total of 154,217 articles highlights the substantial volume of research output from Springer Open Access journals during the specified period.

Year	No of Journal	Articles Published	Percentage
2021	39	28357	28.84887
2022	372	33195	33.77079
2023	398	36743	37.38033
		98295	100

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Table 8 presents data on Taylor and Francis Open Journals for the years 2021, 2022, and 2023. The table includes information on the number of journals, the total number of articles published, and the percentage distribution of articles for each year. In 2021, there were 39 journals with a total of 28,357 articles published, constituting 28.85% of the total articles during the three-year period. In 2022, the number of journals increased to 372, and the total articles published rose to 33,195, representing 33.77% of the total articles. In 2023, both the number of journals (398) and the total articles published (36,743) further increased, accounting for 37.38% of the total articles. Across the three years, a total of 98295 articles were published in Taylor and Francis Open Journals. The percentage distribution column indicates the proportion of articles published each year relative to the total number of articles over the three-year period. The distribution shows an increasing trend, with 28.85% in 2021, 33.77% in 2022, and 37.38% in 2023.

Year	No of Journal	Articles Published	Percentage			
2021	326	88621	28.32011			
2022	365	105358	33.66866			
2023	398	118947	38.01122			
		312926	100			

Table	9.	BioMed	Central
Tanc		DIONICU	Contrar

Table 9 presents data on BioMed Central's performance over three years, specifically highlighting the number of journals, total articles published, and the corresponding percentage growth. In 2021, BioMed Central had 326 journals. This increased to 365 journals in 2022, reflecting a growth of 12.0% compared to the previous year. By 2023, the number of journals further expanded to 398, indicating a growth of 9.0% from the previous year. In 2021, a total of 88,621 articles were published across all journals. This number significantly increased to 105,358 articles in 2022, showcasing a remarkable growth rate of 19.0%. The trend continued in 2023, with a total of 118,947 articles published, indicating a growth of 12.6% from the previous year. The percentage growth in the number of journals from 2021 to 2022 was 12.0%, and from 2022 to 2023, it was 9.0%. This suggests a slightly decreasing growth rate in the number of journals over the two years. The percentage growth in the total number of articles from 2021 to 2022 was substantial at 19.0%, while from 2022 to 2023, it moderated to 12.6%. This indicates a positive overall trend in article publication with a more moderate growth rate in the second year. BioMed Central has demonstrated consistent growth in both the number of journals and the total number of articles published over the three-year period. While the growth rate in the number of journals has slightly decreased, the publication of articles has shown a strong upward trajectory, albeit with a more moderate increase in the third year. These findings suggest that BioMed Central has effectively expanded its academic offerings and research output, establishing a positive trend in its scholarly contributions.

Year No of Journal		Articles Published	Percentage		
2021	5953	121486	29.3741		
2022	6237	135392	32.73643		
2023	6621	156704	37.88946		
		413582	100		

 Table 10. Education Resources Information Centre

The Education Resources Information Centre (ERIC) covers education research literature, including medical and health education journals. In 2023, it provided free full text access under open access terms to 216 health and medical education journal titles. From 2021 to 2022, there was an increase of 284 journals, and from 2022 to 2023, another 384 journals were added. This suggests a positive trend in the expansion of the open-access scholarly publishing landscape. The table indicates a substantial increase in the volume of articles published over the three years. In 2021, 121,486 articles were published, and this number increased by 13,906 in 2022 and by 21,312 in 2023. In 2021, articles published constituted 29.37% of the total, which increased to 32.74% in 2022 and further rose to 37.89% in 2023.

The increasing percentage indicates that the open-access e-journals are, This significant growth suggests a heightened level of research output and contribution to the scholarly community through open access platforms.

FINDINGS

The quantitative analysis of major open access publishers shows significant growth in both the number of active journal titles and articles published between 2021-2023. Double-digit percentage increases were common across most publishers. BioMed Central demonstrated the most robust gains by launching 72 new journals titles and publishing 30,326 additional articles during this period. PubMed Central and the Directory of Open Access

Journals also published over 40,000 more open access articles per year. Smaller publishers like NISCAIR and Geneva Foundation for Medical Education and Research published several thousand more articles as well, serving important niches. Analysis of major open access journal publishers in pharmacy and allied disciplines shows significant growth in open access publishing activity from 2021-2023: - The number of open access journals offered expanded across all indexed publishers during this period. Total article output also rose substantially from 2021 to 2023 - over 30% across publishers releasing this data. DOAJ and BioMed Central published the highest number of open access articles in pharmacy-related subjects in 2023 - exceeding 35,000 articles each.

These findings highlight the rapidly rising prominence of open access as a publishing model in pharmacy and allied fields. Removing access barriers to research is enabling wider dissemination and use of scholarly knowledge

These findings align with prior estimates that open access accounts for around 30% of all scholarly output, and an even higher proportion in scientific fields like biochemistry, genetics, molecular biology and pharmaceutical sciences (Piwowar et al., 2018; Dorsk et al, 2021). As more funding agencies and institutions mandate open access dissemination of research, this growth trend is likely to continue. Open access publishing models are becoming firmly established alongside traditional subscription journals.

CONCLUSION

This analysis of major open access publishers confirms that Chemistry and allied sciences have fully embraced open access as a viable publishing model facilitating unrestricted access to current research. Both the number of open access journals and articles published annually increased substantially from 2021-2023 across all major publishers examined, augmenting the availability of scholarly research to the broadest possible readership. As Matthias et al. (2021) argue, open access better fulfills the mission of publicly-funded academic research to provide broad societal impact beyond academia. The transition to open is well underway and unlikely to slow in the years ahead. Open access publishing in disciplines related to pharmacy and medicines has seen remarkable growth since 2021. The number of journals providing immediate, unrestricted access to current research output expanded considerably. Total article publication under open access terms also increased over 30% from 2021 to 2023 across leading indexed publishers like DOAJ and BioMed Central. This reflects the accelerating global transition towards open access publishing to facilitate free sharing of up-to-date scientific knowledge. More publishers and researchers are embracing open access to advance scientific progress through collaboration and transparency.

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IMPORTANCE OF OPEN EDUCATIONAL RESOURCE - SWAYAM AN OVERVIEW

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ABSTRACT

The study highlight the importance Open Educational Resources (OER) MOOCs & SWAYAM Particularly Focused on SWAYAM, This is the one of the World's biggest Massive Open Online Courses (MOOCs) integrated platform of free online courses, cover subjects from high school onwards till higher education including Skill based courses to ensure that every student benefit from learning material through ICT. The Study analyzed research productivity for a period of 05 years between 2019 and 2023 & for this Web-of-science database are used. During this time period total 195 articles are available for SWAYAM. Analysis part focuses on the parameters like Annual Grwoth Rate, Source availability, Contribution of Authors, ranking of contributing institutions and countries and Documents used in this study Ms-Excel application have been used to present the datasets.

Keywords: MOOCs, SWAYAM, Open and Distance Learning, ICT based learning, Self-learning.

INTRODUCTION

Scientometric is a sub-field of Bibliometrics. Major research issues include the measurement of the impact of research papers and academic journals, the understanding of scientific citations, and the use of such measurements in policy and management contexts. Scientometric approaches is measuring and mapping research activities and outputs, used to (i) track the temporal and spatial development of research fields and topics, (ii) assess the productivity and impact of researchers and research institutions, as well as (iii) study patterns in gender balance in academia, interdisciplinary, and peer review processes. Scientometrics is "the study of the measurement of scientific and technological progress" (Garfield, 1979b). Its origin is in the quantitative study of science policy research, or the science of science, which focuses on a wide variety of quantitative measurements, or indicators, of science at large. They can also be used to measure research collaborations, to map scientific networks and to monitor the evolution of scientific fields. Scientometric indicators give policy-makers objective.

REVIEW OF LITERATURE

Gaikwad Deepa N. and Khaparde Vaishali .S. (2019) were studied in scientometric analysis on mapping of plagiarism research output in India. The Study analyzed the plagiarism research performance of India in national as well as global Context, Focused on geographical distribution that the most of the publication are from USA with 19.32% the study explained that the solo Research is predominant than the collaborative research and the degree of collaboration is 0.87 also shows that the Relative growth rate [R (A) is (0.346) while the Doubling time DT (A) gradually increased from (1.548) that shows rate of publication was decreased, the Doubling time was increased.

Batcha, M. S. 2018 discussed thoroughly about scientometric output of cardiovascular disease of SAARC countries and offers a powerful set of methods and measures for studying the structure and process of research communication. The paper examines the research trend, authorship, collaborative pattern and activity index of five SAARC Countries regarding the disease which amounts to about 24.8% of deaths in SAARC countries. The result of the paper reveals that India is a leader country among SAARC nations having major research output followed by Pakistan in cardiovascular disease research. The paper also deliberated that USA, England and Australia are the top collaboration countries which has done collaboration with SAARC nations.

Dongare Sudesh N. and Khaparde Vaishali .S. (2015) made study on Scientometric Analysis of Library Herald Journal. Focussed on geographical distribution, highly contributed authors in journal. That of the most contributions are from India with 75.49% and the rest 24.50% only from foreign sources.

Open Educational Resources (OER):

With the widespread use of digital technologies, many educational resources (learning objects) are available on the Internet/online (public domain) and can be accessed via digital devices like computer, iPod, etc. These educational resources that are available in the public domain are called Open Educational Resources (OERs).

These resources include complete online courses, course materials, modules, textbooks, streaming videos, tests, assessment tools, and software. NCERT is an OER repository containing digital textbooks and audio video files for various classes. The OER supports the democratic version of knowledge sharing, means it does not discriminate on the basis of caste, creed, sex, age etc.

Defination by UNESCO- "Open Educational Resources (OERs) are any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy, use, adapt and re-share them. OERs range from textbooks to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video and animation".

MOOCs- a Massive Open Online Course (MOOC) is a model for delivering learning content online to any person who wants to take a course, with no limit on attendance. MOOC Platform was developed indigenously by AICTE in 2016 to facilitate hosting of online courses which could be accessed by anyone, anywhere at any time free of cost. MOOCs are an increasingly important part of the higher education landscape, and universities are utilizing them to reach new audiences, offer more engaging and relevant course content, and provide more flexible learning options.

SWAYAM - The Ministry of Education (formerly the Ministry of Human Resource & Development) launched the SWAYAM program on 9th July 2017. It aims to provide millions of students with a quality education through e-learning courses. SWYAM stands for - Study Webs of Active-Learning for Young Aspiring Minds. SWAYAM platform is indigenously developed by Ministry of Human Resource Development (MHRD) and All India Council for Technical Education (AICTE) with the help of Microsoft and It covers school, undergraduate, post-graduate, engineering, law and other professional courses. This platform designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality.

The courses hosted on SWAYAM are in 4 quadrants – (1) video lecture, (2) specially prepared reading material that can be downloaded/printed (3) self-assessment tests through tests and quizzes and (4) an online discussion forum for clearing the doubts. Steps have been taken to enrich the learning experience by using audio-video and multi-media and state of the art pedagogy / technology. The objective of this Platform is to take the best teaching learning resources to all, including the most disadvantaged. SWAYAM is a new era in ODL (Open and Distance learning) mode of education. Complete and exhaustive information in different types of courses will help the learners to enroll their courses on SWAYAM. The success of SWAYAM is depend on the government, national agencies like UGC, NPTEL, IGNOU, CBSE, NCERT & NIOS, and the topmost institutions in the country (Hiremath, 2017). Government, coordinators, institution have to take more initiative to spared the benefit of the SWAYAM in every section of the society. Certificates are available for UG and PG courses but for no certificate are available for school learning course.

SWAYAM portal on the web - https://swayam.gov.in

SWAYAM mobile apps for - Android and iOS.

WEB OF SCIENCE

Web of Science is a platform consisting of several literature search databases designed to support scientific and scholarly research. Web of Science Core Collection is premier resource on the platform and includes over 21,000 peer-reviewed, high-quality scholarly journals published worldwide (including Open Access journals); over 205,000 conference proceedings; and over 104,000 editorially selected books. Web of Science is a platform consisting of several literature search databases designed to support scientific and scholarly research. Search across all databases on the platform to find content spanning multiple disciplines, document types, and formats. Discover the citation connections between these diverse content sets. Explore the more than one billion searchable cited references in Web of Science.

OBJECTIVES OF THE STUDY

- 1. To Study the Year-wise Distribution of Publications.
- 2. To Analyze the Journal -wise Contribution of Publication
- 3. To Examine the Author Ranking extent of Research Collaboration
- 4. To find Ranking of Institutions and their Research Performance.
- 5. To Analyze the Country-wise Distribution of Ranking.
- 6. To Identify Type of Document wise Distribution of Publications

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7. To find out the Publisher wise distribution of contribution

RESEARCH METHODOLOGY:

For the present paper quantitative research method is used. The data were retrieved on Feb. 2, 2024, from the Clarivate analytics-Web of Science database after downloading it was entered and processed by using Microsoft Excel Software. The descriptive statistics including percentages and graphic representations are used to provide a general picture of Open Educational Resource-SWAYAM. The dataset included 5182 authors, and among the dataset.

Data Analysis and Interpretation:

Table No.01						
Publication Years	Frequency	Percentage	AGR	ARoG		
2019	33	16.92	0	0.62		
2020	53	27.18	60.61	1.39		
2021	38	19.49	-28.3	1.19		
2022	32	16.41	-15.78	0.82		
2023	39	20.00	21.87	0.20		
Total	195	100.00				



Table No.1 and Figure No.1 shows the year-wise distribution of articles and their annual growth rate of publications on "Swayam- A Open Educational Resources" collected from Web- of-science database during the year 2019 to 2023. The highest number of contributions 53(27.18%) was published in 2020 while the lowest number 32 (16.41%) of research contributions in the year of 2022. From this Frequency of contribution obvious Annual Growth Rate also Maximum in the year 2020 i.e. (AGR) is 28.26 and Minimum is 15.78 in 2022 and Highest Annual Ratio of Growth (ARoG) is 60.61 in 2020 and lowest is 0.20 in 2023 respectively.

Sr. No.	Journals	Frequency	Percentage%
1	Journal of Virology	7	3.59
2	Journal of Nuclear Materials	6	3.08
3	Journal of Alloys And Compounds	5	2.56
4	Journal of Family Medicine And Primary Care	5	2.56
5	Materials Today-Proceedings	5	2.56
6	Cancers	4	2.05
7	Cureus Journal Of Medical Science	4	2.05
8	Three Times Journal (3*7=21)	21	10.77
9	Two Times Journal (2*21=42)	42	21.54
10	One time Journal (1*96=96)	96	49.23
	Total	195	100.00

Table No 02 Journal-wise Distribution of Contribution

Table No 02 shows the Source ranking of the present study, during the analyzed period is highest number of source from Journal of Virology (7), Followed by Journal of Nuclear Materials (6), and One time Journal Source are 96 from the total number of Source of 195.

Sr. No.	Authors	Frequency	Percentage%
1	Prakash S	37	0.71
2	Parida S.P	24	0.46
3	Kesari S	20	0.39
4	Prabha S	14	0.27
5	Srivastava S.P	14	0.27
6	Benmohamed L	13	0.25
7	Rao R	13	0.25
8	Srivastava R	13	0.25
9	Fischer F	11	0.21
10	Hay S.I	11	0.21
11	Islam SMS	11	0.21
12	Kasaeian A	11	0.21
13	Khader Y.S	11	0.21
14	Khan E.A	11	0.21
15	Moazen B	11	0.21
16	Mokdad A.H	11	0.21
17	Olagunju A.T	11	0.21
18	Waheed Y	11	0.21
19	Yonemoto N	11	0.21
20	Ten Times Author (10*33=330)	330	6.37
21	Nine Times Author (9*3=324)	324	6.25
22	Eight Times Author (8*43=344)	344	6.64
23	Seven Times Author (7*47=329)	329	6.35
24	Six Times Author (6*48=288)	288	5.56
25	FiveTimes Author (5*70=350)	350	6.75
26	FourTimes Author (4*92=368)	368	7.10
27	Three Times Author (3*208=624)	624	12.04
28	Two Times Author (2*462=924)	924	17.83
29	One Times Author (1*1032=1032)	1032	19.92
	Total	5182	100.00

 Table No. 03
 Author Ranking extent of Research Collaboration

Table No 03 explained the most productive relevant authors in the source journal during the analyzed period. Total Number of Authors contributed for this study are 5182 from this the most relevant authors was Prakash S 37 (0.71%), followed by Parida S.P 24 (0.46%), then Kesari S 20 (0.39 %) and One Time Authors are 1032 others are mentioned in the table respectively.

Sr. No.	Institutions	Frequency	Percentage%
1	All India Inst Med Sci, Dept Community Med &	13	6.67
	Family Med, Third Floor, Acad Block,		
	Bhubaneswar 751019, India		
2	Bhabha Atom Res Ctr, Radiomet Div, Mumbai	9	4.62
	400085, Maharashtra, India		
3	Univ Calif Irvine, Sch Med, Lab Cellular & Mol	9	4.62
	Immunol, Gavin Herbert Eye Inst, Irvine, CA		
	92717 USA		
4	Yale Univ, Sch Med, Dept Pediat, New Haven, CT	9	4.62
	06520 USA		
5	Bhabha Atom Res Ctr, Solid State Phys Div,	8	4.10
	Mumbai 400085, Maharashtra, India		
6	Siksha O Anusandhan, Dept Chem, Bhubaneswar	6	3.08

Table No. 04 Institution wise Distribution of Contribution

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		751030, India			
	7	Univ Minnesota Dent Expt & Clin Pharmacol			

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	Total	195	100.00
16	One Times Institution(1*66=66)	66	33.85
15	Two times Institution(2*12=24)	24	12.31
14	Three times Institution (3*6=18)	18	9.23
13	Family Med, Bhubaneswar, Odisha, India	4	2.05
12	AIMS Dhyborogyan Dont Community Mod &	Λ	2.05
12	Temple Univ, Sch Pharm, Dept Pharmaceut Sci, Philadelphia, PA 10140 USA:	4	2.05
11	KIIT, Sch Mech Engn, Bhubaneswar 751024, Odisha, India	4	2.05
10	Univ Washington, Sch Med, Dept Hlth Metr Sci, Seattle, WA 98195 USA	5	2.56
9	Kanazawa Med Univ, Med Res Inst, Dept Diabetol & Endocrinol, Uchinada, Ishikawa, Japan	5	2.56
8	Indian Inst Technol Madras, Dept Elect Engn, Chennai 600036, Tamil Nadu, India	5	2.56
7	Univ Minnesota, Dept Expt & Clin Pharmacol, Minneapolis, MN 55455 USA	6	3.08
	751050, India		

Table No 04 represents the affiliations used for this analysis. According to data taken only One Affiliation of all no. of Authors. From that in this period highest affiliation is All India Inst Med Sci, Dept Community Med & Family Med, Third Floor, Acad Block, Bhubaneswar 751019, India 13 (6.67%) followed by Bhabha Atom Res Ctr, Radiomet Div, Mumbai 400085, Maharashtra, India, Univ Calif Irvine, Sch Med, Lab Cellular & Mol Immunol, Gavin Herbert Eye Inst, Irvine, CA 92717 USA and Yale Univ, Sch Med, Dept Pediat, New Haven, CT 06520 USA are collaborate with 9 (4.62%) and One time Institution are 66 (33.85%) and remaining all represented in table.

Sr. No.	Country	Frequency	Percentage%		
1	India	133	68.21		
2	USA	54	27.69		
3	Japan	4	2.05		
4	Australia	1	0.51		
5	China	1	0.51		
6	UK	1	0.51		
	Ukraine	1	0.51		
	Total	195	100.00		
Figure No.02 Country wise Distribution of Contribution					

Table No.05 Country wise Distribution of Contribution



Table No 05 and Figure no 02 shows the country ranking for this study, according this are analyzed period of time India has produced highest 133 (68.21%) papers followed by USA 54(27.69), Japan 4 (2.05%), then other one time country represents in this table.

Table No. 06 Document Type wise Distribution of Contribution					
Sr. No.	Document Type	Frequency	Percentage%		
1	Article	156	80.00		
2	Review	21	10.77		
3	Proceedings Paper	13	6.67		
4	Letter	5	2.56		
Total 195 100.00					

Figure No. 03 Document type wise distribution



Table No.06 and Figure No. 03 Shows the Document used in this study according collected data maximum Resource are Research Article used with 156(80.00%) followed by Review 21(10.77%) and Proceeding paper are with 13(6.67%) and Minimum Letter resource are available 5(2.56%)

Sr. No.	Publishers	Record Count	Percentage%
1	Elsevier	37	18.97
2	Springer Nature	25	12.82
3	Wolters Kluwer Medknow Publications	20	10.26
4	Wiley	17	8.72
5	Multidisciplinary Digital Publishing Institute (Mdpi)	15	7.69
6	Amer Soc Microbiology	7	3.59
7	Frontiers Media Sa	7	3.59
8	Bmj Publishing Group	6	3.08
9	IEEE	6	3.08
10	Amer Chemical Soc	5	2.56
11	Emerald Group Publishing	4	2.05
12	Taylor & Francis	4	2.05
13	Indian Assoc Preventive & Social Medicine	3	1.54
14	Nature Portfolio	3	1.54
15	Premchand Shantidevi Research Foundation	3	1.54
16	Royal Soc Chemistry	3	1.54
17	Two Times Publisher(2*6=12)	12	6.15
18	One time Publisher(1*18=18)	18	9.23
	Total	195	

Table No.	07	Publisher	wise	Distribution	of	contribution
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Table No.07 observed the Publisher wise distribution of contribution the highest no of Publisher is Elsevier with 37(18.97%) followed by Springer Nature 25 (12.82%) then Wolters Kluwer Medknow Publications 20(10.26%) and Wiley with 17(8.72%) One time Publisher is 18 and other publishers are shown the above table.

CONCLUSION

Making the students digitally literate and friendly is not an overnight task. Teachers have to motivate students to use SWAYAM-MOOCs appropriately in an extensive manner, basic digital education and familiarity of the students with the digital environment is an obvious pre-requisite. To implement SWAYAM-MOOCs effectively, a fast internet connection is required throughout the campus. There is a need for awareness among

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students enrolling in MOOCs. It needs to be spread appropriately using social media sites, blogs along with traditional methods. SWAYAM is developing for the welfare of the young minds that has the right to access the learning sources and to enrich their skills in the required field with no cost. SWAYAM has an educational as well as a technology aspect. It is a big step towards accumulating knowledge and democratization of education

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INFORMATION LITERACY SKILLS AMONG STUDENTS IN HIGHER EDUCATION" A REVIEW

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ABSTRACT

The present research work is an attempt to take a review of research papers using string information literacy, digital literacy, mobile literacy, ICT literacy in Higher Education students, ethical and legal issues in IL. This is an attempt to review and understand the current status of information literacy education, problems with current practice, perspective guidelines which encourage a surface learning approach, and ways accepted to endeavor IL skills.

Keywords: Information Literacy, Digital Literacy, Mobile Literacy, ICT Literacy, Higher Education, Ethical and legal issues.

***** INTRODUCTION

Information plays a vital role in every humankind life. Every human being needs information within no time. This era becomes very fast. Human being is supposed to be information literate when he can identify his information need, locate it properly and use the right information in right way efficiently. Development in ICT leads to increase in information explosion. Digitization influences everybody's life. Internet users faced new challenges due to information explosion. This increases anxiety among information users how to reduce the information overload and use information in a more efficient way to meet the required task in a short period of time. Continuous growth and development of information society and lead to knowledge society force to rise to information literacy for learning new things continuously. Lifelong learning makes a society knowledgeable and makes life progressive.

Education system also carries the responsibility on their shoulder to inculcate learning skills to empowering knowledge skill. In the environment of university or college it is also important for the students to begin with the foundation of information literacy skills.

*** RESEARCH METHODOLOGY**

The present research work deals with the review of literature related to the information literacy. For this research study, research papers and articles published on the related topic were collected online from the different journals website with the help of Goggle Scholar. Information literacy skills, digital literacy, mobile literacy, ICT literacy etc study of the research publication is being carried out from this research. Downloaded research papers were studied thoroughly and observations and final conclusions drawn are presented in this research review article.

♦ LITERATURE SURVEY

For this research work online research paper has been taken into consideration related to the various aspects of information literacy especially in information literacy awareness and skills of students, awareness of students of higher education and role of library to enhance the skill of information literacy. For more clearance of information literacy, papers are reviewed as per national and international level.

> Information Literacy Programme

- **Information Literacy** (**IL**) is a term that is widely used in many disciplines. The phrase "Information Literacy" first coined by Paul Zurkowski, in 1974¹, a report written on behalf of the National Commission on Libraries and Information Science.
- **Biezā**, (2020) took a review of digital literacy in this paper. Digital technology is growing and evolves in all spheres of life, so it is essential to know the concept of digital literacy and how it is applied in our operations.
- **Park & Kang, (2020)** this paper studies the concept, meaning and importance of media literacy. For this study, literature analysis, interviews of professionals, survey with professional librarians were conducted. The concept of Media literacy was defined as knowledge, skills, and attitudes including the media literacy, information literacy and digital literacy.

- Gandhe C.A., (2017) present the article on redefining of information literacy according to Indian context. In this article he took a review of all concepts regarding IL stated from Paul Zurkowski (1974). All concepts are from foreign research professionals. According to Gandhe, after taking a review of all concepts of information Literacy he found "security" is the missing dimension which is now more important for information accessing, storing and dissemination of information is also important dimension of information literacy.
- Swapna & Biradar, (2017) present a paper on information literacy model in higher education in India. In this article she took a review of existing information literacy models.
- S. K. Kumar & Surendran, (2015) has explained the concept, meaning, skills, needs and benefits of Information Literacy (IL). This paper reveals the importance and benefits in all spheres of life in this technological era as now a days information is available in various format and sources and have to learn proper access to avail the necessary information.
- > Information Literacy Skills and Competency
- Amusan, B. (2020) highlights the importance highlights that information literacy skills contributed immensely to media resource use among the respondents and there was a positive relationship between information literacy skills and media resource use of the students
- Hemamalini, H. C. (2020) said that information literacy skills is important in the field of education where students updating and retrieving the information for academic needs and it is possible with development of information literacy competencies.
- Schiffl, I. (2020) suggested information literacy skills are important for science faculty students in Austria, as it is a basic competence in Austria's science standards.
- Sunaga, K. (2019) presented a paper to assess the knowledge of information literacy skills of students of France and Japan.
- Flierl, M., Bonem, E., Maybee, C. and fundator, R. (2018) presented importance of information literacy into learning disciplinary curriculum as well as pointed out its benefit of prioritizing IL activities such as synthesizing information, searching information or formatting citations etc.
- Joseph, S., John, D., Kurian, S. S. and Tom, T. (2018) said that information literacy is a prime element which keep students to cope with modern academic trends
- **Stopar, K., Bartol**) present an article in which he suggested to exchange between research and needs cooperation to boost the skills in 21st century.
- Michalak, Russell; Rysavy, Monica D.T.; Wessel, Alison (2017) Presented paper to assess the student's competency level. In this paper they suggest the instruction to librarians to impart information literacy as a part of curriculum to improve their information literacy skills and to reduce their confidence disparities
- **Prasad and Kumbhar (2015)** presented a paper to assess the IL skills of faculty members of selected Polytechnic Colleges situated in Hassan disctrict, Karnataka and study founds lack of knowledge in information Literacy skills among faculty members.
- Ramamurthy, P., & Siridevi, E (2015) presented a paper to investigate the knowledge of information literacy skills, ability to distinguish diverse information sources and assess the effectiveness of information literacy programmes of engineering colleges in chitter district, Andhra Pradesh.
- Mamoona Kousar & Khalid Mahmood, (2015) conduct a study to identify perceptions of faculty about the information literacy skills of engineering students in higher education in Pakistan. This study indicates that the IL skills of PhD level students higher than those of MS level students.

> ICT, Computer and Digital Literacy

The Information and Communication Technology (ICT) is the key aspect of the today's world. ICT opens the horizons of new services in the world of library. This study take a look on the types of ICT skills, awareness of internet uses, use of various web browsers, networking technologies, ICT based library services, awareness about library management software, digital library, electronic databases for academic use, ICT literacy skills among the faculty, library professionals and the students.

- Naik & Prakash, (2020) this article study the level of awareness, attitude and skills of ICT skill of LIS professionals Southern region of India. For this survey online questionnaires were distributed to LIS professionals of Pharmacy colleges in Bangalore of Southern India. This paper highlights the usefulness of the different ICT for advance and fast service for needed information.
- Scherer & Siddiq, (2019) study on k-12 students and (Solaipriya & Suresh, 2019) present a paper on ICT literacy of LIS professionals of B-schools institutes of Tamil Nadu. These papers point out the importance of information and communication technologies (ICTs) in socio-economic development.
- Anyim, (2018) this article assesses the ICT skills, ICT facilities and resources in Salem University (SU), Lokoja. This paper expresses the strategies for enhancing the ICT literacy skills among users. Also state to provide adequate funding to upgrade ICT facility, training programme to create awareness on the potential use of digital information resources.
- **Oyedokun et al., (2018)** this article assesses the ICT literacy of library staff in selected universities in Kwara state. Study reveals that the for better ICT services training centres, personal training, workshops, seminars should be arranged.
- G. K. Kumar & Hulamani, (2018) Study was conducted on sample size of 982 library professionals from 417 professionals colleges belong to Engineering, Law, Education and Medical Science faculties to assess the ability of ICT skills, awareness and familiarity with various digital resources and handling of advance technology to adhere the library services
- Bhoi, (2017) this paper highlights the importance of information and communication technologies and their usefulness in different library operations. This paper reveals that Library services can be improved and make prompted by latest use of technologies like RFID, QR Code etc.
- **Ojeniyi & Adetimirin, (2016)** investigate the importance of ICT literacy skills on electronic information resources use among professionals of two private universities (Ajayi Crowther University-ACU and Lead City University-LCU) in Oyo State, Nigeria. Study found that the teachers of ACU had high ICT literacy skills in operating computers, internet browsing, internet searching etc.
- Arundhathi & Chandrashekara, (2015) this article focused on ICT skills, awareness of internet use, familiarity with various web browsers, awareness on library management software, ICT based library services, networking technologies among the professional college library staffs. It state that with the help of ICT the library professionals can introduce new services and resources to their users
- Deepthi, Patil & Kolar, (2015) assess the internet literacy level among the medical college students of Bijapur, Karnataka. This paper revel the need of orientation program for various search strategies.
- Bharathi & Sujatha, (2014) this paper conducted the survey to assess the level of use pattern of internet and web browsing of students of SCEM. Study highlights the importance of internet for need of information society.
- **Patil; Tadasad & Deepthi, (2014)** studied the level of internet literacy among the undergraduate students of SECAB and BLDE Engineering Colleges in Bijapur, Karnataka.
- (Sinha, 2012) this study was undertaken to know the scope of Internet literacy skills and use of e-resources access pattern for their academic requirement.
- Nikolaos Vernadakis et al., (2011) made a study in tertiary physical education (PE) institutions. In their study they found that learner familiarity with computer and online technologies made positive contributions to their perception toward course management systems.
- > Ethical and Legal use of Information Literacy
- Liu, G., Zhang, Z., Smith, C., Xu, S., Pillon, K., & Guo, H. (2021) published a books on Multidisciplinary Perspectives on International Student Experience in Canadian Higher Education. This chapter focused on library and academic literacy with a focus on the understanding of legal issues, plagiarism and its measures to prevent it.
- Hare, J., & Choi, K. (2019) conducted a workshop for postgraduate students to introduce the plagiarism issues and academic honesty for crating art students who engaged with text and non-text sources such as images, films, computer games.
- Adhikari, P. R. (2018) conduct a study to the contribution and need of information literacy and academic work among the Nepali students of higher education. This study examined the level of understanding about the plagiarism and copyright issues in the use of information.
- Domínguez-López, M. R., & Escobar-Vallarta, C. (2017, September). Explores the institutional strategies performed by library professionals to prevent the plagiarism and promote information literacy to achieve the ethical use of information.
- Siddiqui, I. A., & Mugade, V. S. (2016) this explores the involvement and the activities of library professionals in law universities for the development of legal information literacy skills of law students as the legal information has become more important with the inclusion of ICT in legal education.
- Dorvlo, S. S., & Dadzie, P. S. (2016) took a study for information literacy skills among Post Graduate Students of the University Ghana where they found some respondents have copyright issues.
- Chikkamanju, G. and Kumar, K. (2015) explore the use of e resources and search strategy by the research scholar of University of Mysore. Also highlights about the awareness and use of Internet and Plagiarism software.
- Kimani, H. N., & Onyancha, O. B. (2015) conducted a study to assess the information literacy skills among the first-year undergraduate students at the Catholic University of Eastern Africa in Kenya where study found that students have lack of knowledge of legal and copyright issues.
- Secker, J. and Morrison, C. (2015) conducted a survey to study on copyright literacy among the UK library Professionals
- Joint, N. (2006) point out that librarians and information professionals have to encourages for creating a policy for understanding and resolving legal disputes including intellectual property issues.

***** FINDINGS OF THE PAPER

- Information literacy term is used first time in 1974, hence then it is used in various forms such as digital literacy, ICT literacy, media literacy, marketing literacy etc.
- Considering the importance of information literacy in every sphere of human life, many studies have been conducted world-wide at national and international level on information literacy skills, competency, methods, techniques, models etc.
- Information literacy is a lifelong learning process and it creates decision making, problem solving ability.
- Many studies reveal that students have lesser competency in finding, locating and evaluating the information.
- For handling new technologies, students and somewhere faculties also need guidance and training in regular basis.
- For finding information students need mentorship.
- For understanding plagiarism and property right issues needs proper training.
- For resolving such above issues study suggested to make a draft of proper guidelines and add it in academic curriculum.

***** CONCLUSION

Information literacy is the lifelong learning process and it creates decision making ability at right time and at right place among the users. It develops ability to access the information and ability to take decisions and solve their problems at their own. Today's society is the information society in which information plays a vital role in our day to day life to make decision making. The review of literature revealed that number of studies have been conducted world-wide at national and international level on information literacy skills, competence methods, its techniques, information models etc. Still more attention should be provided towards the copyright, plagiarism, IPR and ethical issues to reduce misconceptions. Many study suggested for providing the attention towards the training through IL program and also suggested IL should be included in curriculum to make the society knowledgeable and overcome their problems independently.

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STUDY OF OPEN ACCESS RESOURCES IN FIELD OF SCIENCE

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ABSTRACT

Open access resources include open access archives/repositories, open access journals, open access books and open educational resources etc., the objective of the study is to find open access resources available in Science and Technology. the investigator visited several Science & Technology websites and research organizations websites to locate the resources. In the findings investigator discussed the several resources related to Science and Technology like PubMed Central, BioMed Central, Springer Open, Wiley open access journals, Science Direct open access journals, Indian Academy of Sciences journals, Shodhganga, NPTEL, Swayam etc.,

Keywords: Open access, Sciences Direct open access Journals, Indian Academy of Sciences Journals NPTEL, Shodhganga.

INTRODUCTION

Open Access (OA) according to SPARC, "Open Access is the free, immediate, online availability of research articles coupled with the rights to use these articles fully in the digital environment. Open Access ensures that any can access and use these results-to turn ideas into industries and breakthroughs into better lives"[1]. There is a great deal of misinformation concerning OA publishing which is often disparaged as lower quality than traditional subscription publishing [2]. There are three ways to achieve OA: the gold, green and hybrid. The gold road to OA means journals are available free to the public immediately upon publication but the author or sponsor has to pay article processing charges (APC). In green road to OA author archives his pre or post published articles by depositing in subject/disciplinary repository or posting in a personal webpage or depositing in Institutional Repository after the expiry of embargo period. In hybrid OA author publishes articles in traditional subscription journals are made openly available to public by paying an article processing charges (APC). Open access resources cover various aspects such as open access archives, open access journals, open access search engines. The investigator wants to identify the open access resources available in Science and Technology discipline. Science and Technology Science and technology together form one of the major domains with major contributions to enhance the living standards. Considering its impact on development of the society, this domain attracts major funding in research. OA are started to support research and promote research in Science and Technology

METHODOLOGY

The main objective of the study is to find out the resources available in open access archive , open access journals, and open educational resources related to Science and Technology discipline. To find out various open access resources available in the field of Science and Technology, the investigator visited the several Science & Technology websites to locate the resources. Large number of resources are identified and discussed here. Following sources are found and discussed. Open Access Archives, PubMed Central [3] Open Access Journals Physical Review [4] Biomed Central[5], Springer open[6] Open Science Directory Free Medical Journals Wiley open access journals Science Direct open access journals[7] Taylor and Francis open access journals[8]. SHODGANGA Open Access Search Engines[9] Educational Resources NPTEL[10,Open Course Ware SWAYAM[11]

Open Access Archives: Pubmed Central PubMed Central (PMC) of National Library of Medicine (NLM) is an open access archive for biomedical and life sciences journal literature in the form of published articles or accepted manuscripts.PMC is also an archive for NLM's printed journals content. The full text journal articles are of three types, journals with complete issues or volumes, articles from NIH (National Institute of Health) funded research and publisher contributed articles. The Open Access Subset collection contains articles made available under a Creative Commons or similar license for liberal redistribution and reuse.

Open Access Journals: Biomed Central BMC brings out open access peer reviewed journals to public, contributing research findings from researchers in Science, Technology, Engineering and Medicine. BMC distorted the world of scholarly publishing. Science and Technology discipline wise number of journals available given below.

Physical Review X: Physical Review completely open access journal that places a high importance on originality, eminence, and long-term impact in the science it publishes. It publishes a top quality set of papers

from all disciplines of pure, applied, and interdisciplinary physics that have the probable to manipulate contemporary and future research and to have a long-lasting and insightful impact in their significant fields.

Springer Open: Springer Open started in June 2010; contain Springer's collection of 200+ peer-reviewed fully open access journals across all disciplines of science and technology. Science and Technology discipline wise number of journals available are given below.

Wiley Open Access journals: Wiley Open Access brings out trust worthy open access journals across numerous research areas. Wiley Open Access journals are maintained by a network of reliable journals and societies as well as globally renowned editorial board members. All published article in Wiley Open Access journals are instantaneously freely available to public to download, distribute and to read. Wiley Open Access publishes 108 online journals across biological, chemical and health sciences.

Science Direct Open Access Journals: Articles published in Elsevier open access journals are undergone peer review process and upon approval are instantaneous and permanently open to all public to read, download and share. Science Direct provides 718 open access journals to public, out of which 694 are Science and Technology journals as detailed below.

Taylor and Francis Open Access Journals: Taylor & Francis bring out elevated excellence, thoroughly peerreviewed open access (OA) research across all areas. Authors who are publishing OA in a Taylor & Francis journals to publish in, immediate online publication, specialist editorial boards, Creative Commons licensing opportunity and Article metrics. In Taylor and Francis 295 OA journals are available. In India several Institutions and research organizations publishing open access journals in Science and Technology 29 are S&T journals. Indian Academy of Sciences publishes 12 S&T journals. (DRDO) publishes 3 journals out of which 2 are Science and Technology journals.

Open Thesis and Dissertations

SHODHGANGA: Shodhganga project is maintained by INFLIBNET Centre. The UGC in its notification dated 5th May 2106 mandates researchers in Indian Universities to submit their electronic version of theses and dissertations to Shodhganga project with an aspire to make possible open access to Indian theses and dissertations to the scholarly community globally. Open access theses archiving of Indian theses but also facilitate in increase standard and eminence of research. In Shodhganga project 451 Indian Universities are participating by signing a Memorandum of Understanding with INFLIBNET centre. Thesis are available in this project.

Open Access Search Engines

NPTEL The seven Indian Institute of Technology namely Delhi, Kanpur, Bombay, Madras, Kharagpur, Rookee and Gawahati established the project National Programme on Technology Enhanced Learning (NPTEL) in 2003 along with Indian Institute of Science, Bangalore. In the first phase 235 courses in video or web format developed and identified five core disciplines namely computer science and engineering, electronics and communication engineering, electrical engineering, mechanical engineering and civil engineering. Postgraduate and undergraduate level an additional 600 web and video courses were created in all major branches of physical sciences and engineering. Management courses are created for postgraduate level only.

SWAYAM Government of India started the SWAYAM programme and intended to reach the three fundamental principles of Education policy viz., access, equity and quality. The intentional of this attempt is to take the unsurpassed education resources to all, . All the courses are interactive in nature designed by the experts in the field and are openly available to pubic in India with free of cost. Further specially selected teachers and faculty prepared these courses from across the country. SWAYAM courses are in 4 quadrants they are 1. Video instructions 2. Especially arranged reading materials that can be download or printable. 3. Self-evaluation examination through tests and interrogate and 4. An online debate for clearing the doubts.

CONCLUSION

Open access resources help the Science for their academic

and research purpose.

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- 8. https://authorservices.wiley.com/open-research
- 9. http://shodhganga.inflibnet.ac.in/ 28.
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OPEN SOURCE SOFTWARE AND LIBRARIES

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ABSTRACT

In this era of transition from information are to knowledge society, the libraries have much greater challenges to face the whole perception of library has now changed from collection of books to a single window knowledge bank. This paper while giving the introduction of the concept, describes the open source software (oss) and explains the meaning of the term of open source software, giving some of the difinations the typical terms used to explain it and also elaborates some of the important issues with reference to the explanation of the open source software. It describe important open source software used in India It describes important open source software. Presently used worldwide with special reference to the popular open source software used in India Library environment. This paper describes in brief about the feature of some of the open source library management software.

Keywords: Open source software, Greenstone, Dspace, KOHA, E-prints, EVergeen, Fedora.

INTRODUCTION

Open source software (OSS) is not a new idea. You already know that the open source movement started with the Internet. Recently technical and market forces joined together to draw a nice role of open source movement.

Libraries play an important role in proving overall library and information services to the students. We have just entered in new millennium and we have lot of challenges before us for keeping us in pace with modern development in information technology. Library automation stars with the adoption of library management Software in the Library. The software should have the maximum facilities to automate the library into computerized systems.

There are many commercial library software are in use in the different libraries, but open sources library management software has generated lot of interest among the library professionals over the past years. Open source refers to software that includes the original source code, used to create it so that users can modify it to make it work it according to their needs.

Open source software (oss) is also considerably different from shareware, public domain software, freeware, or software viewears and readers that are made freely available without access to source code. Shareware, whether or not one registers it and pays the registration fee, typically provide no access to the original source code.

There are many commercial library software are in use in the different libraries, but open source Libe

There are many commercial library software are in the different libraries, but open source Library management software has generated lot of interest among the library professional over the past years. Open source software (OSS) came into existence with the development of ICTS. The term "Open Source" refers to software that includes the original source code, used to create it so that users can modify it to make it work according to their needs. It also includes the right of redistributions, therefore, there may be free, a developer or distributor may change for services Including special programming installation, training and technical support, etc. In general the source code of open source software (OSS) is widely accessible, freely available and retable, The most popular source license, the general public License (GPL) allow almost full and re- use of source code.

OPEN SOURCE MOVEMENT;

Early 1980s witnessed a big conflict between oss and proprietary software. For example MIT Artificial Intelligence Lab established an agency called symbolies in early 1980s and made all the freely available software proprietary under its name, This conversi on process eventually killed the culture of code sharing at MIT lab.

Software developers may want to publish their software with an open source software licence, so that anybody may also develop the same software or understand how it works. Open source is to let the product be more under standable, modifiable, duplicatable, reliable or simply accessible, while it is still marketable . The open source software (OSS) is copyrighted and distributed with license terms designed to ensure that the source code will always be available. Sometimes small amount of fee may be charged for the softwares packaging, distribution, or support.

DEFINITION;

The open source movement has been in conscious development for nearly two decades but the term open source itself has been a relative Latecomer. Christine Peterson of the foresight Institute proposed the term open source in late 1997 during a meeting of small group of open source movement key persons, (Raymond, 2001). This group registered the domain name opensource.org defined open source, developed open source Initive (OSI) group, designed OSI certification, and created a list of license that meet the standereds for open source certification, and created a list of licenses that meet the standered for open source software is made freely available , along with the binary version so that anyone can see, change, and distribute it subject to the condition he/ she abide by the accompanying licence.

Use of open source software; Open source software in a library, it is essential to first ascertain the requirements of library, availability of Ascertain the requirements of library, availability of manpower and technology aids and also the budget for library activities expansion other than the management inclination towards such an efforts.

Benefit of open source software; Libraries are now considering OSS because of its low purechase costs, there is no initial purchase fees, or upgrade fees. A user can access form anywhere any time provided has access to the necessary infrasture.

Open Access means no restrictions on providing articles for teaching purposes. Only the URL need be provided. Open Access takes care of the rest. Publishers likewise also benefit for the disseminstion, greater visibility and higher journal citation impact factor of their articles.

Some of popular open source software In Libraries;-

It is a suite of software tool for creating, building, managing and distributin digital library collections, it providing a new way of organizing info Library collections. It providing a new way of organizing information and publishing it on the internet, means to easily create searchable and brow sable interfaces to digital library collections via the web it has been developed and distributed in cooperation with UNESCO and the human information NGO in Belgium.

Dspace;

Dspace was developed by messiah use its Institute of technology (MIT) Libraries and Hewlett Packard (HP) as an open source application that institutions and organizations could run with relatively few resources. Dspace is one of the first (OSS) open source software platforms to store, manage and distribute the collections in digital format Dspace is the digital repositories. It is to support the long term preservation of the digital material stored in the repository. Dspace a c c e p t s all manner of digitalformats, such as articles, preprints, working papers, technical reports conference papers, books, these, datasets, computer programs, Visualization simulations, and other models, multimedia publications, administrative records, published books, journals, bibliographic datasets, images, audio files, videofiles, reformatted digital library collections, learning objects web pages etc.

KOHA;

Koha is a promising full featured open source integrated library system (ILS) created in 1999 by katipo communication for the Horowhenua Library Trust in Newzealand, and currently being used by thousands of libraries all over the world. Its important features meet the users needs including simple, clear interface for librarians and members customizable search circulation and borrower management, web 2.0 full acquisitions system including budgets and pricing information. Ability to cope with any number of branches, patrons, currencies and other data, serials system for magazines or newspapers, reading list for members etc.

Koha is built using library ILS standers and uses the OPAC (Online Public Access Catalouge) interface, In addition koha has no vendor- lock in, so libraries can technical support from any party from they want.

E-Prints;

E- Prints has been developed at the universities of southamption school of electronics and computer science in 2000 and released under a GPL license for builing open access repositories that are compliant with the open Archives Initiative protocol for metadata Harvesting (OAI-PMH). It shares many of the features commonly seen in document management systems.

Evergreen;

Evergeen ILs is another option when researching open source ILs options, Developed by Equinox software, Evergreen is a robust, enterprise level ILs solution developed to be capable of supporting the workload of large librarians in a fault tolerant system. It too is standards compliant and uses the OPAC interface, and offers many features including flexible administration, workflow, customization, adaptable programming interfaces.

FEDORA

The fedora is based on the flexible digital object and repository Architecture (FEDORA). It has been developed by the university of Virginia and correll university. It can be used to develop institual repositories and other interoperable web based digital libraries and the system implements the fedora architecture. Adding uitilities that facilitate repository management All functions of fedora both at the object and repository level, are exposed as web services.

GREENSTONE

The Greenstone digital Library software (GSDL) is a top of the line and internationally renowed open source software system for developing digital libraries. Promoted by the new Zealand Digital Library project sponsored by the UNESCO (http://www.unesco.org) The software is issued under the terms of GNU General public License. Greenstone provides a way of building. Maintain and distributing digital library collections.

Greenstone builds collections using almost popular and slandered digital formats such as HTML, XML. Word. Post script PDF, RTF and many other formats which include audio as well as video.

CONCLUSION

Open source software it is possible to create a platforms for open access. A number of nonprofit organizations have released open source library management systems. Open source software will be better supported and more source software will be better supported and more easily maintained. Open source software are used for functioning the library some amount may be saved.

By using open source software In the library money the otherwise would be spent on software solutions can be used for other important resources such as purchasing additional media resources books journals etc. or can be used to hire educated. Technical support that provides patrons with the know how to better use already existing resources.

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QUANTITATIVE ANALYSIS OF RESEARCH PRODUCTIVITY IN THE JOURNAL OF PHYSICAL REVIEW ACCELERATORS AND BEAMS: A SCIENTOMETRICS STUDY

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ABSTRACT

This study presents a comprehensive Scientometrics analysis of research publications in the Journal Physical Review Accelerators and Beams over a five-year period (2019-2023). Utilizing data from the Scopus database, the analysis encompasses various facets, including publication patterns, country-wise and institutional distributions, authorship characteristics, and trends over the study duration. The findings reveal noteworthy trends in publication output, with 2020 being the most prolific year and a subsequent decline observed in 2021 and 2022. Country-wise, the United States emerged as the leading contributor, followed by Switzerland, while the European Organization for Nuclear Research stood out as the most productive institution. Authorship patterns were scrutinized, identifying Tomás, R. as the most productive author and Tomas R. Guilarte as both the most productive and prolific author, with impressive citation indices. The study also explored collaboration indices, shedding light on the degree of collaboration among authors.

Keywords: Research Productivity, Collaboration Index, Authorship Characteristics, Institutional Distribution, Scholarly Landscape.

1. INTRODUCTION

Scientometrics, a scientific discipline, delves into the characteristics of research output, encompassing organizational research structures, resource inputs, and outputs. It establishes benchmarks for assessing the quality of information output, employing analyses of patterns, growth, and other attributes to characterize disciplines. Scientometrics involves the scientific measurement of scientists' work, primarily through the analysis of their publications and citations (Khurshid and Sahai, 1991). In this field, various laws, such as Bradford's Law addressing the increased scattering of papers on specific topics (Bradford, 1934), the Scientometric law focusing on the frequency of authors' paper publications (Lotka, 1926; Lyon, 1979), and the Informatics law considering word frequency, play consistent roles. Prior to engaging in bibliometric, Scientometric and bibliometric techniques share similarities, their distinct roles emerge within their unique contexts (Natarajan, 2010). This bibliography aims to compile relevant articles and publications, serving as a resource for researchers in this field.

Scientometrics, as a field of study, involves the quantitative analysis of scientific publications and their impact on the scientific community. This analysis provides valuable insights into the structure and dynamics of scientific research. In this context, conducting a scientometric analysis of the Journal of Physical Review Accelerators and Beams offers a comprehensive understanding of the journal's contribution to the field of accelerator physics.

2. Journal of Physical Review Accelerators and Beams (PRAB)

The Journal of Physical Review Accelerators and Beams (PRAB) is a renowned scholarly publication dedicated to advancing the understanding and dissemination of research in the field of accelerator physics and technology. As an essential resource for scientists, researchers, and engineers in the accelerator community, PRAB plays a pivotal role in shaping the discourse surrounding particle accelerators, beam physics, and related technologies.

3. OBJECTIVES OF THE STUDY

The primary aim of this study is to conduct a comprehensive analysis of the publications featured in the journal Physical Review Accelerators and Beams over the ten-year period from 2018 to 2023. The specific objectives include:

- 1. To find out Annual Distribution Analysis: Authorship Patterns:
- 2. To find out the Collaboration Index (CI) and Degree of Collaboration (DC):
- 3. To find out Collaboration Coefficient (CC) and Modified Collaboration Coefficient (MCC):

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- 4. To find out Most Productive Writers:
- 5. To find out Geographical Distribution Analysis:

4. METHODOLOGY:

This study employs scientometrics analysis to examine the research contributions of authors in the Physical Review Accelerators and Beams (PRAB) journals from 2019 to 2023 (a five-year period). The journal data is retrieved directly from its official website at https://journals.aps.org/prab/. A total of 1113 full-text research articles published during this timeframe are included in the analysis. Bibliographic details extracted from these publications are systematically tabulated, organized, and analyzed using MS Excel. The data is structured to provide insights into various aspects, including growth rate, collaboration index (CI), degree of collaboration (DC), collaboration coefficient (CC), and modified collaboration coefficient (MCC).

5. SCOPE OF THE STUDY:

This research is confined to the examination of scientific professionals' research contributions found in full-text papers within the journals Physical Review Accelerators and Beams (PRAB). The study specifically considers publications within the five-year duration from 2019 to 2023, encompassing a total of 1113 articles distributed across five volumes.

6. Data Analysis and Interpretation

6.1. Year-wise distribution of articles

The table illustrates the year-wise distribution of articles in the Physical Review Accelerators and Beams journal from 2019 to 2023.

Sr. No	Year	Article	Percentage	Total Citations	CPP
1	2019	180	16.17	4231	23.51
2	2020	209	18.78	4042	19.34
3	2021	260	23.36	5674	21.82
4	2022	258	23.18	4902	19.00
5	2023	206	18.51	4944	24.00
To	otal	1113	100.00	23793	

Table 1: Year-wise distribution of articles

The table presents a year-wise distribution of articles published in the Physical Review Accelerators and Beams journal for the years 2019 to 2023. The highest number of articles were published in 2021, accounting for 23.36% of the total, followed closely by 2022 with 23.18%. The years 2019 and 2020 also had substantial contributions, constituting 16.17% and 18.78%, respectively. In 2023, the publication rate decreased to 18.51%. In terms of total citations, 2021 had the highest with 5674, closely followed by 2023 with 4944 citations. The Citation Per Paper (CPP) metric varies across the years, with 2023 having the highest CPP at 24.00, indicating a relatively higher impact per paper in that year. Overall, the data provides insights into the annual publication trends and citation impact within the specified period.

6.2. Document Types

The table reveals the distribution of document types in the Physical Review Accelerators and Beams journal during 2019-2023.

Sr. No	Document Type	Article	Percentage
1	Article	1086	97.57
2	Erratum	20	1.80
3	Editorial	5	0.45
4 Letter		2	0.18
	Total	1113	100.00

 Table 2: Document -wise distribution of articles

The table illustrates the document-wise distribution of articles in the Physical Review Accelerators and Beams journal. The vast majority of contributions are in the form of regular articles, constituting 97.57% of the total (1086 articles). Errata make up 1.80%, editorials contribute 0.45%, and letters represent 0.18%. This distribution emphasizes the prominence of standard articles in the journal, while other document types such as errata, editorials, and letters are relatively less common. The data provides insights into the variety of content types published in the journal.

Ta	Table No. 3: Country-wise distribution of publications- Top 20					
Sr. No	Name of Country	No. of contributors	Percentage	Rank		
1	United States	458	13.09	1		
2	Switzerland	244	6.97	2		
3	Germany	489	13.98	3		
4	China	129	3.69	4		
5	United Kingdom	123	3.52	5		
6	Italy	100	2.86	6		
7	Japan	94	2.69	7		
8	France	81	2.31	8		
9	Russian Federation	63	1.80	9		
10	Sweden	39	1.11	10		
11	Spain	25	0.71	11		
12	South Korea	24	0.69	12		
13	Canada	22	0.63	13		
14	Israel	19	0.54	14		
15	India	13	0.37	15		
16	Portugal	13	0.37	15		
17	Malta	12	0.34	16		
18	Poland	11	0.31	17		
19	Belarus	10	0.29	18		
20	Greece	10	0.29	18		
		Truncated				
	Total	3499	100.00)		

6.3 Geographical Distribution of Contributors

The table provides an overview of the geographical distribution of contributors to the Physical Review Accelerators and Beams journal. The United States leads with 458 contributors, accounting for 13.09% of the total contributors and securing the top position. Switzerland follows closely with 244 contributors (6.97%), claiming the second position, while Germany ranks third with 489 contributors (13.98%). Other notable contributors include China (4th), the United Kingdom (5th), Italy (6th), Japan (7th), France (8th), the Russian Federation (9th), and Sweden (10th), among others. The data emphasize the international collaboration and diverse representation of contributors from various countries, showcasing the global impact of research published in the journal.

6.4. Top Authors and Their Contributions in Physical Review Accelerators and Beams Journal:

Table 4: Shows the ranking of 20 top most productive author

Sr. No	Name of Author	No. of publications	Percentage	Rank
1	Tomás, R.	21	0.60	1
2	Métral, E.	15	0.43	2
3	Stupakov, G.	14	0.40	3
4	Migliorati, M.	13	0.37	4
5	Osterhoff, J.	13	0.37	4
6	Redaelli, S.	13	0.37	4
7	Huang, X.	12	0.34	5
8	Huang, Z.	12	0.34	5
9	Buffat, X.	11	0.31	6
10	Burrows, P.N.	11	0.31	6
11	Di Mitri, S.	11	0.31	6
12	Tang, C.	11	0.31	6
13	Wuensch, W.	11	0.31	6
14	Calviani, M.	10	0.29	7
15	Chiggiato, P.	10	0.29	7
16	Chung, M.	10	0.29	7
17	Giovannozzi, M.	10	0.29	7

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18	Grudiev, A.	10	0.29	7
19	Hemsing, E.	10	0.29	7
20	Power, J.G.	10	0.29	7
Truncated				
Total		3499	100.0	0

Table 4 provides an overview of the top 20 most productive authors in the Physical Review Accelerators and Beams journal, showcasing their significant contributions. The data reveals that a total of 1113 publications were authored by various contributors. Notably, Tomás, R. emerges as the most impactful author, contributing 21 publications, representing 0.60% of the total. Following closely is Métral, E. from the United States with 15 (0.43%) publications, securing the second position. Stupakov, G. takes the third position with 14 (0.40%) publications. Other prolific authors include Migliorati, M.; Osterhoff, J.; and Redaelli, S., each with 13 (0.37%) publications.

It is noteworthy that Tomas R. Guilarte stands out as the most productive author, holding both the highest number of publications and a remarkable H-Index of 65, indicating substantial impact and recognition in the field. Additionally, Guilarte has an i10-Index of 135, further underlining the influence and citations of their work. This data underscores the significance of collaborative and impactful research in the journal, with these authors making notable contributions to the scientific community.

6.5. Institution-Wise Distribution of Publication

Table 5: Institution-Wise Distribution of Publication-Top	20
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Sr. No	Name of Affiliation	No. of Contributors	Percentage	Rank
1	European Organization for Nuclear Research,Switzerland	207	5.92	1
2	SLACNationalAcceleratorLaboratory, United States	130	3.72	2
3	Deutsches Elektronen-Synchrotron DESY, Germany	76	2.17	3
4	Brookhaven National Laboratory	71	2.03	4
5	Chinese Academy of Sciences	57	1.63	5
6	High Energy Accelerator Research Organization, Tsukuba	52	1.49	6
7	Argonne National Laboratory	52	1.49	6
8	Lawrence Berkeley National Laboratory	49	1.40	7
9	Fermi National Accelerator Laboratory	49	1.40	7
10	The Cockcroft Institute	47	1.34	8
11	CNRS Centre National de la Recherche Scientifique	45	1.29	9
12	Paul Scherrer Institut	38	1.09	10
13	University of Chinese Academy of Sciences	35	1.00	11
14	GSI Helmholtz Centre for Heavy Ion Research GmbH	34	0.97	12
15	INFN, Laboratori Nazionali Di Frascati	33	0.94	13
16	Cornell University	32	0.91	14
17	Thomas Jefferson National Accelerator Facility	32	0.91	14
18	University of California, Los Angeles	32	0.91	14
19	John Adams Institute for Accelerator Science	32	0.91	14
20	University of Oxford	31	0.89	15
	Trunc	cated		
	Total	3499	100.00)

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Table 5 provides insights into the geographical distribution of contributors in the Physical Review Accelerators and Beams journal. The data showcases the top affiliations based on the number of contributors, their percentage representation, and the corresponding ranks. The European Organization for Nuclear Research (CERN), situated in Switzerland, claims the top position with 207 contributors, constituting 5.92% of the total. Following closely is the SLAC National Accelerator Laboratory in the United States, securing the second position with 130 contributors (3.72%). Deutsches Elektronen-Synchrotron DESY in Germany holds the third position with 76 contributors (2.17%).

The affiliations listed in the table represent prominent institutions in the field of nuclear research and accelerator science. This distribution provides valuable insights into the global collaboration and participation of institutions in contributing to the research published in the journal. The diversity of affiliations and their substantial representation underscores the international and collaborative nature of scientific research in this domain.

6.6. Analysis of Collaboration factors and Authorship Patten

Table 6: Analysis of Collaboration factors in the Journal Physical Review Accelerators and Bems Publication at Global Level

Sr. No	Year	2019	2020	2021	2022	2023	Total
1	Single Author	46	52	67	62	45	272
2	Second Author	38	48	56	52	58	252
3	Third Author	27	31	45	47	48	198
4	Fourth Author	21	28	33	37	18	137
5	Fifth Author	17	27	24	19	11	98
6	Sixth Author	13	9	16	17	10	65
7	Seven Author	8	6	10	11	9	44
8	Eight Author	6	5	6	8	5	30
9	Nine Author	4	3	3	5	2	17
10	Total Articles	180	209	260	258	206	1113
11	Total Author	590	651	807	838	613	3499
	CI	3.278	3.115	3.104	3.248	2.976	15.720
	DC		0.249	0.258	0.240	0.218	1.221
	CC	0.744	0.751	0.742	0.760	0.782	3.779
	MCC	0.190	0.187	0.191	0.183	0.171	0.922
C	C-MCC	0.554	0.564	0.551	0.577	0.611	2.857

The table provides a breakdown of the authorship patterns and collaboration indices in articles published in the Journal of Physical Review Accelerators and BEMS for the years 2019 to 2023.

• Authorship Patterns:

- The majority of articles have a single author, ranging from 46 (2019) to 45 (2023), totaling 272 articles.
- Second, third, and fourth authors contribute significantly, with variations across the years.
- Articles with seven to nine authors are less common but still present.
- Total Articles and Authors:
- The total number of articles increases from 180 in 2019 to 206 in 2023.
- The total number of authors fluctuates, reaching 838 in 2022.
- Collaboration Indices:
- Collaboration Index (CI) ranges from 3.104 (2021) to 3.278 (2019), indicating a moderate level of collaboration.
- Degree of Collaboration (DC) ranges from 0.218 (2023) to 0.258 (2021).
- Collaboration Coefficient (CC) is between 0.742 (2021) and 0.782 (2023), showing consistent collaboration.
- Modified Collaboration Coefficient (MCC) fluctuates slightly, ranging from 0.171 (2023) to 0.191 (2021).

• The difference between CC and MCC (CC-MCC) indicates the presence of multi-authorship, ranging from 0.551 (2021) to 0.611 (2023).

These indices collectively depict the collaborative nature of research in the field, with varying degrees of multiauthorship over the years.

7. CONCLUSION:

The scientometrics analysis of the Journal of Physical Review Accelerators and BEMS over the five-year period from 2018 to 2023 provides valuable insights into the publication patterns, authorship dynamics, institutional contributions, and collaboration trends. Here are the key findings and implications:

1. Publication Patterns:

- The publication output increased steadily over the years, with 2021 having the highest number of articles.
- Document-wise distribution indicates that the majority (97.57%) of publications are articles, emphasizing the primary research focus of the journal.

2. Authorship Analysis:

- The top 20 most productive authors contributed significantly to the journal, with Tomás, R. being the most prolific author.
- Institutional-wise distribution reveals contributions from diverse research organizations, with the European Organization for Nuclear Research, Switzerland, leading in the number of publications.

3. Geographical Distribution:

- The geographical distribution of contributors reflects global participation, with the United States, Switzerland, and Germany leading in the number of contributors.
- This international representation underscores the journal's significance in attracting a diverse pool of researchers.

4. Collaboration Trends:

- The collaborative nature of research, as measured by CI, DC, CC, and MCC, indicates a dynamic and evolving landscape.
- Multi-authored papers are prevalent, with an increasing trend observed over the study period.

5. Collaboration Metrics:

- The Collaborative Index shows a declining trend, possibly reflecting changes in research dynamics.
- The Degree of Collaboration varies, with 2022 having the lowest DC, suggesting a diverse range of authorship patterns.
- Collaboration Coefficient and Modified Collaboration Coefficient fluctuate, with the overall collaborative research activity remaining high.

6. Overall Implications:

- The collaborative nature of research is prominent, emphasizing the importance of teamwork and interdisciplinary approaches in the field.
- Institutions such as CERN, SLAC, and DESY play significant roles, showcasing the global impact of specific research organizations.

In essence, the findings of this study contribute to a comprehensive understanding of the scholarly landscape within the scope of the Journal of Physical Review Accelerators and BEMS, providing valuable insights for researchers, institutions, and policymakers involved in the field of accelerators and beams. The emphasis on collaboration and the international reach of contributors underscore the journal's role as a platform for impactful and collaborative research in this specialized domain.

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USE OF SOCIAL MEDIA IN LIBRARIES

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ABSTRACT

This paper is therefore, an attempt to examine the present scenario in library services delivery with these new and emerging technologies, challenges faced by Indian libraries in the use of these Social Media are investigated and possible solutions proffered. Social media has become a catalyst in reshaping the manner in which individuals and organizations do their businesses. Social media includes popular networking websites, like Facebook and Twitters. As well as bookmarking sites like dig or Reddit. It involves blogging and forums.

Keywords: Social media, Academic Library, Facebook. YouTube, LinkedIn

INTRODUCTION

Information is explosion day by day continuously to nonstop one place to another place or one person to another person to changing dimension of the present day. Every one interaction is the social media network. The social media bring the essential services to library user in visibility its assortment and enhance services and other side its advantages is faculty bring responsibility too. The development of social media can go protected means towards developing a dynamic library services. The librarian and other institutional Librarian have a good relation with their users or students or members any information accessible through these tools will get more people in the earliest possible time or quick. Similarly libraries also need to use such social media tools to reach to top to bottom user communities Library is a knowledge resources Center need know about present technology. The unprecedented technological advancement of the 21st century, no doubt has impacted on library Services gradually and in India in particular. The social media hype has gradually crept into the library profession with social sites Such as Facebook, MySpace, Flickr, YouTube, Library Thing, it has become evident that our services will need to change to meet the growing needs of our end users. Use of technology such as internet is one of the most important factors that can influence educational Performance of students positively or advancing with the advancement digital technologies and social network. It one of the popular media among students and young population especially among student who spent a lot of time on these sites for creating profile. In the New York public library free programme has more than 93000 Twitter followers and 321389 fans on Facebook and YouTube channel with 32.9k Followers.

What is Social Media?

Social media includes popular networking websites, like Facebook and Twitter. As well as book marking sites like dig or Reddit, It involves blogging and forums and aspects of an interactive presence which allows individuals ability, to engage in conversations with one another, often as a discussion over a particular blog post, news article or event. The best way to define social media is to break it down, Media is an instrument on communication like a newspaper or a radio, so social, media would be a social instrument of communication. Think of regular media as a one-way street where you can read a newspaper or listen to a report on television, but you have very limited ability to give your thoughts on the matter. Social Media, on the other hand, is a two-way street that gives you the ability to communicate to

Definition & Concepts:

Social Media means electronic communities through which users online communities to shave information. Ideas, personal messages, and other content " It can also be defined," the use of dedicated websites and applications to interact with other users or to find people with similar interests to one's life. Social Media are primarily Internet-based toads for sharing and discussing information among human being" Wikipedia An umbrella term that defines the various activities that integrate technology, social interaction, and the construction of words and pictures."- Anvil Media

Some Popular Social Media:

• Facebook's defined as an online social networking Website where people can create profiles, shave information such as photos and quotes about themselves, and respond or link to the information posted by others. An online social networking website is an example of Facebook. Twitter is an micro blogging service that allows registered members to broadest short posts called tweets. Twitter members can broadcast tweets and follow other users tweets by using multiple platforms and device.

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- WhatsApp Messenger is a free messaging app available for android and other, smart phones. What app uses your phone's internet connection?
- Blog A website that displays positions by one or more individuals in chronological order and usually has likes to comments on specific postings is blog.
- You tube Videos of new activities, functions, performances, seminars and cultural and sports events can be uploaded on you tube may attract new users, Contents posted on YouTube receive high engagement.
- LinkedIn is a social networking designed specifically for the business community. The goal of the site is to allow registered members to establish and documents network of people they know and trust professionally. With fellow camera phone enthuse acts.
- Social Bookmarking (Del.icio.us, Blinklist, simpy) Interact by tagging websites and searching through websites bookmarked by other people
- Social News (Digg, propeller, Reddit) Interact by voting for articles and commenting on them
- Social photo and video sharing. (You Tube, Flickr) Interact by sharing photos or videos and commenting on user submissions.

Flicker:

Librarians can use these tools to share and distribute new images of library collections. Cover page of new arrivals of both books and journals can be disseminated to users via flicker,

Library Thing:

A tool that enriches the library OPAC, once an account is created, a list of books with ISBN is sent to Library Thing which sends back a piece of Code which is pasted into the footer of the library OPAC. Librarians can utilize this to send a list of current publication to users. The changing Library Environment Today, Libraries are using the latest technologies and trends to make their Services popular and user friendly. The concept of a library as physical place where one can visit to get information is rapidly changing to social cyberspace where users access, communicate and Contribute to existing knowledge.

Managing social media:

There is an increasing trend towards using social media monitoring tools that allow marketers to Search, track and analyses conversation on the web about their brand or about topics of interest. This can be useful in PR management and campaign tracking, allowing the user to measure return on investment, competitor-auditing and general public engagement,

CONCLUSION

The social media bring the essential services to library user in visibility its assortment and enhance Services and other side its advantages is faculty bring responsibility too. The development of Social media can go protected means towards developing a dynamic library services, it is access the service delivery and sweetening of any library service out that to have a structured analysis to guide to a win situation for each Knowledge service suppliers and data users.

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BENEFITS OF KOHA LIBRARY MANAGEMENT OPEN-SOURCE SOFTWARE: CRITICAL VIEWS

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ABSTRACTS

KOHA remains as a flexible and easy to understand open-source arrangement that engages libraries to robotize and deal with their tasks proficiently while profiting from the cooperative soul of the worldwide opensource local area. KOHA's benefits lie in its expense viability, local area support, customization choices, complete usefulness, and easy to use interface, going with it a convincing decision for libraries looking for a solid and versatile coordinated library framework. Fundamentally, KOHA's open-source establishment, local area driven improvement, adaptability, exhaustive usefulness, and easy to use configuration all in all position it as a strong and versatile answer for current libraries, tending to their centre functional necessities while cultivating development and cooperation inside the library local area.

Keywords: Library, KOHA, Open-Source, ILS, Online Library

INTRODUCTION:

KOHA is a strong and broadly utilized open-source incorporated library framework (ILS) that gives thorough library the executives arrangements. Created by a worldwide local area of bookkeepers, designers, and associations, KOHA offers a scope of elements to computerize and smooth out different library tasks. Here is a prologue to KOHA:

1. Open-Source Way of thinking:

KOHA is based on the standards of open-source programming, and that implies that its source code is unreservedly accessible to general society. This supports cooperation, development, and a local area driven way to deal with improvement.

2. Coordinated Library Framework (ILS):

KOHA fills in as an ILS, offering a unified stage for dealing with all parts of library tasks. It incorporates modules for listing, dissemination, acquisitions, serials, and that's only the tip of the iceberg.



3. Online Point of interaction:

One of KOHA's eminent elements are its online point of interaction, permitting library staff to get to the framework from any gadget with a web association. This improves adaptability and works with distant administration.

4. Indexing and Metadata the executives:

KOHA gives strong apparatuses to classifying and overseeing bibliographic records. It upholds different metadata guidelines, making it versatile to various listing rehearse.

5. Flow the executives:

The flow module robotizes undertakings connected with getting and returning things, overseeing fines, and following client movement. It works on the general flow process, improving productivity.

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6. Acquisitions and Serials Control:

KOHA incorporates modules for overseeing acquisitions, empowering libraries to smooth out the method involved with requesting and getting new materials. Serials control highlights help in overseeing periodicals and memberships.

7. Benefactor the executives:

Libraries can effectively oversee benefactor data, including client records, fines, and holds. KOHA upholds different supporter classifications and gives adaptable client profiles.

8. Announcing and Examination:

KOHA offers announcing apparatuses that permit libraries to produce custom reports, dissect utilization insights, and pursue information driven choices to further develop administrations.

9. Local area Backing:

Being open source, KOHA benefits from a lively worldwide local area of clients and engineers. This people group effectively adds to the product's turn of events, giving updates, fixes, and backing.



10.Customization and Adaptability:

KOHA is exceptionally adjustable, permitting libraries to fit the framework to their particular necessities. Libraries can adjust formats, add modules, and coordinate outsider apparatuses to improve usefulness.

11.Cost-viability:

As open-source programming, KOHA wipes out permitting expenses related with restrictive frameworks, making it a financially savvy answer for libraries with restricted spending plans.

Benefits of KOHA Library Open Source

KOHA programming offers various benefits for libraries, adding to further developed proficiency, availability, and cost-adequacy. Here are a few key benefits:

1. Open Source and Savvy:

Being open source, KOHA disposes of the requirement for permitting expenses, making it a savvy answer for libraries with restricted financial plans. Libraries can distribute assets to other basic regions as opposed to spending on restrictive programming.

2. Local area Backing:

KOHA benefits from a hearty worldwide local area of curators, engineers, and associations. This dynamic local area offers consistent help, updates, and improvements, guaranteeing the product stay current with developing library needs and innovation.

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3. Online Connection point:

The online point of interaction of KOHA permits library staff to get to the framework from any gadget with a web association. This advances adaptability, works with distant administration, and guarantees simple admittance to library assets.

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Library Trust, Koha is currently maintained by a team of software providers and library technology staff from around the globe. Power in 10/2009 EBIT Delete (New	Q Advanced search	R eports
What's Next? Now that you've installed Koha what's next? Hore are some suggestions:	Lists	Koha administration
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Control System) Control System) Chat with Kohe users and developers	@ Authorities	About Koha

4. Customization and Adaptability:

KOHA is exceptionally adaptable, permitting libraries to fit the framework to their particular prerequisites. Libraries can change formats, add modules, and incorporate outsider devices to adjust KOHA to their exceptional work processes and inclinations.

5. Thorough Usefulness:

KOHA offers many modules for inventorying, dissemination, acquisitions, serials, and then some. This thorough usefulness permits libraries to deal with all parts of their tasks inside a solitary, coordinated framework.

6. Cross-Stage Similarity:

KOHA is intended to chip away at different working frameworks, guaranteeing similarity with various server conditions. This cross-stage capacity adds flexibility to the product and empowers libraries to pick the foundation that best suits their requirements.

7. Easy to understand Point of interaction:

KOHA gives an easy-to-understand point of interaction to both library staff and benefactors. Instinctive route and clear designs add to a positive client experience, lessening the expectation to learn and adapt for library staff and making it simpler for supporters to get to assets.

8. Proficient Inventorying and Metadata The board:

KOHA's indexing apparatuses smooth out the most common way of adding, altering, and overseeing bibliographic records. Libraries can proficiently deal with huge assortments and guarantee exact and predictable metadata the executives.

9. Robotization of Routine Undertakings:

KOHA computerizes routine errands like course, acquisitions, and serials control. This computerization decreases manual responsibility, limits blunders, and permits library staff to zero in on more key and worth added exercises.

10.Detailing and Investigation:

KOHA gives detailing devices that empower libraries to create custom reports and accumulate bits of knowledge into use measurements. This information driven approach upholds informed navigation and assists libraries with advancing their administrations.

11.Versatility:

KOHA is versatile and reasonable for libraries of different sizes, from little local area libraries to enormous scholastic organizations. It can develop with the developing necessities of a library, guaranteeing versatility and long-haul ease of use.

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DISCUSSION ON KOHA SOURCE: CRITICAL VIEWS

KOHA, as an open-source coordinated library framework, carries huge benefits to libraries, cultivating a dynamic and practical climate. Its open-source nature wipes out authorizing charges, making it an available answer for libraries with restricted monetary assets. The worldwide local area supporting KOHA guarantees ceaseless improvement, refreshes, and a cooperative space where custodians and engineers cooperate to address developing necessities. This people group driven approach improves the product's highlights as well as makes a common information pool, advancing prescribed procedures and effective critical thinking.

The online point of interaction of KOHA adds a layer of openness, empowering library staff to oversee tasks from any gadget with web access. This adaptability is particularly important in the present advanced scene, considering distant administration and adjusting to the changing workplaces. KOHA's customization choices engage libraries to fit the framework to their one-of-a-kind work processes, guaranteeing that it adjusts consistently with their particular necessities. This flexibility is vital for libraries with different requirements, permitting them to enhance their cycles and administrations.

KOHA's complete usefulness covers inventorying, flow, acquisitions, and then some, giving a comprehensive answer for libraries. This coordinated methodology smoothest out activities as well as guarantees information consistency across various modules. The product's cross-stage similarity adds adaptability, permitting libraries to pick the foundation that suits them best, adding to a proficient and versatile innovative environment.

The easy-to-understand connection point of KOHA benefits both library staff and supporters, making a positive client experience. Instinctive route and clear designs lessen the expectation to learn and adapt for staff, while supporters can undoubtedly get to assets. The computerization of routine errands, like course and acquisitions, improves functional effectiveness, limiting mistakes and permitting library staff to zero in on additional essential parts of their jobs.

KOHA's revealing and investigation instruments give libraries important experiences into utilization measurements, empowering information driven direction. This approach upholds libraries in upgrading their administrations, allotting assets successfully, and improving the general client experience. The adaptability of KOHA makes it reasonable for libraries of differing sizes, guaranteeing that it can develop close by the advancing necessities of the establishment.

All in all, KOHA stands apart as a powerful and easy to use open-source programming answer for libraries, offering a heap of benefits that take special care of the different necessities of library the board. Its open-source way of thinking guarantees cost-viability, freeing libraries from permitting charges and encouraging a cooperative worldwide local area that consistently adds to its turn of events.

The online connection point gives adaptability and openness, permitting library staff to oversee activities from a distance, adjusting to the developing workplace. KOHA's customization choices engage libraries to fit the framework to their particular work processes, advancing versatility and effective cycles.

The far-reaching usefulness of KOHA, covering recording, dissemination, acquisitions, and that's just the beginning, unites library tasks inside a bound together framework. Cross-stage similarity upgrades adaptability, obliging different foundation inclinations and adding to a productive innovative biological system. The easy-to-use interface improves on errands for library staff and benefactors, making a positive and natural client experience. Mechanization of routine undertakings improves functional productivity, lessening manual responsibility and limiting blunders.

CONCLUSION

KOHA's detailing and examination devices empower information driven navigation, supporting libraries in streamlining administrations and dispensing assets successfully. The versatility of the product guarantees its reasonableness for libraries of fluctuating sizes, giving an answer that can develop close by the establishment's developing necessities.

Fundamentally, KOHA's assets lie in its expense viability, local area support, customization capacities, extensive usefulness, and easy to understand configuration, making it an important resource for libraries looking for a cutting edge and versatile coordinated library framework. KOHA not just meets the centre prerequisites of library the board yet additionally cultivates a cooperative and imaginative climate inside the worldwide library local area.

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- 7. Library Technology Guides: (https://librarytechnology.org/](https://librarytechnology.org/)

ओपन ऍक्सेस (मुक्त प्रवेश) चळवळ आणि विविध देशांमध्ये ओपन ऍक्सेस उत्पत्ती व त्याचे परिणाम.

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सारांश :

प्रस्तुत लेखामध्ये ओपन एक्सेस म्हणजेच मुक्त प्रवेश चळवळीचा संक्षिप्त सारांश सांगण्यात आला आहे. विविध देशांमधील ओपन एक्सेस चळवळीचे स्वरूप विशद करण्याचा प्रयत्न करण्यात आला आहे. विविध देशांमध्ये होणाऱ्या ओपन एक्सेस चळवळी साठी केले जाणारे प्रयत्न व त्यांचे स्वरूप यांची देखील माहिती प्रस्तुत लेखामध्ये देण्यात आलेली आहे. ओपन एक्सेसची संज्ञा, उद्दिष्टे, प्रकार व ओपन एक्सेस चळवळीचा होणारे परिणाम यांच्या बद्दल देखील प्रस्तुत लेखामध्ये माहिती देण्यात आलेली आहे.

प्रस्तावना

आजच्या आधुनिक युगात कोणत्याही देशाचा विकास हा त्या देशातील संशोधनावर अवलंबून असतो. जेवढे शास्त्रशुद्ध संशोधन असेल तेवढी प्रगती त्या देशाची होत असते, या शास्त् शुद्ध संशोधनासाठी योग्य माहिती संशोधकांना मिळावी यासाठी प्रयत्न करण्यात येऊ लागले त्यासाठीओपन एक्सेस गरेजेच आहे. ओपन एक्सेस म्हणजे नेमके काय? आणि ते कशासाठी करावे.तर संशोधक संशोधन करतात आणि त्यांचे कार्य जर्नल लेख, कॉन्फरन्स पेपर्स, पुस्तकांचे अध्याय किंवा पुस्तकांमध्ये लिहितात. एकदा प्रकाशन संपादकांसाठी (इतर संशोधक) सबमिट केल्यानंतर कामाचे मूल्यांकन करा आणि शैक्षणिक समुदायाद्वारे आयोजित केलेल्या समवयस्क पुनराव लोकनासाठी पाठवा. संशोधकांना त्यांच्या प्रकाशित लेखांसाठी पैसे किंवा रॉयल्टी मिळत नाही. या व्यतिरिक्त, समीक्षक पुनरावलोकन आणि संपादन ही कार्ये विद्वत्तापूर्ण प्रक्रियेचा भाग मानली जातात आणि ती मोबदला न घेता हाती घेतली जातात एकदा काम प्रकाशित झाल्यानंतर, संस्थात्मक ग्रंथालये (ज्यांना सार्वजनिक रित्या निधी दिला जातो) जर्नल्सच्या सदस्यतांसाठी मोठ्या प्रमाणात पैसे देतात. याचा अर्थ या संस्थांशी संलग्न असलेले लोक संशोधनात प्रवेश करू शकतात परंतु संलग्नता नसलेले लोक करू शकत नाहीत. फार्मासिस्ट, शिक्षक, परिचारिका, व्यावसायिक लोक यां सारखे प्रॅक्टिशनर्स त्यांच्या क्षेत्रातील नवीनतम घडामोडी पाह शकत नाहीत.त्यामुळे विविध देशाच्या प्रगतीला आळकाठी निर्माण होऊ शकते. हे ओळखन 1990 पासून ओपन एक्सेससाठी प्रयत्न सुरू झाले.संगणकाच्या आगमना नंतर ओपन एक्सेस साठी एक उत्तम प्रतीचे स्थानक मिळाले असे म्हणण्या सवाव गेठरणार नाही.ओपन एक्सेस म्हणजेच विविध देशांमध्ये असणारी माहिती कोणतेही शुल्क न देता व कोणत्याही नफ्याशिवाय अभ्यासकास मिळवून देणे होय. विविध देशांनी ओपन एक्सेसची भूमिका ओळखून ओपन एक्सेससाठी प्रयत्न करण्यास सुरुवात केली. विविध देशाच्या बाबतीत आपल्या देशात किती प्रगती झाली आहे व त्यासाठी अजून काय करावे लागेल याचा प्रयत्न करणे गरजेचे असते. ओपन एक्सेसमळे विविध देशांची माहिती विविध देशांना देवाण-घेवाण करता येते ज्यामुळे संशोधनाचा दर्जा वाढतो. जगभरातील ओपन एक्सेस ही एक चळवळ आहे ज्याचा उद्देश वैज्ञानिक संशोधन आणि डेटा प्रत्येकासाठी ओपन करणे हे आहे.

उद्दिष्टे :-

1) ओपन ऍक्सेस संज्ञा, उद्दिष्टे आणि प्रकार जाणून घेणे.

2) ओपन ऍक्सेस चळवळीचा अभ्यास करणे.

विविध देशांमध्ये ओपन ऍक्सेसची उत्पत्ती, व परिणामाची माहिती घेणे.

संज्ञा :- प्रकाशित केलेली माहिती जेव्हा कोणतेही आर्थिक, कायदेशीर किंवा तांत्रिक अडथळे नसतात म्हणजे जेव्हा कोणीही माहिती वाचू, डाउनलोड करू, कॉपी करू, वितरित करू, प्रिंट करू, आणि शोधू शकतो किंवा वापरू शकतो. कायदेशीर करारांतर्गत शिक्षणात किंवा इतर कोणत्याही प्रकारे त्यास मुक्त प्रवेश असे किंवा ओपन एक्सेस म्हणतात.

ओपन ऍक्सेसची काही उद्दिष्टे आहेत :

- लोकांसाठी वैज्ञानिक संशोधनाची उपलब्धता आणि पुनर्वापरता.
- वैज्ञानिक संप्रेषणाची सुलभता आणि पारदर्शकता.
- वैज्ञानिक सहयोग सुलभ करणे.
- कार्यपद्धती, निरीक्षण आणि डेटा संकलनासाठी पारदर्शकता.

मुक्त प्रवेशाचे प्रकार

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- **कांस्य** :- प्रकाशित केलेले लेख सामान्यतः ऑनलाइन वाचण्यासाठी विनामूल्य असतात परंतु त्यांच्या कडे परवाना नाही. लेख सामान्यतः डाउनलोड, पुनर्वापर किंवा शेअर करण्यासाठी उपलब्ध नसतात.
- हायब्रीड :- एक लेख सबस्क्रिप्शन जर्नलमध्ये प्रकाशित केला जातो परंतु प्रकाशक लेखकाकडून लेख प्रोसेसिंग चार्ज (APC) आकारतो ज्यामुळे सदस्यत्व घेतलेल्या जर्नलमध्ये वैयक्तिक लेखांचा खुला प्रवेश होतो. जर्नल अंकातील वैयक्तिक लेख ओपन एक्सेस आहे परंतु त्याचअंकातील इतर लेख ओपन एक्सेस असू शकत नाहीत. हे मॉडेल गोल्ड ओपन एक्सेस जर्नल पेक्षावेगळे आहे कारण लेखक ओपन एक्सेस म्हणून लेख प्रकाशित करण्यासाठी प्रकाशकाला APC देत असला तरीही सदस्यत्व धारक जर्नलच्या सदस्यते साठी पैसे देतआहे.
- हिरवे :- अंतर्गत प्रकाशित केलेले लेख स्वयं-संग्रहित आहेत आणि विशेषत: संस्थात्मक भांडारां मध्येप्री किंवा पोस्ट-प्रिंट असतात.
- गोल्ड :- जर्नलमधील सर्व लेख ओपन एक्सेस म्हणून प्रकाशित केले जातात, जर्नलच्या वेबसाइट वर कोणालाही मुक्तपणे प्रवेश करण्या योग्य असतात आणि क्रिएटिव्ह कॉमन्स परवान्याद्वारे अधिकृत केले जातात. प्रकाशन खर्च सहसा लेख प्रक्रिया शुल्क (APC) द्वारे दिले जातात जे सामान्यतः लेखकाद्वारे किंवा दुसर्या निधी यंत्रणेद्वारे दिले जातात.
- डायमंड किंवा प्लॅटिनम :- लेखकाला त्यांचा लेख ओपन एक्सेस जर्नलमध्ये प्रकाशित करण्यासाठी APC शुल्क आकारले जात नाही. या जर्नल्स मधील लेखांना विशेषत: संस्था, जाहिरातदार, परोपकारी किंवा तत्सम निधी संस्थांद्वारे निधी दिला जातो. सर्व लेख सामान्यत: क्रिएटिव्ह कॉमन्स परवाना वापरतात आणि ते वाचण्यासाठी, डाउनलोड करण्यासाठी, सामायिक करण्यासाठी आणि कोणालाही पुन्हा वापरण्यासाठी विनामूल्यआहेत.

ओपन एक्सेस चळवळ.

अमेरिकन भौतिकशास्त्रज्ञ पॉल गिन्सपार्ग यांनी लॉस अलामोस येथे वैज्ञानिक कागदपत्रांचे ई-प्रिंट म्हणून ओळखल्या जाणाऱ्या इलेक्ट्रॉनिक प्रीप्रिंटचे ऑनलाइन भांडार स्थापन केले. त्याचे नाव बदलून 1999 मध्ये ArXiv.org असे करण्यात आले. पुरोगामी उदारमतवादी उद्योगपती जॉर्ज सोरोस यांनी ओपन सोसायटी इन्स्टिट्यूटची निर्मिती न्याय, शिक्षण, सार्वजनिक आरोग्य आणि स्वतंत्र प्रसारमाध्यमांना प्रगती करण्याच्या उद्देशाने OSF जगभरातील नागरी समाज गटांना आर्थिक सहाय्य करते. ब्राझीलमध्ये SciELO लाँच. SciELO नेटवर्क आणि त्याच्या जर्नल संग्रहामध्ये सध्या 14 देश आहेत: अर्जेंटिना, बोलिव्हिया, ब्राझील, चिली, कोलंबिया, कोस्टारिका, क्यूबा, मेक्सिको, पेरू, पोर्तुगाल, दक्षिण आफ्रिका, स्पेन, उरुग्वे आणि व्हेनेझएला. पब्लिक नॉलेजप्रोजेक्ट (PKP) ची स्थापना जॉन विलिन्स्की यांनी UBC मधील फॅकल्टी ऑफ एज्युकेशनमध्ये केली, पॅसिफिक प्रेस प्रोफेसर शिप एंडोमेंटसह, संशोधनाची अभ्यासपूर्ण आणि सार्वजनिक गुणवत्ता सुधारण्यासाठी समर्पित आहे. PKP ने ओपन कॉन्फरन्स सिस्टम्स (2000), ओपन जर्नेल सिस्टम्स (2001), ँओपन हार्वेस्टर सिस्टम्स (2002) आणि ओपन मोनोग्राफ प्रेस (2013) तयार केले आहेत. बायोमेड सेंट्ल , स्वयं वर्णित पहिले आणि सर्वात मोठे ओपन एक्सेस विज्ञान प्रकाशक आणि PubMed सेंट्ल , बायोमेडिकल आणि लाइफसायन्स जर्नलसाठी एक विनामूल्य डिजिटल भांडार, स्थापना केली आहे. स्प्रिंगरने बायोमेर्ड सेंट्लच्या अधिग्रहणाची घोषणा केली, ज्यामूळे ते जगातील सर्वातमोठे ओपन एक्सेस प्रकाशक बनले. सर्व शास्त्रज्ञांना प्रतिज्ञा करण्याचे आवाहन करणारी एक ऑनलाइन याचिका सप्टेंबर 2001 पासून जर्नल्समध्ये पेपर्स सादर करणे बंद करतील ज्यांनी त्यांच्या पेपर्सचा संपूर्ण मजकूर सर्वांना उपलब्ध करून दिला नाही, विनामुल्य आणि अखंडपणे, एकतर लगेच किंवा काही महिन्यांच्या विलंबानंतर सोडले. या याचिकेवर 34,000 स्वाक्षऱ्या जमा झाल्या पण प्रकाशकांनी मागण्यांना ठोस प्रतिसाद दिला नाही. त्यानंतर लवकरच, पारंपारिक प्रकाशनाला पर्याय म्हणून पब्लिक लायब्ररी ऑफ सायन्स (PLOS) ची स्थापना करण्यात आली. PLOS ONE हे सध्या प्रकाशित होणाऱ्या पेपर्सच्या संख्येनुसार जगातील सर्वातमोठे जर्नल आहे (2015 मध्येसुमारे 30,000 प्रति वर्ष). ओपन सोसायटी इन्स्टिट्यूटने बुडापेस्टमध्ये ओपन ऍक्सेसला प्रोत्साहन देण्यासाठी कॉन्फरन्स बोलावली त्यावेळी फ्री ऑनलाइन स्कॉलरशिप म्हणूनही ओळखले जाते. जिथे बुडापेस्ट ओपन ऍक्सेस इनिशिएटिव्ह (BOAI) चा जन्म झाला. बुडापेस्ट 3 फेब्रुवारी 2009 रोजी 111 व्या युनायटेड स्टेट्स कॉंग्रेसमध्ये ते सादर केले. स्टार्ट ऑफ द अकॅडेमिक स्प्रिंग , एक ट्रेंड ज्यामध्ये शैक्षणिक आणि संशोधँकांनी पारंपारिक शैक्षणिक जर्नल्समधील प्रतिबंधात्मक कॉपीराइटला विरोध करण्यांस आणि विद्वत्तापूर्ण लेखांच्या विनामूल्य ऑनलाइन प्रवेशास प्रोत्साहन देण्यास सुरुवात केली. कॉस्ट ऑफ नॉलेज मोहिमेची सुरुवात ज्याने विशेषतः एल्सेव्हियरला लक्ष्य केले. हे प्रख्यात गणितज्ञांच्या गटाने सुरू केले होते. ज्यांनी प्रत्येकाने एल्सेव्हियरच्या जर्नल्समध्ये प्रकाशनात भाग न घेण्याचे वचन दिले होते आणि सध्या त्यांच्या कडे 15,933 सह-स्वाक्षरी आहेत. युनायटेड स्टेट्स आधारित मोहिमेची सुरुवात Access 2 Research ज्यामध्ये खुल्या प्रवेश वकिलांनी युनायटेड स्टेट्स सरकारला आवाहन केले की करदात्याने अनुदानित संशोधन लोकांसाठी उपलब्ध करूनद्यावे. खुला परवाना. ही मोहीम मोठ्या प्रमाणावर यशस्वी झाली, आणि निर्देश आणि FASTR (विज्ञान आणि तंत्रज्ञान संशोधन कायदा) हे यूए.सए. मधील फेडरल स्तरावर ओपन एक्सेसच्या प्रगतीमध्ये परिभाषित घटक बनले आहेत. विद्यार्थ्यांसाठी आणि करिअरच्या सुरुवातीच्या संशोधकांसाठी बर्लिन 11 उपग्रह परिषद, ज्याने 35 देशांतील 70 हन अधिक सहभागींना वैज्ञानिक आणि

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अभ्यासपूर्ण संशोधनासाठी मुक्त प्रवेशासाठी एकत्र आणले. वॉशिंग्टन डीसी मधील फर्स्ट ओपनकॉन, ओपन ऍक्सेस, ओपन डेटा आणि ओपन एज्युकेशनल रिसोर्सेसवरील विद्यार्थ्यांसाठी आणि करिअरच्या सुरुवातीच्या संशोधकां साठी वार्षिक परिषद. ओपन ऍक्सेस हे युरोपियन कमिशनच्या होरायझन 2020 रिसर्च अँड इनोव्हेशन प्रोग्राममध्ये एम्बेड केलेले आहे. coAlition-S ने प्रकाशित योजना S, सर्व संशोधन मुक्तपणे आणि खुलेपणे उपलब्ध करून देण्याच्या उद्दिष्टासह तत्त्वांचा एक संच तयार केला. सुरुवातीला 12 युरोपियन फंडिंग एजन्सींचा समावेश असलेल्या cOAlition-S ने HHMI सह 20 हून अधिक आंतरराष्ट्रीय फंडर्सपर्यंत विस्तार केला आहे.

विविध देशांमध्ये ओपन एक्सेसची उत्पत्ती, व त्याचे परिणाम.

भारतात मुक्त प्रवेश

भारतात, ओपन ऍक्सेस (उन्मुक्त अभिगम) चळवळ 2004 मध्येसुरू झाली, जेव्हा एम.एस. स्वामीनाथन रिसर्च फाउंडेशन, चेन्नई यांनी दोन कार्यशाळा आयोजित केल्या होत्या. 2006 मध्ये, राष्ट्रीय ज्ञान आयोगाने आपल्या शिफारशींमध्ये असे प्रस्तावित केले की "ज्ञानात प्रवेश हा व्यक्ती आणि गटांच्या संधी आणि पोहोच वाढवण्याचा सर्वात मूलभूत मार्ग आहे". 2009 मध्ये, वैज्ञानिक आणि औद्योगिक संशोधन परिषदेने (CSIR) अनुदानित संशोधनासाठी त्यांच्या अनुदानितांना खुला प्रवेश देण्याची आवश्यकता सुरू केली. 2011 मध्ये, ओपन ऍक्सेस इंडिया फोरमने भारतासाठी ओपन ऍक्सेससाठी मसुदा धोरण तयार केले. शोधगंगा, प्रबंधांसाठी एक डिजिटल भांडार, 2011 मध्ये शैक्षणिक संशोधनाचा प्रचार आणि जतन करण्याच्या उद्देशाने स्थापना करण्यात आली. विद्यापीठ अनुदान आयोगाने (UGC) विद्वानांना किमान मानके आणि M. Phil./Ph.D च्या पुरस्काराच्या प्रक्रियेनुसार शोधगंगामध्ये त्यांचे प्रबंध जमाकरणे बंधनकारक केले आहे. डिग्री रेग्युलेशन, 2016. सध्या, ओपन ऍक्सेस जर्नल्सच्या डिरेक्टरीमध्ये भारतात प्रकाशित 326 ओपन ऍक्सेस जर्नल्सची यादी आहे, त्यापैकी 233 चे कोणतेही शुल्क नाही.

ऑस्ट्रेलियात मुक्त प्रवेश

2001 मध्ये पहिल्या ओपन ऍक्सेस युनिव्हर्सिटी रिपॉजिटरीची स्थापना झाल्या पासून ऑस्ट्रेलियामध्ये शैक्षणिक प्रकाशनांसाठी मुक्त प्रवेश मोठ्या प्रमाणावर वाढला आहे आणि मुक्त प्रवेश हा ऑस्ट्रेलियातील अभ्यासपूर्ण प्रकाशन आणि संशोधन लॅंडस्केपचा एक मूलभूत भाग आहे. दोन प्रमुख संशोधन निधी देणाऱ्यांमध्ये मुक्त प्रवेश धोरणे आहेत: नॅशनल हेल्थ अँड मेडिकल रिसर्चकौन्सिल (NHMRC) आणि ऑस्ट्रेलियन रिसर्च कौन्सिल (ARC) आणि जवळपासअर्ध्या ऑस्ट्रेलियन विद्यापीठांमध्ये मुक्त प्रवेश धोरणे आहे. ऑस्ट्रेलियन संस्था मुक्त प्रवेश चळवळीच्या सुरुवातीच्या काही घडामोडींमध्ये सामीलहोत्या, ज्यामध्ये 2003 मध्ये संशोधन आउटपुटसाठी खुले प्रवेश जळवळीच्या सुरुवातीच्या काही घडामोडींमध्ये सामीलहोत्या, ज्यामध्ये 2003 मध्ये संशोधन आउटपुटसाठी खुले प्रवेश अभिन पॅक्सेस धोरणे आणली, तथापि या धोरणांमधील सावधगिरीचा परिणाम कमी झाला कारण त्यांचे परीक्षण केले गेले नाही. किंवा अनिवार्य. 2020 पर्यंत, ऑस्ट्रेलियन संस्था इतर देशांच्या, विशेषतः युरोप आणि लॅटिन अमेरिकेच्या तुलनेत मागे आहेत. 2021 मध्ये एक महत्त्वपूर्ण बदल घडला, जेव्हा NHMRC ने त्याच्या मुक्त प्रवेश धोरणाचा मसुदा जाहीर केला जो मागील सावधगिरी काढूनटाकेल आणि सर्व अनुदानित संशोधन निधी क्रिएटिव्ह कॉमन्स लायसन्स अंतर्गत मुक्त प्रवेशबनवण्याचा आदेश देईल. संशोधन निधी देणाऱ्यांच्या जाती रक्त प्रवेश कोल जो मागील सावधगिरी काढूनटाकेल आणि सर्व अनुदानित संशोधन आउटपुट निर्बंधाशिवाय क्रिएटिव्ह कॉमन्स लायसन्स अंतर्गत मुक्त प्रवेशबनवण्याचा आदेश देईल. संशोधन निधी देणाऱ्यांच्या आंतरराष्ट्रीय युतीने विकसित केलेल्या प्लॅन एस शिफारशींना प्रतिसाद म्हणून हे केले गेले.

बेल्जियम मध्ये मुक्त प्रवेश

बेल्जियममध्ये, 2007 नंतर जेव्हा लीज विद्यापीठाने आपला पहिला मुक्त प्रवेश आदेश स्वीकारला तेव्हा विद्वत्ता पूर्ण संप्रेषणाच्या मुक्त प्रवेशला गती मिळाली. मुक्त प्रवेशासाठी च्या "ब्रसेल्स घोषणा" वर अधिकाऱ्यांनी 2012 मध्ये स्वाक्षरी केली होती. मुक्त प्रवेशवरील बर्लिन घोषणेसाठी बेल्जियमच्या अनेक संशोधन संस्थांची उपस्थिती आणि 2007 मध्ये ULG येथे तात्काळठेव आणि पर्यायी प्रवेश आदेशाची निर्मिती, संशोधन मंत्री यांनी 2012 मध्ये स्वाक्षरी केलेल्या खुल्या प्रवेशावरी लब्रुसेल्स घोषणेला कारणीभूत ठरले. या घोषणेने बेल्जियमला बेल्जियमच्या शैक्षणिक आणि वैज्ञानिक संशोधनात निकाल प्रसारित करून संस्थात्मक ओपन एक्सेस रिपॉझिटरीजचे विस्तृत नेटवर्क उपलब्ध करून दिले.

कॅनडामध्ये मुक्त प्रवेश

कॅनडामध्ये इन्स्टिट्यूट ऑफ हेल्थरिसर्चने 2008 मध्ये मुक्तप्रवेशाचे धोरण लागू केले, जे 2015 मध्ये नैसर्गिक विज्ञान आणिअ भियांत्रिकी संशोधन परिषद आणि सामाजिक विज्ञान आणि मानवता संशोधन परिषद समाविष्ट करण्या साठी विस्तारले. ब्रिटिश कोलंबिया विद्यापीठात सार्वजनिक ज्ञान प्रकल्पाची सुरुवात 1998 मध्ये झाली. मुक्त प्रवेशा साठी उल्लेखनीय कॅनेडियन वकिलांमध्ये लेस्लीचॅन, जीन क्लॉड गुएडॉन, स्टीव्हन हरनाड, हेदर मॉरिसन आणि जॉन विलिंस्की यांचा समावेश आहे.

फ्रान्समध्ये मुक्त प्रवेश

फ्रान्समध्ये विद्वान संप्रेषणाचा खुला प्रवेश तुलनेने मजबूत आहे आणि त्याला सार्वजनिक समर्थन आहे. Revues.org, सामाजिक विज्ञान आणि मानविकी प्रकाशनांसाठी एक डिजिटल व्यासपीठ, 1999 मध्येसुरू झाले. हायपर आर्टिकल्स एन लिग्ने 2001 मध्येसुरू झाले. फ्रेंचनॅशनल सेंटर फॉर सायंटिफिक रिसर्चने 2003 मध्ये प्रभावशाली बर्लिन घोषणा तयारकरण्यात भाग घेतला.

जर्मनीमध्ये मुक्त प्रवेश

2000 च्या दशकाच्या सुरुवाती पासून जर्मनीमध्ये विद्वत्तापूर्ण संप्रेषणाचा मुक्त प्रवेश वेगाने विकसित झाला आहे. प्रकाशक बेलस्टीन इन्स्टिट्यूट, कोपर्निकस पब्लिकेशन्स, डी ग्रुटर, नॉलेज अनलॅच्ड, लिबनिझ इन्स्टिट्यूट फॉर सायकॉलॉजी इन्फॉर्मेशन, सायन्स ओपन, स्प्रिंगर नेचर, आणि युनिव्हर्सिटीट्सवेर्लाग गॉटिंगेन आंतरराष्ट्रीय ओपन ऍक्सेस स्कॉलर असोसिएशनशी संबंधित आहेत. 2003 मध्ये सुरुवातीच्या बर्लिन परिषदे पासून, फॉलो अप कॉन्फरन्स दरवर्षी जर्मनीमध्ये होतात. बर्लिन, ड्रेस्डेन, गॉटिंगेन, हॅम्बर्ग, कोलन, कॉन्स्टॅंझ, म्युनिक, रेगेन्सबर्ग यासह जर्मन भाषिक लोकांमध्ये 2007 पासून "ओपन-ऍक्सेस-टेज" (ओपन ऍक्सेस डेज) दरवर्षी होत आहेत. 2007 मध्ये अनेक जर्मन संस्थांनी "Open-access.net"ही सामान्य माहिती वेबसाइट सुरूकेली. बिलेफेल्ड युनिव्हर्सिटी लायब्ररी "लेख शुल्कासाठी पारदर्शक पायाभूत सुविधा" प्रकल्पाचे आयोजन करते, ज्यामध्ये जर्मनी आणि इतर ठिकाणच्या प्रकाशनांसाठी लेख प्रक्रिया शुल्क समाविष्ट आहे.

हंगेरीमध्ये मुक्त प्रवेश

हंगेरीमध्ये अलिकडच्या वर्षांत डिजिटल रिपॉझिटरीज आणि शैक्षणिक प्रकाशकांसह इतर माध्यमांद्वारे विद्वत्तापूर्ण संप्रेषणाचा खुला प्रवेश विकसित झाला आहे. 2008 मध्ये अनेक शैक्षणिक ग्रंथालयांनी हंगेरियन ओपन ऍक्सेस रिपॉझिटरीज (HUNOR) कन्सोर्टियमची स्थापना केली.

चीनमध्ये मुक्त प्रवेश

चीनमध्ये ओपन ऍक्सेस वेगाने वाढत आहे. या वाढीचे श्रेय संशोधन आणि विकास आणि धोरणासाठी राज्याच्या वचनबद्धतेला दिलेजाऊ शकते. सध्याचे कायदे संपूर्ण संशोधनामध्ये सातत्य आणि सहकार्याची आवश्यकता दर्शवितात. त्यानुसार, राज्य सरकारी एजन्सींमध्ये, विशेषत: ओपन ऍक्सेसशी संबंधित, सुसंगत धोरणे प्रस्थापित करेल, कारण ते "आत्मनिर्भरता" चा पाठपुरावा करत आहे.

युरोपियन युनियन मुक्त प्रवेश

युरोपियन युनियनच्या संशोधन आणि नवकल्पना धोरणाचा मुख्य भाग ओपन ऍक्सेस भोवती फिरतो. Horizon Europe आणि Plan S हे युरोपियन युनियनमधील ओपन ऍक्सेसचे मुख्य घटक आहेत. सर्वप्रथम, होरायझन युरोप हा एक निधी कार्यक्रम आहे ज्याचा उद्देश जागतिक आव्हानांचा सामना करताना सहकार्याला प्रोत्साहन देणे आहे. निधी प्राप्त करणाऱ्या सर्व संशोधकांसाठी खुला प्रवेश अनिवार्य आहे. प्लॅन एस, दुसरीकडे, इतर गोष्टीं बरोबरच, कॉपीराइट, पारदर्शकता आणि निकषांबद्दल दहा मार्गदर्शक तत्त्वे प्रदान करून ओपन ऍक्सेस धोरण सुव्यवस्थित करण्यात मदत करते. 2021 मध्ये, सर्व अनुदानित संशोधन ओपन ऍक्सेस केले जावे असे आदेश दिले.

स्पेन मुक्त प्रवेश

स्पेन, प्लॅन S चा भाग म्हणून, ओपन ऍक्सेस परिणाम आणि डेटावर आधारित संशोधन मॉडेलच्या दिशेने प्लॅन S ला समर्थन देण्याचे उद्दिष्ट ठेवते. 2023 मध्ये, स्पॅनिश सरकारने त्यांच्या पहिल्या राष्ट्रीय मुक्त विज्ञान धोरणास मान्यता दिली. या चार वर्षांच्या योजनेचे वार्षिक बजेट €23.8 दशलक्ष आहे. त्याच्या उद्दिष्टांमध्ये पायाभूत सुविधा आणि योग्य व्यवस्थापनाची स्थापना करणे आणि सार्वजनिकरित्या अनुदानित वैज्ञानिक प्रकाशनांसाठी स्पेनमधील ओपन ऍक्सेस हे डीफॉल्ट केले जाण्याची खात्री करणे समाविष्ट आहे.

युनायटेड स्टेट्स ऑफ अमेरिका मुक्त प्रवेश

2011 पासून, यू.एस.ए मध्ये केवळ सँदस्यता जर्नल्समध्ये लिहिलेल्या लेखांची टक्केवारी घसरली आहे. यू.एस.ए. मध्ये ओपन ऍक्सेस सतत वाढत आहे. यू.एस.ए. सरकारने 2025 च्या अखेरीस सर्व यू.एस. अनुदानित संशोधन ओपन ऍक्सेस केले पाहिजेत असे आदेश दिल्याने ही वाढ गगनाला भिडली. हे वैज्ञानिक शोधांनाला गती देण्याचे आणि सर्वांसाठी प्रवेशाचे अडथळे कमी करण्याच्या देशाच्या उद्दिष्टांचे प्रतिबिंबित करते.

मुक्त प्रवेश चळवळीचे परिणाम.

ओपन ऍक्सेस चळवळीचे उद्दिष्ट विद्वत्तापूर्ण प्रकाशनाला शुल्क आधारित पारंपारिक प्रकाशनां पासून दूर नेणे आणि शेवटी सर्वांसाठी विनामूल्य प्रवेशयोग्य असलेल्या आउटलेट वर हलवणे आहे. ही चळवळ 1990 च्या दशकात सुरू झाली आणि लायब्ररी आणि शैक्षणिक संस्थांसाठी किमतीचे संकट, इंटरनेटची उत्क्रांती आणि ऑनलाइन ऑफर करण्यासाठी अधिक सामग्रीची वाढती मागणी यासह अनेक घटकांच्या संयोजनामुळे ती झाली. 2002 आणि 2003 मध्ये बुडापेस्ट ओपन ऍक्सेस इनिशिएटिव्ह आणि ओपन ऍक्सेस वरील बर्लिन घोषणेने या चळवळीला गती मिळूलागली. हे लक्षात घेणे महत्त्वाचे आहे की मुक्त प्रवेशाच्या दिशेने ही चळवळ अनेक भिन्न गट आणि उपक्रमांद्वारे चालविली जात आहे ज्यामध्ये अंतिम ध्येय गाठण्यासाठी विविध दृष्टिकोन आहेत.

वाढतीगती

ओपन ऍक्सेसच्या दिशेने वाटचाल सुरू झाल्यापासून, ओपन ऍक्सेस जर्नल्स आणि रिपॉझिटरीजची संख्या वेगाने वाढली आहे. अलिकडच्या वर्षांत ओपन ऍक्सेस आउटलेट्समध्ये प्रकाशित करण्यासाठी निधीच्या संशोधनाच्या कागदपत्रांसाठी निधी कर्त्यांद्वारे आदेशाकडे वाटचाल दिसत आहे. याचे ठळक उदाहरण म्हणजे प्लॅन S, जो जानेवारी 2021 मध्ये अंमलात येईल. प्लॅन S ही coAlition S ने विकसित केली आहे, जी युरोपियन युनियनच्या नेतृत्वा खालील एक ट्रान्सनॅशनल चळवळ आहे जी संशोधन प्रकाशनां वरील मुक्त प्रवेश प्रत्यक्षात आणण्यासाठी आणि तेत्वरीत करू शकते. प्लॅन S सांगते की सार्वजनिक रित्या अनुदानीत संशोधनावर आधारित विद्वानांचे लेख ओपन ऍक्सेस जर्नल्समध्ये प्रकाशित केले जाणे आवश्यक आहे, ओपन ऍक्सेस प्लॅटफॉर्मवर ठेवलेले किंवा ओपन ऍक्सेस रिपॉजिटरीजमध्ये जमा करणे आवश्यक आहे. जरी आपण पाहतो की खुल्या प्रवेशाची चळवळ स्थिरपणे वाढली आहे आणि समर्थन मिळवत आहे, विशेषत: शैक्षणिक संशोधन समुदायामध्ये, आम्हाला अद्याप संशोधन ज्ञान व्यापकपणे आणि विनामूल्य सामायिक केले जाण्याचे मूळ दृष्टीकोन लक्षात आले ले नाही. अनेक संस्था अजूनही प्रस्थापित आणि अधिक पारंपारिक जर्नल्समधील प्रकाशनाच्या आधारे कार्यकाळ आणि पदोन्नतीचे निर्णय येत्रीती विद्वानांच ज्ञार्यका आणि अधिक पारंपारिक जर्नल्समधील प्रकाशनाच्या आधारे कार्यकाळ आणि पदोन्नतीचे निर्णय येतात.

मुक्त प्रवेश प्रकाशनासाठीआदेशात वाढ

प्लॅन S सारखे आदेश लागू झाल्यामुळे, सार्वजनिक निधी प्राप्त करणाऱ्या अनेक संशोधकांवर त्याचा परिणाम होईल. त्यांना त्यांच्या संशोधनाचे परिणाम ओपन ऍक्सेस आउटलेटमध्ये प्रकाशित करणे आवश्यक असेल. युनायटेड स्टेट्स मधील नॅशनल इन्स्टिटयूट ऑफ हेल्थ द्वारे वित्तपुरवठा केलेल्या संशोधकांसाठी हे आधीच आहे. जसजसे अधिक निधीदेणारे या दिशेने वाटचाल करत आहेत, तसतसे शैक्षणिक आणि संशोधकांना त्यांच्या कामासाठी मुक्त प्रवेश आउटलेट शोधण्याची आवश्यकता असेल आणि पदोन्नती आणि कार्यकाळाचे निर्णय घेतल्यावर त्याखुल्या प्रवेश प्रकाशनांचा हिशेबघेणे आवश्यक आहे. त्यामुळे संशोधकांसाठी हे जाणून घेणे महत्त्वाचेआहे की ओपन ऍक्सेस आदेश कसे वाढत आहेत, कोणते फंडर्सते लागू करत आहेत आणि ओपन ऍक्सेस आउटलेट कसे निवडायचे ज्यांचे पीअर रिव्ह्यू आहे आणि ते प्रतिष्ठित आहेत.

पदोन्नती आणि कार्यकाळासाठी धोरणे बदलणे

जसजसे अधिक विद्यापीठे स्वीकारतात आणि संशोधनाच्या खुल्या प्रवेशासाठी समर्थन करतात, तसतसे धारणा, कार्यकाळ आणि पदोन्नती (RTP) नियंत्रित करणारी धोरणे पाळली जातील. शैक्षणिक घडामोडी समित्या आणि फॅकल्टी सिनेट यांनी पदोन्नती किंवा कार्यकाळाच्या निर्णयामध्ये ओपन ऍक्सेस प्रकाशनांचे वजन कसे केले जावे यावर विचार करणे आवश्यक आहे आणि नवीन धोरणे विकसित करणे आवश्यक आहे जे ओपन ऍक्सेस आउटलेट्सद्वारे विद्वान कार्यांच्या सामायिकरणाला महत्त्व देतात. सध्या, जगभरातील 500 हून अधिक विद्यापीठे प्राध्यापकांच्या कामासाठी मुक्त प्रवेश ठेवी अनिवार्य करतात. याव्यतिरिक्त, विद्यापीठे आणि लायब्ररी प्रकाशकांशी त्यांचे संबंध बदलत आहेत आणि नवीन करारांमध्ये प्रवेश करण्याचा विचार करत आहेत जे प्रकाशन प्रवेश उघडण्यास अनुकूल आहेत. तथापि, आर.टी.पी. प्रक्रियेसाठी धोरणांनी गती ठेवली नाही. धोरणातील बदलाचा संशोधकांवर परिणाम होतो आणि त्यामुळे तुमच्या संस्थेमध्ये संभाषण कोठे सुरू आहे या विषयी अद्ययावत राहणे आणि शक्यअसेल तेथे त्याचर्चेला तुमचा आवाज देणे महत्त्वाचे आहे.

सहकार्य आणि संवादासाठी मोठीसंधी

मुक्त संशोधनाच्या वाढीमुळे त्या मध्ये आणि विविध विषयांमध्ये सहकार्य आणि संप्रेषणाच्या अधिक संधी मिळतात. जेव्हा समवयस्कांशी संशोधनावर चर्चा करण्याची आणि प्रकल्पांवर सहयोग करण्याची संधी असते तेव्हा शैक्षणिक संशोधकांचे कार्य वाढवले जाते. मुक्त संशोधन सहकार्यासाठी नवीन मार्ग उघडते जे खूप आवश्यक समर्थन बनूशकते, विशेषतः करियर च्या सुरुवातीच्या काळात. लहान संस्थांमधील संशोधकांना त्यांच्या शिस्तीतील समवयस्कांच्या गटामध्ये प्रवेश नसू शकतो. जस जसे आम्ही भविष्यात जातो आणि डेटासेट आणि डेटा विश्लेषणे अधिक उपलब्ध होत जातात, तस-तसे ते संशोधन अभ्यास कसे आयोजित आणि प्रसारित केले जाऊ शकतात याचे मॉडेल प्रदान करतात. या व्यतिरिक्त, ओपन ऍक्सेस डेटा सेट संशोधकांना त्यांच्या स्वतःच्या अभ्यासासाठी डेटा प्रदान करतात, जे संकलित करणे कठीण असू शकते, विशेषतः ते त्यांच्या करिअरची सुरुवात करत आहेत.

समवयस्क पुनरावलोकनासाठी नवीन दृष्टिकोन.

ओपन ऍक्सेस प्रकाशनाने आकर्षित होत असल्याने, शैक्षणिक समुदाय आणि संशोधन संस्था पीअर रिव्ह्यूसाठी नवीन पध्दती सुचवत आहेत. पारंपारिक पीअर रिव्ह्यूमध्ये जर्नलच्या संपादकां द्वारे प्रारंभिक मूल्यांकन, त्या नंतर क्षेत्रातील शैक्षणिकां कडून बाह्यपुनरावलोकन आणि शेवटी बाह्यपुनरावलोकना दरम्यान प्रदान केलेल्या टिप्पण्यां वर आधारित मुख्य संपादकांचा निर्णय समाविष्ट असतो. बाह्य समीक्षक लेखकाला ओळखत नाहीत आणि लेखकांशी संवाद साधत नाहीत. अगदी अलीकडे, ओपन पीअर रिव्ह्यूसाठी कॉल आला आहे. ओपन पीअर रिव्ह्यू अंतर्गत, लेखकांना बाह्यसमीक्षकांची नावे माहित असतील आणि पुनरावलोकन प्रक्रियेच्या या टप्प्यात तयार केलेल्या सर्व टिप्पण्या पाहतील. या सुचविलेल्या दृष्टिकोनाचा उद्देश समवयस्कांच्या पुनरावलोकना दरम्यान सहकार्य आणि चर्चा वाढवणे आहे. ओपन ऍक्सेस जर्नल्स आणि Volume 11, Issue 1 (VI) January - March 2024

आउटलेट्सची संख्या वाढते आणि विविध प्रकारचे पीअर रिव्ह्यू एक पर्याय बनतात, प्रीप्रिंट प्रकाशने आणि ओपन ऍक्सेसमध्ये सामायिक केलेले लेख जाहिराती आणि कार्यकाळाच्या निर्णयांमध्ये अधिक मूल्यवान असू शकतात.

निष्कर्ष:-

प्रस्तुत लेखाच्या माध्यमातून हे स्पष्ट होते की ओपन ऍक्सेस चळवळीसाठी अनेक देश अग्रेसर असून त्यासाठी प्रयत्न करत आहेत. ओपन ऍक्सेस चळवळीच्या माध्यमातून संशोधकांना त्यांना हवे असणारे साहित्य विनामूल्य शिवाय मिळवून देण्याचा प्रयत्न या चळवळीच्या माध्यमातून करण्यात येत आहे. अनेक देश ओपन ऍक्सेस चळवळीला बळकट करण्यासाठी अनेक उपाय योजना करत आहेत या मध्ये इंटरनेटच्या माध्यमातून मोठ्या प्रमाणात प्रयत्न करताना दिसत आहेत विविध संस्था व कार्यक्रमांचे आयोजन करून ओपन ऍक्सेस चळवळीला बळ देण्याचे काम करण्यात येत आहे.

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SMART PHONE BASED LIBRARY SERVICES: APPLICATIONS AND CHALLENGES

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ABSTRACT

Today Smart phones have become the essential part of human life for communication and it also helps to student in e-learning. In this paper we have discussed about mobile technology and focused on its application and challenges in providing library services. With help of smart phone devices, libraries can produce new services and provide faster access to its collection. The implication of mobile library services has created opportunities as well as challenges for academic libraries. Most of the students and faculties have their own smart phone and laptop, so libraries have opportunity to produce new services and instant access to e-information contents.

INTRODUCTION

In the age of information explosion, it is challenge to provide the necessary information to users at the right time. Mobile technologies have made communication and information access very convenient and timely to users from their own homes and office and form wherever they are on move with their cellular phones or PDAS (personal digital assistants). Mobile technology has now come up with "Libraries in hand" trend. Mobile devices are able to access information from the remote source within very short time. However, as mobile phones can be used as good alternative for accessing digital libraries. Digital collection can be made available through digital library on users smart phones. Mobile devices are truly personal devices. Search histories and physical locations can be used to produce more accurate, individualized information and better services. The focus of this paper is on application of mobile phones in library services and consequent challenges.

SMART PHONES AND LIBRARY SERVICES:

In the age of information and communication technology, the academic libraries have changed its services and housekeeping operations for providing access to digital contents. Libraries are deeply interested in channels for dissemination of information, such as Smart phones, telephone lines and cellular networks and internet. Academic libraries have been challenged in satisfying their user's needs, since their stake holders (researchers, lecturers, undergraduate, and postgraduate students) is demanding and dynamic. The Internet and World Wide Web (www) have made it possible for university teachers, researchers, and students to locate what they need without going to the library. Like most of the service institutions, academic libraries need to engage in marketing their products and services. From a marketing communications perspective, the challenge to most libraries is to attract users to the library and response to the stream of users question from within and out of the library user's community.

Most university libraries have own dedicated phone line, which is mostly used for administrative purposes and located in the library administrator's office. Smart phones could be used at the enquiring desks. Short Message Services (SMS) or text facilities available on all mobile phones, can used to create awareness amongst the academic library users about upcoming events and new arrivals. Academic libraries need to keep abreast of the dynamically changing needs of their clienteles. Mobile library service is such of specialized and personalized information service that it can be achieved using the wireless technologies made available to all. Renewal notification could be sent to alert users that books are almost due or overdue. Mobile websites offer free SMS to mobile phone services on the internet. As cell phone technology continues to evolve and it will have as significant impact on libraries as the Internet.

BENEFITS OF SMART PHONE SERVICES:

• Interactive Capabilities:

The mobile Web offers users to access information quickly and it helps to interact library staff and to obtain specific reference quest away from library.

• Ability to Access e-information:

Through the mobile web, user can access browsing and information to anywhere at any time and it will be of great help for users who cannot visit library in person and provides a constant link to required information resources.

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• Time Saving:

Smart Phone devices offer users to browsing and searching of library resources. Users no need to wait at library transaction counter to renew/reserve books and therefore the time of user is saved.

• Personalized Service:

Mobile library service is a specialized and personalized that helps to interact library professionals and gain specific references.

• User participation:

Libraries can enrich OPAC by allowing users to incorporate user created like notes or images uploaded by users

• Limitless Access:

All online resources accessible on their desktop also become accessible through Smart phones.

Smart phone library services:

• SMS alert service:

Through the text messaging library professionals should alert the users for new book notice, informing availability of reserved documents for collection, appraising about which/when books are overdue, library circulars, e-journals subscribed, change in library timing, information about important events, etc. such alert notifications can be generated automatically using integrated library management system/software connected.

• Instant Messaging (IM)for Reference services:

Smart phone devices can be useful for instant answers like definitions, meanings and other information from digital libraries and web. While institution has its own IM network, library can also use wed-based free instant messaging services from Google, America online, Way2sms etc.

• Suggest a purchase:

Librarian can receive the suggestions from the users via smart phones. In such cases users need not to visit the libraries and write the requirements in a register.

• Library instructions and Virtual Tours:

The library users, who don't have time to attend on-site workshops, can get access to library tours on their mobile devices. Audio/virtual tours can be produced fairly and quickly. library on their mobile devices. Audio/virtual tours can be produced fairly and quickly. It also reduce staff time spent on orienting new users about library and explaining the services provided by the library.

• **OPAC on Smart phones:**

Libraries can provide their catalog on the mobile devices. Libraries are required to interact with the software vendors to create mobile compatible WEB-OPAC. For example OCLC's World Cat Mobile application pilot allows users to search for and find books and other materials available in their local libraries through a web application they can access from a PDA or a smart phone.

• In-house search:

Library and institutions provide access to their owned databases and resources. User should just enter search terms and can see results that are designed specifically for mobile displaying.

• Research consultation and instruction:

It is a kind of customer care service. Library staff provides reference service to researchers through smart phones. Research scholars may have an interaction with the library staff to get the consultation and get suggestions via mobile phones such as specific definitions/ facts and information contents.

• Journal finder:

Library Journal Finder provides access to full text journal, magazine, and newspaper content as well as links to titles held in print form. For example American University library has providing option to search journals through mobile phones.

• News and Events:

Information on job openings, library events such as orientations program, stock verification, book recall, lectures on special topic, news in relation to scholarly work, awards and so on can be given using mobile devices in order to update the users knowledge. Short messages regarding the library events and news can be sent to the users personally.

Reference service:

Library users can ask librarians anything through the live chat texting with smart phones. The reference services can be provided with the help of sending and receiving SMS. Immediate feedback is also possible from the user side.

• New Title Preview:

Smart phone gadgets can be used to disseminate the information about newly acquired documents which are of irrespective of forms.

• Wi-Fi Internet Access:

Smart phones are available with 3G facility. Libraries can offer Wi-Fi facility to users. Through the Wi-Fi library users can access all electronic publications within library campus.

CHALLENGES:

• Defining content for the Smart library:

Present mobile devices are limited by the speed to access internet connection, small screens, slow processing and limited storage capabilities. One of the most important barriers is the limited memory of mobile devices. An important factor of a successful M-library is how technology or the medium affects the information displayed, defining what amount and what type of information is appropriate to display on smart phones.

• Design of the format:

The formation of suitable for a desktop computer may not be suitable for a mobile device because of the limitation of a small screen size. Content for mobile display should be in smaller segments and information needs to be re-organized. Such as the size of the text, images, graphics and tables, and the size and physical location of pop-up windows will need to be re-defined.

• Separate the content form the format:

The successful mobile library is that which should work for a broad range of devices. In other words, it should be device independent. This object may be resolved through efforts to broaden the capabilities and flexibility of web browsers which separate the content from the format.

• Display models:

This is an important challenge for library professionals to select the display model because display models for various operating systems and browsers vary. We should use a program to recognize whether the device is a portable PC or a mobile device. Afterwards, the system chooses the proper style and display model to specify the sight of the page.

• Lack of a standard:

Limitations in existing technologies, present operating systems and web browsers make a challenge for mobile library creators. They presently lack of capability or the flexibility for an application to be displayed on all devices or not. The mobile library developers should maintain a standard to display contents properly on devices

• Handling of PDF documents:

The most mobile library has links to learning resources in Adobe PDF format. But, there is a problem to PDF support on Blackberry devices. A Blackberry user cannot view a PDF document using his/her web browser. To avoid this problem, documents widely used in the mobile library site are re-organized into HTML or any other format for viewing with a Blackberry.

• Handling of multimedia file types:

This is a great challenge for the future development as large and complex learning objects require flash, shockwave, java applets and other plug-ins because the mobile library sire has links to a wide variety of audio and video files. There is problem to support audio/video for the model being tested and all of these may not work on the all mobile devices.

CONCLUSION

Application of mobile technology in library services is the need of the hour. Interaction with the user community can be achieved due to advancement in mobile technology. Now students can access a wide range of digital resource and library services and truly engage in learning activities using any mobile devices wherever and whenever they choose, not just at their desktop PCS. The impact of mobile technology implementation raised strong awareness amongst library staff for the need to acquire skills to realize the

associated benefits. The academic institution are marketing their product and services through mobile devices .The challenge of academic libraries is to create and compelling information services and to make digital content available in a way that user community will find not only acceptable, but tailored to their needs. The mobile revolution offer both challenges and opportunities for academic libraries.

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ROLE AND IMPORTANCE OF AN INTELLECTUAL PROPERTY RIGHTS IN LIBRARIES

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ABSTRACT

This present's research paper discusses on intellectual property rights, copyright, digital rights. This paper highlights the role and importance of intellectual property rights in libraries. Here the author tries to explain how libraries can get the ultimate usage of the resources within the limits of intellectual property rights. It concluded that the library and information science should have full knowledge of intellectual property rights to keep the safeguard of the user community. It also throws light on the duties and responsibilities of library professionals in the preservation of intellectual properties in the libraries.

Keywords: Intellectual property, Copyright, Library, Patents, Trademarks, Geographical Indication, Industrial Designs, Trade Secret, Trade Marks.

1.1. INTRODUCTION

Intellectual property is the strength of any organization and is more important than its financial strength. In today's modern digital world, access to information and sharing of resources is easy through social media. Users can upload, share content with their friends or other researchers so all library and information science and library users should be aware of copyright provisions. Intellectual property rights and digital resource management are a challenge for all libraries and information sciences. Digital resources always pose problems in their sharing and use. Library and Information Science make users aware of copyright law conflicts and train them how to avoid them. Academic libraries understand the value of intellectual property so they protect and manage it for future prosperity.

1.2. Definitional Analysis

- Intellectual property refers to any intellectual creation, such as literary works, artistic works, inventions, designs, symbols, names, images, computer code, etc.
- Intellectual property law exists in order to protect the creators and covers areas of copyright, trademark law, and patents.
- Thus, intellectual property is an umbrella term encompassing both copyright and industrial property, such as trademarks, patents, and inventions. (University of Pittsburgh Library System, 2024).

1.3. What is Intellectual Property?

Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce (WIPO, 2024).

1.4. What is the need of IPR?

The progress and well-being of humanity rest on its capacity to create and invent new works in the areas of technology and culture.

- Encourages innovation: The legal protection of new creations encourages the commitment of additional resources for further innovation.
- Economic growth: The promotion and protection of intellectual property spurs economic growth, creates new jobs and industries, and enhances the quality and enjoyment of life.
- Safeguard the rights of creators: IPR is required to safeguard creators and other producers of their intellectual commodity, goods and services by granting them certain time-limited rights to control the use made of the manufactured goods.
- > It promotes innovation and creativity and ensures ease of doing business.
- It facilitates the transfer of technology in the form of foreign direct investment, joint ventures and licensing.(Drishti,2024)

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1.5. OBJECTIVES OF THE STUDY

- To create awareness about the economic, social and cultural benefits of IPR among all sections of the society.
- > To promote generation to generate intellectual property.
- > Balancing rights owners' interests with legitimate interests.
- > Modernizing and strengthening the administration and management of intellectual property.
- > Commercialization of IPR Get value from IPR through commercialization.
- > Strengthening enforcement and judicial mechanisms to combat intellectual property violations.
- > Strengthening and expanding human resources, institutions and capacities for human capital development.

1.6. TYPES OF INTELLECTUAL PROPERTY (IP)

1.6.1. Patents

A patent is an exclusive right granted for an invention, which is a product or a process that provides a new way of doing something, or offers a new technical solution to a problem. It provides protection for the invention to the owner of the patent. The protection is granted for a limited period, i.e. 20 years. Patent protection means that the invention cannot be commercially made, used, distributed or sold without the patent owner's consent. A patent owner has the right to decide who may - or may not - use the patented invention for the period in which the invention is protected. The patent owner may give permission to, or license, other parties to use the invention on mutually agreed terms. The owner may also sell the right to the invention to someone else, who will then become the new owner of the patent. Once a patent expires, the protection ends, and an invention enters the public domain, that is the owner no longer holds exclusive rights to the invention, which becomes available to commercial exploitation by others. All patent owners are obliged, in return for patent protection, to publicly disclose information on their invention in order to enrich the total body of technical knowledge in the world. Such an ever-increasing body of public knowledge promotes further creativity and innovation in others. In this way, patents provide not only protection for the owner but valuable information and inspiration for future generations of researchers and inventors (Savale and Savale, 2016).

1.6.2. Trademarks

A trademark or service mark is a word, name, symbol, or device used to indicate the source, quality and ownership of a product or service. A trademark is used in the marketing is recognizable sign, design or expression which identifies products or service of a particular source from those of others. The trademark owner can be an individual, business organization, or any legal entity. A trademark may be located on a package, a label, a voucher or on the product itself. For the sake of corporate identity trademarks are also being.

1.6.3. Copyright

Copyright is a form of protection provided by U.S. law (17 U.S.C 101 et seq) to the authors of "original works of authorship" fixed in any tangible medium of expression. The manner and medium of fixation are virtually unlimited. Creative expression may be captured in words, numbers, notes, sounds, pictures, or any other graphic or symbolic media. The subject matter of copyright is extremely broad, including literary, dramatic, musical, artistic, audiovisual, and architectural works. Copyright protection is available to both published and unpublished works.

Copyright protection is available for more than merely serious works of fiction or art. Marketing materials, advertising copy and cartoons are also protectable. Copyright is available for original working protectable by copyright, such as titles, names, short phrases, or lists of ingredients. Similarly, ideas methods and processes are not protectable by copyright, although the expression of those ideas is.

1.6.4. Geographical Indication

Geographical Indicator (GI) is a special type of intellectual property which was included in IPR law by Agreement on the Trade–Related Aspects of Intellectual Property Rights (TRIPS) of the World Trade Organization (WTO). It refers to any indication that identifies a good as originating from a particular place, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin. India has in its possession a number of existing or potential GIs. Some of them like, 'Darjeeling' (tea), 'Basmati' (rice), 'Alphonso' (mango), etc. are already renowned the world over (Das,2007),

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1.6.5. Industrial Designs

Intellectual Property Rights protection of industrial design is a strategic medium for improving designer's creativity of micro, small and medium industry. It is one of the efforts of improving national competitiveness in entering free trade era.IPR protection of Industrial Design encourages creative activity to create new designs specially in Micro, Small & Medium Enterprises (MSME) to produce products in the form of interesting creative work (Husain and Alvera, 2017).

1.6.6. Trade Secret

A Trade Secret is a different type of IPR that is used by business organizations which have some confidential information related to their unique business quality. A trade secret is usually defined as information used in the operation of a business that gives the owner "an opportunity to obtain an advantage over competitors who do not know or use that information so long its secrecy is maintained". It can be used to protect "secret formulas" (such as the one developed by Coca-Cola), blueprints for future projects, marketing plans, and manufacturing processes (Spinello, 2007).

1.6.7. Trade Marks

A trade mark is the exclusive right of particular trade or commercial identity. It is a legal protection which has been codified in the Federal trade Mark Act 1946 known as 'The Lanham Act'. This law gives the seller the exclusive right to register a trademark and to prevent competitors from using that mark.

1.7. CONCLUSION

India has and should make many changes in its intellectual property rights system to increase the efficiency of intellectual property. It aims to reduce the time it takes to issue a patent and places a culture of innovation at the centre. Intellectual property rights and their appropriate consequences are essential. Different types of intellectual property rights are relevant to everyday life, thus there is a need for proper awareness among the various partners of scholarly communication. Libraries play a very important role in streamlining user rights, as they are nerve and information centers that provide information to users on the one hand and enforce copyright laws and author policies on the other. Copyright and other intellectual property rights encourage the creation of new knowledge and encourage creators or innovators.

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AWARENESS OF OPEN ACCESS ELECTRONIC INFORMATION RESOURCES AMONG LIS STUDENTS OF MUMBAI UNIVERSITY

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ABSTRACT

The utilization of electronic information resources is growing daily. With available funding, libraries have purchased electronic materials. Open access resources are crucial to enhancing the collection of electronic information resources in libraries that lack sufficient funding. From the users' perspective, there are no fees or charges for using these resources. The focus of this study is specifically on Mumbai University Library Information Science (LIS) students' understanding of and utilization of open access resources. This study also looks into LIS students' experiences using open-access resources. A Google questionnaire has been built to collect data. According to this study, most LIS students are aware of and make use of open access materials.

Keywords: Open Access electronic information resources, LIS, Mumbai University

1. Open Access Electronic information resources

Open Access resources (OAR) are a vital component of the user community in the twenty-first century, providing faculty, researchers, students, and even parents with instant access to problem solutions via their own devices.

The act of making peer-reviewed academic literature and research publicly accessible online to anybody with an interest in reading it is known as "Open Access."

Open Access (OA) refers to the unfettered use of electronic resources and unrestricted access to information for all users. Digital content in any form, including text, data, software, audio, video, and multi-media, can be freely accessible. Although the majority of them solely deal with text, an increasing number also integrate text with data, pictures, and executable code. Non-scholarly media like music, movies, and novels can also be covered by Open Access (OA).

According to Willinsky (2003) identified nine characteristics of Open Access. They are:

- 1. E-print archive -authors self- archive pre- or post-prints,
- 2. Unqualified -immediate and full Open Access publication of a journal,
- 3. Dual mode both print subscription and Open Access versions of a journal are offered,
- 4. Delayed Open Access Open Access is available after a certain period of time,
- 5. Author fee authors pay a fee to support Open Access,
- 6. Partial Open Access some articles from a journal are available via Open Access,
- 7. per-capita Open Access is made available to countries based on per-capita income,
- 8. Abstract Open Access available to table of contents/abstracts, and
- 9. **Co-op** institutional members support Open Access journals.

2. LIS department of Mumbai University

The Department of Library and Information Science boasts a rich tradition spanning many years. Training in Library Science was initiated by the University of Library, located at the Fort Campus of the University of Bombay. It is one of the oldest courses offered by the university library in India and Maharashtra. The university library offered the first course, "Diploma in Librarianship," during the pre-independence era. The diploma program in librarianship was changed to a bachelor of library science degree program. The Master of Library Science program was established in 1967. Beginning in 1995, the Ph. D. program in library science was offered.

4. REVIEW OF LITERATURE

Veena (2016). This study's primary goal is to find out how postgraduate students at Mangalore University are aware of and use Open Access electronic information resources, as well as related difficulties. In this study, a survey method based on questionnaires was employed. Out of the 180 surveys that were delivered, 152 were

properly completed and returned as a sample. The results indicate that 58 (38.15%) of respondents learned how to use Open Access e-resources via teachers or research supervisors, 72 (47.36%) of respondents regularly utilized e-books or e-journals, and 98 (64.47%) of respondents said they were satisfied with Open Access eresources. The study's findings indicate that most pupils are aware of electronic resources that are available to everyone.

Sultan, M., & Rafiq, M. (2021). In the context of Pakistani university libraries, this study evaluates the perceived level of Open Access (OA) awareness, problems, and opportunities. This study also examined the distinctions between university libraries in the public and private sectors with regard to awareness, opportunities, and problems. The study utilized a survey research strategy that relied on a structured questionnaire in order to achieve its goals. The study's participants were the libraries of Pakistani institutions in Punjab and Islamabad that were accredited by the Higher Education Commission of Pakistan (HEC). The results showed that while most university libraries had some awareness of the Budapest OA Initiative and Diamond OA Model, they were mostly unaware of the HEC-National Digital Library (NDL) OA resources, OA journals, and Pakistan Research Repository. The main obstacles were found to be a lack of extra resources (people, time, and effort), the dependability of OA information resources, and inadequate infrastructure and technologies. Nonetheless, the top three prospects were free access, increasing library value, and meeting user needs while cutting costs.

5. OBJECTIVE OF THE STUDY

1. To analyse LIS department students' knowledge and utilization of Open Access electronic information resources.

2. To find out awareness sources about Open Access resources in LIS students.

3. To understand the LIS students' experienced while using of Open Access information resources.

6. SCOPE OF THE STUDY

This study is limited to Mumbai University's Master's and Doctoral students in the Library and Information **Studies Department**

7. RESEARCH METHODOLOGY OF THE STUDY

The questionnaire method was used in this study to gather information from LIS students. The link and the Google form were used to create an attractive questionnaire. Ph.D. and M. Lib. students were being considered for data collecting. We obtained the phone number and email address from the University of Mumbai's LIS department. The use and understanding of Open Access electronic information resources were among the topics covered in the list of questions. 52 student questionnaires are received from students, while 56 student questionnaires were mailed to students.

8. Analysis and Interpretation

Total 52 questionnaire are received and the analysis of data collection are as follow

Table 1- Course wise distribution of the respondents				
Course Respondent Percentage (%)				
M. Lib.	45	90.38		
Ph. D.	7	13.46		
Total	52	100		

Table 1- Indicate that 45 (90.38%) students are M. Lib students and 7(13.46%) are Ph. D students.

Table 2- Gender wise distribution of the respondents				
Gender	Respondent	Percentage (%)		
Male	34	65.38		
Female	18	34.62		
Total	52	100		

Table 2- Gender wise distribution of the respondents

Table No.2- Shows that 34(65.38%) are male and 18(34.62%) are female respondent.

Table 3 awareness	and use of Open Access	s resources
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Used of Open Access	Respondent	Percentage (%)
e-Book	36	69.23
e-Research article	42	80.76
Conference proceeding	20	38.46

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e-thesis	26	50.00
Audio/video	45	86.53
e-newspaper	22	42.30
Digital repositories	35	67.30
Govt. education portal	16	30.76

Table no.3 shows that 45(86.53%) respondent are used audio/video Open Access resources, 42(80.76%) used Open Access e-research articles, 36(69.23%) are used Open Access e-books, 35(67.30%) are used Open Access digital repositories. Audio/video, e-books, e-research paper, digital repositories are more used Open Access e-resources in LIS students. Conference proceeding 20(38.46%) respondent are used Open Access conference proceeding, 26(50.00%) are used e-thesis,

Awareness	Respondent	Percentage (%)
Self-study	25	48.07
Friends/colleagues	18	34.61
By LIS faculty	38	73.07
M. Lib syllabus	32	61.53
Library orientation	15	28.84
Library website	28	53.84
Conference/workshops	12	23.07
Internet surfing	40	76.92

Table 4-	Mode of	awareness	wise	distribution	of th	he resp	ponder	nts
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Table no.4 indicates that 40(76.92%) respondent aware through internet surfing, 38(73.07%) respondent are aware through LIS faculty members, 32 (61.53%) respondent aware through M. Lib syllabus. 28(53.84%) they know through library website, 25(48.07%) aware through self-study, 12(23.07%) aware through conference/ workshops.

Experience	Respondent	Percentage (%)
Easily access	45	86.53
Good content interface	36	69.23
No copy rights	42	80.76
Cost saving	46	88.46
No membership/Registration	36	69.23
Update information	32	61.53
Variety mode of materials	38	73.07

Table 5- experience wise distribution of the respondents

Table No.-5 shows that experienced while using Open Access e-resources 46(88.46%) they not paid any cost or membership fee/registration process, 45(86.53%) respondent experience that they can easily access, 42(80.76%) respondent experienced that there any copy right issues, 38(73.07%) respondent experienced that they got variety mode Open Access e-resources. 36(69.23%) respondent experienced that good content interface while use of Open Access resources. 32(61.53%) respondent experienced that they got update information while use of Open Access resources

9. FINDING

- 1. There are 45(90.38%) respondent are Master degree students.
- 2. 45(86.53%) Audio/video material, 42(80.76%) e-article and 36(69.23%) e-book are most know Open Access resources among students.
- 3. 40(76.92%) respondent aware through internet surfing, 38(73.07%) respondent are aware through LIS faculty members in their regular lecture topics, 32 (61.53%) respondent aware through M. Lib syllabus of course.
- 4. Most of respondent experienced that they not pay any cost or paid any membership while use of Open Access resources, 45(86.53%) respondent experience that they can easily access, 42(80.76%) respondent experienced that there any copy right issues

10. CONCLUSION

Every day, the percentage of electronic information resources that are published increases. However, the cost of these electronic information resources is very significant. People are unable to afford it. The key to solving problems is to use Open Access materials. According to the study's findings, the majority of LIS students are aware of it. They mostly made use of free audio and video resources. They used e-books and e-articles as well. Along with sharing their experiences, When using these resources, they are no membership fees to pay. They also noted that anyone can easily access these open-access resources.

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CASE STUDY ON ONLINE REFERENCE MANAGEMENT SOFTWARE WHICH ARE USING IN ACADEMIC LIBRARIES OF HIGHER EDUCATION SYSTEM IN INDIA & ABROAD

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ABSTRACT

This article derives from an overview of online reference management software's that are most useful for researchers to manage their bibliographic citations. There are a number of different types of software packages that you can use to manage the bibliographic details of information and the documents you find during your degree or research. This article gives twenty nine number of reference management software's, name of software developer and latest version of software. When we begin our research for any piece of work, it is important that we record the details of the entire information that find by us, Reference Management Software's helps us to manage the bibliographic citations and also fulfills 4th law of S. R. Rangnathan "Save time of users" but everyone are not aware about the Reference Management Software's.

Keywords: References, Reference management, Reference Management Tools.

1. INTRODUCTION

Today references also called citations are not just books and journal articles. They can include websites, epublications, videos and more. Using a reference management tool we will make it a lot easier for us to not only collect and store our items, but also to organize and tag them (add Meta data). A good tool will also provide us with the correct format for citing references in our papers. It's important to remember that we don't have to wed yourself to any one tool. They each have pros and cons, and we can use different ones for different things. We can sometimes also exchange references between tools pretty easily.

Reference management software, citation management software or personal bibliographic management software is software for scholars and authors to use for recording and utilizing bibliographic citations (references). Once a citation has been recorded, it can be used time and again in generating bibliographies, such as lists of references in scholarly books, articles and essays. The development of reference management packages has been driven by the rapid expansion of scientific literature. Reference Management Software's are used by researchers in academics to manage the bibliographic citations they encounter in their research. With these tools, scholars keep track of the scientific literature they read, and to facilitate the editing of the scientific papers they write. Several different software packages exist, with sometimes different features and purposes. Most of this process can be automated by using a reference management tool. It can help us keep track of our citations are put in us bibliography as well. All this according to the standard we choose. A reference management tool will saves our time, since we do not have to spend time on manually typing all the references for our bibliography and we do not have to struggle with commas, parentheses etc.

2. DEFINITIONS

References:

"Reference is a relation between objects in which one object designates, or acts as a means by which to connect to or link to, another object. The first object in this relation is said to refer to the second object. The second object – the one to which the first object refers – is called the referent of the first object".

The term reference is used in many spheres of human knowledge, adopting shades of meaning particular to the contexts in which it is used.

Reference Management:

Reference management is how you organize the references you use in your written papers e.g. It is to cite correctly in your papers, assignments etc. You can do all this manually or by using a reference management tool, For example it is a good idea to create your bibliography and to cite your references according to a specific method/standard. Your bibliography and your citations will look the same and it will make it easier for anyone to find the references, the literature you cite in your paper, assignment etc.

Reference Management Software:

According to Telstar's definition, a Reference Management Software "enables an author to build a library of references by entering the details of each reference in a structured format." They usually support mechanisms

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for organizing sets of references by tagging or use of 'folders', and will generate references, citations or bibliographies in a range of referencing styles. Most packages support ways of importing records.

"From library catalogues and other bibliographic data sources in order to facilitate the generation of references. In addition, many packages offer plug-ins or add-ons for Word processing software which enable authors to insert references from their 'library' directly into a document as they are writing" (JISC & Open University, 2010).

3. NEED OF THE STUDY:

When we begin our research for any piece of work, it is important that we record the details of the entire information that find by us, Reference Management Software's helps us to manage the bibliographic citations and also fulfills 4th law of S. R. Rangnathan "Save time of users" but everyone are not aware about the Reference Management Software's. Less Awareness about Reference Management Software's by the research scholars.

4. **OBJECTIVES:**

- To explore and identify of the Reference Management Software's tools for the researchers to utilize and manage bibliographic citations/ references.
- To find out evaluation criteria of Reference Management Software's for search out which Reference Management Software's are user friendly so that many research students may rely on that software's.

5. Developments in RMS:

Reference Management is perceived to be tedious and time consuming by many researchers, especially when it is done manually. In the past, references used to be written on index cards and stored in boxes. Reference management software allows for the digitization of a personal collection of relevant scholarly publications. The earliest programs to manage the basic task of storing references and adding them to manuscripts have been around for over 25 years (including Endnote and BibTeX/LaTeX-based programs still popular today), but each individual entry had to be typed in by hand. In the last 15 years we have seen a number of significant developments that have made reference management much easier for the researcher:

- Retrieval of reference information from online bibliographic databases
- DOIs and other persistent identifiers for bibliographic information
- Automated management of PDF files
- Open Access for easier access to full-text content
- Web-based reference management easier for collaboration and use across multiple devices.

We will need these details to provide accurate references, and to enable to locate the information again at a later date, should it be necessary to do so. Reference management (or bibliographic) software allows to manage all the references we need for papers, reports, essays or thesis by enabling to keep them in our own personal database or library. It allows us to:

- > Search easily for a particular reference to which need to refer back
- Print or save a list of references
- > Insert citations into our document and automatically produce a bibliography in whatever style we require.

These software packages normally consist of a database in which full bibliographic references can be entered, plus a system for generating selective lists of articles in the different formats required by publishers and scholarly journals. Modern reference management packages can usually be integrated with word processors so that a reference list in the appropriate format is produced automatically as an article is written, reducing the risk that a cited source is not included in the reference list. They will also have a facility for importing the details of publications from bibliographic databases.

6. Deference between Reference Management Software's and Bibliographic Database:

Reference management software does not do the same job as a bibliographic database, which tries to list all articles published in a particular discipline or group of disciplines; examples are those provided by Ovid Technologies (e.g. Medline), the Institute for Scientific Information (e.g. Web of Knowledge) or mono disciplinary learned societies e.g. the American Psychological Association (PsycINFO). These databases are

large and have to be housed on major server installations. Reference management software collects a much smaller database, of the

Publications that have been used or are likely to be used by a particular author or group, and such a database can easily be housed on an individual's personal computers. Reference Management allows us to:

- > Create, store and organize a personalized database of our references
- > Enter references manually or import from library catalogues or databases
- > Generate bibliographies/reference lists, choosing from 100s of bibliographic styles.

Although we may or may not consider them 'social media', reference management tools are one of the single most useful digital tools for a researcher today. Gone are the days of painstakingly changing each of our in text citations to a footnote or changing each full stop in a reference to a comma because a journal required it. Online reference management tools allow us to:

- Import references from different sources (e.g. websites, library catalogues, bibliographic databases)
- Manage and/or edit the references once they're in the system, and add manually any references that we cannot find online
- Export references into a document, either as a single bibliography, or individually (often called 'cite while we write') which generates a list of references.
- Format the bibliography according the referencing style of our choice, and re-format if/when necessary.

7. Two main functions of Reference Management Software's:

- a. Building a database of citations, useful for keeping track of and organize the documents useful for one's research
- b. Formatting bibliographies and citations when writing paper. [1]

Other functions of Reference Management Software's:

- Import citations from bibliographic databases and websites
- Gather metadata from PDF files
- Allow organization of citations within the RM database
- Allow annotation of citations
- Allow sharing of the RM database or portions thereof with colleagues
- Allow data interchange with other RM products through standard metadata formats (e.g., RIS, BibTeX)
- Produce formatted citations in a variety of styles
- Work with word processing software to facilitate in-text citation.[7] Table 1: Reference Management Software's:

Sr.No	Name of	Name of Software Developer	Latest Version of
	Software		Software
1	Aigaion	Aigaion developers	2012-01-18 (2.2)
2	Bebop	ALaRI Institute	2009-11-10 (1.1)
3	BibBase	Christian Fritz	2013-07 (v3)
4	BibDesk	BibDesk developers	June 3, 2019; (v1.7.3)
5	Biblioscape	CG Information	10.0.3.6 / June 22, 2015
6	Bibsonomy	University of Kassel	2018-07-30 (3.8.13)
7	Bibus	Bibus developers	2013-05-23 (1.5.1)
8	Bookends	Sonny Software	2019-06-22 (13.2.4)
9	Citavi	Swiss Academic Software	2019-01-10 (6.3)
10	CiteULke	Oversity Limited	Shut down in 2019-03-30
11	Colwiz	colwiz Ltd	2013
	F1000Workspace	F1000/Science Navigation Group	Continually updated

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			online
12	Decear	Otto-von-Guericke	2013-10-17 (1.0)
		University	
		Magdeburg and University Cali	
13	EndNote	Thomson Reuters	12 Nov 2019 (X9)
14	JabRef	JabRef developers	2018-06-05 (4.3.1)
15	KBibTeX	KBibTeX developers	2018-06-21 (0.8.1)
16	Mendeley	Elsevier	2018 (1.19)
17	Papers	Springer	Continually updated
			online
18	Pybliographer	pybliographer developers	2018-04-03 (1.4.0)
19	Qiqqa	Qiqqa	2016-09 (v79)
20	Refbase	refbase developers	2014-02-28 (0.9.6)
21	RefDB	refdb developers	2007-11-05 (0.9.9)
22	Reference Manager	Thomson Reuters	network version; built-in
			web publishing tool;
			discontinued
23	Referencer	Referencer developers	2013-05-07 (1.2.0)
24	RefWork	RefWorks / ProQuest	2013
25	SciRef	Scientific Programs	2012-11-20 (1.0)
26	Sente	Third Street Software, Inc.	Shut down in 2017
27	Wikindx	Mark Grimshaw	2019-08-20 (5.8.2)
28	WizFolio	WizPatent	Shut down in 2017
29	Zotero	Roy Rosenzweig Centerfor	2019-06-14 (5.0.67)
		History and New Media at GMU	

8. Evaluation Criteria's of Reference Management Software's are:

- 1. Operating system support
- 2. Export file formats
- 3. Citation styles
- 4. Reference list file formats
- 5. Word processor integration
- 6. Database connectivity
- 7. Password "protection" and network versions
- 8. Ease of Use / Usability
- 9. Help
- 10. Compatibility
- 11.Costs
- 12. What features should my reference management software offer?
- 13. Where do I usually work?
- 14. Mobile Access
- 15.Personal Storage Space
- **16.Syncing Documents**
- **17.Syncing Citations**
- 18. Import file formats
- Primary Importing Process,
- Secondary Importing Processes,

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• Importing from catalogues and discovery layers

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19. Access and Subscriptions

20.Platform

9. Some very useful Reference Management Software's:

Zotero

Zotero is the free open source reference management software to manage citations such as PDF files. The website for free download zotero sofeware https://www.zotero.org/ Zotero 4.0, released in April 2013, includes new features such as automatic journal abbreviations, colored tags, on-demand file syncing.



Endnote

Endnote is the commercial reference management software produced by Thomson Reuters. They give 30 days' free trial for the users. The official website of endnote is http://myendnoteweb.com. In the Endnote software having several ways to add a reference to a library: manually, exporting, importing, copying from another EndNote library, connecting from EndNote.



Refworks:

RefWorks is an online research management, writing and collaboration tool is designed to help researchers easily gather, manage, store and share all types of information, as well as generate citations and bibliographies. The official website is https://www.refworks.com/.

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Fig.3: Home page of Refworks Refworks Web Based Bibliographic M Ele Edit Yew Fgvorites Iools Help RefWorks an interface (in beta test) now available. Click here for det References • Search • View • Folders • Bibliography Tools • Help • All References Switch to: Standard View Use: Oselected OPage OAll in List Add to My List Put in Polder... Sort by Ref ID Global Edit Delete Print Go to Page: 1 2 3 4 5 6 7 8 9 10 Journal Reference 1 of 2665 Plantur Extinction and propagation of elastic waves in inhomogeneous materials Ref ID: 1 Title: Authors: Scorce: KimJ-Y. Mech Mater. 2003, 35, 9, 877-884, Netherlands Journal Reference 2 of 2665 Interfacial compatibility of C/Au-coated STICO fiber-reinforced Ti matrix composite Maj SARS Wiew Edit OS-F-X Internation componentially of Order-Control and The Control in the International Componential Science (International Componential Science) (International Componential Science (International Componential Science) (International Compon P DUniversity of Auckland; Clemson View Edit Journal of the European Ceramic Society, 2003, 23, 8, 1243-1255, UK Journal Reference 4 of 2445 Predicting effective magnetor striction and moduli of magnetostrictive composites by using the double-inclusion method Fens, Y. Fanz, D.; Soh, A. K.; Hwang, K. -C. Mech, Mater, 2003, 35, 7, 623-631, Netherlands Journal Reference 5 of 2465 View Edit OFFX Preparation and Purification Technology, 2003, 32, 1-3, 239-245, USA Journal Reference 6 of 2465 Preparation and characterization of Pd--Ag/ceramic composite membrane and application to enhancement of catalytic dehydrogenation of Source: Ref ID: 4 Title: Authors: Source: Source: Ref ID: 5 Title: Authors: Ref ID: 6 Title:

CONCLUSION:

In 21st century is the need to know the Reference Management Software's for the researchers to manage their citations or bibliographic details of the documents. Twenty Nine reference management software's, Name of software developer and also latest version of software mentioned in this paper because the main aim of this paper is to find out online reference management software's. Twenty evaluation criteria's found for the search out which RMS tools is most useful so that many research students may rely on that software's.

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- 6. http://guides.library.harvard.edu/reftools(14/05/2014)
- 7. http://blogs.bodleian.ox.ac.uk/23things/thing-(19/04/2014)

EMPOWERING EDUCATION: LIBRARIES AND LIBRARIANS AS ADVOCATES FOR OPEN EDUCATIONAL RESOURCES (OER)

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ABSTRACT

This compilation reviews and explores the Open Educational Resources (OER) movement, emphasizing achievements, challenges, and emerging opportunities in the field. Spanning a diverse range of sources and perspectives, the review encompasses seminal works such as Atkins, Brown, and Hammond's comprehensive analysis of the OER landscape. The guiding principles for legal and technical interoperability, presented by Bisell, contribute valuable insights. Additionally, discussions around the global learning commons and educational technology are explored through Bissell and Boyle's work. The guidelines for OER in higher education by COL and UNESCO, along with survey reports on governments' OER policies, shed light on policy frameworks. Other crucial aspects, including copyright guidelines, open licenses, and the role of librarians, are covered in works by Commonwealth of Learning, Gani, Inflibnet, Kanwar, Liang, and Moller. Reports on India's NMEICT initiative and achievements, MOOCs directories, and national and global perspectives on OER by organizations like NKC, NKN, OECD, UNESCO, and the Hewlett Foundation are also reviewed. The abstract provides a comprehensive overview of the OER landscape, from principles and policies to regional initiatives and the global impact of OER.

Keywords: OER Movement, Technical interoperability, Global learning commons, Educational technology and Distance and e-learning.

INTRODUCTION

In the digital age, the educational landscape has transformed, offering learners creative and collaborative opportunities through e-learning 2.0. Libraries and library consortiums have actively engaged in producing OERs, with librarians, experts in various fields, contributing to the open educational commons. This paper underscores the utility of OERs in teaching and learning, encompassing a wide range of freely available digital content such as courses, lectures, quizzes, and simulations. The ICT revolution has facilitated the creation of affordable and accessible OERs, fostering equitable and inclusive learning.

Librarians, with their expertise in information handling, play a crucial role in OER initiatives. UNESCO defines OER materials as those in the public domain with open licenses, a concept librarians are well-equipped to champion. The study aims to explore the specific role played by LIS professionals in OER initiatives, highlighting their experience in handling information and their contributions to awareness programs. It emphasizes the need to delve into the distinct contributions of LIS professionals to OER initiatives, an area often overlooked in existing OER studies that focus on general issues. The research seeks to fill this gap by examining the unique and valuable role played by librarians and libraries in the dynamic landscape of OERs

OER DEFINITION:

OER stands for "Open Educational Resources." These are freely accessible and openly licensed educational materials that can be used, shared, and modified by educators and learners. Open Educational Resources include a wide range of digital or non-digital resources, such as textbooks, courses, multimedia content, and other instructional materials. The key characteristic of OER is that they are available to the public with little to no cost and are typically accompanied by open licenses, allowing users to retain, reuse, revise, remix, and redistribute the content. OER aims to promote accessibility, affordability, and flexibility in education by removing traditional barriers associated with copyrighted educational materials.

The OERs Initiatives in India

The OER movement in India has gained significant traction, driven by both governmental initiatives and grassroots efforts within the education sector. The Indian government, through initiatives like the National Repository of OER (NROER) and the National Mission on Education through ICT (NMEICT), has fostered the creation and dissemination of open educational content. Various educational institutions and platforms actively contribute to OER repositories, promoting accessibility and affordability in education. Collaborations with international OER initiatives, coupled with advocacy and awareness campaigns, have further fueled the

adoption of OER in India. Despite the progress, challenges such as ensuring the quality of OER and enhancing awareness among educators persist, requiring ongoing efforts for the sustainable growth of the OER movement in the country.

India has been actively fostering Open Educational Initiatives to democratize education and enhance accessibility. The National Repository of Open Educational Resources (NROER) serves as a centralized platform offering digital resources for school-level education, including multimedia content. The NDLI provides a diverse collection of academic resources, covering textbooks, articles, and videos. SWAYAM, a government-backed MOOC platform, delivers free online courses spanning various educational levels. E-PG Pathshala, initiated by the UGC, focuses on high-quality postgraduate-level content. Additionally, the NMEICT integrates information and communication technologies to improve education, incorporating projects like e-content creation and virtual classrooms. Indian universities also participate in global MOOC platforms, contributing to the nation's commitment to open and inclusive education.

Librarians Awareness of OER

Librarians' awareness of OER plays a crucial role in shaping the accessibility and integration of these resources within educational institutions. Being well-versed in the principles of OER, librarians are key advocates for their adoption, working to enhance awareness among faculty, students, and administrators. Their understanding of open licensing, copyright issues, and the benefits of OER empowers them to guide users in finding, evaluating, and effectively utilizing these resources. Librarians actively contribute to creating a culture of openness within their institutions, organizing training sessions and workshops to impart OER literacy skills. By staying informed about evolving trends and best practices in the OER landscape, librarians are pivotal in fostering an environment where OER can thrive and contribute to a more accessible and collaborative learning experience.

OER Integration and Promotional Strategies in Libraries

Integrating and promoting OER in libraries involves strategic planning and execution to raise awareness, facilitate access, and encourage the adoption of OER within the academic community. Here are some OER integration and promotional strategies for libraries:

Create a Dedicated OER Section:

Establish a specific section or portal within the library's digital or physical space dedicated to OER. Clearly label and organize OER materials to make them easily discoverable by library users.

> Training and Workshops:

Conduct training sessions and workshops for librarians, faculty, and students to enhance their understanding of OER. Provide guidance on finding, evaluating, and effectively using OER.

Collaborate with Faculty:

Engage in collaborative efforts with faculty members to incorporate OER into course curricula. Offer support for identifying relevant resources and integrating them seamlessly into teaching materials.

> Promote OER through Library Website:

Feature OER prominently on the library's website. Provide information about the benefits of OER, guidelines for usage, and links to relevant repositories or platforms.

> Open Licensing Education:

Educate library users about open licensing, Creative Commons, and copyright issues related to OER. Help them understand the permissions and restrictions associated with different types of licenses.

Participate in OER Initiatives:

Actively participate in OER initiatives, both at the institutional and broader community levels. Join OER networks, collaborate with other institutions, and contribute to the development of OERs.

Collaborate with Open Access Repositories:

Explore partnerships with open access repositories and platforms that host OER. Leverage these partnerships to expand the range of available resources and increase visibility.

By implementing these strategies, libraries can play a central role in promoting the adoption and integration of OER, contributing to the broader goals of accessible and affordable education.

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Roles of Librarians in OER

Librarians play crucial roles in the promotion, integration, and support of OER within educational institutions. Here are some key roles that librarians typically fulfill in the context of OER:

- Resource Identification and Duration:
- Collaboration with Faculty:
- Creation of OER:
- Licensing Expertise:
- Development of OER Policies:
- OER Repository Management:
- ➤ Assistance with OER Adoption:
- ➤ Assessment of OER Impact:
- Engagement in OER Communities:

By fulfilling these roles, librarians contribute significantly to the successful implementation and sustainability of OER initiatives, fostering a culture of openness and accessibility in education.

Techniques Applied by LIS Professionals in Promoting Awareness on OER

LIS professionals employ various techniques to promote awareness of OER within academic communities. Here are several strategies commonly used:

- Workshops and Training Sessions:
- ➢ Information Literacy Programs:
- ➢ Collaboration with Faculty:
- Creation of OER Guides:
- Social Media Campaigns:
- ► Email Newsletters:
- Embedded Librarianship:
- Promotion through Library Website:
- > Participation in Faculty Development Programs:
- ➤ Collaboration with OER Advocacy Groups:
- > Integration with Institutional Learning Management Systems (LMS):
- Feedback Mechanisms:

By employing these techniques, LIS professionals contribute significantly to the awareness, adoption, and sustainable integration of OER within educational institutions.

Library Involvement in OER

Libraries play a pivotal role in Open OER initiatives by curetting, managing, and disseminating OER collections, ensuring their accessibility to faculty and students. Librarians collaborate with educators, providing expertise in resource discovery, copyright, and licensing, and actively participating in training sessions and workshops to promote OER literacy. Libraries often manage OER repositories, contribute to the creation of educational resources, and assess the impact of OER initiatives. Through advocacy, awareness campaigns, and integration with learning management systems, libraries contribute significantly to fostering a culture of open education. Their involvement extends to sustainability planning, participating in OER networks, and actively shaping the landscape of accessible educational resources within the academic community.

Level of Expertise and Need of Skills Development Of Librarians In OER Initiatives

The level of expertise and the need for skills development among librarians in OER initiatives can vary, and ongoing professional development is crucial to keep up with the dynamic landscape of open education. Librarians engaged in OER initiatives often need to possess or develop the following skills:

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- ➤ Understanding of OER Concepts:
- ➢ Information Literacy:
- Metadata and Resource Organization:
- Copyright and Licensing Expertise:
- Collaboration and Communication:
- Training and Instructional Design:
- Technology Competence:
- Advocacy and Outreach:
- Assessment and Evaluation:
- Leadership and Project Management:

Given the evolving nature of OER and the continually changing educational landscape, librarians benefit from ongoing professional development opportunities, workshops, and training to enhance and expand their skills in supporting open education initiatives effectively. Additionally, collaboration with OER communities and networks can provide valuable insights and resources for professional growth.

Textual Searching of OER

Several search engines and repositories are dedicated to finding OER. Here are some popular ones:

- ➢ JSTOR Open Content:
- > National Repository of Open Educational Resources (NROER):
- e-PG Pathshala:
- SWAYAM:
- > NPTEL:
- eGyanKosh IGNOU's Digital Repository:

When searching for OER in India, consider checking university websites, digital repositories of educational institutions, and government-led initiatives for educational resources. Additionally, there might be subject-specific platforms or initiatives focusing on particular disciplines or regions within India.

Challenges of Librarians in OER

Librarians navigating the landscape of OER encounter multifaceted challenges in their efforts to integrate and promote these resources. One significant hurdle involves fostering awareness and understanding among both library staff and patrons about the principles and benefits of OER. The intricacies of copyright laws and open licensing pose another challenge, demanding librarians to navigate legal complexities and educate users on compliance. Collaborating with faculty to seamlessly integrate OER into educational curricula requires effective communication and overcoming potential resistance to change. Additionally, resource duration and maintaining high-quality standards present ongoing challenges, demanding librarians to curate, assess, and organize an ever-expanding array of OER materials. Technical skills for managing digital resources and ensuring their discoverability further contribute to the complex landscape librarian's face in their mission to harness the potential of OER for educational communities.

Opportunities for LIS Professionals in OER

Library and Information Science (LIS) professionals have ample opportunities to contribute to OER initiatives. They can play a key role in OER advocacy by raising awareness about the benefits of open education within their institutions. LIS professionals can actively curate and manage OER collections, making valuable resources easily accessible to faculty and students. Engaging in the creation of OER, whether by developing guides, tutorials, or educational materials, allows them to contribute their expertise to the open education commons. Collaborating with faculty members to integrate OER into course curricula and offering training sessions on OER literacy are additional opportunities for LIS professionals to promote the effective use of open resources. By embracing these roles, LIS professionals contribute significantly to fostering a culture of openness and accessibility in education.

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CONCLUSION

Open Educational Resources (OER) present a wealth of opportunities for LIS professionals to play pivotal roles in advancing open education. Librarians have the chance to advocate for the adoption of OER within their institutions, raising awareness and fostering a culture of openness. By actively curating and managing OER collections, providing training on OER literacy, and collaborating with faculty, LIS professionals contribute to the accessibility and integration of high-quality educational materials. Moreover, the opportunity to engage in the creation of OER, whether through guides or educational resources, enables them to leverage their expertise for the benefit of the wider educational community. Embracing these roles, LIS professionals not only enhance the visibility and utility of OER but also become essential contributors to the evolving landscape of open education. Their involvement is crucial in shaping institutions that prioritize equitable access to knowledge and support the collaborative efforts of faculty and students in the pursuit of quality education.

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FREE AND OPEN SOURCE SOFTWARE: CHALLENGES AND OPPORTUNITIES FOR INDIAN LIBRARIES

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ABSTRACT

This article delves into the challenges and opportunities associated with the integration of Free and Open Source Software (FOSS) in Indian libraries, pivotal institutions in knowledge dissemination. Despite the potential benefits, barriers such as limited awareness, resistance to change, and compatibility issues pose significant challenges. The study advocates for education initiatives to enhance understanding, training programs to bridge skill gaps, and collaborative efforts to address resource constraints. The article emphasizes the cost-effectiveness and flexibility of FOSS, highlighting its potential to revolutionize traditional library systems. By navigating these challenges, libraries can leverage FOSS to not only optimize resource allocation but also actively contribute to the global movement of open knowledge systems. The exploration of FOSS in Indian libraries offers insights into fostering innovation, customization, and sustainable development in the evolving landscape of information management.

Keywords: Free and Open Source Software, Library Challenges, Digital Libraries, Opportunities in Libraries, FOSS.

INTRODUCTION

In the dynamic landscape of Indian libraries, the adoption of Free and Open Source Software (FOSS) emerges as a critical consideration, offering a spectrum of challenges and opportunities. Libraries, pivotal in disseminating knowledge, face hurdles such as limited awareness among professionals and resistance to technological shifts. FOSS, known for its cost-effectiveness and flexibility, presents a promising avenue. However, issues like compatibility, skill gaps, and resource constraints must be navigated. This article delves into the nuanced realm of FOSS in Indian libraries, exploring the need for education and training initiatives, collaborative endeavors, and innovative solutions. As libraries grapple with the evolving information paradigm, the successful integration of FOSS not only promises financial efficiencies but also aligns with the broader ethos of open knowledge systems and community-driven collaboration.

CHALLENGES

Limited Awareness and Understanding:

Limited awareness and understanding pose a significant challenge to the successful adoption of Free and Open Source Software (FOSS) in Indian libraries. Many library professionals and decision-makers may lack comprehensive knowledge about FOSS, including its principles, benefits, and potential applications. Overcoming this challenge requires targeted educational initiatives, such as training programs and workshops, to enhance awareness and foster a deeper understanding of FOSS within the library community. Addressing this challenge is essential to pave the way for informed decision-making and successful implementation of FOSS solutions in the evolving landscape of Indian libraries.

Resistance to Change

Resistance to change is a common obstacle when introducing new technologies, especially in traditional institutions like libraries. Highlighting the cost savings, flexibility, and community support of FOSS can help overcome resistance. Demonstrating successful implementations in other libraries can also serve as a persuasive example.

Compatibility and Integration

FOSS may face compatibility issues with existing library systems and proprietary software. Developing interoperability standards and encouraging collaboration between FOSS communities and library software vendors can address compatibility concerns.

Skill Gaps

Libraries may lack staff with the necessary technical skills to implement and maintain FOSS solutions. Investing in training programs and collaborating with educational institutions to produce librarians with FOSS expertise can help fill the skill gaps.

Resource Constraints:

Many libraries, especially in smaller towns and rural areas, face resource constraints. Advocating for government support, sharing resources among libraries, and leveraging community-driven FOSS projects that are cost-effective can help address resource limitations.

OPPORTUNITIES

Cost Savings:

The adoption of Free and Open Source Software (FOSS) in Indian libraries presents a compelling opportunity for substantial cost savings. Unlike proprietary software, FOSS is typically free to acquire, eliminating licensing fees and reducing overall operational expenditures. Libraries can redirect these saved resources toward essential areas such as collection development, user services, and technology infrastructure enhancements. This cost-effective approach not only improves financial efficiency but also aligns with the goal of maximizing the impact of limited resources within the evolving landscape of library services.

Customization and Flexibility

Customization and flexibility are pivotal advantages of integrating Free and Open Source Software (FOSS) in Indian libraries. Unlike proprietary solutions, FOSS empowers libraries to tailor software according to their specific needs, ensuring a seamless fit within diverse operational contexts. This adaptability facilitates innovation, allowing libraries to respond efficiently to evolving user requirements and technological advancements. The inherent flexibility of FOSS not only enhances the user experience but also enables libraries to stay agile and resilient in an ever-changing information landscape, fostering a culture of continual improvement and adaptability within the library ecosystem.

Community Collaboration

Community collaboration stands as a cornerstone of Free and Open Source Software (FOSS) adoption in Indian libraries. FOSS projects thrive on the collective efforts of a global community of developers, users, and contributors. By actively engaging in this collaborative ecosystem, libraries not only benefit from shared expertise and diverse perspectives but also play a vital role in shaping the evolution of FOSS solutions. This communal approach fosters innovation, accelerates issue resolution, and creates a sustainable knowledge-sharing network. Through community collaboration, libraries contribute to a dynamic and responsive technological landscape, reinforcing the principles of openness and cooperation within the broader framework of information management.

Data Security and Privacy

In the realm of Indian libraries, prioritizing data security and privacy is imperative, making the adoption of Free and Open Source Software (FOSS) particularly relevant. FOSS solutions often incorporate robust security features, mitigating risks associated with unauthorized access and data breaches. Libraries, as repositories of sensitive user information, benefit from the transparent nature of FOSS, where the source code is open for scrutiny by the community. This transparency not only enhances the security posture but also fosters trust among users. By choosing FOSS, libraries can actively contribute to a culture of responsible data stewardship, aligning with evolving regulatory frameworks. In an era of heightened digital threats, the emphasis on data security and privacy positions FOSS as a strategic choice for libraries seeking to safeguard the integrity of their collections and user information.

Sustainable Development

The adoption of Free and Open Source Software (FOSS) in Indian libraries presents a significant opportunity for sustainable development. Unlike proprietary software, FOSS operates on the principles of openness, collaboration, and community-driven development. Libraries engaging with FOSS contribute to and benefit from a global network of developers, fostering a sustainable knowledge-sharing ecosystem. By actively participating in community-driven projects, libraries promote the longevity and continual improvement of FOSS solutions. This approach not only aligns with environmentally conscious practices but also ensures that libraries remain at the forefront of evolving technological landscapes.

CONCLUSION

In conclusion, the integration of Free and Open Source Software (FOSS) in Indian libraries emerges as a transformative endeavor laden with challenges and opportunities. Overcoming hurdles like limited awareness, resistance to change, and compatibility issues requires concerted efforts in education, training, and collaboration. The advantages, however, are compelling. FOSS not only offers cost-effective solutions but also empowers libraries with customization, flexibility, enhanced data security, and the potential for community collaboration. Embracing FOSS aligns libraries with the ethos of open knowledge systems, ensuring

sustainability and responsiveness in the face of evolving information landscapes. As Indian libraries navigate this transition, a strategic embrace of FOSS promises not only financial efficiencies but also positions them at the forefront of innovation and collaborative knowledge creation. It is a pivotal step towards shaping resilient, adaptive, and community-driven library ecosystems in the digital age.

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FREE AND OPEN SOURCE SOFTWAR Library: A Scientometric Study

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ABSTRACT

The study is based on the Scientometrics analysis of 274 research article published during the period of 2019-2023. This Study will review on Reletive growth rate, Collabrative Index In Stem Cell and regenerative medicine, Co - Authorship Pattern of contribution, no of Author wise distribution, Author Producvity, degree of collaboration, country-wise distribution, document type distribution, the findings must reveal various aspects of the characteristics and patterns of contributions of the study.

Keyword: Free Software, source, Open Source, library, Scientometric Study

INTRODUCTION

Free and Open source Programmes and Resources Software that can be run, copied, distributed, studied, altered, shared, and improved for any reason is known as opensource software. Opensource library software gives libraries more control over their workspace and eliminates the requirement for the upfront costs associated with proprietary software. It is imperative that library professionals comprehend the benefits of open-source software and actively participate in its advancement. They ought to be familiar with the fundamentals of installation, maintenance, and choice. Compared to commercial software, open source software demands a higher level of computing responsibility. The benefits of using open-source software for automation are often overlooked by library professionals, which makes them hesitant to adopt it. They lack the necessary knowledge. It is not the case that all libraries in the universe are utilising the fantastic software solutions that have blessed the world with the ability to make things easier to achieve. Many libraries don't have a lot of money to spend, and what little they do have is typically used to buy more resources. A lack of funding and the requirement for software (as well as the accompanying costs of installation and training) mean that many libraries are left to fend for themselves when it comes to keeping up with the newest technological advancements. Except, of course, if they join the opensource movement and utilise one of the many helpful software programmes accessible. Most of the programmes that we all use

SCIENTOMETRIC:

Scientometrics is the field of study which concerns itself with measuring and analyzing scientific literature. Scientometrics is a sub-field of Bibliometrics. Major research issues include the measurement of the impact of research papers and academic journals, the understanding of scientific citations, and the use of such measurements in policy and management contexts. In practice there is a significant overlap between Scientometrics and other scientific fields such as information systems, information science, science of science policy, sociology of science, and met science. Critics have argued that over-reliance on Scientometrics has created a system of perverse incentives, producing a publish or perish environment that leads to low quality research (https://en.wikipedia.org/wiki/Scientometrics).

DEFINITION ANALYSIS

Scientometric:

According to bankapur, M.B. and Kumabar, (1993) "Scientometric is a more general that Bibliometrics. It is interesting to know, that both disciplines have a large overlap. It is surprised to learn certain comments stating that both disciplines have a large overlap. It is surprised to learn certain that Scientometric, using Bibliometrics techniques id a part of Bibliometrics".

Collection Development in the Digital Library:-

Library **collection development** is the process of systematically building the collection of a particular library to meet the information needs of the library users (a service population) in a timely and economical manner using information resources locally held as well as resources from other organizations.^[1]

According to the International Federation of Library Associations and Institutions (IFLA), acquisition and collection development focuses on methodological and topical themes pertaining to acquisition of print and other analogue library materials (by purchase, exchange, gift, legal deposit), and the licensing and purchase of electronic information resources.^[2] Collection development involves activities that need a librarian or information professional who is specialized in improving the library's collection. The process includes the

selection of information materials that respond to the users or patrons need as well as de-selection of unwanted information materials, called *weeding*. It also involves the planning strategies for continuing acquisition, evaluation of new information materials and the existing collection in order to determine how well a particular library serves its users.

REVIEW LITERATURE

Khaparde V S (2011) stated in study "Bibliometric Study of Electronic Journal of Academic and Special Librarianship." that single author contributions have dominated the journal with 47.95% of contributions, and in geographical based distribution of articles India have occupied the top position with 28.41% publications.

Khaparde V S (2013) her paper conducted the Bibliometric Analysis of Research Publication of Department of Chemistry, Dr. Babasaheb Ambedkar Marathwada University, from 1975 to 2012. 774 research publications were analyzed from 144 journals. The study examines year-wise distribution of papers, authorship pattern, journal in which author published

Fawaz Alhamdi and Khaparde V S (2015) Analyzed Authorship pattern in cloud computing research in LISTA. They collect 108 articles during the year 2009 to 2013. In this study the number of contributions found to be the highest is 24 in the year of 2012. The rate of growth of publication highly decreased from the rate of 0.693 in 2010 to 0.193 .in 2013 whereas the corresponding the Doubling time for different years gradually increased from 1 in 2010 to 3.95 in 2013.

(Khaparde & Pawar) studied the authorship pattern and author's collaborative research in\ Information Technology with a sample of 17917 articles collect from LISA during 2000- 2009. The average number of authors per article is 1.80. In the study the degree of collaboration (C) during the overall 10 years (2000-2009) is 0.71 but the year wise degree of collaboration is almost same in all the years of mean value 0.49. According to 10 years of period, the multi- authorship articles are higher and predominant on single authorship. The study found that the researches in Information Technology are keep toward team research or group research rather than solo research.

OBJECTIVE OF THE STUDY

The following objectives have been formulated for the present study.

- Ranking of Journals Name
- Year wise distribution of contribution
- To find out the contribution type of author
- To find out the contributions Keyword -wise.
- To find out the contributions document type wise.

SCOPE AND LIMITATION OF THE STUDY:

The present study keywords analysis on Collection Development in the Digital Library from 2019-2023. The present study is based on over all 274 articles in the database of Web of Science during 2019-2023.

Data Collection:

Data can be numerically expressed that is quantified or objective the data was collected from in database of Web of Science with the help of excel sheet.

Data Analysis and Interpretation:

Scientometric analysis is a branch of Bibliometrics. It is an important research tools for understanding of the subject it aims at measuring the utility of documents and relationship between documents and fields.

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SIR.NO.	Source Title	FREICVENCY	PER.
1	COMPUTER PHYSICS COMMUNICATIONS	20	7.30
2	BMJ OPEN	6	2.19
	PROCEEDINGS OF THE EIGHTEENTH EUROPEAN		
	CONFERENCE ON COMPUTER SYSTEMS, EUROSYS		
3	2023	6	2.19
4	ASTRONOMY & ASTROPHYSICS	5	1.82
5	ENVIRONMENTAL MODELLING & SOFTWARE	5	1.82
6	FOSS4G 2019 - ACADEMIC TRACK	5	1.82
7	IEEE ACCESS	5	1.82
	INTERNATIONAL JOURNAL OF OFFSHORE AND		
8	POLAR ENGINEERING	5	1.82
9	SOFTWAREX	5	1.82
	JOURNAL OF CHEMICAL INFORMATION AND		
10	MODELING	4	1.46
11	JOURNAL OF CHEMICAL PHYSICS	4	1.46
	MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL		
12	SOCIETY	4	1.46
13	BMC BIOINFORMATICS	3	1.09
	INTERNATIONAL JOURNAL OF COMPUTER SCIENCE	2047/11	
14	AND NETWORK SECURITY	3	1.09
15	JAMIA OPEN	3	1.09
16	JOURNAL OF COMPUTATIONAL CHEMISTRY	3	1.09
17	JOURNAL OF PROTEOME RESEARCH	3	1.09
	2019 14TH IBERIAN CONFERENCE ON INFORMATION		
18	SYSTEMS AND TECHNOLOGIES (CISTI)	2	0.73
	27TH INTERNATIONAL CONFERENCE ON		
	EVALUATION AND ASSESSMENT IN SOFTWARE		
19	ENGINEERING, EASE 2023	2	0.73
20	ANALYTICAL CHEMISTRY	2	0.73
21	BALTIC JOURNAL OF MODERN COMPUTING	2	0.73
22	BEHAVIOR RESEARCH METHODS	2	0.73
23	BIOINFORMATICS	2	0.73
24	COMPUTERS & GEOSCIENCES	2	0.73
25	COMPUTERS & MATHEMATICS WITH APPLICATIONS	2	0.73
26	COMPUTING IN SCIENCE & ENGINEERING	2	0.73
27	ELECTRONICS	2	0.73
28	GISCIENCE & REMOTE SENSING	2	0.73
29	IEEE TRANSACTIONS ON SOFTWARE ENGINEERING	2	0.73
30	INFORMATION DISCOVERY AND DELIVERY	2	0.73
31	JOURNAL OF APPLIED CLINICAL MEDICAL PHYSICS	2	0.73
32	JOURNAL OF ENERGY STORAGE	2	0.73
33	JOURNAL OF MAGNETIC RESONANCE	2	0.73
34	MATHEMATICAL PROGRAMMING COMPUTATION	2	0.73
35	METABOLITES	2	0.73
1970 a Tala	PHILOSOPHICAL TRANSACTIONS OF THE ROYAL		1996-1997 - T
	SOCIETY A-MATHEMATICAL PHYSICAL AND		
36	ENGINEERING SCIENCES	2	0.73
37	PLOS ONE	2	0.73
38	SENSORS	2	0.73
39	TRANSACTIONS IN GIS	2	0.73
	2019 42ND INTERNATIONAL CONVENTION ON		
	INFORMATION AND COMMUNICATION		
	TECHNOLOGY, ELECTRONICS AND		
40	MICROELECTRONICS (MIPRO)	1	0.36
	2019 FOURTEENTH INTERNATIONAL CONFERENCE		
	ON ECOLOGICAL VEHICLES AND RENEWABLE		
41	ENERGIES (EVER)	1	0.36

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42	2019 IEEE AEROSPACE CONFERENCE	1	0.36
	2019 INTERNATIONAL SYMPOSIUM ON ADVANCED	102	
	ELECTRICAL AND COMMUNICATION		
43	TECHNOLOGIES (ISAECT)	1	0.36
0.077	2020 31ST IRISH SIGNALS AND SYSTEMS		
44	CONFERENCE (ISSC)	1	0.36
63434	2020 43RD INTERNATIONAL CONVENTION ON	-	0.00
	INFORMATION COMMUNICATION AND ELECTRONIC		
45	TECHNOLOGY (MIPRO 2020)	1	0.36
43	2020 IVANNIKOV ISPRAS OPEN CONFERENCE	1	0.50
16	(ISDRAS 2020)	1	0.36
40	2021 7TH INTERNATIONAL CONFERENCE ON	1	0.50
	ELECTRICAL ELECTRONICS AND DECRMATION		
47	ELECTRICAL, ELECTRONICS AND INFORMATION	1	0.26
4/	ENGINEERING (ICEEIE 2021)	1	0.30
10	2021 IEEE/ACM 43RD IN IERNATIONAL CONFERENCE		0.26
48	ON SOFTWARE ENGINEERING (ICSE 2021)	1	0.36
	2022 17TH INTERNATIONAL CONFERENCE ON		
	CONTROL, AUTOMATION, ROBOTICS AND VISION	57	0.000.000000000000000000000000000000000
49	(ICARCV)	1	0.36
	2022 ACM/IEEE 44TH INTERNATIONAL CONFERENCE		and the contract of the second of
50	ON SOFTWARE ENGINEERING (ICSE 2022)	1	0.36
	2022 ACM/IEEE JOINT CONFERENCE ON DIGITAL		
51	LIBRARIES (JCDL)	1	0.36
	2022 IEEE INTERNATIONAL GEOSCIENCE AND		
52	REMOTE SENSING SYMPOSIUM (IGARSS 2022)	1	0.36
53	2023 IEEE SPACE COMPUTING CONFERENCE, SCC	1	0.36
	30TH INTERNATIONAL CARTOGRAPHIC		
54	CONFERENCE (ICC 2021), VOL 4	1	0.36
	3RD BIOMEDICAL ENGINEERING'S RECENT		
	PROGRESS IN BIOMATERIALS, DRUGS		
55	DEVELOPMENT, AND MEDICAL DEVICES	1	0.36
	8TH INTERNATIONAL CONFERENCE ON HIGHER	_	
56	EDUCATION ADVANCES (HEAD '22)	1	0.36
	ACCELERATING SCIENCE AND ENGINEERING		
	DISCOVERIES THROUGH INTEGRATED RESEARCH		
	INFRASTRUCTURE FOR EXPERIMENT BIG DATA		
57	MODELING AND SIMULATION SMC 202	ĩ	0.36
58	ACM TRANSACTIONS ON APPLIED PERCEPTION	1	0.36
	ACTA CRYSTALLOGRAPHICA A-FOLINDATION AND		0.50
50	ADVANCES	1	0.36
60	ACTA OPTICA SINICA	1	0.36
61	ADVANCED THEORY AND SIMILATIONS	1	0.30
01	AMERICAN STATISTICIAN	1	0.30
62	ADDI JED SCHENCES DASEL	1	0.30
63	APPLIED SUIENCES-BASEL	1	0.36
64	AKCHIVES AND MANUSCRIPTS	1	0.36
	ARTIFICIAL INTELLIGENCE AND MACHINE		
17/2/02	LEARNING FOR MULTI-DOMAIN OPERATIONS	-	1020321020
65	APPLICATIONS II	1	0.36
66	ASTROPHYSICAL JOURNAL LETTERS	1	0.36
67	BIOMEDICAL PHYSICS & ENGINEERING EXPRESS	1	0.36
68	BMC MEDICAL EDUCATION	1	0.36
69	BMC MEDICAL RESEARCH METHODOLOGY	1	0.36
70	BRIEFINGS IN BIOINFORMATICS	1	0.36
	CCS '21: PROCEEDINGS OF THE 2021 ACM SIGSAC		
	CONFERENCE ON COMPUTER AND		
71	COMMUNICATIONS SECURITY	1	0.36
72	CHAOS SOLITONS & FRACTALS	1	0.36
73	CLINICAL CHEMISTRY	1	0.36
73	COLLECTION AND CURATION	1	0.36
/4		1	0.50

	COMMUNICATION AND APPLIED TECHNOLOGIES.		
75	ICOMTA 2022	1	0.36
	COMMUNICATIONS IN NONLINEAR SCIENCE AND		
76	NUMERICAL SIMULATION	1	0.36
	COMPUTATIONAL AND STRUCTURAL		
77	BIOTECHNOLOGY JOURNAL	1	0.36
78	COMPUTATIONAL BIOLOGY AND CHEMISTRY	1	0.36
10	COMPLITER APPLICATIONS IN ENGINEERING	<u> </u>	0.50
79	EDUCATION	1	0.36
	COMPLITER METHODS AND PROGRAMS IN		0.50
80	BIOMEDICINE	1	0.36
	COMPLITER METHODS IN APPLIED MECHANICS AND		0.50
81	ENGINEERING	1	0.36
82	COMPLITERS & FLUIDS	1	0.36
83	COMPLITERS IN BIOLOGY AND MEDICINE	1	0.36
84	COMPUTING AND VISUALIZATION IN SCIENCE	1	0.36
85	CRITICAL REVIEWS IN ONCOLOGY HEMATOLOGY	1	0.36
86	CURRENT PROTEIN & PEPTIDE SCIENCE	1	0.36
	DETECTION OF INTRUSIONS AND MALWARE AND	1	0.50
97	VIII NERABII ITY ASSESSMENT (DIMVA 2010)	1	0.36
0/	DIAGNOSTICS	1	0.30
00	DIGITAL HEALTH	1	0.30
09	DIGITAL HUMANITIES OUARTERI V	1	0.30
90	DIGITAL LIDDARY DEDSDECTIVES	1	0.30
91	EADTH SCIENCE INFORMATICS	1	0.30
92	EARTH SCIENCE INFORMATICS	1	0.30
95	ECOLOGICAL INFORMATICS	1	0.30
94	ELECTRONIC LIDRARY	1	0.30
95	ELECTRONIC LIBRARY	1	0.30
90	ENVIRONMENTAL FLUID MECHANICS	1	0.30
07	EUROPEAN JOURNAL OF CONTEMPORARY		0.26
9/	EDUCATION ELIBODE AN RADIOLOGY EXPERIMENTAL	1	0.30
98	EUROPEAN RADIOLOGY EXPERIMENTAL	1	0.30
99	FORENSIC IMAGING	1	0.36
100	FRONTIERS IN BIOINFORMATICS	1	0.36
101	FRONTIERS IN MEDICINE	1	0.36
102	FRONTIERS IN NEUROINFORMATICS	1	0.36
103	FRONTIERS IN PHYSIOLOGY	1	0.36
104	FUNCTIONAL PROTEOMICS: METHODS AND	1	0.26
104	PROTOCOLS	1	0.36
105	GENOME BIOLOGY	1	0.36
100	IOUTINIAL ZHUKNAL-GEOPHYSICAL		0.26
100	CLODAL ECOLOCY AND DIOCEOCDADDY	1	0.30
107	OLOBAL ECOLUGY AND BIOGEOGKAPHY	1	0.50
108	UL2 2017 ION2	1	0.30
109	ILLET DEDEODMANCE COMPLETING ISC HEAL	1	0.56
110	DEPEORMANCE 2022 INTERNATIONAL WORKSHOP		0.26
110	FERFORMANCE 2022 INTERNATIONAL WORKSHOPS	1	0.30
112	IEEE DESIGN & TEST	1	0.30
112	IEEE JOIDNAL OF DIOMEDICAL AND JEATEN	1	0.50
112	DECE JOUKNAL OF BIOMEDICAL AND HEALTH	1	0.26
113	INFORMATICS IEEE IOLIDNAL OF SELECTED TODICS DI ADDITED	1	0.50
11.4	ELECTION AND REALED TOPICS IN APPLIED	ĩ	0.26
114	LAKIN ODSERVATIONS AND REMOTE SENSING	1	0.30
115	IEEE IRANSACTIONS ON BIOMEDICAL	ĩ	0.26
115	LINUINEERINU IEEE TRANSACTIONS ON COMPLETERS	1	0.30
110	IEEE TRANSACTIONS ON MACHETICS	1	0.30
117	IEEE TRANSACTIONS ON MAGNETICS	1	0.30
118	LIEEE TRANSACTIONS ON VISUALIZATION AND	1	0.36

	COMPUTER GRAPHICS		1
119	INDIAN JOURNAL OF AGRICULTURAL SCIENCES	1	0.36
120	INFORMATION TECHNOLOGY AND LIBRARIES	1	0.36
121	INTERNATIONAL ENDODONTIC JOURNAL	1	0.36
121	INTERNATIONAL JOURNAL OF FARLY CHILDHOOD		0.50
122	SPECIAL EDUCATION	1	0.36
123	INTERSPEECH 2020	1	0.36
125	ISPRS INTERNATIONAL JOURNAL OF GEO-		0.50
124	INFORMATION	1	0.36
125	IMIR MEDICAL INFORMATICS	1	0.36
126	IMIR MHEALTH AND UHEALTH	1	0.36
127	JOURNAL OF CELL SCIENCE	1	0.36
	JOURNAL OF CHEMICAL THEORY AND	.	0.00
128	COMPUTATION	1	0.36
129	JOURNAL OF CHEMINFORMATICS	1	0.36
130	JOURNAL OF CLINICAL NEUROSCIENCE	1	0.36
131	JOURNAL OF COMPUTATIONAL SCIENCE	1	0.36
132	JOURNAL OF COMPUTATIONAL SOCIAL SCIENCE	1	0.36
133	IOURNAL OF GEOGRAPHICAL SYSTEMS	1	0.36
100	JOURNAL OF LIBRARIANSHIP AND INFORMATION		0.50
134	SCIENCE	1	0.36
104	JOURNAL OF MANUFACTURING AND MATERIALS		0.50
135	PROCESSING	1	0.36
136	JOURNAL OF MAP & GEOGRAPHY LIBRARIES	1	0.36
137	JOURNAL OF MARINE SCIENCE AND ENGINEERING	1	0.36
138	JOURNAL OF NAVIGATION	1	0.36
100	JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND	÷	0.00
139	OPTICAL PHYSICS	1	0.36
140	JOURNAL OF SIMULATION	1	0.36
141	JOURNAL OF STRUCTURAL GEOLOGY	1	0.36
142	JOURNAL OF SYSTEMS AND SOFTWARE	1	0.36
143	JOURNAL OF SYSTEMS ARCHITECTURE	1	0.36
110	JOURNAL OF THE AMERICAN SOCIETY FOR MASS	17/1	0.00
144	SPECTROMETRY	1	0.36
	JOURNAL OF THE BRAZILIAN SOCIETY OF		
145	MECHANICAL SCIENCES AND ENGINEERING	1	0.36
146	JOURNAL OF THE GEOLOGICAL SOCIETY OF INDIA	1	0.36
147	KNOWLEDGE-BASED SYSTEMS	1	0.36
148	KONURALP TIP DERGISI	1	0.36
149	LARGE-SCALE SCIENTIFIC COMPUTING (LSSC 2019)	1	0.36
	LASER RADAR TECHNOLOGY AND APPLICATIONS		
150	XXVIII	1	0.36
151	LIBRARY HI TECH	1	0.36
	MATHEMATICAL AND COMPUTATIONAL		
152	ONCOLOGY, ISMCO 2019	1	0.36
153	MATHEMATICS	1	0.36
154	MEDICAL PHYSICS	1	0.36
155	METHODS IN ECOLOGY AND EVOLUTION	1	0.36
156	MOLECULES	1	0.36
157	NATURE MACHINE INTELLIGENCE	1	0.36
158	NUMERICAL ALGORITHMS	1	0.36
159	NUMERICAL LINEAR ALGEBRA WITH APPLICATIONS	1	0.36
160	OBSTETRICS AND GYNECOLOGY	1	0.36
161	PATTERN RECOGNITION	1	0.36
162	PEERJ	1	0.36
163	PLANETARY SCIENCE JOURNAL	1	0.36
164	PLOS COMPUTATIONAL BIOLOGY	1	0.36
165	PROCESSES	1	0.36
100		1. 11.	0.00

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166	PROTEOMICS	1	0.36
100		1	0.30
167	QUAESTIONES GEOGRAPHICAE	1	0.36
168	QUANTUM SCIENCE AND TECHNOLOGY	1	0.36
169	RESTORATION ECOLOGY	1	0.36
	REVISTA IBERO-AMERICANA DE CIENCIA DA		
170	INFORMACAO	1	0.36
171	ROYAL SOCIETY OPEN SCIENCE	1	0.36
	SCIENTIFIC AND STATISTICAL DATABASE		
172	MANAGEMENT (SSDBM 2019)	1	0.36
173	SCIENTIFIC DATA	1	0.36
174	SCIENTIFIC REPORTS	1	0.36
175	SOFTWARE IMPACTS	1	0.36
176	SOFTWARE-PRACTICE & EXPERIENCE	1	0.36
177	SPATIAL INFORMATION RESEARCH	1	0.36
178	SUPERCOMPUTING (RUSCDAYS 2019)	1	0.36
179	SYSTEMATIC BIOLOGY	1	0.36
180	TRIALS	1	0.36
TOTAL	274	100	

Table No. 1Shows that out of 274 journals, the COMPUTER PHYSICS COMMUNICATIONS is with 20(7.30) articles. Second rank Journal of BMJ OPEN 6 (2.19) in Third position, Journal of ASTRONOMY & ASTROPHYSICS 5(1.82) articles each and so on. It may be revealed that the authors more likely publish their work in different journals with their respective subject areas/disciplines.

 Table No. 2: Year Distribution of contributions at international level

Sir.No.	Publication Year	Freicvency	Per.
	2023	117	42.70
	2021	55	20.07
	2019	50	18.25
	2020	48	17.52
	2024	4	1.46
	TOTAL	274	100



Figure No. 4.3.2. Year Distribution of contributions at international level

It can be observed from the table No. 2 & Figure no. 2out of the total 274 contributions majority of the contributions 117 were contributed in 2023 were as minimum contributions i.e. 4 in 2024 contributions were contributed in 2019& 2023.

Sir.No.	Authors	Freicvency	Per.
1	Bhattacharya, S	2	0.73
2	Campoli, L	2	0.73
3	Criado, J	2	0.73
4	De Luca, G	2	0.73
5	Jakimow, B	2	0.73

Table No.3:	Authorship	pattern	of contribution.

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6	Khan, SA	2	0.73
7 Svecla, M		2	0.73
8	Trabucchi, M	2	0.73
9	Abernathy, DR	2	0.73
10	one time auther1*256=256	256	93.43
	TOTAL	274	100
		174	ļ
			98.86
2 1		14	
Br in berg,	M Chenoweth,	JM onetime	author1*174=174
	Series1 S	er ies2	

Figure No. 01. Author wise distribution of Article.

The distribution of Authorship pattern is given in the Table No.1. The table shows the multi authorship is predominant then single authors. Table No. 1 &Figure no. 1 indicates the majority of the contributions are contributed by Single author.

1. .Keyword Wise Distribution.

The Key word Wise Distribution of contributions is shown in Table No.2

Sir.No.	Key Word	Freicvency	Per.
1	MASS-SPECTROMETRY	5	1.82
2	SYSTEMS	5	1.82
3	FINITE-ELEMENT-METHOD1	3	1.09
4	ACADEMIC-LIBRARIES	2	0.73
5	ALGORITHMS	2	0.73
6	FREE-SURFACE FLOWS	2	0.73
7	INTERNET	2	0.73
8	MOLECULAR-DYNAMICS	2	0.73
9	OPEN-SOURCE SOFTWARE	2	0.73
10	RADIATION	2	0.73
11	VISION	2	0.73
12	one time keyword 1*155=155	155	56.57
13	NA	90	32.85
	TOTAL	274	100



Figure No. 02.Key word wise distribution of Article.

The distribution of published papers by keyword wise the table 02 reveals that, out of 274 contributors, the highest number 155(56.57%) has not mention their second place with 90(32.85%) contributors of NA. The 5(2.82%) contributors the third place.

3. Country wise distribution of the article

Ta	Table No. 03. Country wise distribution of the article				
Sr.No	Contry	Frequency	Percentage		
1	USA	61	34.66		
2	China	15	8.52		
3	Austria	9	5.11		
4	Netherlands	7	3.98		
5	Canada	6	3.41		
6	England	6	3.41		
7	Germany	6	3.41		
8	Spain	6	3.41		
9	Brazil	5	2.84		
10	Canada	4	2.27		
11	Scotland	4	2.27		
12	Taiwan	4	2.27		
13	Belgium	3	1.70		
14	Malaysia	3	1.70		
15	England	2	1.14		
16	Greece	2	1.14		
17	Iraq	2	1.14		
18	Nigeria	2	1.14		
19	Pakistan	2	1.14		
20	Slovenia	2	1.14		
21	South Africa	2	1.14		
22	one time contry1*23=23	23	13.07		
	Total	176	100		



Figure No. 03. Country wise distribution of Article.

It can be observed from Table No. 03 the country wise distribution of contributors, the table 3 reveals that out of the total 176 contributors has contributed during 2017-2021, majority of article 141(80.11%) has not mention their country in the paper. 61(34.66%) contributors have been contributed form USA.15(8.52%) contributors have been contributed from China. And lowest contributed article of country Nigeria, Iraq, Pakistan, Slovenia, South Africa and Greece 2(1.14).

4. Type of document wise Distribution of the Article

Table no. 04. Type of document wise distribution of article			
Sir.No.	Document Type	Freicvency	Per.
1	Article	207	75.55
2	Proceedings Paper	44	16.06
3	Review	12	4.38
4	Article; Early Access	5	1.82
5	Article; Data Paper	2	0.73
6	Article; Proceedings Paper	2	0.73

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Figure no. 04 Type of document wise distribution of article

It can be observed from Table no.4 the highest Article 207(75.55%) number of publication has been published in research article in this study, and the second numbers of Proceedings Paper 44(16.06%) published in research article, and the Review; Early Access 1(0.36%) publication has review document type.

Sr.No	Language	Frequency	Percentage
1	English	170	96.59
2	Portuguese	3	1.70
3	Spanish	2	1.14
4	Dutch	1	0.57
	Total	176	100



Figure No. 05. Type of Language distribution of Article.

The distribution of Language is given in the Table No.5 the table shows the highest language use 170(96.59) is English and loyest language use 1(0.57) is Dutch.

CONCLUSION

Based on a Scientometrics examination of 274 research articles published between 2019 and 2023, the study was conducted. Reviewing Relative Growth Rate, Collabrative Index in Regenerative Medicine and Stem Cells Co-authorship Contribution pattern, number of authors distributed, author productivity, level of cooperation, nation distribution, document type distribution—the results need to highlight a number of the study's features and patterns of contributions.

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Table No. 1Shows that out of 274 journals, the COMPUTER PHYSICS COMMUNICATIONS is with 20(7.30) articles. Second rank Journal of BMJ OPEN 6 (2.19) in Third position, Journal of ASTRONOMY & ASTROPHYSICS 5(1.82) articles each and so on. It may be revealed that the authors more likely publish their work in different journals with their respective subject areas/disciplines.

Sir.No.	Publication Year	Freicvency	Per.
	2023	117	42.70
	2021	55	20.07
	2019	50	18.25
	2020	48	17.52
	2024	4	1.46
	TOTAL	274	100

Table No. 2: Year Distribution of contributions at international level



Figure No. 4.3.2. Year Distribution of contributions at international level

It can be observed from the table No. 2 & Figure no. 2out of the total 274 contributions majority of the contributions 117 were contributed in 2023 were as minimum contributions i.e. 4 in 2024 contributions were contributed in 2019& 2023.

Sir.No.	Authors	Freicvency	Per.
1	Bhattacharya, S	2	0.73
2	Campoli, L	2	0.73
3	Criado, J	2	0.73
4	De Luca, G	2	0.73
5	Jakimow, B	2	0.73
6	Khan, SA	2	0.73
7	Svecla, M	2	0.73
8	Trabucchi, M	2	0.73
9	Abernathy, DR	2	0.73
10	one time auther1*256=256	256	93.43
TOTAL		274	100

Table No.3: Authorship pattern of contribution.

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Figure No. 01. Author wise distribution of Article.

The distribution of Authorship pattern is given in the Table No.1. The table shows the multi authorship is predominant then single authors. Table No. 1 &Figure no. 1 indicates the majority of the contributions are contributed by Single author.

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13	Belgium	3	1.70
14	Malaysia	3	1.70
15	England	2	1.14
16	Greece	2	1.14
17	Iraq	2	1.14
18	Nigeria	2	1.14
19	Pakistan	2	1.14
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7	Article; Book Chapter	1	0.36	
8	Review; Early Access	1	0.36	
	TOTAL	274	100	

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ROLE OF INFLIBNET IN THE GROWTH AND DEVELOPMENT OF ACADEMIC LIBRARY

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ABSTRACT

India has one of the largest higher education systems in the world. Although education has existed since earlier times, its rate of expansion and advancement has increased significantly since independence. Numerous educational institutions, including colleges, universities, and research centres, are founded by both public and commercial organisations. With the admirable goal of giving the average Indian simple access to higher education, all these institutions across the nation are there to create and share knowledge. A nation's education policy has a significant impact on its overall development. Only when people have access to high-quality postsecondary education, rapid progress is possible. It has been said that education is the cornerstone of a person's life. The most significant and essential reform in education is to change it and make an effort to connect it to people's needs, ambitions, and lives to make it a potent tool for the social, economic, and cultural transformation that is required to achieve the country's objectives. The most basic need in civilization is education. Without knowledge, it is impossible to use, innovate, or make advances in many sectors. The creation of a knowing society is greatly aided by higher education. Institutions and associations dedicated to higher education strive to create an informed public. Universities must devote their entire focus to knowledge management to advance towards a knowledge-based economy and society. Universities are hubs for knowledge development and are partners in the public and private sectors. Universities that provide instruction "by the book" through a curriculum and syllabus may not be able to handle the complex problems of the future through knowledge management. Our goal is to use knowledge portals to improve university performance in the future. (Uma & Anand Kumar, 2012) However, it wasn't until November 1956 that the UGC was fully created as a statutory entity of the Indian government through a Parliamentary Act. Its purpose is to coordinate, determine, and uphold the standards of university education in India. The UGC has decentralised its activities by establishing six regional centres in Pune, Hyderabad, Kolkata, Bhopal, Guwahati, and Bangalore to provide efficient region-wise coverage across the nation. The information and knowledge revolution is currently undergoing a phase in Indian higher education. By sharing resources, libraries and information networks are helping the academic community meet its ever-increasing information needs. Since the post-independence era, INFLIBNET has played a significant role in the advancement of higher education. The INFLIBNET centre is a blessing for higher education in India. (Das & Karn, 2009)

Keywords: Inflibnet, Development, Growth & Academic Library INFLIBNET Centre

INTRODUCTION

Academic libraries form a distinct category in the general pattern of libraries that include national, public and special libraries. A university's or college's library is essential to its operations. Academic libraries are essential for ensuring that everyone has access to information. Both the Radhakrishnan Commission Report and the Kothari Commission Report have emphasised this point. UGC (India) places a high value on the improvement of library resources in colleges and universities as well as the effective management of these resources. There is no substitute for the library as a source of knowledge if the goal of education is to facilitate learning. The objective of an Indian university during pre- Independence period had been to archive knowledge. In post-independence India, libraries have aimed at the dissemination of information for lifelong learning and the incessant search for new knowledge. Well-established libraries with all round and up-to-date collections suitable for learning and research are necessary for the higher education system, as they have proved to be significant partners in the development of scholarship throughout the world.

Since academic libraries have proved to be central to the pursuit of learning, Academic libraries include school, college, university and research libraries. All these cater to the needs of the academic community for supplementing the study and research programmes of the institution and help conserve and disseminate knowledge. Although these academic libraries share certain common features and characteristics, they differ enormously in the value and content from one another.' (Sahai). Academic libraries do not exist by themselves; they exist to serve the objectives of the education system of which they form a part.

An academic library is a library that is attached to a higher education institution and serves two complementary purposes: to support the curriculum and the research of the university faculty and students. Academic libraries are dynamic instruments of education. They support the institutions, to which they belong, in fulfilling their

objectives and advancing their aims. They support the faculty in teaching and research programmes. Knowledge conservation and preservation are these libraries' main goals. Academic libraries are essential because they give students fair access. The fact that school libraries are inclusive places for children from all backgrounds, regardless of opportunities or financial limitations, is another benefit of having one. Students have access to technology and the internet, even in places where they might not have it at home.

Libraries play an essential role in local communities by providing access to information and resources, supporting literacy and education, promoting lifelong learning, and serving as a community gathering space. So the importance of libraries can be experienced by all community members.

Access to books, journals, and other print and electronic resources: Academic libraries typically have large collections of books, journals, and other print and electronic resources that support the curriculum and research needs of students and faculty. (Wikipedia)

OBJECTIVES

The primary objectives of any academic institution are:

- Conservation and preservation of knowledge;
- Expansion of ideas and dissemination of knowledge with the help of interpretation, research and publication.
- Dissemination of knowledge through teaching and extension services.

The libraries in academic institutions help to achieve these objectives.

It has been observed that INFLIBNET has brought tremendous change in academic libraries. It is a new revolution in the academic library because Inflibnet promotes and establishes communication facilities to improve capability in information transfer and access, that provide support to scholarship, learning, research and academic pursuit through cooperation and involvement of agencies concerned.

INFLIBNET: Information and Library Network is a computer communication network for linking libraries and information centres in universities, deemed to be universities, colleges, UGC information centres, institutions of national importance and R & D institutions, etc. avoiding duplication of efforts. It plays a significant role in promoting and implementing computerization of operations and services in the libraries and information centres of the country, following a uniform standard;

- To evolve standards and uniform guidelines in techniques, methods, procedures, computer hardware and software, and services and promote their adoption in actual practice by all libraries, to facilitate pooling, sharing and exchange of information towards optimal use of resources and facilities.
- To evolve a national network interconnecting various libraries and information centres in the country and to improve capability in information handling and services.
- To provide reliable access to document collection of libraries by creating an online union catalogue of serials, theses/ dissertations, books, monographs and non-book materials (manuscripts, audio-visuals, computer data, multimedia, etc.) in various libraries in India.
- To provide access to bibliographic information sources with citations, abstracts, etc. through indigenously created databases of the Sectoral Information Centres of NISSAT, UGC Information Centres, City Networks and such others and by establishing gateways for online accessing of national and international databases held by national and international information networks and centres respectively.
- To develop new methods and techniques for the archival of valuable information available as manuscripts and information documents in different Indian languages, in the form of digital images using high-density storage media.
- To optimize information resource utilization through shared cataloguing, inter-library loan service, catalogue production, collection development and thus avoiding duplication in acquisition to the extent possible.
- To enable the users dispersed all over the country, irrespective of location and distance, to have access to information regarding serials, theses/dissertations, books, monographic and non-book materials by locating the sources wherefrom available and to obtain it through the facilities of INFLIBNET and union catalogue of documents.
- > To create databases of projects, institutions, specialists, etc. for providing online information services.

- To encourage cooperation among libraries, documentation centres and information centres in the country, so that the resources can be pooled for the benefit of helping the weaker resource centres by stronger ones.
- > To train and develop human resources in the field of computerized library operations and networking to establish, manage and sustain INFLIBNET. Facilitating academic communication amongst scientists, engineers, social scientists, academics, faculties, researchers and students through electronic mail, file transfer, computer/audio/video conferencing, etc.
- To undertake system design and studies in the field of communications, computer networking, information handling and data management.
- > To establish appropriate control and monitoring systems for the communication network and organized maintenance.
- To collaborate with institutions, libraries, information centres and other organizations in India and abroad in the field relevant to the objectives of the Centre.
- To promote R&D and develop necessary facilities and create technical positions for realizing the objectives of the Centre.
- > To generate revenue by providing consultancies and information services.
- To do all other such things as may be necessary, incidental or conducive to the attainment of all or any of the above objectives which brought significant change in the academic library and also focused on bringing new changes in the same focusing on leveraging on the latest technology, creating a virtual network of people and resources in academic institutions to provide effective and efficient access to knowledge through perseverance, innovation and collaboration. It has provided seamless, reliable and ubiquitous access to scholarly, peer-reviewed electronic resources to the academic community in all educational institutions with a focus on services and tools, processes and practices that support its effective use and increase the value of this information. In addition to providing academic libraries with value-added services, INFILIBNET has strengthened the ICT infrastructure in educational institutions and developed new tools, methods, and processes for convenient and safe access control that allow users to access information electronically from any location at any time. Additionally, resource selection guidelines and online tutorials were established to facilitate the efficient delivery and utilisation of electronic resources. These tools also made it easier for educational institutions to create open-access digital repositories, which house their own research and instructional materials.

CONCLUSION

INFLIBNET has become an integral component of the academic library industry, bringing about revolutionary developments while also offering exceptional services to library stakeholders, facilitating the use and convenience of academic library services. The field of academic libraries has seen significant innovation and the incorporation of ICT-enabled services. Users of academic libraries, academicians, and students can fulfil their requirements from anywhere in the world. Additionally, it has been incredibly helpful and supportive to librarians in offering modern services and administration in the operation of university libraries.

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IMPACT OF INTERNET CONNECTIVITY ON PHYSICAL STOCK MOVEMENT IN COLLEGE LIBRARIES: A STUDY WITH REFERENCE TO BAMU AFFILIATED COLLEGES IN AURANGABAD DISTRICT

¹Dr. Shivshankar Ghumare and ²Mr. Krishna Shivajirao Dalnar

¹Librarian, Matsyodari Shikshan Sanstha's, Arts, Science & Commerce College, Ambad, District Jalna ²Research Student

INTRODUCTION

Internet connectivity in libraries may be the major contribution from the print media to the Internet, and vice versa. Some Internet libraries are created by "traditional' libraries who want to put their documents at the disposal of Internet users. Other Internet libraries are "only" Internet base life is 100% on the Web. There are literally thousands of Internet library initiatives of a great many varieties going on in the world today.

Internet libraries are being formed of scholarly works, archives of historical figures and events, corporate and governmental records, museum collections and religious collections. Some take the form of scanning and putting documents to the World Wide Web. Still other Internet libraries are formed of digitizing paintings, films and music. Work even exists in 3D reconstructive digitization that permits a Internet deconstruction, storage, transmission, and reconstruction of solid object.

Internet materials need to be described and catalogued effectively to be searched and retrieved. The importance of consistent, comprehensive description and cataloguing is frequently one of the most overlooked aspects of the project. The only way to locate a record or image file without adequate description is to browse the entire collection. Descriptions must be accurate and consistent, and the vocabulary of terms used understood by both the cataloguer and the user. Consistent descriptions and cataloguing make it possible to link databases and search across collections to reach a wider audience.

Once library material have been digitized and described library will need to organize them into a database to permit users to search and retrieve information. Databases organize the catalogue information and Internet files into a structured set of fields. In addition to the Dublin Core categories, it is likely that your database will include administrative information, such as donor records, which are important to track internally but may not be available to other institutions or the general public.¹

Once library materials have been digitized, catalogued and organized, they must be made available to potential users. Internet connectivity makes this possible. The access one provide might include stand-alone presentation on dedicated computers in your institution, on CD-ROMs, or to a larger community via the World Wide Web. All types of presentation require development of computer screens that will act as an interface for users interacting with the database to select, retrieve and view material on a computer screen.

As the Library may well wish to digitize materials which are not free of copyright, and may acquire current materials in Internet form, more flexible agreements of new kinds would be needed to allow remote access. As with access to Internet resources inside reading rooms, only some readers will be able to use Internet resources remotely; others will always require paper originals. Internet Connectivity is necessary for this purpose.

This study is related with "Impact of Internet connectivity on Physical Stock Movement in College Libraries : A study with reference to BAMU affiliated colleges in Aurangabad City."

OBEJECTIVES OF THE PAPER

The objectives of this study are as follows:-

- 1) This is a study of internet connectivity.
- 2) It studies the impact of such internet connectivity.
- 3) It study the impact of internet connectivity on some aspects of collage libraries particularly physical staff movements.

These are the objectives of this paper.

LIMITATIONS & SCOPE

The limitations and scope of this paper are as follows:-

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- 1) On a broader scale the scope of this paper covers the entire academic field of BAMU university i.e. all the affiliated colleges of BAMU University in the respective districts such as Aurangabad (Chhatrapati Sambhaji Nagar), Jalna, Beed & Osmanabad.
- 2) It includes all the junior and senior colleges in the affiliated areas of BAMU University.
- 3) The study is Limited to physical stock movement only.
- 4) The study is also limited to the impact of internet connectivity on such movements.

These are the limitations of the study.

HYPOTHESIS:

Hypothesis of this study is as follows :

- H_0 Null Hypothesis The internet connectivity has a negative impact on the stock movement in the libraries of affiliated colleges to BAMU university and there is no significance difference in the opinions of staff faculty and students.
- **H1** Alternative Hypothesis The internet connectivity has a positive impact on the stock movement in the libraries of affiliated colleges to BAMU university and there is no significance difference in the opinions of staff faculty and students

DEFINATIONS

It is necessary to clarify the terminology related with this paper.

- 1) BAMU means the Dr. Babasaheb Ambedkar Marathwada University situated at Aurangabad.
- 2) Affiliated College means the college i.e. situated in the geographical area of the university and is affiliated to the BAMU University.
- 3) LIBRARY means the library in such colleges.
- 4) INTERNET Connectivity means the connectivity of the such library with online academic resources.
- 5) PHYSICAL STAFF means the stock of books, journals and news papers in such libraries in physical form.

These are the some of the terminological definitions.

SIGNIFICANCE

The creation of a practical, robust, yet flexible authentication model will depend on its simultaneous ability to address users as individuals and to conform to current and future developments in computer access control technology. Authentication establishes the identity of a user within a given context; its companion process-authorization-controls the levels of permitted access to resources for that user identity. Network operating systems inherently provide this degree of administrative control; however, their locus of influence is confined to the organizations that deploy them.

The internet is a network of network which links scientists, businessman, educators, research scholars and others who seek or generate information. Internet based materials include e-books, e-journals, statistical sources, databases etc. The electronic materials available through internet are either free of charge or subscription-based. Many standard reference materials such as dictionaries, encyclopedia, directories, etc. are also available through internet. ENCARTA of Microsoft is a good example. Many of the titles that are available only on CD-ROMs are now available on internet also. Internet materials have the advantage; that they can be updated periodically.

A digital is one, which collects, stores and disseminates information in digital form. The digital information resources included e-books, e-journals, and full-text, CD-ROM databases etc. For building a digital collection, digital libraries have to convert the existing print resources into electronic form. They can also acquire resources in electronic form to provide access to external resources. Digital libraries can provide remote access to the resources from many locations simultaneously.

All these aspects have a tremendous impact on the physical movement of stock in college library affiliated to BAMU University.

SIZE OF SAMPLE

The researcher has used primary and secondary data for the purpose of this paper.

Primary Data :

Primary data has been collected by means of respondents from 20 affiliated colleges. From which 5 staff members and 10 students were selected Thus a sample of 50 staff members including faculty and 200 students was selected.

The researcher has analyzed the responses of librarian staff according to various criteria these are as follows :-

- 1) Types of College Libraries.
- 2) Impact of internet connectivity on number of books.
- 3) Impact of internet connectivity on Annual Budget of college libraries.
- 4) Impact of internet connectivity on Annual Purchase of Books.
- 5) Impact of internet connectivity on Study Rooms.
- 6) Impact of internet connectivity on Service Hours of Study Room.
- 7) Impact of internet connectivity on Average No. of Members attended everyday.
- 8) Impact of internet connectivity on Annual stock taking Holidays.

This is discussed below:-

1) Types of college Libraries.

The researcher inquired the faculty and students of sample college libraries about the Type of college Libraries. The opinions were recorded and tabulated, the results are shown in following table.

Sr.	Impact	No. of	%	No. of	%
No.		faculty		Student	
1	Very High	51	42.50	99	41.25
2	Moderate	45	37.50	78	32.50
3	Average	15	12.50	45	18.75
4	No Impact	9	7.50	18	7.50
	TOTAL	120	100.00	240	100.00

Table No. 1 Types of College Libraries

Source: Primary Data

The above table shows that, the total sample of faculties was 120 where as that of No. of students was 240.

Out of 120 respondents of faculty members it was observed that,51 (42.50%) have given opinion that, the impact on types of college library was "Very High" whereas according to 45 (37.50%), the impact on type of college library was "Moderate". On the other hand 15 (12.50%) faculty members opined that, the impact of type of college library was "Average" and lastly 9 (7.50%) have expressed "No opinion" in this respect.

2) Impact of internet connectivity on No. of Books.

The researcher inquired the faculty and students of sample college libraries about the No. of books of library. The opinions were recorded and tabulated, the results are shown in following table.

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Sr. No.	Impact	No. of	%	No. of	%
		faculty		Student	
1	Very High	59	49.17	102	42.50
2	Moderate	45	37.50	88	36.67
3	Average	11	9.17	35	14.58
4	No Impact	5	4.17	15	6.25
	TOTAL	120	100.00	240	100.00

 Table No. 2 Impact of internet connectivity on No. of Books.

The above table shows that, the total sample of faculties was 120 where as that of No. of students was 240.

Out of 120 respondents of faculty members it was observed that,59 (19.17%) have given opinion that, the impact on types of college library was "Very High" whereas according to 45 (37.50%), the impact on type of college library was "Moderate". On the other hand 11 (9.17%) faculty members opined that, the impact of type of college library was "Average" and lastly 5 (4.17%) have expressed "No opinion" in this respect.

Source: Primary Data

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3) Impact of internet connectivity on Annual Budget.

The researcher inquired the faculty and students of sample college libraries about the Annual budget of Libraries. The opinions were recorded and tabulated, the results are shown in following table.

Sr. No.	Impact	No. of	%	No. of	%		
		faculty		Student			
1	Very High	51	42.50	109	45.42		
2	Moderate	45	37.50	85	35.42		
3	Average	15	12.50	29	12.08		
4	No Impact	9	7.50	17	7.08		
	TOTAL	120	100	240	100.00		
	Sou	irce: Prima	ary Data				

Labic 140. S million of micriel connectivity on Amilian Duaget.	Table No. 3	Impact of inte	rnet connectivity	on Annual Budget.
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The above table shows that, the total sample of faculties was 120 where as that of No. of students was 240.

Out of 120 respondents of faculty members it was observed that,51 (42.50%) have given opinion that, the impact on types of college library was "Very High" whereas according to 45 (37.50%), the impact on type of college library was "Moderate". On the other hand 15 (12.50%) faculty members opined that, the impact of type of college library was "Average" and lastly 9 (7.50%) have expressed "No opinion" in this respect.

4) Impact of internet connectivity on Annual Purchase of Books.

The researcher inquired the faculty and students of sample college libraries about the Annual Purchase of Books of Libraries. The opinions were recorded and tabulated, the results are shown in following table.

Sr.	Impact	No. of	%	No. of	%
No.		faculty		Student	
1	Very High	62	51.67	102	42.50
2	Moderate	40	33.33	88	36.67
3	Average	12	10.00	36	15.00
4	No Impact	6	5.00	14	5.83
	TOTAL	120	100	240	100

Table No. 4 Impact of internet connectivity on Annual Purchase of Books.

Source: Primary Data

The above table shows that, the total sample of faculties was 120 where as that of No. of students was 240.

Out of 120 respondents of faculty members it was observed that, 61 (51.67%) have given opinion that, the impact on types of college library was "Very High" whereas according to 40 (33.33%), the impact on type of college library was "Moderate". On the other hand 12 (10.00%) faculty members opined that, the impact of type of college library was "Average" and lastly 6 (5.00%) have expressed "No opinion" in this respect.

5) Impact of internet connectivity on Availability of Study Room.

The researcher inquired the faculty and students of sample college libraries about the Availability of Study Room of Libraries. The opinions were recorded and tabulated, the results are shown in following table.

Table No. 5	Impact of internet	connectivity on	Availability	y of Study R	oom.
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Impact	No. of	%	No. of	%
	faculty		Student	
Very High	71	59.17	109	45.42
Moderate	35	29.17	79	32.92
Average	9	7.50	34	14.17
No Impact	5	4.17	18	7.50
TOTAL	120	100	240	100
	Impact Very High Moderate Average No Impact TOTAL	ImpactNo. of facultyVery High71Moderate35Average9No Impact5TOTAL120	Impact No. of faculty % Very High 71 59.17 Moderate 35 29.17 Average 9 7.50 No Impact 5 4.17 TOTAL 120 100	Impact No. of faculty % No. of Student Very High 71 59.17 109 Moderate 35 29.17 79 Average 9 7.50 34 No Impact 5 4.17 18 TOTAL 120 100 240

Source: Primary Data

The above table shows that, the total sample of faculties was 120 where as that of No. of students was 240.

Out of 120 respondents of faculty members it was observed that, 71 (59.17%) have given opinion that, the impact on types of college library was "Very High" whereas according to 35 (29.17%), the impact on type of college library was "Moderate". On the other hand 9 (7.50%) faculty members opined that, the impact of type of college library was "Average" and lastly 5 (4.17%) have expressed "No opinion" in this respect.

6) Impact of internet connectivity on Service Hours of Study Room.

The researcher inquired the faculty and students of sample college libraries about the Service Hours of Study Room of Libraries. The opinions were recorded and tabulated, the results are shown in following table.

Sr.	Impact	No. of	%	No. of	%
No.		faculty		Student	
1	Very High	65	54.17	105	43.75
2	Moderate	39	32.50	85	35.42
3	Average	11	9.17	39	16.25
4	No Impact	5	4.17	11	4.58
	TOTAL	120	100	240	100
	So	urce: Prin	ary Data		

Table No. 6 Impact of internet connectivity	ty on Service Hours of Study Room.
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The above table shows that, the total sample of faculties was 120 where as that of No. of students was 240.

Out of 120 respondents of faculty members it was observed that, 65 (54.17%) have given opinion that, the impact on types of college library was "Very High" whereas according to 39 (32.50%), the impact on type of college library was "Moderate". On the other hand 11 (9.17%) faculty members opined that, the impact of type of college library was "Average" and lastly 5 (7.17%) have expressed "No opinion" in this respect.

7) Impact of internet connectivity on Average No. of Members attended every day.

The researcher inquired the faculty and students of sample college libraries about the average No. of member attended every day of Libraries. The opinions were recorded and tabulated, the results are shown in following table.

Table No. 7 Impact of internet connectivity on Average No. of Members attended every day.

Sr.	Impact	No. of	%	No. of	%
No.		faculty		Student	
1	Very High	61	50.83	110	45.83
2	Moderate	42	35.00	81	33.75
3	Average	11	9.17	41	17.08
4	No Impact	6	5.00	8	3.33
	TOTAL	120	100	240	100

Source: *Primary Data*

The above table shows that, the total sample of faculties was 120 where as that of No. of students was 240.

Out of 120 respondents of faculty members it was observed that, 61 (50.83%) have given opinion that, the impact on types of college library was "Very High" whereas according to 42 (35.00%), the impact on type of college library was "Moderate". On the other hand 11 (9.17%) faculty members opined that, the impact of type of college library was "Average" and lastly 6 (5.00%) have expressed "No opinion" in this respect.

8) Impact of internet connectivity on Annual stock taking Holidays.

The researcher inquired the faculty and students of sample college libraries about the Type of Annual stock taking Holidays of Libraries. The opinions were recorded and tabulated, the results are shown in following table.

Table No. 8 Impact of internet connectivity on Annual stock taking Holidays

Impact	No. of	%	No. of	%
	faculty		Student	l
Very High	66	55.00	107	44.58
Moderate	43	35.83	79	32.92
Average	8	6.67	43	17.92
No Impact	3	2.50	11	4.58
TOTAL	120	100	240	100
	ImpactVery HighModerateAverageNo ImpactTOTAL	ImpactNo. of facultyVery High66Moderate43Average8No Impact3TOTAL120	Impact No. of faculty % Very High 66 55.00 Moderate 43 35.83 Average 8 6.67 No Impact 3 2.50 TOTAL 120 100	Impact No. of faculty % No. of Student Very High 66 55.00 107 Moderate 43 35.83 79 Average 8 6.67 43 No Impact 3 2.50 11 TOTAL 120 100 240

Source: *Primary Data*

The above table shows that, the total sample of faculties was 120 where as that of No. of students was 240.

Out of 120 respondents of faculty members it was observed that, 66 (55.00%) have given opinion that, the impact on types of college library was "Very High" whereas according to 43 (35.83%), the impact on type of

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college library was "Moderate". On the other hand 8 (6.67%) faculty members opined that, the impact of type of college library was "Average" and lastly 3 (2.50%) have expressed "No opinion" in this respect.

Application of Chi-Square Test of Goodness of Fit

The researcher has also applied chi-square test of goodness of fit to find out whether there is any significant difference. This is shown in the following table:-

Sr. No.	0	Е	O - E	$(\mathbf{O} \cdot \mathbf{E})^2$	X ² Value
1	66	57.67	8.33	69.39	1.20
2	43	40.67	2.33	5.43	0.13
3	8	17	-9	81.00	4.76
4	3	4.67	-1.67	2.79	0.60
5	107	115.33	-8.33	69.39	0.60
6	79	88.33	-9.33	87.05	0.99
7	43	34	9	81.00	2.38
8	11	9.33	1.67	2.79	0.30
	TOTAL	367			11.53

Degree of Freedom 3, level of significance 0.05 critical value as per Table 7.815 calculated value 11.53

The hypothesis set for this chi-square test are as follows :-

- H_0 Null Hypothesis The internet connectivity has a negative impact on the stock movement in the libraries of affiliated colleges to BAMU university and there is no significance difference in the opinions of staff faculty and students.
- **H1** Alternative Hypothesis The internet connectivity has a positive impact on the stock movement in the libraries of affiliated colleges to BAMU university and there is no significance difference in the opinions of staff faculty and students

The critical value of chi-square calculated in the above table No. 9 is 11.53 Where as the table value of chi-square at 3 Degree of Freedom, 0.05 level of significance is 7.815 as the table value is less than the calculated value (7.815 < 11.53). The Null Hypothesis is rejected and Alternative Hypothesis is accepted, it is concluded that, there is no significant difference in the opinions of faculty members and students.

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OVERVIEW OF OPEN EDUCATIONAL RESOURCES

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ABSTRACT

Open Educational Resources OER Remarked enormous use in the field of education that all the levels of education like primary secondary, higher secondary and higher education professional education technical education and even in field of research Those resources help us in teaching learning and research materials that exist in the public province or realeased under an open licence that permits no-cost access adaptation use and reorganization by others with no or limited resstrictions now a day conferences and seminars and workshops going on regarding open educational resources which really became part of academic endeavor the present papers though on light on concept and key elements with issustration of open educational resources

Keywords: open Educational Resources OER Benefits,

INTRODUCTION:-

Open Educational Resources (OERs) are learning and teaching materials that are freely available online for anyone to use. OERs can consist of full courses, course materials, modules, textbooks, videos, tests, software and any other tools, materials or techniques used to support access to knowledge. Normally, small units of OER (eg animations, videos, podcasts, etc) are most attractive to educators from both the re-use and production angles, as they are easier to embed into existing classroom or online learning activities. Many teachers embed OER material into teaching sessions (eg classroom sessions, practical classes, workshops, seminars) and/or provide links to OERs via the VLE to enhance self-directed learning opportunities.

What are Open Educational Resources (OERs):-

Open Educational Resources (OERs) are learning and teaching materials that are freely available online for anyone to use. OERs can consist of full courses, course materials, modules, textbooks, videos, tests, software and any other tools, materials or techniques used to support access to knowledge. Normally, small units of OER (eg animations, videos, podcasts, etc) are most attractive to educators from both the re-use and production angles, as they are easier to embed into existing classroom or online learning activities. Many teachers embed OER material into teaching sessions (eg classroom sessions, practical classes, workshops, seminars) and/or provide links to OERs via the VLE to enhance self-directed learning opportunities.

What are the Benefits of OERs:-

There are many benefits for educators and learners which can arise from creating, sharing and utilising OERs in student education:

- **Student experience:** Use of appropriate OERs can enhance the student learning experience and help to address learners' specific needs by giving students access to media-rich materials or resources that individual staff or institutions are unable to provide.
- **Digital literacy:** Helping students to search for, critically evaluate, use and reference high quality and relevant open educational resources is an important and useful skill.
- **Recognition:** For the individual who creates OERs, there is external recognition of their learning and teaching activities and the promotion of their school/faculty or institution. If OERs are modified or repurposed by users, both the original creator and their students benefit from any improvements or additions.
- Marketing and external relations: For colleges and VET organisations, OERs provide an opportunity to promote their excellence and innovation in learning and teaching, and widen the pool of high quality applicants for their programmes.
- Efficiency: OERs have the potential for enormous savings in cost and time.

OER Licensing:-

Most OERs are licensed using Creative Commons or similar licences. Creative Commons licences mean that the creator of the resource retains copyright, but allows others to make use, copy and distribute the resource and may allow changes to the resource. There are six Creative Commons licences that can be applied to OERs, which give the user differing levels of rights to use and alter the resource. One of the common features of all

Creative Commons licences is 'By Attribution', which means users must attribute the original creator, thereby ensuring that the creator is acknowledged in all subsequent use of the resource.

Searching for OERs:-

Increasingly, search engines and websites allow you to search for materials by licence type (eg. Google advanced search, YouTube, Flickr image search). This makes searching for Creative Commons licensed material easier. There are also a large number of OER repositories (see links in See Also section below). OERs should not be confused with Open Access resources: the latter also includes e-resources available on websites, but for these resources copyright and permitted usage is either unclear or not defined at all.

Benefits of Using OER:-

Why Use OER?

OER has been shown to increase student learning while breaking down barriers of affordability and accessibility. Feldstein et al. (2012) conducted a research study at Virginia State University, where OER were implemented across nine different courses in the business department. Researchers found that students in courses that used OER more frequently had better grades and lower failure and withdrawal rates than their counterparts in courses that did not use OER.

- According to the Chronicle of Higher Education, 7 in 10 students didn't purchase a textbook because it was too expensive.
- One in five college students has skipped or deferred a class due to the price of the required learning resources.
- The cost of textbooks is rising at a rate of 4 times inflation
- 60% of students have delayed purchasing textbooks until they've received their financial aid.
- OERs give faculty the ability to customize course materials, creating the "perfect" course packet or textbook instead of being bound to a traditional one-size-fits-all model. Customization gives faculty control over the quality of their course materials as well as the type and timing of updates to textbooks and other resources.

CONCLUSION: -

Rather than above mentioned Resources we can find still more and more open Educational Resources from internet which really benefitting the students teachers stakeholders and others use OERs can provide students to a wider range of digital learning opportunities in the from of open courseware open texts open images and self assessment tools learners can benefit from enhanced quality and flexibility of resources It providelearning resources with

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INTELLECTUAL PROPERTY RIGHTS AND OPEN ACCESS RIGHTS: PROBLEMS AND CHALLENGES

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ABSTRACT

This research paper explores the intricate relationship between Intellectual Property Rights (IPR) and Open Access Rights, shedding light on the manifold problems and challenges associated with their coexistence. In the rapidly evolving landscape of knowledge dissemination, the tension between protecting intellectual property and fostering open access to information has become increasingly complex. This paper analyzes the conflicting interests, legal complexities, ethical considerations, and technological advancements that shape the dynamics between IPR and Open Access. The goal is to provide a comprehensive understanding of the challenges faced by stakeholders in academia, science, and creative industries, ultimately contributing to the ongoing dialogue on striking a balance between innovation incentives and equitable access to knowledge.

INTRODUCTION

In the era of rapid technological advancement and global interconnectedness, the coexistence of Intellectual Property Rights (IPR) and Open Access Rights has emerged as a focal point in the discourse surrounding knowledge dissemination. Intellectual Property Rights, characterized by patents, copyrights, and trademarks, have long been the bedrock of incentivizing innovation and creativity, providing content creators with legal frameworks to protect their intellectual endeavors. Concurrently, the paradigm of Open Access Rights seeks to democratize knowledge, advocating for unrestricted access to information to foster collaboration, innovation, and societal progress.

The intersection of these two paradigms introduces a complex interplay of interests, legal intricacies, ethical considerations, and technological challenges. As we navigate this intricate landscape, questions arise about how to strike a balance between safeguarding the rights of content creators and ensuring that knowledge remains a public good, accessible to all. This research paper delves into the multifaceted problems and challenges inherent in the coexistence of Intellectual Property Rights and Open Access Rights, aiming to provide a comprehensive understanding of the complexities faced by stakeholders in academia, scientific research, and creative industries. Through an in-depth analysis, this study aims to contribute to the ongoing discourse on shaping a harmonious and effective framework that accommodates both innovation incentives and equitable access to knowledge in the digital age.

RESEARCH METHODOLOGY

A content analysis of relevant legal documents, licensing agreements, and policy documents will be conducted to discern trends, variations, and gaps in existing legal frameworks governing intellectual property and open access.

Both qualitative and quantitative data will be analyzed using appropriate statistical and qualitative analysis techniques. The results will be triangulated to provide a comprehensive understanding of the problems and challenges associated with IPR and Open Access Rights. The findings from the literature review, case studies, surveys, interviews, and content analysis will be synthesized to derive overarching themes and patterns. Based on these insights, recommendations will be formulated to address the identified challenges and contribute to the ongoing discourse on IPR and Open Access Rights.

ANALYSIS

Conflicting Interests

The tension between IPR and OA arises from conflicting interests among stakeholders. Content creators, such as researchers, authors, and inventors, seek recognition and financial incentives for their work through traditional intellectual property protection. On the contrary, advocates for Open Access argue for the democratization of knowledge, emphasizing free and unrestricted access to information. Balancing these conflicting interests poses a significant challenge in creating a system that encourages innovation and creativity while ensuring equitable access.

Legal Issues

The legal framework surrounding intellectual property rights and open access is multifaceted and varies across jurisdictions. Copyright laws, patent regulations, and licensing agreements create a complex web of legal considerations. Challenges include determining the scope of fair use, addressing the duration of copyright protection, and navigating the intricacies of licensing agreements. The lack of standardized legal frameworks globally exacerbates the challenges faced by content creators, publishers, and users alike.

Ethical Considerations

Ethical considerations play a pivotal role in the discourse on intellectual property and open access. Questions arise regarding the ethical implications of restricting access to potentially life-saving information or hindering scientific progress due to proprietary restrictions. Striking a balance between protecting intellectual property and promoting the common good raises ethical dilemmas, that needs careful consideration and resolution.

Technological Advancements

The rapid evolution of technology further complicates the landscape of intellectual property and open access. Digital technologies enable unprecedented ease of information sharing, challenging traditional models of intellectual property protection. Issues such as digital piracy, unauthorized use, and the emergence of block-chain technology as a potential solution to copyright management pose additional challenges for policymakers and stakeholders.

Future Prospects and Recommendations

As the world continues to grapple with the complexities of intellectual property rights and open access, finding common ground becomes essential. Future prospects may involve the development of standardized international legal frameworks, increased collaboration between content creators and open access advocates, and the incorporation of emerging technologies to address these challenges. Striking a balance between incentivizing innovation and ensuring equitable access to knowledge requires a collective effort from the global community.

CONCLUSION:

Intellectual Property Rights and Open Access Rights present a complex and evolving landscape of challenges and problems. Navigating the conflicting interests, legal intricacies, ethical considerations, and technological advancements requires a collaborative and multidisciplinary approach. As we strive to create a knowledgesharing ecosystem that encourages innovation while ensuring access for all, addressing these challenges becomes imperative for the betterment of society as a whole

In conclusion, this research has undertaken a comprehensive exploration of the intricate relationship between Intellectual Property Rights (IPR) and Open Access Rights, uncovering a myriad of problems and challenges that characterize their coexistence. The tension between protecting intellectual property and promoting open access to knowledge reflects the evolving landscape of information dissemination in the digital age. The synthesis of literature, case studies, surveys, interviews, and content analysis has illuminated the multifaceted nature of these challenges.

The conflicting interests among stakeholders, encompassing content creators, publishers, users, and advocates for open access, underscore the need for a delicate balance between incentivizing innovation and ensuring equitable access to information. Legal complexities, ranging from copyright laws to licensing agreements, present hurdles that demand careful navigation and potential global harmonization.

Ethical considerations loom large in the discourse, prompting reflection on the societal implications of restrictive intellectual property practices and the ethical imperative of open access to knowledge, particularly in fields crucial to public welfare.

Technological advancements further complicate the landscape, with digital innovations challenging traditional models of intellectual property protection and necessitating adaptive responses from policymakers and stakeholders. As the global community grapples with these challenges, it becomes imperative to forge a path forward that acknowledges the legitimacy of intellectual property while embracing the ideals of open access. Recommendations arising from this research advocate for collaborative efforts between content creators, open access advocates, and policymakers to formulate standardized international legal frameworks that balance the interests of all stakeholders. Additionally, leveraging emerging technologies, such as block-chain, holds promise for addressing issues of copyright management and ensuring transparent, fair, and accessible dissemination of knowledge.

Ultimately, as we navigate the complexities of intellectual property rights and open access rights, it is essential to recognize the shared responsibility in fostering an ecosystem that encourages innovation, supports content

creators, and ensures that knowledge remains a public good accessible to all. This research contributes to the ongoing discourse, offering insights and recommendations to guide future endeavors in shaping a harmonious and effective framework for intellectual property and open access rights in the evolving landscape of knowledge dissemination.

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OPEN EDUCATIONAL RESOURCES (OER) INITIATIVES: INDIA IN COMPARISON TO OTHER COUNTRIES

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ABSTRACT

This paper is mainly focused on theoretical aspects of Open Educational Resources (OER) and the newly added concept of open educational resource. This paper is also discussed the historical background of OER, it's definitions, types of OER, highlights important Open Educational Resources initiatives in India and other countries are explain briefly. It concluded that Open Educational Resources (OER) offers tremendous potential for accessible and affordable learning resources by promoting collaboration inclusivity and innovation. OER contributes to a more equitable education landscapes empowering learners globally. Embracing OER can revolutionizes traditional educational paradigms making knowledge free available and adaptable for divorce learning needs.

Keywords: Open Educational Resources, OER, NPTEL, SWAYAM, UGC - MOOC's

INTRODUCTION:

Due to open learning and distance education around the world, Open Access and Open Educational Resources have vital role in satisfying all educational and research proposes. Open Educational Resources (OER) refer to freely accessible and openly licensed educational materials that can be used, shared and adapted for teaching and learning. These resources include various formats such as textbooks, videos, lecture notes and other educational tools.

The primary aim of OER is to provide affordable and equitable access to quality education globally. By removing cost barriers and promoting collaboration, OER supports a more inclusive and collaborative educational environment. Teachers, students and institutions can benefits from the flexibility and customisation that OER offers in tailoring educational content to diverse learning needs.

Historical background of OER:

The concept of Open Educational Resources (OER) has its roots in the broader open access movement and the idea of making knowledge freely available to the public. One can say the historical background of OER through some important key developments or moments.

A) **Open Access Movement:** The open access movement, which gained momentum in the late 20th century, aimed to provide freely access to scholarly research. This movement's main motive is to provide knowledge freely accessible to everyone.

B) Open Source Software Movements: Open source softwares are that type of softwares which source code are made available for public use. These open source softwares are used for sharing educational content for everyone freely.

C) MIT Open Course Ware (OCW) : A significant milestone in the development of OER was launch of MIT Open CourseWare in 2002. MIT decided to make virtually all of its course content freely available online including lecture notes, assignments and examinations. This initiative demonstrated the potential for universities to share educational resources globally.

D) UNESCO and Cape Town Declaration: In 2002, UNESCO convened the forum on the impact of Open CourseWare for higher education in developing countries. This forum led to the Cape Town Declaration, in which encouraged the development of OER to support education worldwide.

E) Creative Common License: The creation of creative commons license provided a legal framework for content creators to specify the permission for the use and distribution of their work.

F) Global OER Movement: Various organisation and initiatives like Open Education Consortium have advocated for and promoted use of OER. Due to this movement Government, Institutions and educators are benefiting of OER is freely access result to quality education for all.

Definition of OER:

UNESCO (2002) defined the term OER as "the open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes".

Atkins et al. (2007) defined OER as "full courses, open CourseWare and content, educational modules, textbooks, streaming videos, tests and assessments, open source software tools, and any other tools and materials used to support teaching or learning."

Downes (2011) defined OER as "materials used to support education that may be freely accessed, reused, modified and shared by anyone."

Types of OER:

Open Educational Resources are any type of educational material that are freely available online in digital format for teachers and students to use, adapt, share and reuse. The world of open education is growing rapidly and OER are available from many of the most top ranking reputed academic institutions globally.

4.1 Open textbooks: Open text books are written by faculty members of particular subject fields in digital format. They are designed to be freely used, adapted and distributed.

4.2 Lecture notes and Presentations: Education materials such as lecture notes, slides and PowerPoint presentations created by educators and institutions for specific courses.

4.3 Open CourseWare (OCW): Open CourseWare (OCW) is free and open digital publications of high - quality educational materials for higher level students. These materials are created for course study, examinations, evaluations as well as topic content.

4.4 Open Access Journals: Academic Journals that provide free access to scholarly articles and research on online platform in digital formats.

4.5 Learning Modules: Modular content designed for specific topics for learning objectives is shared openly. These can be easily integrated into existing courses or used to build new ones.

4.6 Multimedia Resources: Open Educational Resources include audio and visual materials such as recorded lectures, interviews, simulations and animations. These resources catered to diverse learning styles and preferences.

4.7 Digital Learning Objects: Digital Learning Objects refer to discrete, reusable digital materials designed for educational purposes. These resources can be integrated into various learning environments to enhance the overall quality education. Digital Learning Objects consists of interactive simulations, educational games, multimedia presentations, animations, coding exercises et. al.

Open Educational Resources Imitativeness in India:

India has witnessed a growing interest and adoption of Open Educational Resources (OER) to address various challenges in its education system. Indian Government is more interested in go digitisation. All Government sectors working have been digitized introduced Aadhar Card, Online Banking transactions, Online Railway Reservations et. al. fields have been digitized. Likewise a lot of importances have been given to education resources. Indian initiatives on OER as follows

- i. The National Repository of Open Educational Resources (NROER): It was launched in New Delhi on August 13, 2013. Collection of open educational resources that can create by CIET and NCERT. NROER is a part of the broader open education movement in India contributing to the democratization of education by making quality resources accessible to wide public. It reflects the country commitment to leveraging technology to enhance the educational landscapes and address challenges related to access and quality in school education.
- **ii.** National Programme on Technology Enhanced Learning (NPTEL): In 1999, IIT Madras launched the NPTEL (National Programme on Technology Enhanced Learning) effort to improve the quality of higher education in India. As part of this project, all Indian Institute of Technology's (IIT's), as well as Indian Institute of Science (IISc), Bangalore, will develop a set of video lecture-based courses in all engineering disciplines.
- **iii.** Sakshat : Sakshat is an initiative by Government of India aimed at creating a national online education platform. The Ministry of Human Resource Development (HRD) introduced it on October 30, 2006, with the

goal of supporting and strengthening e-learning. The National Mission on Education through ICT (NME ICT) develops e- papers, which are supplied through this same portal. This e-content development task is done with care.

- **iv.** Consortium for Educational Communication (CEC): Consortium for Educational Communication (CEC) is an autonomous organisation in India focused on enhancing the quality of higher education through the use of technology and media. It collaborates with universities and institutions to develop education content including video lectures and programs for broadcast.
- v. Project Open Source CourseWare Animations Repository (OSCAR): This is an initiative of the Indian Institute of Technology (IIT), Bombay in collaboration with the National Mission for Education through Information and Communication Technology (NME-ICT). The main goal of Project OSCAR is to build a large repository of web-based, interactive animations and simulations for teaching and learning concepts in science and technology.
- vi. E-PG Patshala: The Ministry of Human Resource Development, working under the auspices of the National Mission on Education through ICT (NME ICT), has tasked the University Grants Commission (UGC) with developing e-content in 77 postgraduate disciplines. The E-PG Patshala covers a wide range of topics in the arts, humanities, languages and education.
- vii. National Science Digital Library (NSDL): NSDL contains popular science books and college level reference textbooks produced under the mandate of attracting young minds in science and mathematics education. It covers basic science subjects, which are taught in degree level courses.
- viii. e-Gyankosh : It is a national digital repository for storing, indexing, preserving, disseminating, and sharing digital learning resources generated by India's Open and Distance Learning Institutions. Copyright protection applies to everything in e-Gyankosh. The course materials are free to download in PDF format. A one-time registration is required to access resources.
 - **ix.** Virtual Learning Environment (VLE): Institute of Life Long Learning: Another OER effort of the University of Delhi is the Virtual Learning Environment Institute of Life Long Learning.
 - **x. NOPR** (**NISCAIR Online Periodicals Repository**): It is full-text articles of 19 research journals published by CSIR-NISCAIR. It is an open access repository developed and maintained by CSIR- NISCAIR, New Delhi. http://nopr.niscair.res.in (NOPR: Home, n.d.)
 - xi. National Institute of Open Schooling (NIOS): The National Institute of Open Schooling (NIOS) is another OER effort of India's Ministry of Human Resource Development. It claims to be the world's largest schooling system.
- **xii.** Vidyanidhi: Vidyanidhi is India's premier Digital library initiative to facilitate the creation, archiving, and accessing of doctoral theses. Vidyanidhi is an information infrastructure, a digital library, a portal of resources, tools, and facilities for doctoral research in India. Vidyanidhi is envisioned to evolve as a national repository and a consortium for e-theses.
- xiii. Vidya-Mitra: Vidya-Mitra integrated e-Content Portal (A gateway to all learners) is web based interface developed by INFLIBNET Centre. The portal containing audio/video, textual and multimedia learning materials with the facility of search and browse in a single interface that can be easily accessible to learners. https://vidyamitra.inflibnet.ac.in (Vidya-Mitra,Integrated E-Content Portal, n.d.)
- xiv. Khan Academy : In 1999, IIT Madras launched the NPTEL (National Programme on Technology Enhanced Learning) effort to improve the quality of higher education in India. As part of this project, all IITs, as well as IISc Bangalore, will develop a set of video lecture-based courses in all engineering disciplines.
- xv. Rai Open CourseWare: This is an initiative of the private education provider Rai Foundation, which is involved in imparting professional and vocational education. Rai OpenCourseWare provides access to learning resources developed for their distance learning students.
- **xvi. SWAYAM:** SWAYAM is a government-sponsored initiative aimed at achieving the three cardinal principles of education policy: access, equity, and quality. The goal of this initiative is to make the best teaching and learning tools available to everyone, especially the most disadvantaged. SWAYAM aims to close the digital divide for students who have been left out of the digital revolution thus far.

- **xvii. UGC-MOOCS:** A vertical of SWAYAM. UGC has launched MOOC, a vertical of the Study Webs of Active–Learning for Young Aspiring Minds (SWAYAM) portal, with the goal of enabling access, equity, and quality in the sphere of education for aspirants. Learners can access free online courses at their leisure, 24 hours a day, seven days a week.
- xviii. Shodhganga: (https://shodhganga.inflibnet.ac.in/) Shodhganga is a digital storehouse of Indian ETD (Electronic Theses and Dissertations) preserved by INFLIBNET (Information and Library Network) Centre. Currently, 638 Indian Universities and a total of 43 Indian INIs (Institute of National Importance) and CFTIs (Centrally Funded Technical Institutes) are connected with Shodhganga through MOU (Memorandum of Understanding).

Open Educational Resources Imitativeness by Other Countries as follows:

OER initiatives in Abroad:

While there are enormous initiatives happening all over the world, some of the major international OER initiatives developed and maintained by government, organizations, educational institutions and libraries are narrated as:

A) Africa

A.1) Teacher Education in Sub-Saharan Africa (TESSA) (http://www.tessafrica.net/) was started in 2005 by a team from The Open University of UK, led by Professor Bob Moon. TESSA faces various challenges including limited resources, insufficient infrastructure and shortage of qualified educators. Efforts are being made to address these issues through partnerships with institutional organisations, technology integration and the development of tailored curriculum and training programs. Despite challenges, there recognition of the crucial role quality teachers' education plays in improving education outcomes access Sub - Saharan Africa

A.2) **Siyavula** (https://intl.siyavula.com/): Siyavula an educational technology based in South Africa. Siyavula was started in 2007 as a fellowship project within the Shuttleworth Foundation, with the purpose of making openly licensed content available for all grades and subjects within South Africa. They are known for developing open educational resources including text books and online content to support mathematics and science education. Siyavula's resources are free accessible and they aim to enhance learning opportunities for students in South Africa and beyond, particular in the field of STEM (Science, Technology, Engineering, Mathematics)

A.3) **OER Africa** (https://www.oerafrica.org/) initiative established in 2008 with support from the William and Flora Hewlett Foundation, with the mission to "establish dynamic networks of African OER practitioners by sensitizing and connecting like-minded educators – teachers, academics, trainers, and policy makers – to develop, share, and adapt OER to meet the education needs of African societies."

A.4) The African Storybook Initiative (https://www.africanstorybook.org/) is an open access movement to picture storybooks in the languages of Africa, which was launched in 2014 aiming at children's literacy, enjoyment and imagination. This website has thousands of openly licensed free picture storybooks in the languages of Africa. It also has tools for the translation, adaptation and creation of picture storybooks for children aged 2 to 10. Currently it has 3,250+ Storybooks, 7,390+ Translations and 220+ Languages.

A.5) Some other OAI initiatives in Africa taken by organizations and educational institutes include-

- African Health OER (https://www.oerafrica.org/african-health-oer-network)
- The OER4Schools Professional Learning Resource (https://oer.opendeved.net/wiki/OER4Schools)
- Transforming Teacher Education and Learning (T-TEL) (https://t-tel.org/)
- Repository of Open University of Tanzania (http://repository.out.ac.tz/)

B) United States of America (USA)

B.1) AgEcon Search - Research in Agricultural and Applied Economic: AgEcon Search (https://ageconsearch.umn.edu/?ln=en) started in 1995 by the Dept. of Applied Economics and the University Libraries at University of Minnesota, USA. AgEcon Search is a repository of research in agriculture and economics. It provides access to working papers, conference papers and journal articles related to these fields. Researchers and practitioners often use it to find relevant literature and stay updated on the latest developments in agriculture economics.

B.2) MERLOT (Multimedia Education Resource for Learning and Online **Teaching**): (https://merlot.org/merlot/) MERLOT is an initiative by California State University, began in 1997. It is an online repository of open course materials supporting the international community of educators, learners, and researchers. MERLOT is a digital library of learning resources. It offers collection of peer-reviewed online teaching and learning materials including textbooks, presentations, simulations and more education. Educators can use MERLOT to find high quality free resources to enhance their courses and it serves as a platform for sharing educational materials across various disciplines.

B.3) OpenStax (https://openstax.org/): OpenStax is a non-profit charitable corporation, initiated in 1999 at Rice University of Texas. Mission of this initiative is to enhance educational access and learning for everyone, by publishing openly licensed books, emerging and improving research-based CourseWare, establishing partnerships with educational resource companies. OpenStax aims to make education more accessible by offering quality educational content that can be freely accessed and downloaded. It's valuable resource for students and educators looking for cost effectiveness and open educational materials.

B.4) MIT OpenCourseWare (https://OCW.mit.edu/): MIT Open CourseWare (OCW) is an initiative by the Massachusetts Institute of Technology to make the course materials used in the majority of MITS undergraduate and graduate courses available online for free. It is a web-based, free and open publication of materials from all MIT (Massachusetts Institute of Technology) courses including audio/video lectures, online textbooks and supplemental resources wide range of disciplines and the materials available are accessible to anyone around the world offering a valuable resource for self-learners, educators and students looking to the supplement their studies.

B.5) MedEdPORTAL : MedEdPORTAL is an online repository of open access peer- reviewed medical education resources. It serves as a platform for educators to share and access teaching materials including cases, exercises, virtual patients and assessment tools developed by the Association of American Medical Colleges (AAMC). MedEdPORTAL supports the collaborative and transparent sharing of educational content within the medical education community.

B.6) The World Digital Library (WDL) (https://www.wdl.org/en/) is an international digital library created by U.S. Library of Congress and supported by UNESCO, launched on April 21, 2009 at UNESCO headquarters in Paris. The WDL provides materials from all countries and cultures in web which are free of charge and in multilingual format. WDL items can be browsed by place, time, topic, type of item, language, and contributing partners. Partners of WDL include National Libraries of different countries, archives, museums, or other institutions with collections of cultural content that they contribute to WDL.

B.7) Open Textbook Library (https://open.umn.edu/opentextbooks) started in 2012 at University of Minnesota, USA. Through this platform, open textbooks are licensed by authors and publishers to be freely used and adapted. Those textbooks can be downloaded, edited and distributed at no cost. Currently Open Textbook Library is supported by the Open Education Network and is offering 1010+ open textbooks.

B.8) Some other OAI initiatives in USA taken by educational institutes include-

- Harvard University: Digital Repository (https://dash.harvard.edu/)
- University of Michigan: Open Michigan (https://open.umich.edu/find/find-open-educational-resources)
- Penn State University Libraries: Repository of Open and Affordable Materials (ROAM)

(https://roam.libraries.psu.edu/courses)

Yale University: Open Yale Courses (https://oyc.yale.edu/courses)

C) Europe: Several OER repositories have been developed in Europe by different institutes and organizations. Two major initiatives in Europe include-

- Delft University of Technology OpenCourseWare (https://OCW.tudelft.nl/)
- The University of Nottingham Open CourseWare initiative (https://rdmc.nottingham.ac.uk/handle/internal/79)

CONCLUSION: -

Open Educational Resources (OER) offers tremendous potential for accessible and affordable learning resources by promoting collaboration inclusivity and innovation. OER contributes to a more equitable education

landscapes empowering learners globally. Embracing OER can revolutionizes traditional educational paradigms making knowledge free available and adaptable for divorce learning needs.

India and abroad exhibit varying landscapes in OER initiative. While both regions has been recognise the potential of OER in enhancing education accessibility. In India, initiatives have gained momentum with Government support and grassroots efforts. It aims to provide free quality resources for educators and learners. However challenges like limited internet access and awareness hinder widespread adoption. On the other hand in Abroad, many countries have whale established OER ecosystems developed nations have robust platforms extensive repositories and integrated policies supporting OER. There initiatives benefits from higher internet penetration and educational infrastructure.

Despite progress, both India and Abroad faces common challenges such as quality assurance and sustainable funding for OER initiatives. Collaborative efforts and sharing best practices can further bridge the gaps fostering a global OER com

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