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What, Why and How of Hippocampus Videos?: The OER of Choice Among the Academia

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Introduction

HippoCampus.org is a free, core academic web site that delivers rich multimedia content—videos, animation, and simulations—on general education subjects to middle-school and high-school teachers and college professors, and their students, free of charge. Teachers project HippoCampus content during classroom learning and assign it for computer labs and homework. Students use the site in the evenings for study and exam prep. Users do not need to register or log in to use the site.

As an open resource for personalized learning, HippoCampus.org was designed as part of a worldwide effort to improve access to quality education for everyone. HippoCampus is powered by The NROC Project, a non-profit, member-driven project focused on new models of digital content development, distribution, and use. NROC makes editorial and digital engineering investments in the content to prepare it for distribution by HippoCampus.

Other noteworthy points

- Students are not required to log in to HippoCampus.org, so there is no way to track student use from the public site. However, institutions that are members of the National Repository of Online Courses (NROC) have access to HippoCampus content through

their school's learning management system, which can track use, assignments, and grades.

- HippoCampus is provided by the NROC Project for personal enrichment and individual instructor use only. The unlicensed use of this content by educational organizations or commercial vendors is prohibited.
- Unfortunately, there is no way to download the video from the website. As an individual user, however, you may create a custom HippoCampus page and then link to an individual topic. After you have created your custom page, there will be buttons in the upper right corner that allow you to view the text version (when available), bookmark, or link to the topic.
- All the content we provide at HippoCampus is created by other educational institutions and contributed to us to distribute as part of our non-profit mission.
- Use the "Comments and Questions" feature in the Media Window control bar. The icon looks like a small speech bubble, and allows you to send in a description of the error directly from the relevant piece of media. Or you can send an email to Help@HippoCampus.org.

Browse the Video Collections @ HippoCampus

Go to Google and type Hippocampus videos. When the results are listed, click on the site ' www.hippocampus.org' and you will reach the below screen which is very simple and clear (Fig.1).

It has a top menu row with options to know more about Open Educational Resources, to get user guides from HelpCentre, to login to the hippocampus account by teachers and know about hippocampus, in general.

It has got three columns. The first column has the list of subjects, on which educational videos are available. The second row shows the relevant image and the third column has the list of available collections of videos.

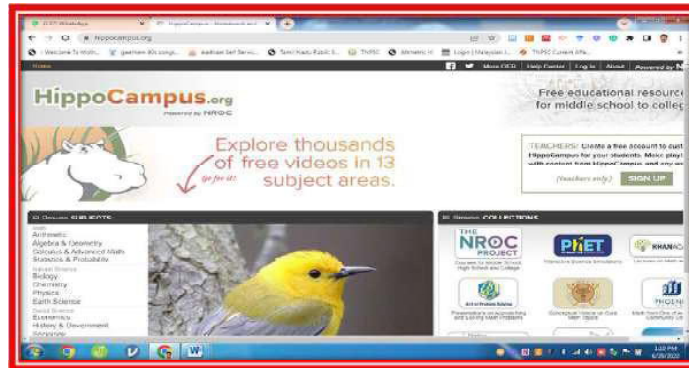


Figure 1 :Home Page : <https://www.hippocampus.org/>

Browse 13 subjects

More than 7000 educational videos are categorized and grouped under 13 subject categories. These 13 categories are grouped under four major groups like Math, Natural Science, Social Science and Humanities (Fig.2).



Figure 2 :13 Subjects in 4 Groups

Suppose, if you want to browse / search for videos on Chemistry, click on 'Chemistry' available under Natural Science Group. You will land at Fig. No.3.

Fig.3 shows the video providers and the categorization of videos under each provider. For example, the videos on Chemistry are grouped under two broad types: Presentations and Simulations. Under presentations

We have Khan Academy Collection and NASA Collection while the simulations section has The Concord Consortium Collection and PhET Collection.

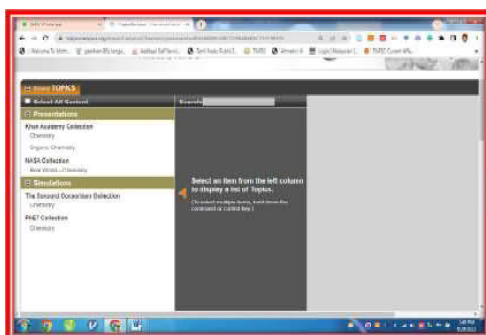


Figure 3 :Videos in Chemistry Subject

Click Organic Chemistry of Khan Academy and see the list of videos appear in the second column (Fig.4)

Choose and click the video you want to watch. The video will start playing in the third column (Fig.5).

If you want to search for videos matching specific keyword from all the collections, check the box 'Select All Content'. Then, all the videos of the collections will appear in the second column. Either you can sort them by sequence or name. We can even search for specific keywords also. For example, I typed the keyword 'atom' in the search interface (Fig.6). Only those videos that match the keyword will appear in the second columns as the results.

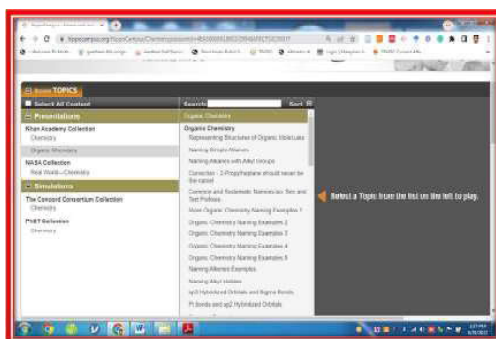


Figure 4 : List of videos in Organic Chemistr

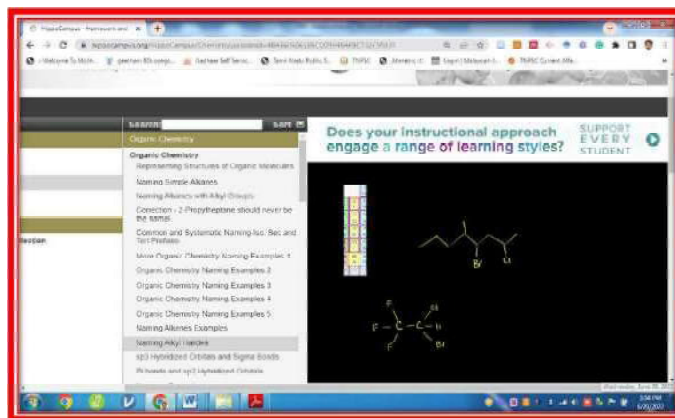


Figure 5 : Watching the Video in the third Column

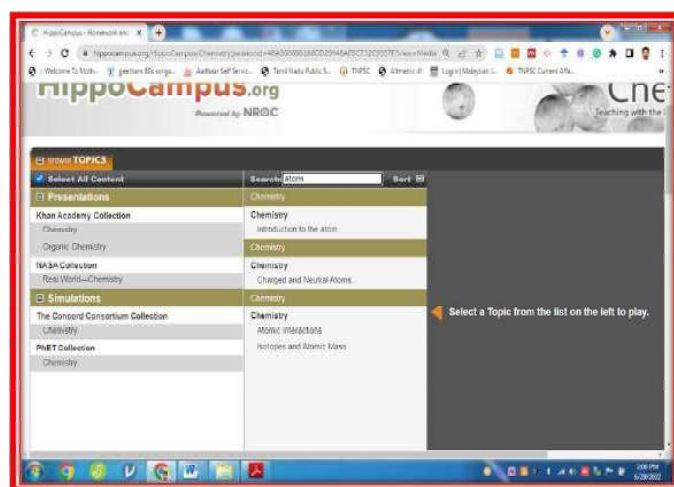


Figure 6 : Select All Content and Search Options

Browse Collections

The videos are grouped under more than 20 different collections based on the content providers. The NROC project, PhET, Khan Academy, Phoenix, MSJC, Learning Games Lab, OpenIntro, Biointeractive, The concord consortium, APES, Grammatically correct, Virginia Historical Society are some of the content providers you may find on the column 'Browse Collections' (Fig.7)

If we are interested to get videos on statistics, click the collection 'OpenIntro'. All the videos related to statistics will be listed (Fig.8).

At the same time, if you want to select the collections based on standards/grades according to certain international standards, that is also quite possible if you select and choose the relevant options by clicking the menu 'Standards Correlations'. Content Standard, Subject and Grade Level are the three filters that can be used to refine the results here (Fig.9).



Figure 7 : Collections

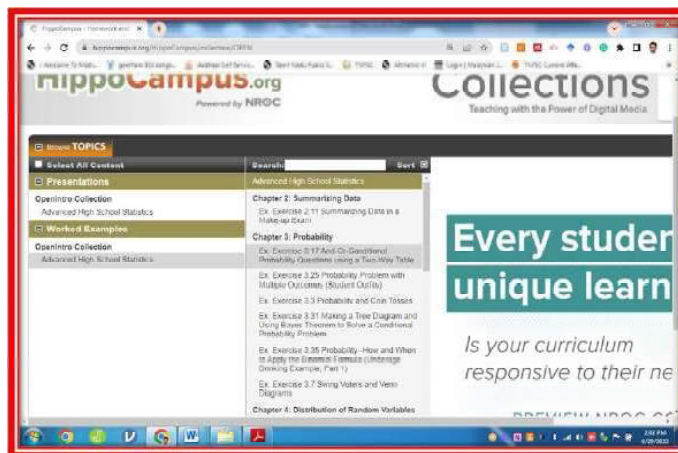


Figure 8 : Videos from OpenIntro

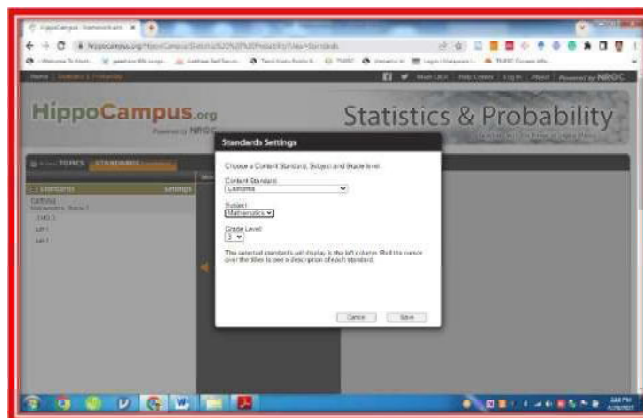


Figure 9 : Choosing Standards / Level of Content

Creating own playlists @ HippoCamps

As the librarian / teacher, we can create our own playlists in HippoCampus by clicking on the button 'Sign Up' available in the home page (Fig.10).

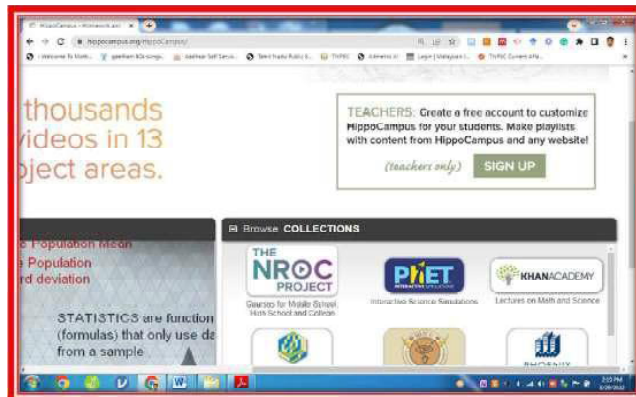


Figure 10: Sign up Option in the HomePage

When the get the following screen, fill the particulars asked for under the create account tab. Once the required details including username, password, email address, name, position, institution, state and country and subject of interest are filled properly, click Create my account (Fig. 11)

Figure 11 : Creation of New Account

You will be getting username and password along with required links to access your customized page in HippoCampus. When you enter HippoCampus the next time, click 'Login' and enter your login and password. Your login screen will look like Fig.12.

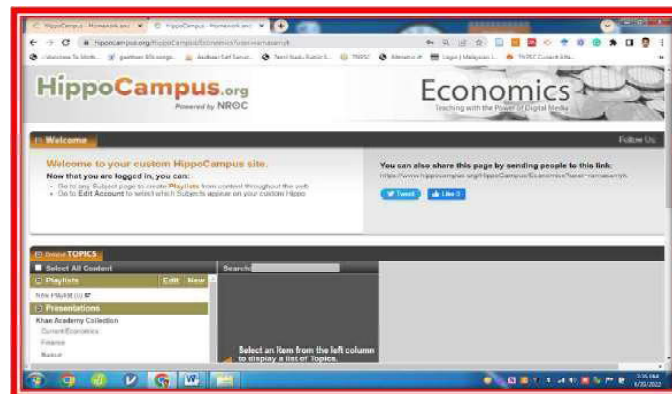


Figure 12 : Playlist Option

Now choose the subject area in which you want to create your own playlist. Now, a new button 'Playlist' appears in the screen with an option to edit, create a new playlist and add videos to the playlists. I have selected 'Economics' first, then chosen 'Banking/Finance' and got the related videos displayed in the second column. I have dragged two selected videos and dropped them in the playlist button. Now my playlist has two videos (Fig.13).

Now, click the playlist to enter the settings page (Fig.14). Here yo

can give a new name for your playlist, add a new playlist, change the settings for each added video and you can even delete the video from the playlist.

Then, click on the 'Settings' button to give a small description about your playlist, copy the dedicated URL page and add any external URL (any website, google docs page etc.) in the Add URL option (Fig. 15).

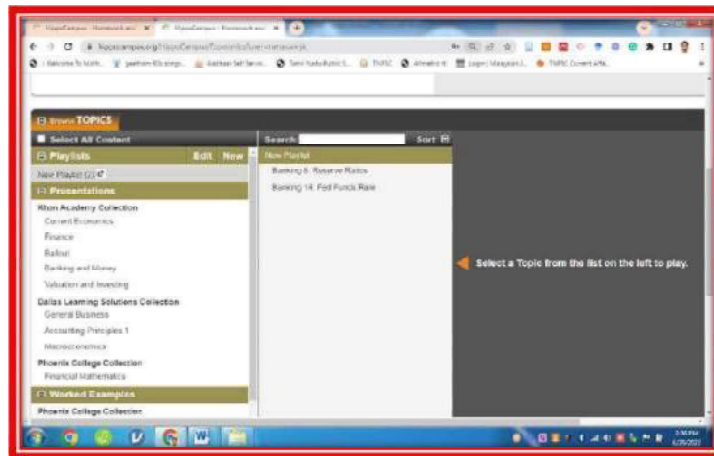


Figure 13 : New Playlist with 2 videos

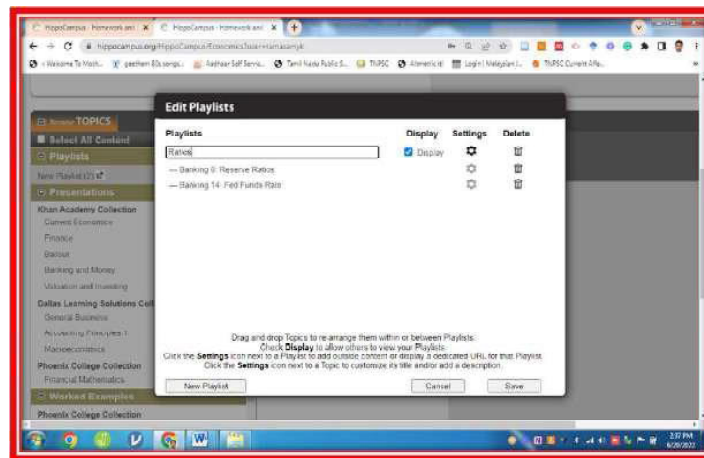


Figure 14 : Naming, Renaming and Setting

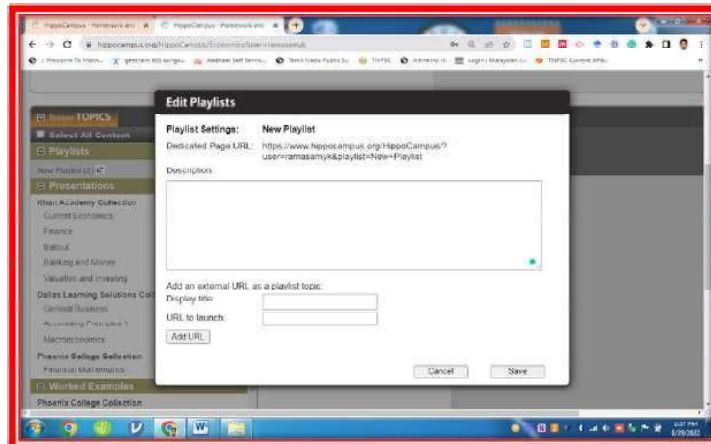


Figure 15 :Description, Adding URL and Copying Dedicated Page

Conclusion

Thus, HippoCampus is a viable option for the librarians to render reference service and current awareness service to the chosen clients by way of creating custom playlists based on the information requirements of the users. The playlists thus created may be updated now and then depending on the course of study of the users. The librarian needs to just send the dedicated custom playlist URL to the users. The users may just paste the URL in their web browser and will be able to see and watch the videos enlisted in the given playlist. The users need not open any account in HippoCampus. Though it has got a good number of videos for school library users, a sizeable number of videos are meant for college students also. The LIS professionals may find this video OER quite useful for rendering information services to their clientele.

REFERENCES

- <https://support.nroc.org/hc/en-us/sections/4416681758615-HippoCampus-Teacher-and-Student-User-Guide>
- <https://www.hippocampus.org/>
- <https://www.hippocampus.org/HippoCampus/?user=ramasamyk>

33**Contents of the Library Website of the NAAC
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Introduction

The development of every nation is highly dependent on education. The education scenario has been growing with several abrupt developments and several Universities and institutions sprouting up by the day. High standard Universities and institutions as well as below standard ones. To check the quality of these Universities and institutions, several measures and agencies to check the quality of education provided has been setup by the government bodies. National Assessment and Accreditation Council (NAAC) was established by the UGC in September 1994 at Bangalore for evaluating the performance of the Universities and Colleges in the Country. NAAC's mandate includes the task of performance evaluation, assessment and accreditation of universities and colleges in the country. The philosophy of NAAC is based on objective and continuous improvement rather than being punitive or judgmental, so that all institutions of higher learning are empowered to maximize their resources, opportunities and capabilities. The National Education Policy (NEP) 2020 gives high emphasis on accreditation. It states that, "Through a suitable system of graded accreditation and graded autonomy, and in a phased manner over a period of 15 years, all Higher

Education Institutes in India will aim to become independent self-governing institutions pursuing innovation and excellence.”

NAAC “evaluates the institutions on a range of parameters, including their structure of governance, infrastructure, financial soundness, teaching and learning, research, etc. And issues grades ranging from A++ to C based on these parameters. Institutions are graded under four categories, viz. A, B, C and D, denoting Very good, Good, Satisfactory and Unsatisfactory levels respectively. An institution with a grade D means it is not accredited.

University of Kerala

Initially called University of Travancore, a public university run by the Kerala State. It was established in 1937 after an official declaration by Chithira Thirunal Balarama Varma, the Maharajah of Travancore, who also came to become the first Chancellor of the university. It was the first university in Kerala, and one of the first among 16 in the country. Currently, the university has more than 150 affiliated colleges (60 Arts and Science colleges, 2 Law colleges, 17 Engineering Colleges, 9 MBA/MCA Colleges, 37 Teacher Training Colleges, 4 Medical Colleges, 4 Ayurveda colleges, 2 Homeopathy Colleges, one Siddha Medical College, 3 Dental colleges, 10 Nursing Colleges, 4 Pharmacy Colleges, 2 Fine Arts Colleges, and a Music College.), sixteen faculties and 43 Departments of teaching and research in addition to study centres and other departments under its umbrella. It also has a National College of Physical Education affiliated to it.

It was ranked 22nd in the NIRF 2019 ranking, followed by 23rd in 2020 and 27th in 2021.

First accredited by NAAC in 2003, with a B++ grading, it was without accreditation since 2008. The university received an A grade NAAC accreditation in 2015 with a CGPA of 3.03 on four point scale. And in June 2022, it received re-accreditation by NAAC with highest grade of A++ scoring 3.67 points out of 4, making it the first university in the State to receive the highest rank in NAAC assessment thus making it eligible to get projects worth up to Rs 800 crore from the UGC.

As the NAAC guidelines for Universities states, “ Though it is institutional accreditation that the NAAC does, the assessment of a library, a vital sub-unit, is a key step that integrates itself with the overall evaluation. Library is the fulcrum of support for the entire range of academic activities on an educational campus. In today’s high-tech learning environment, the

library as a learning resource is taking up increasingly more academic space and time in the life of a learner. In times ahead, this will be even more so. All this plays up the need for scientific evaluation of a library so that its role as the centrepiece of academic development is protected and enhanced. It is in this context that the NAAC has after wide consultations evolved a set of guidelines on quality indicators, to help academic libraries to be always in their best form.

In the process of institutional accreditation, libraries have a crucial role. The services of the libraries have been expanding as they contribute significantly to the learning process, particularly, the e-learning process.

In the accreditation process, evaluation of libraries is an essential component, where the collection, services and their outreaching capacity are monitored. In the recent past, significant developments have been reported in library and information services and the libraries are shouldering newer responsibilities in higher education. Hence the standards for assessing the quality of library services need to be updated. It is true that libraries largely support learning, teaching and research processes in institutions”.

It is in this backdrop, that the NAAC has developed a set of objective indicators to facilitate assessment of the Library and Information Services of academic institutions.

A. MANAGEMENT OF LIBRARY AND INFORMATION SERVICES

- a. Number of days the Library is kept open
- b. Working hours
- c. Library Advisory Committee
- d. Manpower development
- e. Infrastructure of the Library
- f. ICT Infrastructure and Know-how
- g. Overall policy of the institution on library
- h. Budget

B. COLLECTION AND SERVICES PROVIDED TO USERS

- (i). Collection
- (ii). Services

C. EXTENT OF THE USE OF SERVICES

D. BEST PRACTICES FOR UNIVERSITY/AUTONOMOUS COLLEGE LIBRARIES

The Kerala University Library

The University of Kerala has its Main Library near its city campus and caters to all students, staff and public. It was established in 1942 and is the biggest and oldest university library in the State. The library stocks a collection of over 350,000 books with 5000 titles being added annually every year. The library also subscribes to around 500 journals/ magazines / magazines; 43 foreign Journals, more than 400 Indian periodicals, 35 magazines and 20 Newspapers. The library also stocks bound volumes of more than 1000 journal titles. UGC Infonet Digital information services is also provided. It stocks a unique set of Kerala Studies in its special collection among others such as General Biographies, Women' Studies, UN and World Bank Publications, Government publications and bound volumes of rare books and newspapers and journals. The rare books collection is in the process of digitizing. The Manuscript Library of the University has over 65,000 works mainly palm leaf manuscripts. Also in its Manuscripts collection are paper manuscripts, copper plates, writings on birch bark, bark of Amyris agallocha and textiles. The library is managed using Koha open source library management system.

The library has its own exclusive website www.kulib.in. The website is very detailed and advanced and meets the requirements of its members. The library website is available only in English. The navigation bar is provided on every page of the website. The navigation bar provides the following links to the other pages of the websites.

[Home](#)

[About Us](#)

[Collection](#)

[Services](#)

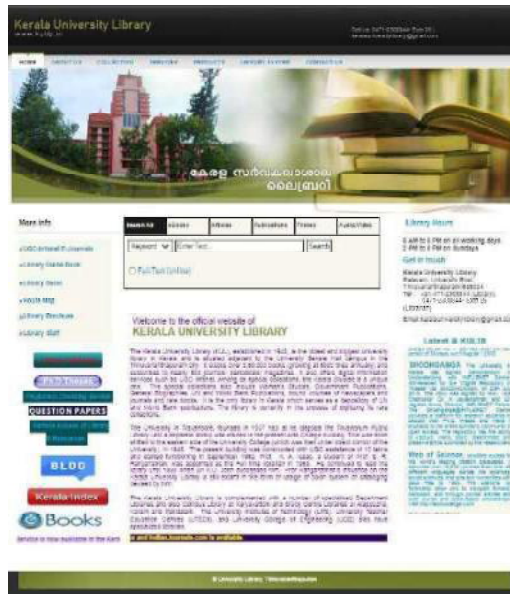
[Products](#)

[Library System](#)

[Contact Us](#)

a. Home (Homepage)

The Homepage of the website gives a brief description and history of the library. It provides links to all other pages of the website and links to the library e-resources for easy navigation. The Homepage also displays links to the WebOPAC, Ph.D Theses, Plagiarism Checking Service, Shodhganga member ID, Previous Question Papers, Remote access to library e-resources, Blog service, Kerala Index, link to e-books, basic information such as Library hours, Contact details of the Library, Latest News and a Search facility of its resources. The Homepage also provides access to UGC Infonet e-journals, Library guide book, Library rules, Route map, Library Brochure and Library Staff directory.



b. About Us

The 'About Us' page gives a brief description of the Library, its history, timeline, and organisation of the library into 11 sections of the library, viz.

Sections

Circulation Section

Acquisition section

Technical section
Reference section
Periodical section
Documentation and Information Services section
Information Technology section
Kerala Studies Section
UN & World Bank Section
Research Section and
Maintenance Section (Stack Room).

c. Collection

The 'Collection' page gives information about the collection of books, Journals, maps, microfilms, CDs, Theses, Dissertations, etc. It also provides information about the kinds of reference sources available at the library such as Encyclopedias, Dictionaries, Biographies, handbooks, etc. It also briefs about the category of special collection available at the library.

Special Collections

Kerala Studies
Women studies
Government publications
General Biographies
Bound volumes of Newspapers
UN & World Bank Publications
Theses
Bound volumes of periodicals (Science& Social Science)
Closed Reference (Rare Books)



d. Services

The 'Services' page lists the services provided by the library.

Bibliographic services

CD-ROM search

Current awareness service

Current Content services

E- Journal services

Extension services

Indexing services

Inter library loan services

Internet services

Lending of Books

OPAC search

Reference service

Referral service

Reprographic services

User Education programmes

World Bank e-library service



e. Products

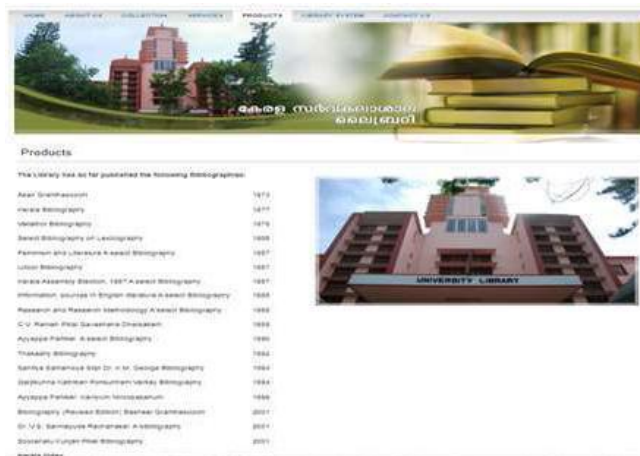
The 'Products' page displays the list of Biographies published by the library.

Asan Granthasoochi	1973
Kerala Bibliography	1977
Vallathol Bibliography	1978
Select Bibliography on Lexicography	1986
Feminism and Literature A select Bibliography	1987
Ulloor Bibliography	1987
Kerala Assembly Election, 1987 A select Bibliography	1987
Information sources in English literature A select Bibliography	1988
Research and Research Methodology A select Bibliography	1988
C.V. Raman Pillai Gaveshana Dharsakam	1989
Ayyappa Paniker A select Bibliography	1990
Thakazhy Bibliography	1992
Sahitya Samanwya Silpi Dr. K.M. George Bibliography	199

Garjikunna Kathikan Ponkunnam Varkey Bibliography	1994
Ayyappa Paniker: Kaviyum Niroopakanum	1999
Bibliography (Revised Edition) Basheer Granthasoochi	2001
Dr. V.S. Sarmayude Rachanakal: A bibliography	2001
Sooranatu Kunjan Pillai Bibliography	2001

Kerala Index

‘Kerala Index’ a quarterly publication which contains an index of articles of research value on topics relating to Kerala prepared from newspapers and magazines subscribed by the library.



f. Library System

The ‘Library system’ page gives the information about the library and its branches. The University library is spread across three branches.

Campus library

The Campus Library at Kariavattom campus was started in 1976 to extend the facilities to the campus community. It now rests on a two storey building with an area of 1238 sq. M. It has a collection of more than 7000 books and 60 periodicals subscriptions. The campus library came to being as a reference section stocking important reference books for the various courses and also materials for research scholars. The library provides other services such as reprographic, internet and UGC-Infonet E-Journal services.

Department Libraries

The University library also has department libraries for all the 43 teaching departments. The department libraries are spread across the 2 major campuses of the University, the Campus at Kariavattom (34), and the Senate House campus (6). The remaining ones are at the Department of Music, Govt. Women's college campus, Vazhuthacaud (1), Department of Education, Thycadu (1).

Study Centre Libraries

The University study centres at Alappuzha, Kollam and Pandalam also have their own separate libraries catering to the reference needs of PG Students, Research Scholars, SDE students, UITs, B.Ed Centres, IMK extension centre etc and Faculty members under it in the respective districts.

g. Contact Us

The 'Contact Us' page gives the Address, Phone numbers and email id of the library

Links to e-resources

The Homepage of the library website provides links to various other e-resources.

UGC-Infonet E-Journals

The link gives member access to databases and e-journals from a variety of sources

Bibliographic Database

American Mathematical Society (Mathscinet)

BIOSIS (Biological Abstracts)

Web of Science

Royal Society of Chemistry

Analytical Abstracts

Catalysts & Catalysed Reactions

Chemical Hazards in Industry

Laboratory Hazards Bulletin

Methods in Organic Synthesis

Natural Products Update

Electronic Journal Platforms

American Chemical Society

American Physical Society

Blackwell

Emerald (LIS Collection)

Institute of Physics

MEDICAL JOURNALS (1380 free journals)

Oxford University Press

Project Muse

Science Direct (Cell Press)

Springer Online

American Institute of Physics

Annual Reviews

Cambridge University Press

Euclid

J-STOR

Nature

Portland Press

Royal Society of Chemistry

Society for Indl. & Appl.Maths. (SIAM)

Taylor & Francis Online Journals

Gateway Portals

Knimbus

Ingenta

J-Gate Plus

JCCC

Open Access Journals

General List of Open access eprints

PubMed Central (PMC)

Networked Computer Science Technical Reference Library

Citebase

BioMed Central

BBS Prints Interactive Archive

Cognitive Science

Public Library of Science

arXiv

CogPrints

CERN Document Server (CDS)

The Economics network (RePEc)

HighWire Press Free

Citeseer

Eprints.org archives

Directory of Open Access Journals

Library Guide Book

The Library guide book gives a brief description of the library along with a brief history, It also provides a downloadable book in pdf format containing detailed information about the library, library system followed, the organisation of the library, the library procedures and what the library offers.

Library rules

The 'Library rules' link takes you to the rules to be followed by members. It also provides a downloadable pdf for later reference.

Route map.

The 'Route map' link gives the location map of the library and the Palayam locality.

Library brochure

The 'Library brochure' link takes you to the downloadable brochure about the library.



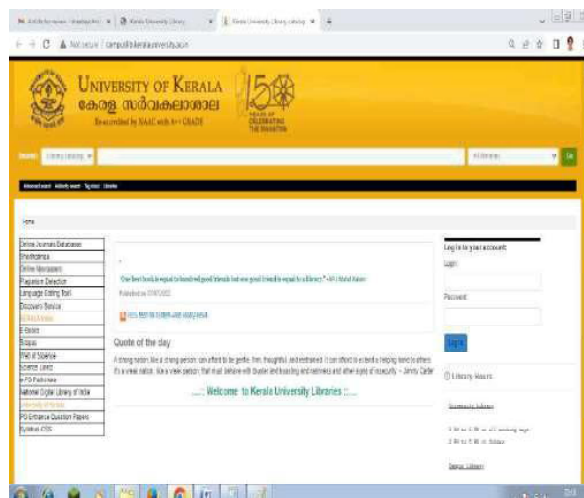
Library Staff

This link gives the Staff directory as to the who's who at the library.

Other important links

Other important links placed in the homepage are;

'**Online Catalogue**' which gives access to the WebOPAC.



‘**Search bar**’ to search through the list of resources. The search facility permits search of ebooks, articles, Publications, Theses and audio & video, though keyword search.



‘**Ph.D Theses**’ link gives access to the Shodhganga reservoir of Indian theses

‘**Plagiarism Check Service**’ link provides the downloadable Instructions for Plagiarism check.

‘**Question Papers**’ link directs the user to the Google Drive storage of question papers of previous years.

‘**Remote access of Library e-resources**’ provides off campus access to faculty members to the subscribed electronic resources through e-ShodhSindhu and other publishers

List of subscribed e-resources by University of Kerala:

- American Chemical Society (ACS)
- American Institute of Physics
- American Physical Society (APS)
- Annual Reviews
- Emerald
- EBSCO Discovery Services and EBSCO host Research Database
- EPWRF (E P W Research Foundation)
- IEEE Xplor

Indian Journals

IOP

J-gate Plus

JSTOR

Nature

NotNul :Hindi Database

Oxford University Press

Project Muse

Royal Society of Chemistry

SAGE

Scopus

Springer

Science Direct

Taylor and Francis

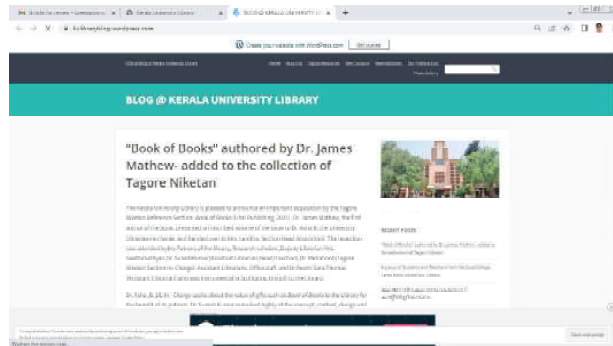
Web of Science

Wiley

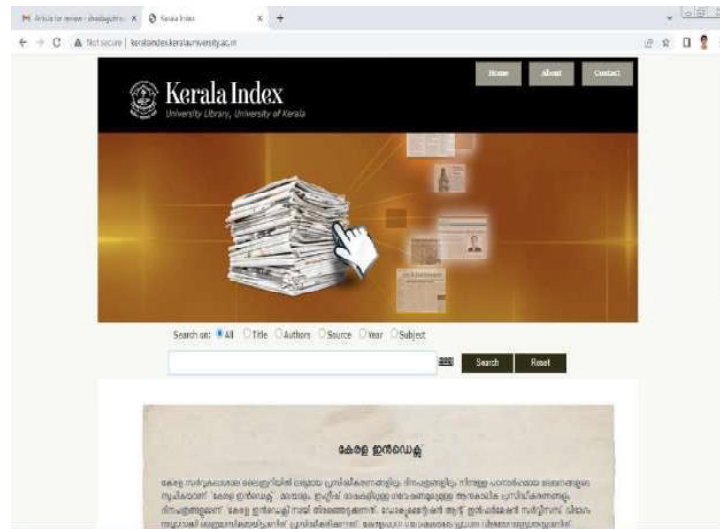
Library subscribes the electronic resources through e-ShodhSindhu as well as from the publishers. The Off-Campus Access service is provided to the faculty members to seamlessly



'**Blog**' link provides access to the library blog, 'Blog@keralauniversity', with the site address, <https://kulibraryblog.wordpress.com/>, powered by Wordpress.



'**Kerala Index**' link directs the user to lookup library articles from Kerala. It provides a Search facility within.



'**e-books**' link directs the user to the E-Books subscribed in Kerala University Library. The page gives access to 329 of the e-books subscribed by the University.

'**Latest@KULIB**' provides a scrolling view of the latest news of the library

Every page displays the authority of design and maintenance of the website and the copyright statement.

In March 2022, Higher Education Minister launched University's library network that brings together all the resources of the libraries under the University under one network.

The 'One University, One Library' network links nearly 10 lakh books, rare documents, theses, government publications, journals and others that have been stocked in the 56 libraries including the Kerala University library in Palayam, the campus library in Kariavattom, the libraries in 44 teaching departments, 7 inter university centres and the study centers in Kollam, Pandalam and Alappuzha. Users can also reserve the books and renew membership from home. In a recent study, 'Attitude of Users Towards E-Resources: A Study based on Kerala University Library', conducted by Abdulla A. , Amrutha Madhu V.V. , Anju S. Nair, Assistant Professors, Department of Library and Information Science, University of Kerala, it was found that 94.17% of the respondents sought the needed information from online sources. They observed that out of 120 respondents, 81.67% sought information from 'e-journal', followed by, 74.17% using 'e-book' for seeking information. 64.17% respondents used E- Newspapers' and 22.50% 'E-Thesis and Dissertations. 5.83% 'online databases' for finding information.

The study also revealed that 52.50% respondents were satisfied with the available e-resources, followed by 45.00% fully satisfied. Only 1.67% were less satisfied and 0.83% dissatisfied with the e-resources.

Conclusion

Just as NAAC accreditation is becoming an unavoidable part of every institution, the grading of institutional libraries also a relevant part for accreditation. And in this era of ever changing world of information technology, library websites being a mirror of the library are growing to become more than what the physical library can cater to. The larger chunk of the user community look to this online medium for their information requirements and so it is in fact a duty of the library management to ensure that the library website is well equipped to meet what the information seeker seeks from the library. The Library of the University of Kerala has adapted to the growing technology and has used all possible means available to meet the user needs.

References

- Abdulla, A., Amrutha Madhu V.V., & Anju S. Nair. (2022). Attitude of Users Towards E-Resources: A Study based on Kerala University Library. *International Journal of Innovative Research in Technology*, 8(9), 706-713
- About us. (n.d.). NAAC. <https://naac.gov.in/index.php/en/about-us> (n.d.). Kerala University Library. <https://www.kulib.in>
- Barman, S. R. (2022, February 14). *New guidelines: Institutes that complete one year can seek provisional NAAC accreditation*. The Indian Express. <https://indianexpress.com/article/india/institutes-that-complete-one-year-provisional-naac-accreditation-7772063/>(n.d.). NAAC. <https://naac.gov.in/docs/Guidelines/Library-Guidelines-Universities.pdf>
- University Grants Commission :: Inter University Centres (IUC). (n.d.). Retrieved July 09, 2022, from <https://www.ugc.ac.in/page/naac.aspx> (n.d.). Major Initiatives | Government of India, Ministry of Education. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf.

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Shodh-Chakra — Researcher Perspective

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Shodh-Chakra

Shodh-Chakra is an effort of the Information and Library Network (INFLIBNET) Centre, guided by the University Grants Commission (UGC), to assist the academic community throughout the research life cycle. Shodh-Chakra offers a one-of-a-kind environment for the researcher, guide/supervisor, and university to manage a research scholar's research lifecycle. This will function as a digital workplace for researchers to collect, store, organise, and cite their research findings. The process of using the portal begins with the signing of an agreement between the University and the INFLIBNET Centre. Furthermore, researchers can log into the system and use the Shodh-Chakra functions.

Researchers Manual Registration

Fig :Researcher Registration Page

Researchers must first register by inputting basic information such as their First Name, Last Name, Email Address, Mobile Number, University, Department, and so on. Enter the Captcha text and press the Register button.

Fig :Sign in Page

After entering these details, you will receive an email with a username and one-time password that will allow you to log in and reset your password by clicking on the change password option. There are two sorts of credentials: those issued by the university and those self-registered

by the research scholar; in the case of self-registration, the involved university will authorize and validate your registration. You will be able to access the site once it has been verified by the institution.



Fig : Researcher's Dashboard

The Figure shows the researcher's dashboard after successfully logging into the portal. The dashboard will assist researchers in creating their research profile by allowing them to enter the research topic, synopsis, scholarship, keywords, and so on. The dashboard displays the complete research procedure, from literature gathering through thesis submission. Researchers can use Shodhganga, Crossref, and other open access resources incorporated with the Shodh-Chakra to search for literature.

Fig :Profile Creation

The goal of creating profiles for researchers is to retain research-related information and make recommendations on literature searches and

related areas of research. After selecting the profile, the researcher must provide the following information: first name, last name, email address, mobile number, date of admission, gender, upload photo, insert address and click the submit button to store the data.

Fig:Information about Research Topic/Title

The researcher will be able to select/enter the title/topic of the research as well as co-guide details. In the profile section, the research scholar will also be able to store his or her ORCID ID and Researcher ID.

Fig. Synopsis of Research

Research synopsis uploaded by the researcher may be accepted or rejected.

Fig :Information about Scholarship/Fellowship

The research scholar can keep track of the fellowship/scholarship received for the research project. Because these details are verified by the university, it will be locked after submission and can only be edited by the university administrator. The system displays YES and NO options; if the researcher chooses yes, a few more fields will be displayed. Once these details are entered, click the submit button.

The screenshot shows a web interface for 'KEYWORDS & METADATA'. At the top, there are navigation tabs: Profile, Topic/Title, Synopsis, Scholarship/Fellowship, Keywords & Metadata (active), Course Work, and Add Objective. A 'Dashboard' button is in the top right. The main form has three dropdown menus for 'Category 1', 'Category 2', and 'Keyword'. Below these is a 'Keywords' section with a 'Subject' field and a 'Submit' button. A note says 'Notice will help to fetch literature thesis for researchers'.

Fig :Keywords and Metadata

The Keywords and metadata tab will assist researchers in selecting the appropriate subject category and keywords for their research work. The system will retrieve relevant literature from various resources integrated into the portal and prompt the user on the dashboard.

The screenshot shows a web interface for 'COURSE WORK'. At the top, there are navigation tabs: Profile, Topic/Title, Synopsis, Scholarship/Fellowship, Keywords & Metadata, Course Work (active), and Add Objective. A 'Dashboard' button is in the top right. The main form has three dropdown menus for 'Current Status', 'Start Date', and 'End Date'. Below these is a 'Remarks' field and a 'Submit' button.

Fig :Coursework Related

Under the profile section, the coursework tab will assist research scholars and universities to track of coursework-related information.

SACHIN MALI [S-CHAKRA-2021-01] [RESEARCH AND DEVELOPMENT - INFLIBNET]

Profile Topic/Title Synopsis Scholarship/Fellowship Keywords&Metadata CourseWork **Add Objective** **Dashboard**

ADD OBJECTIVE

Guide*
-Select-

#	Objective	Progress	Remarks

Submit

Fig :Research Objectives

The objective section of the profile management section will assist researchers and guides to track of the completion of research work and establishing the research work's target. The researcher can choose the name of the guide, and the progress of the objective..

SHODH CHAKRA
An Initiative By
INFLIBNET Centre
for Higher Education, Gandhinagar, Delhi

ASSISTANCE FOR LITERATURE WORK

My Favorite **Shodhganga** **Dashboard**

All **History** **Start**

SEARCH ALL **Research** **Stop**

SUBJECT

Computer science 0

Library Science 0

Information 0

LANGUAGE

Showing 1 to 2 of 2 results **1/2** **Sorted**

Title: **Computer science** **add to favorite** **add with annotation** **View**

University: **Dr. B.R. Ambedkar Open University** **Department/Subject:** **Library Science** **Author:** **Kumar, Vinita** **Guids/Organisation:** **Open Access**

Level: **Source: Shodhganga** **Language:** **Not Specified**

Title: **Research Development for Information Science Research in Related Database Management System and its Integration with IT** **add to favorite** **add with annotation** **View**

University: **Dr. B.R. Ambedkar Open University** **Department/Subject:** **Library Science** **Author:** **Parth, Prashant** **Guids/Organisation:** **Open Access**

Level: **Source: Shodhganga** **Language:** **Not Specified**

Fig :Related Thesis from Shodhganga

As shown in Figure, the system will communicate with the live Shodhganga database, and the results will be displayed on the screen. Select the relevant one and click the 'Add to Favorite' button to save it in the resource under 'My Library.' Researchers can read the full text of a selected thesis by clicking on the 'View' button. Researchers can annotate directly from the result page by clicking the 'Add with Annotation' button. This feature will assist researchers in creating annotations on the fly for future use.



Fig :Knowledge Resources-Research Ethics

'Research Ethics' is the first tab in the knowledge resources. The screen displays e-text and videos related to research ethics, and researchers can read and watch all of the modules listed on the left side of the screen, as shown in figure.



Fig :Knowledge Resources- Literature Review

The second tab under knowledge resources is 'Literature Review,' which will assist researchers in conducting effective and efficient literature searches on specific research topics, as illustrated in figure..



Fig :Knowledge Resources-Reference Management

The third tab in the knowledge Resources is titled 'Reference Management System.' This will assist scholars in understanding the tools and procedures for using various reference management software such as Mendeley and Zotero. The modules under reference management would also be useful in mentioning while composing the research paper and thesis chapters.



Fig :Knowledge Resources- Scientific / Academic Writing

Scientific/academic literature is the fourth tab. Academic writing is an art, and the modules in the scientific/academic writings category cover significant areas of academic writing.

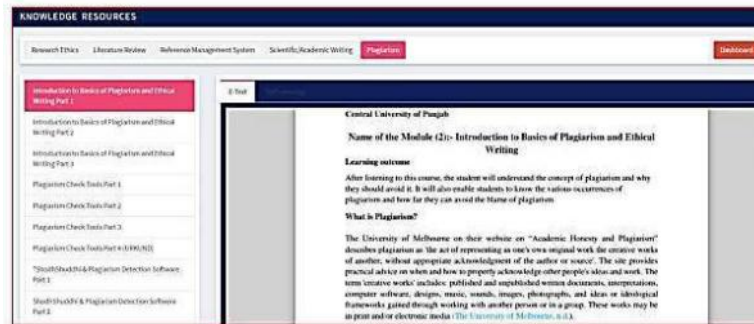


Fig :Knowledge Resources-Plagiarism

'Plagiarism' is the fifth and final tab in the knowledge resources. Plagiarism is one of the most important topics for a researcher to comprehend before beginning any research activity. Expert-recorded films provide an in-depth understanding of how to avoid infringement in research activities.

Resource Aggregation

The resource aggregation area makes it easier for researchers to identify relevant resources from many categories and save them in ‘My Favorite’ for future use and reference. This tool will assist academics in locating published papers from several databases, including Google Scholar, Scopus, and Open Access sites.

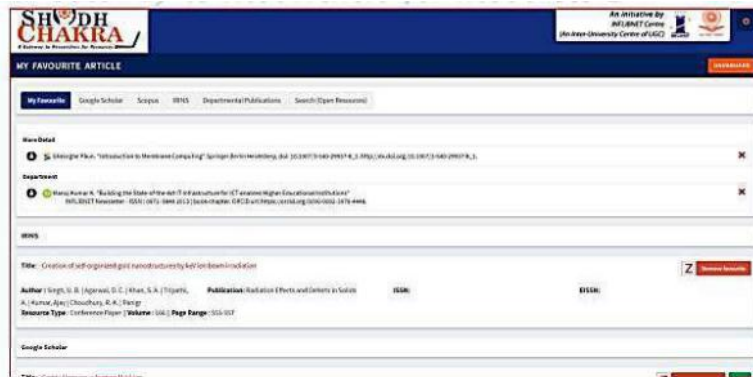


Fig :My Library – Favourite Resources

‘My Favorite’ is the first tab in the resource aggregation section. This tab will hold all of the resources that have been marked as Favorite. Figure depicts the information of the saved resources under my preferred tab.

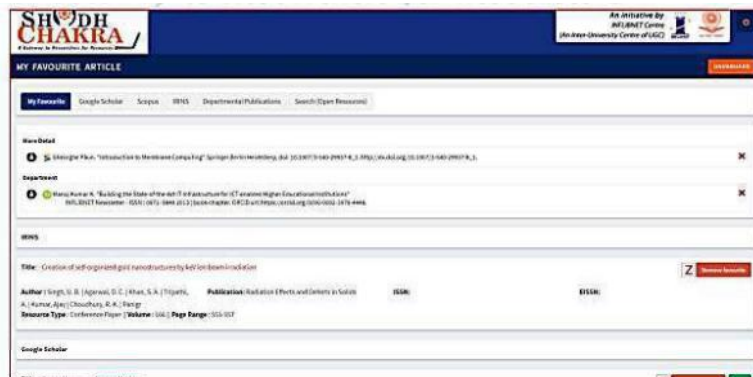


Fig :Favourite Resources – Google Scholar

‘Google Scholar’ is the second tab under resource aggregation. Google Scholar is connected with the resource aggregate tab via API. It

will provide a straightforward search window with three fields: Google Scholar ID, Title, Author, and Keywords. Researchers can enter an acceptable word and choose a field in which to conduct the search. The system will get the results, which can then be added to favorites by pressing the “Add to Favorites” button, as illustrated in figure.

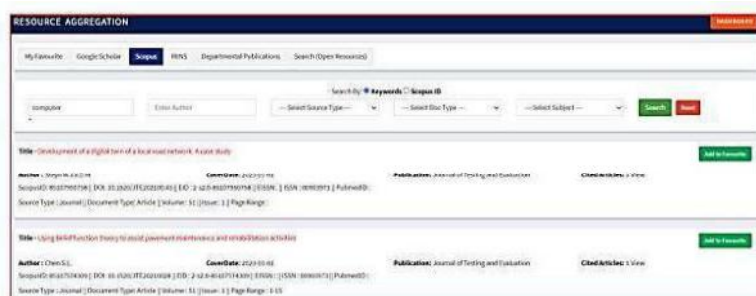


Fig :Favourite Resources – Scopus

‘Scopus’ is the third tab under resource aggregation. Scopus is a database that indexes and abstracts millions of publications and assigns citation scores to each research work. The Shodh-Chakra retrieves and displays bibliographic information for the searched terms on the screen. In order to use the article later, researchers can choose whether it is relevant and mark it as a favorite.

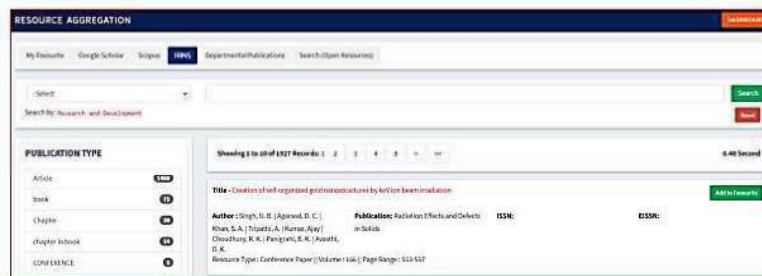


Fig :Favorite Resources – Indian Articles

‘IRINS’ is the fourth tab. On the IRINS portal, research profiles of faculty members from the majority of Indian academic institutions have been generated. IRINS has been connected with Shodh- Chakra to allow researchers to conduct searches in the IRINS and save the results as a favorite for future use.



Fig :Favorite resources – Department Resources

All materials published by peers from the same department of the native institute of researchers will be listed in the departmental publications. A researcher can save a favorite in my library area for future reference.

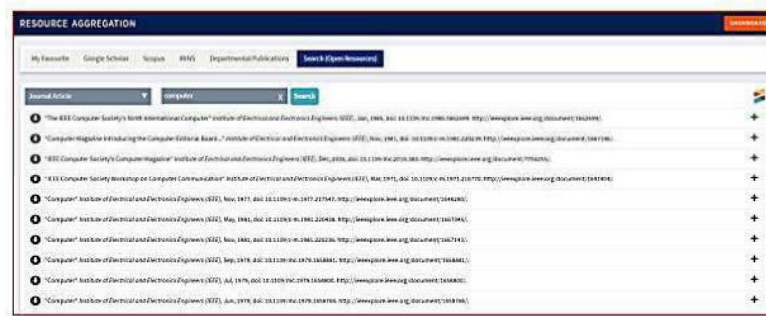


Fig :Favorite Resources – Open Resources

The fifth tab assists scholars in locating bibliographic information for open access works. Shodh-Chakra will populate the metadata of the resources, and the entire text of an individual article can be retrieved using the DOI.

Publications (Journal/Workshop/Conference)

‘According to current UGC standards, a research researcher must publish publications in journals, conferences, and seminars/workshops. Researchers are unaware of the number of journals that are published; conferences are being planned. The publication section would assist researchers in searching for and adding to their preferred journals, conferences, and workshops/seminars where they may submit their research papers for publication and presentation.



Fig : My Favourite Journal

‘My Favorite Journal’ displays a list of all journals that have been designated as favourites. A researcher can save his or her preferred/required journal.



Fig :Search Journal

The journal tab allows the researcher to search for journals based on title and keywords. The UGC Care List, Scopus, and Web of Science will be used to retrieve the results. Figure 24 shows how a researcher might choose a relevant article and mark it as a favorite.

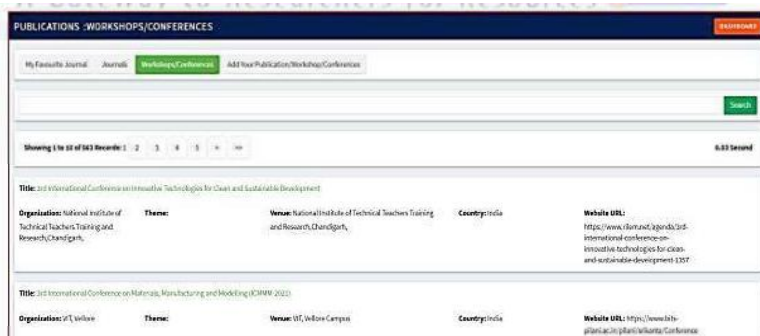


Fig :Workshops & Conference

According to current UGC standards, the researcher must deliver at least one research paper at the conference. It can be tough to find future conferences on various subjects. The Shodh-Chakra collects information about upcoming conferences from academic institutions and compiles it under the workshop and conference page. The researcher can save it as a favorite for future reference.

Srno	Title	Author	Publisher	Source	Date	Language	URL	Action
1	Impact of COVID-19 research publications study in	Abhinav Kumar, Gurpreet Thour, Anshul Kumar, Chaitan	CCSNET Journal of Science and Information	Journal Article	30-07-2020	English	https://www.ccsnetjournal.com/ISSN/2020-2020-1741/194	[Edit] [Delete]
2	Implementation of Learning Analytics Framework for	Sameer Naidu, Lavell, Suresh Pappu, Janki Chakraborty	IEEE	Conference Paper	31-08-2017	English	http://ieeexplore.ieee.org/document/8074953	[Edit] [Delete]
3	Color Classification	S. R. Rangarajan	Asia Publishing House	Book	11-12-	English		[Edit] [Delete]

Fig :Adding Research Publications/Conference Papers

Researchers can save a list of articles from journals and conference proceedings. This function allows the researcher to keep track of all personal publications in one spot.

A. Reference Management

Download Bibliography Report | Print Bibliography Report

Biological Studies of the Deacon Intersegmental Pore of *Megaloptera* W. F. F. F.

- 1. "ScopusDirect Snapshot" Accessed May 15, 2020. <https://www.scopusdirect.com/scopusdirect/30-5140/442000150>
- 2. Kozani, Sotirios, Nikolaos Kozani, and Ali (Shah) Kozani. "Coronavirus (COVID-19) Outbreak: What the Department of Radiology Should Know." *Journal of the American College of Radiology* 17, no. 4 (April 1, 2020): 440-50. <https://doi.org/10.1016/j.jacr.2020.02.008>

Studies on Evaluation and Identification of Broad Based Tobacco Addiction & Under Moderate Stress Condition

- 1. "Coronavirus (COVID-19) Control: Clinical Case Report." *Journal of the American College of Radiology* 17, no. 4 (April 1, 2020): 440-50. <https://doi.org/10.1016/j.jacr.2020.02.008>
- 2. "ScopusDirect" Accessed May 15, 2020. <https://www.scopusdirect.com/scopusdirect/30-5140/442000150>

Comparing various human thinking

- 1. "ScopusDirect" Accessed May 15, 2020. <https://www.scopusdirect.com/scopusdirect/30-5140/442000150>
- 2. "Coronavirus, Volume 10: 2nd Edition" Accessed May 15, 2020. <https://www.bentley.com/books/coronavirus-volume-10-2nd-edition>

Fig :Adding References

The handling of references for the collected/referred material is a critical task. All documents referred to for an ongoing research project must be cited. The Shodh-Chakra contains an integrated Zotero Reference Management tool for managing all research resources.

Thesis Submission

Fig :Thesis Submission

The submission of a thesis to the university for the award of a degree is the final stage in a research scholar's research journey. Through Shodh-Chakra, the research scholar will be able to submit all documents, including the registration receipt, pre-submission report, course work completion certificate, plagiarism report, and finally the thesis. The researcher can only submit documents to the Guide and the University.

Fig :Submission related Documents

Researchers can save full-text documents in the 'Drive' section of 'My Library.' These documents may be distributed to the research supervisor.

Full Text Thesis

The screenshot displays the 'MY FAVOURITE RESOURCES/JOURNAL' section with a 'Full text thesis' tab selected. It lists two entries:

Title	University	Department/Subject	Author	Guide/Organizer
Morphological Studies of the Decar Intertrappean Flora of Khatgolparahar HP India	Bharat Gadge Baba Amravati University	Botany	Bobade H B	Patil P E V
Studies on the effect of antibacterial activity and anticancer activity of Aegle Marmelos, Solanum Nigum and Cassia Fistula	Harsh University	Microbiology	Vernekar, D	Kamulkaran, C M

Fig :My Favourite Full-text Thesis

The 'My Library' section provides all of the resources that have been recognised as favourites by various categories. Full-text thesis marked as a favourite from Shodhganga will be presented on the full-text Thesis tab.

The screenshot displays the 'MY FAVOURITE RESOURCES/JOURNAL' section with a 'Knowledge Resources' tab selected. It lists one entry:

Title	Author	Publisher	ISSN	ISSN
Creation of self-organized polychromosomes by helion beam irradiation	Singh, B. B. (Agrawal, D. C., Khan, S. A., Tripathi, A., Kumar, Ajay) (Choudhary, R. K., Parig)	Radiation Effects and Defects in Solids		

Resource Type: Conference Paper | Volume: 198 | Page Range: 553-557

Fig :My Favourite – Knowledge Resources

Under the 'My Library' 'Knowledge Materials' tab, the resources marked as favorites under knowledge resource are displayed.



Fig :My Favourite – Creating Notes

Researchers can make remarks in the 'Note' section of 'Guide Interaction.' This will allow research scholars and guides to debate research-related issues on the portal. Both the researcher and the guide can make and share notes with one another.



Fig :My Favourite – Shared Notes

The notes shared by Guide can be accessed by selecting the Shared Notes option in the Interaction with Guide area, as shown in figure.

Conclusion

The Shodh Chakra platform has been designed to aid and assist reach scholars and mentors in managing their whole research schedule and work cycle, from literature evaluation through research submission. Researchers will be able to collect, organize, save, and cite their study work, thanks to the platform. The Shodh Chakra platform is accessible online. Universities and institutes will be required to submit information about their research scholars in order to have access to the platform via the official website.

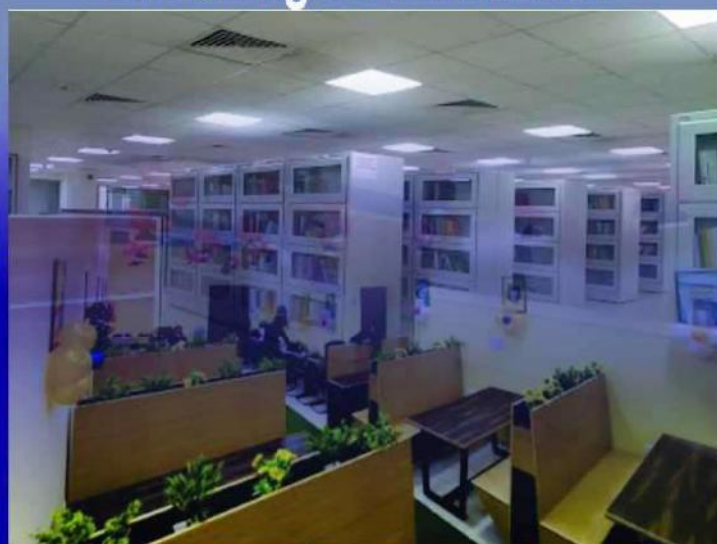
ABOUT THE BOOK

This edited volume provides various perspectives on various technological applications in academic libraries. This volume focuses on the viewpoints of researchers, librarians, information professionals, publishers, and library users in India. This volume provides an excellent overview of innovative librarianship especially in academic libraries and its helps readers find, retrieve, read and use the research they need. At the same time, it allows authors to enlarge their audience and amplify their impact. Innovation and creativity are universal as every person or organization has the desire for innovation and creativity in varying degrees. Both are included in creative process. Creativity means bringing something into existence whereas innovation means to bring something into use. In these circumstances the editors were collected 39 papers from Library and Information Science Professionals from the National level and titled on **Ingenious Librarianship: Enriching Self-Reliance**. Contents are edited suitably in order to appreciate the professionals. This edited volume consists of 39 papers from Library and Information Science Professionals under four themes such as, i) Enriching the Self Reliance in Libraries, ii) Open Educational Resources in Libraries, iii) Innovative Technology and Digital Libraries and iv) Web based Sources and Services in Libraries.

Ingenious Librarianship: Enriching Self-Reliance

Editor
Dr. S. Dhanavandan

Ingenious Librarianship: Enriching Self-Reliance



Editor

Dr. S. Dhanavandan



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9**Digital Deep Reading Strategies and
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Concerning the Future of Reading****K.Anuradha* and Dr K.Ramasamy****

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Introduction

Reading helps the individual to gain knowledge, Information and data. The type of reading ranges from leisure reading to Intensive reading. Depending on the purpose and method of reading, the reader gains in-depth knowledge or procures just a small data to satisfy the time-bound requirement. Intensive reading also known as deep reading or critical reading is always preferred to gain mastery over the content being read. Intensive/ Deep Reading is done mostly by Researchers, Scholars and Experts. The process of Intensive reading requires high focus and good grasping capacities forpro longed duration. The ICT has bestowed the boon of digital Intensive reading with easy and open access to large chunk of E-Resources and databases in every field of knowledge. The Digital Reading is the order of the Day and the Researchers focus on its pros and cons ,recommending future research on certain unexplored aspects of Reading in digital and Paper format.

Evolution of Reading: Sheet-based to Screen-based

The advantage of Online reading over Paper based is the access to plenty of E-Resources, which are open and mostly free to use, with copyright and licensing validity, paving ways for intense research and reading through multiple kinds of affordable gadgets. This trend has helped the Learners and researchers to access the relevant materials profusely, doubling the digital reading compared to the paper reading. The digital or the Online Reading is done as followed in paper based material but the strategies differ from offline reading to online reading.

There are several highly acclaimed and validated Reading strategies for precise comprehension of the text read in paper. The digital reading is a sudden upsurge and has only a few strategies, lacking or lagging in validated methods of reading. This lead to the research on the digital reading by the European Group of Researchers: COST funded by European funding bodies.

European COST: Open Call for Research

COST (Cooperation in Science and Technology) is an EU funded Inter-Governmental framework with more than 40 members for Research Innovation networks. The Research Initiatives or Actions of COST help in stimulating Research and connecting the researches done across Europe and beyond. The COST Actions are bottom-up network with the duration of four years that boost research. The prime objective is to support the 'Open call' for the COST. The decision-making body is the General Assembly members, committee of Senior Officials and the Legal bodies of the Executive board.

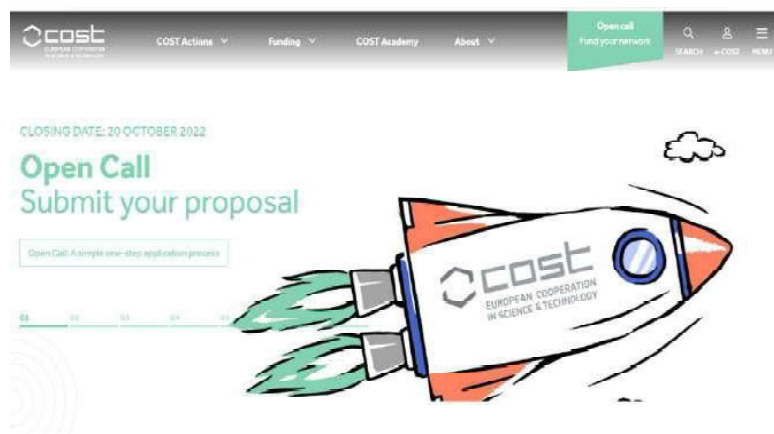


Fig. 1: The Home page of "COST"

Evolution of reading in the age of digitisation (E-READ)



Fig -2 : Logo of E-READ

Evolution of Reading in the Age of Digitisation (E-READ)

A European research initiative funded by European- COST, connecting almost 200 scholars and scientists of reading, publishing, and literacy from across Europe, in a single platform, a joint effort to research the impact of digitization on reading practices.

The research has focused on how readers, and very particularly children and young adults, comprehend or remember written text when using print or digital materials.

The goal of the COST Action was to improve scientific understanding of the implications of digitization, thereby helping the individuals, disciplines, societies and sectors across Europe to cope optimally with the effects. Based on a multidimensional, integrative model of reading, and blending paradigms from experimental sciences along with perspectives (e.g., diachronic) from the humanities.

There are four Working Groups which focused its Research on different Aspects of Reading

Working Group -1: Continuing/skilled reading

Working Group -2: Developmental aspects of reading

Working Group -3: - The Aura study, An Empirical study on Shakespeare Sonnet Reading. The Cognitive and Emotional Aspects of Literary Prose Reading.

Working Group – 4: - A Database on Book and Reading Eco system, Educational Publishing and Trade Publishing

The Stavanger Declaration Concerning the Future of Reading:-

The relevant stakeholders and members of the E-READ, met on 3–4 October 2018, in Stavanger University, Stavanger, Norway. The main findings of four years of empirical research and debates (2014 – 2018) were presented. The Stavanger Declaration Concerning the Future of Reading has three parts.

1. Key Findings 2. Recommendations 3. Questions of Future Research.

Key Findings of the Research

- ✓ Individual differences in skills, abilities, and predispositions form distinct learning profiles that affect children’s ability to use and learn from digital versus print sources.
- ✓ Digital text offers excellent opportunities to tailor text presentation to an individual’s preferences and needs. Benefits for comprehension and motivation have been demonstrated where the digital reading environment was carefully designed with the reader in mind.
- ✓ Digital environments also pose challenges. Readers are more likely to be overconfident about their comprehension abilities when reading digitally than when reading print, in particular when under time pressure, leading to more skimming and less concentration on reading matter.
- ✓ A meta-study of 54 studies with more than 170.000 participants demonstrates that comprehension of long-form informational text is stronger when reading on paper than on screens, particularly when the reader is under time pressure. No differences were observed on narrative texts.
- ✓ Contrary to expectations about the behavior of ‘digital natives’, such screen inferiority effects compared to paper have increased rather than decreased over time, regardless of age group and of prior experience with digital environments;

- ✓ Our embodied cognition (i.e. that how and what we learn, know, and can do depends on features of the entire physical body) may contribute to differences between reading on paper and on screen in terms of comprehension and retention. This factor is underestimated by readers, educators and even researchers. These findings are consistent with those conducted in countries outside of Europe.

Recommendations:

- Systematic and careful empirical investigation into the conditions under which learning and comprehension is enhanced – and of the circumstances under which they are hindered – in both print and digital environments needs to be conducted.
- Students should be taught strategies they can use to master deep reading and higher-level reading processes on digital devices. In addition, it remains important that schools and school libraries continue to motivate students to read paper books, and to set time apart for it in the curriculum.
- Teachers and other educators must be made aware that rapid and indiscriminate swaps of print, paper, and pencils for digital technologies in primary education are not neutral. Unless accompanied by carefully developed digital learning tools and strategies, they may cause a setback in the development of children’s reading comprehension and emerging critical thinking skills.
- Appropriate action is needed to develop better guidelines for the implementation of digital technologies, especially in education, but also in media environments more generally. With respect to education this pertains, for example, to the development of empirically validated instruction in digital literacy skills (selecting, navigating, evaluating, and integrating information encountered digitally). Such digital skills will be applicable in many contexts, for example in dealing with government communication and other public information.
- Educators, reading experts, psychologists, and technologists should partner to develop digital tools (and related software) that incorporate insights from research about the processing of digital and printed formats, including the role of embodied cognition, for reading practices.

- Further research into digital learning materials should involve increased cooperation among technology developers and humanities and social science researchers to help facilitate unbiased and evidence-based public debates on the digital transformation.

Questions for future research

- As the use of digital materials for both education and personal reading grows, important questions about the future of reading, the pedagogy of literacy, and the long-standing importance of textual communication arise: In what reading contexts and for what readers can the use of digital text be most fruitful?
- Conversely, in which domains of learning and literary writing should the medium of paper be encouraged and championed?
- Is the tendency for screen reading to be more fragmented, less concentrated, and to involve more shallow processing turning skimming into the default reading mode that is carried over to paper reading habits?
- Is our susceptibility to fake news, biases and prejudices amplified by overconfidence in our digital reading skills?
- What can be done to encourage deeper processing of texts in general and, in particular, of texts read on screen?

Conclusion

The Research on paper based and Online based Reading strategies are highly focused due to its high relevance. Though most of reading are in digital format, paper-based reading is still preferred by the senior citizens for the emotional bonding they carry for the printed books. The future research, based on the recommendations and directions of the Stavanger Declaration may give clear cut strategies and methodologies to reap the benefit of both the modes of reading. The digital divide gap may be bridged by the innovations of the future.

References

<https://www.cost.eu/>

<https://ereadcost.eu/wg4-database/>

<https://ereadcost.eu/stavanger-declaration/>

<https://ereadcost.eu/wp-content/uploads/2019/01/StavangerDeclaration.pdf>

10

Ingenious Library Services for Digital Era Users

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INTRODUCTION

Libraries are the center of learning and have been imparting knowledge to community since a very long time. With the digital revolution and increased access to digital devices, information is readily available at the fingertip for everyone. Libraries are no longer limited to physical spaces and a whole library can be carried in a pocket-sized device. To remain relevant in today's world, libraries are transforming both in terms of architecture and services. Traditional library services like classification, cataloguing, circulation etc. are still pertinent to users and are being redesigned to cater to the needs of new age users. Libraries are also providing many new innovative services to attract more users and to remain an integral part of the society. Some of such services which can be introduced in modern libraries are discussed in this paper. The sudden strike of pandemic and closure of libraries had inspired many libraries to launch several digital services to meet the expectations of modern users. As these services are highly beneficial to users, librarians can launch creative services based on the type of institution and users' requirements. There are several constraints involved in offering new services but it can be subdued with proper planning and creative ideas.

TRADITIONAL LIBRARY SERVICES

According to Gavit (2019) “library services are defined as the facilities provided by a library for the use and dissemination of library material like books, journals, theses, dissertations, etc. in order to meet the users’ requirement” (p.2). Earlier libraries had more print collection and users would directly visit the library. So, services were mostly designed to serve such a clientele. Some of the traditional library services offered were classification, cataloguing, circulation, interlibrary loan, document delivery service, reference service, current awareness service, selective dissemination of information, newspaper clipping service etc. With the advent of computers and learning management software, many of the manual services became automated. Nowadays, the libraries have hybrid collection with both print and e resources and large part of the clientele are online users, so libraries are offering web-based services along with traditional services.

NEED FOR REDESIGNING LIBRARY SERVICES

With the introduction of web 2.0, a new and significant term named library 2.0 has also emerged and brought a revolution of digital library (Tiwari, 2016). Today’s libraries have a virtual presence with digital collection and online users and there is a need to redesign the traditional services to serve the virtual users as well. The digital natives and even the digital immigrants are preferring to work in online environments and they expect digital information services to be offered to them by libraries. There is also a change in the information- seeking behaviour of the users. Thus, it is advisable for the libraries to transform as per the expectations and demands of the user population in order to retain their existing clientele and attract new ones. If the libraries do not transform to provide modern services, they are at the risk of extinction. Offering innovative services have become a necessity to maintain the position of libraries as centres of knowledge and learning. (“Modern library”, n.d.).

INNOVATIVE LIBRARY SERVICES

Innovative services can either be a modified version of a traditional service to suit the requirements of the new age users or a completely new service designed for the changing world. Services can be specially designed for physical library users and also online users. A few innovative services which can be introduced for physical library users are as follows:

Self Check In/Check Out Kiosks

As technology is evolving rapidly, future libraries will have less

staff based and more technology enabled services. Many libraries have already implemented Radio-Frequency Identification (RFID) to books and automated circulation services. Such self checkin and check-out machines have been of great use during the time of pandemic as social distancing and less physical interaction was recommended. This service is greatly useful for users especially in big libraries as they can issue, return, renew or reserve books in a hassle free and quick manner. By providing this facility, circulation service in libraries can be extended to longer hours and users can visit libraries to issue or return books at their convenient time.

Digital Device Lending Service

Traditionally libraries were lending resources such as books, journals, CDs etc. to users. With the digital revolution, libraries started procuring more e resources and started providing computer facility to access such resources. E reading has become very popular these days and using computers for longer hours can be inconvenient, so handy devices are more preferred by users. As every user may not own such devices, libraries can purchase few laptops, tablets, kindle etc. and lend it to users who prefer to read e resources. It can be either lent to use within libraries or may be issued to users for a particular time period.

Literary Events and Training Programs

Modern libraries have huge scope to serve its users in various ways by utilizing the expertise of library staff and technology available. Even though we live in a digital world, not all are technologically competent. Patrons often experience several issues such as inability to use OPAC, locate appropriate resources, determine the quality of online information etc. So, libraries can play an important role in imparting technology training to users to teach them about internet and various digital devices. Workshops and hands on training programs can also be conducted on various topics like information literacy, digital content creation, open access educational resources etc. to benefit library users and ensure maximum utilization of resources. Libraries can also host literary programmes like meet the author, readers forum, book exhibition etc. to promote reading related activities. All these programs can be conducted in a physical space or as virtual events such as webinars.

Innovative Library Spaces

Today's libraries are no longer just a learning space but have become a hub of edutainment and social meeting. Libraries can redesign its architecture and provide space for unconventional library activities like group

discussions, brainstorming, social gathering, relaxation etc. Innovative spaces like maker space, discussion rooms, exhibition space, cafe etc. are inevitable for futuristic libraries. Libraries can also offer free internet and Wi-Fi facilities, digital wall, QR code scanning for fine payment, digital studio, content creation facilities etc. Apart from these spaces, new age libraries can also provide special services and facilities such as help desk, special rooms, interactive books, information resources in alternate formats, lifts, ramps etc. for differently abled users and make the library barrier free and accessible to all.

Some of the web based library services for digital era users are as follows.

Remote Access

As many users of today's generation prefer to access information resources online, library can provide remote access services to them. Libraries can digitize question papers, journal back volumes, print books which do not have copyright restrictions etc. and upload them in library website or institutional repositories. Users can be given login credentials for remote access to the resources and in this way, they can browse and access the library resources at their convenient place and time.

Library Website and Library App

Libraries can create a website to act as the information base for users regarding library's vision, mission, services, resources, operational hours, staff etc. It also provides a gateway to digital collection, online databases and other electronic resources subscribed by the library. It provides updates on library events, new arrivals, staff publications etc. (Emezie, 2018). Several web based services can be provided through library website, such as web OPAC to browse through library collection, list of frequently asked questions (FAQ), library tour video, demo videos on information searching etc. Digital reference service is another useful service which can be provided through 'Ask a Librarian' option in the website. It helps users to get answers to reference queries quickly and conveniently.

Libraries can also create mobile application to serve its clientele in a better way. Most of the website services can be given through the app. In addition, users can use the library app to pay fines, renew or reserve books, book discussion rooms, get notifications regarding due dates, new arrivals etc. Thus, library website and app can be the main platform for library to communicate and connect with online users on a regular basis and render services to them.

Social Media Presence

Majority of people today spend a lot of time in various social media platforms. Libraries can also create official accounts in various social media like Facebook, Instagram, Twitter etc. to create a virtual presence and connect with its users. Social media has a lot of potential to offer several services like reference service, online document delivery service, making announcements about new arrivals and events organized by libraries etc. It can also help in the promotion of library collection and services offered.

BENEFITS OF PROVIDING INNOVATIVE SERVICES

Offering innovative services have several advantages for both library and users. It enables users to access the resources and avail the services of the library at the comfort of their home without a physical visit. Also, information requirements of users can be fulfilled instantly with minimal operating costs. Web based library services save the time of the users and a large number of users can be helped simultaneously by the staff. As technology and machines take up many of the routine services, libraries can function with lesser staff and users have less dependency on the library staff for getting the required information (Gavit, 2019). It saves the time of library staff and they can do more productive works. Apart from the initial cost in implementation, such technology-based services can be economically beneficial for institutions in the long run and ensure smooth conduct of library activities. Libraries providing these innovative services can attract more users and ensure maximum utilization of resources. Such libraries can become a role model for other institutions and in turn help in the promotion and publicity of the library among the public.

CHALLENGES IN PROVIDING NEW SERVICES

The advantages of providing innovative services are manifold but there are several reasons which restrict libraries from offering such services to the users. The main issue is budget constraint. Many libraries do not get enough funds for collection and infrastructure development to serve its clientele effectively. As a lot of these innovative services involve high cost, their effective execution becomes challenging with limited budget allocated to libraries. Also lack of access to digital devices and internet related issues can cause hindrance in providing these services. Another issue is lack of technical expertise of library staff. Well qualified and technically sound staff are required to offer these technology and web-based services to the users. Also, users need to have knowledge about using special equipment, web-based services, copyright laws, licensing agreements etc. Many a times,

even digital natives do not turn out to be digital literate. Thus, proper education and training of users and library staff is necessary for ensuring smooth delivery of modern services. Above all, dedication of staff to serve the library users to their maximum capacity is very important for implementing these ingenious services.

CONCLUSION

Today's libraries are transforming to satisfy the changing needs of the modern user community. It's a task to bring users to the library in this Google era. So, libraries are providing more value-added services along with conventional services to stay relevant in today's information age. Traditional services are modified to suit the needs of modern clientele. Many new physical and web based innovative services are introduced by several libraries which can be implemented in other libraries as well. As these services are of great benefit, the library can attempt to overcome the constraints involved in its implementation. Library staff can creatively design new services based on the users' requirement and funds available to create futuristic libraries.

References

- Emezie, N. A. (2018). Stepping up the ladder to meet user needs: innovative library services and practices in a Nigerian university of technology. *Library Philosophy and Practice*, 1767. <https://core.ac.uk/reader/189477910>
- Gavit, B. K. (2019). Web based library services. *Library Philosophy and Practice*, 2931, 1-7. <https://core.ac.uk/download/pdf/228203669.pdf>
- Modern library services(n.d.).**National Institute of Open Schooling (NIOS)**<https://nios.ac.in/media/documents/SrSecLibrary/LCh-014.pdf>
- Tiwari, K. (2016). Librarians: An innovative approach to library service: A case study on technical university libraries in India. *International Journal of Digital Library Services*, 6(1), 104-112. <http://www.ijodls.in/uploads/3/6/0/3/3603729/969.pdf>

11

What, Why and How of Hippocampus Videos?: The OER of Choice Among the Academia

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Introduction

HippoCampus.org is a free, core academic web site that delivers rich multimedia content—videos, animation, and simulations—on general education subjects to middle-school and high-school teachers and college professors, and their students, free of charge. Teachers project HippoCampus content during classroom learning and assign it for computer labs and homework. Students use the site in the evenings for study and exam prep. Users do not need to register or log in to use the site.

As an open resource for personalized learning, HippoCampus.org was designed as part of a worldwide effort to improve access to quality education for everyone. HippoCampus is powered by The NROC Project, a non-profit, member-driven project focused on new models of digital content development, distribution, and use. NROC makes editorial and digital engineering investments in the content to prepare it for distribution by HippoCampus.

Other noteworthy points

- Students are not required to log in to HippoCampus.org, so there is no way to track student use from the public site. However, institutions that are members of the National Repository of Online Courses (NROC) have access to HippoCampus content through

their school's learning management system, which can track use, assignments, and grades.

- HippoCampus is provided by the NROC Project for personal enrichment and individual instructor use only. The unlicensed use of this content by educational organizations or commercial vendors is prohibited.
- Unfortunately, there is no way to download the video from the website. As an individual user, however, you may create a custom HippoCampus page and then link to an individual topic. After you have created your custom page, there will be buttons in the upper right corner that allow you to view the text version (when available), bookmark, or link to the topic.
- All the content we provide at HippoCampus is created by other educational institutions and contributed to us to distribute as part of our non-profit mission.
- Use the "Comments and Questions" feature in the Media Window control bar. The icon looks like a small speech bubble, and allows you to send in a description of the error directly from the relevant piece of media. Or you can send an email to Help@HippoCampus.org.

Browse the Video Collections @ HippoCampus

Go to Google and type Hippocampus videos. When the results are listed, click on the site ' www.hippocampus.org' and you will reach the below screen which is very simple and clear (Fig.1).

It has a top menu row with options to know more about Open Educational Resources, to get user guides from HelpCentre, to login to the hippocampus account by teachers and know about hippocampus, in general.

It has got three columns. The first column has the list of subjects, on which educational videos are available. The second row shows the relevant image and the third column has the list of available collections of videos.

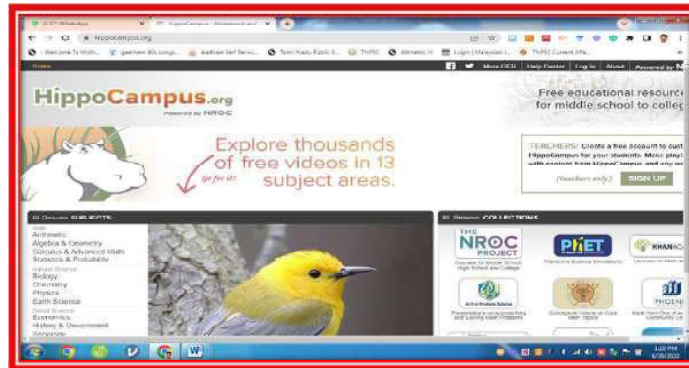


Figure 1 :Home Page : <https://www.hippocampus.org/>

Browse 13 subjects

More than 7000 educational videos are categorized and grouped under 13 subject categories. These 13 categories are grouped under four major groups like Math, Natural Science, Social Science and Humanities (Fig.2).



Figure 2 :13 Subjects in 4 Groups

Suppose, if you want to browse / search for videos on Chemistry, click on 'Chemistry' available under Natural Science Group. You will land at Fig. No.3.

Fig.3 shows the video providers and the categorization of videos under each provider. For example, the videos on Chemistry are grouped under two broad types: Presentations and Simulations. Under presentations

We have Khan Academy Collection and NASA Collection while the simulations section has The Concord Consortium Collection and PhET Collection.

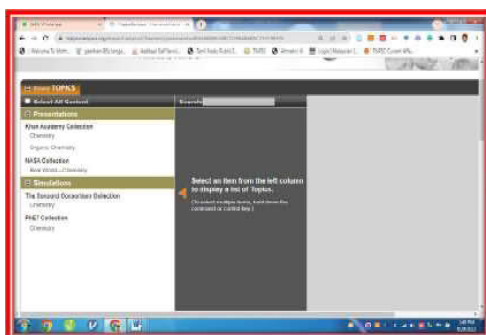


Figure 3 :Videos in Chemistry Subject

Click Organic Chemistry of Khan Academy and see the list of videos appear in the second column (Fig.4)

Choose and click the video you want to watch. The video will start playing in the third column (Fig.5).

If you want to search for videos matching specific keyword from all the collections, check the box 'Select All Content'. Then, all the videos of the collections will appear in the second column. Either you can sort them by sequence or name. We can even search for specific keywords also. For example, I typed the keyword 'atom' in the search interface (Fig.6). Only those videos that match the keyword will appear in the second columns as the results.

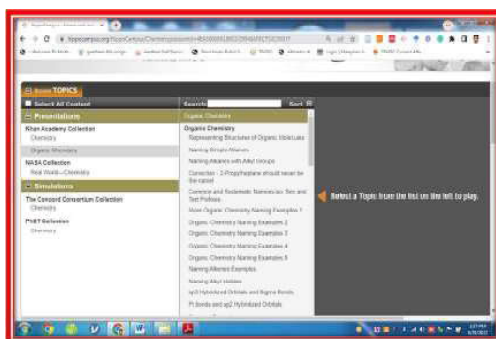


Figure 4 : List of videos in Organic Chemistr

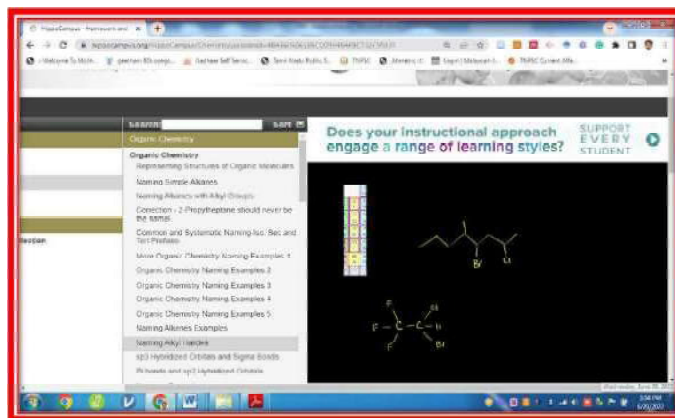


Figure 5 : Watching the Video in the third Column

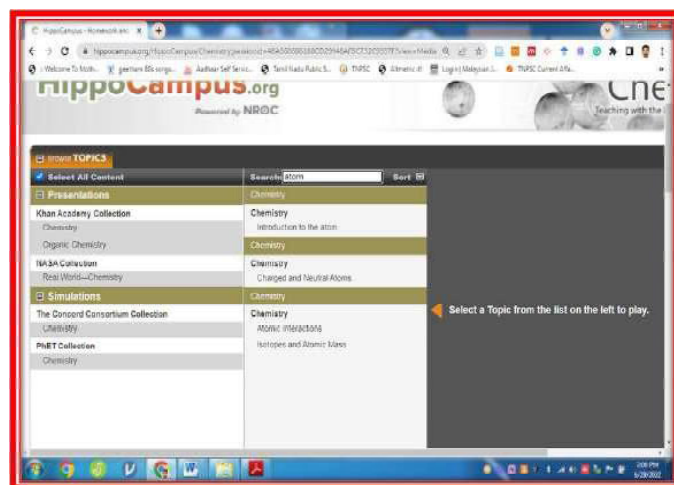


Figure 6 : Select All Content and Search Options

Browse Collections

The videos are grouped under more than 20 different collections based on the content providers. The NROC project, PhET, Khan Academy, Phoenix, MSJC, Learning Games Lab, OpenIntro, Biointeractive, The concord consortium, APES, Grammatically correct, Virginia Historical Society are some of the content providers you may find on the column 'Browse Collections' (Fig.7)

If we are interested to get videos on statistics, click the collection 'OpenIntro'. All the videos related to statistics will be listed (Fig.8).

At the same time, if you want to select the collections based on standards/grades according to certain international standards, that is also quite possible if you select and choose the relevant options by clicking the menu 'Standards Correlations'. Content Standard, Subject and Grade Level are the three filters that can be used to refine the results here (Fig.9).

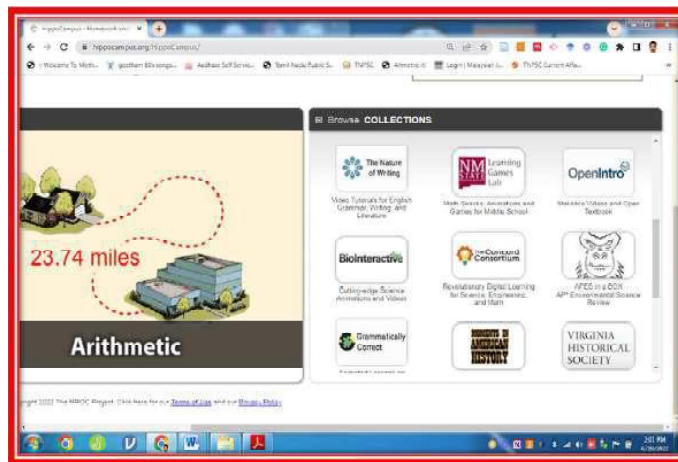


Figure 7 : Collections

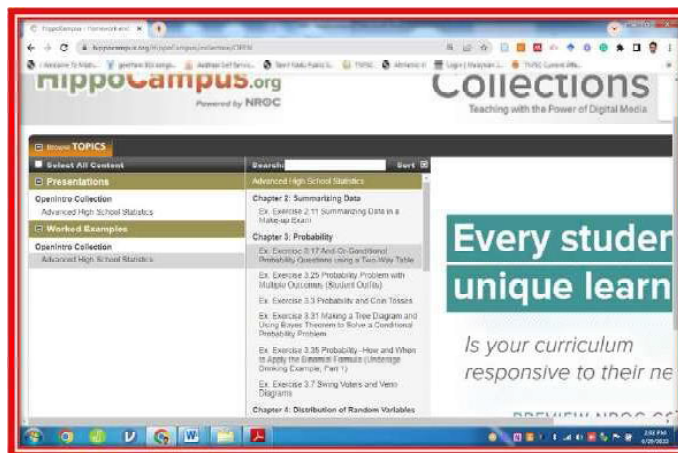


Figure 8 : Videos from OpenIntro

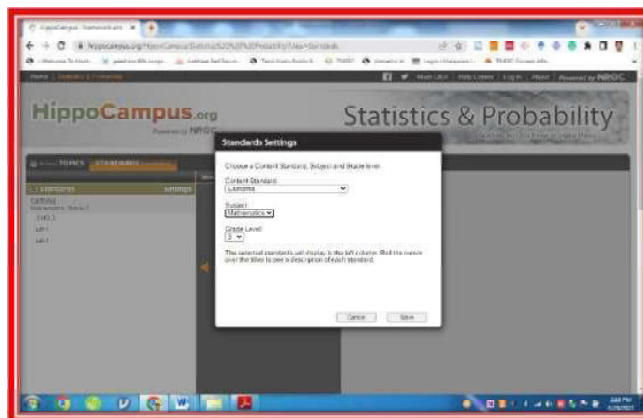


Figure 9 : Choosing Standards / Level of Content

Creating own playlists @ HippoCamps

As the librarian / teacher, we can create our own playlists in HippoCampus by clicking on the button 'Sign Up' available in the home page (Fig.10).

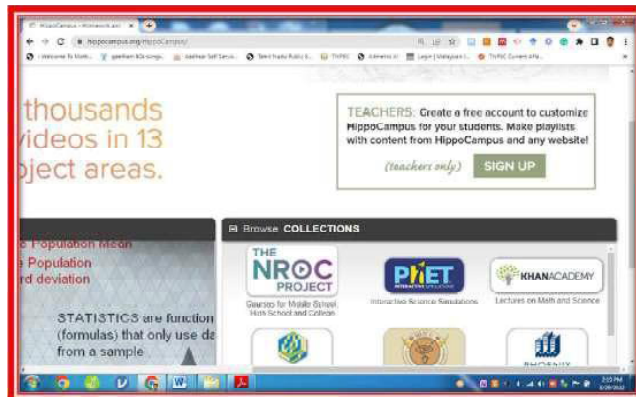


Figure 10: Sign up Option in the HomePage

When the get the following screen, fill the particulars asked for under the create account tab. Once the required details including username, password, email address, name, position, institution, state and country and subject of interest are filled properly, click Create my account (Fig. 11)

The screenshot shows a web browser window with the HippoCampus account creation page. The page has a header with 'Log In', 'Create Account', and 'Institutional Use' tabs. The main content area contains a registration form with the following fields: Password, Password (again), Email address, First name, Last name, Position (a dropdown menu), Institution, State (a dropdown menu), Country (a dropdown menu), and Subject of Interest (a dropdown menu). Below these fields are two checkboxes: 'Sign me up for the quarterly HippoCampus newsletter' and 'I accept the HippoCampus Terms of Use'. At the bottom of the form is a 'Create my account' button. The background of the page shows a blurred view of the HippoCampus website with a '23.74 mile' graphic.

Figure 11 : Creation of New Account

You will be getting username and password along with required links to access your customized page in hippocampus. When you enter HippoCampus the next time, click 'Login' and enter your login and password. Your login screen will look like Fig.12.

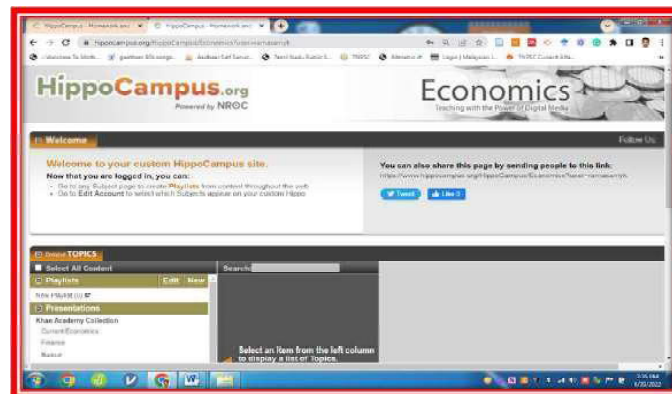


Figure 12 : Playlist Option

Now choose the subject area in which you want to create your own playlist. Now, a new button 'Playlist' appears in the screen with an option to edit, create a new playlist and add videos to the playlists. I have selected 'Economics' first, then chosen 'Banking/Finance' and got the related videos displayed in the second column. I have dragged two selected videos and dropped them in the playlist button. Now my playlist has two videos (Fig.13).

Now, click the playlist to enter the settings page (Fig.14). Here yo

can give a new name for your playlist, add a new playlist, change the settings for each added video and you can even delete the video from the playlist.

Then, click on the 'Settings' button to give a small description about your playlist, copy the dedicated URL page and add any external URL (any website, google docs page etc.) in the Add URL option (Fig. 15).

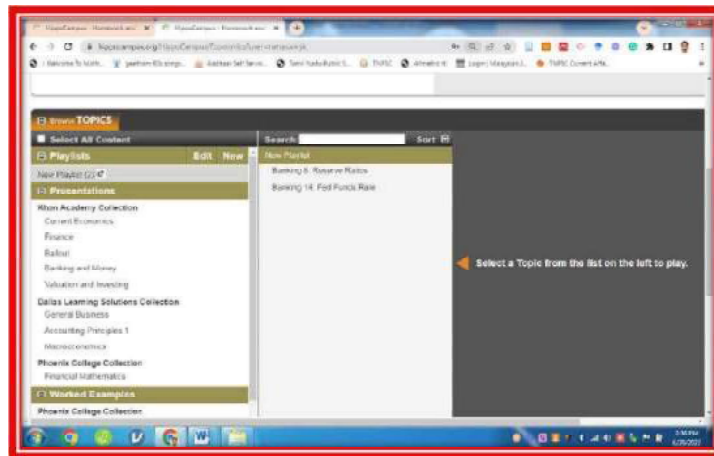


Figure 13 : New Playlist with 2 videos

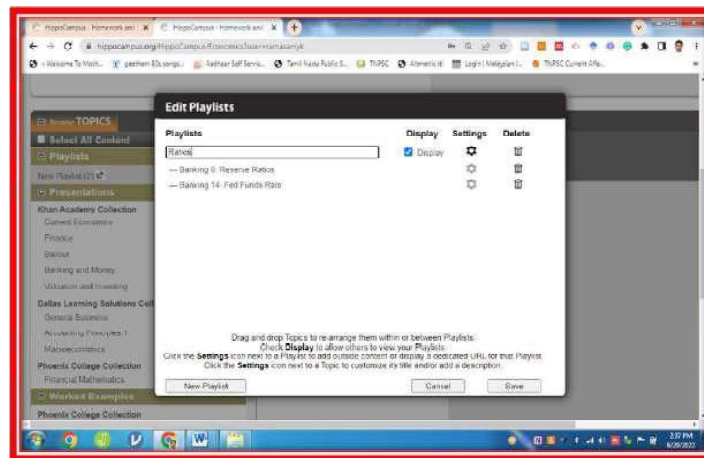


Figure 14 : Naming, Renaming and Setting

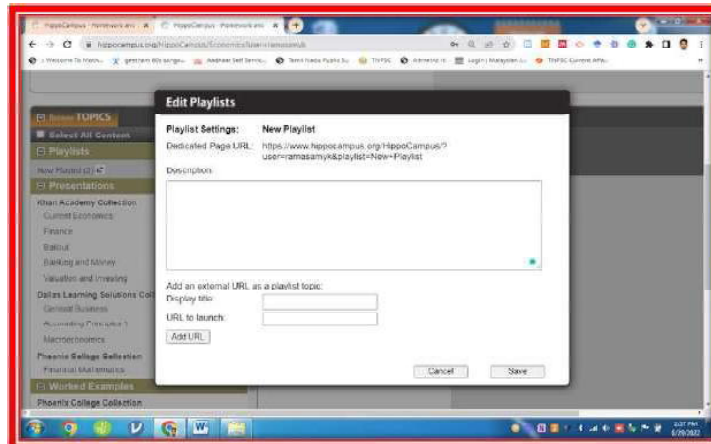


Figure 15 :Description, Adding URL and Copying Dedicated Page

Conclusion

Thus, HippoCampus is a viable option for the librarians to render reference service and current awareness service to the chosen clients by way of creating custom playlists based on the information requirements of the users. The playlists thus created may be updated now and then depending on the course of study of the users. The librarian needs to just send the dedicated custom playlist URL to the users. The users may just paste the URL in their web browser and will be able to see and watch the videos enlisted in the given playlist. The users need not open any account in HippoCampus. Though it has got a good number of videos for school library users, a sizeable number of videos are meant for college students also. The LIS professionals may find this video OER quite useful for rendering information services to their clientele.

REFERENCES

- <https://support.nroc.org/hc/en-us/sections/4416681758615-HippoCampus-Teacher-and-Student-User-Guide>
- <https://www.hippocampus.org/>
- <https://www.hippocampus.org/HippoCampus/?user=ramasamyk>

33**Contents of the Library Website of the NAAC
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Introduction

The development of every nation is highly dependent on education. The education scenario has been growing with several abrupt developments and several Universities and institutions sprouting up by the day. High standard Universities and institutions as well as below standard ones. To check the quality of these Universities and institutions, several measures and agencies to check the quality of education provided has been setup by the government bodies. National Assessment and Accreditation Council (NAAC) was established by the UGC in September 1994 at Bangalore for evaluating the performance of the Universities and Colleges in the Country. NAAC's mandate includes the task of performance evaluation, assessment and accreditation of universities and colleges in the country. The philosophy of NAAC is based on objective and continuous improvement rather than being punitive or judgmental, so that all institutions of higher learning are empowered to maximize their resources, opportunities and capabilities. The National Education Policy (NEP) 2020 gives high emphasis on accreditation. It states that, "Through a suitable system of graded accreditation and graded autonomy, and in a phased manner over a period of 15 years, all Higher

Education Institutes in India will aim to become independent self-governing institutions pursuing innovation and excellence.”

NAAC “evaluates the institutions on a range of parameters, including their structure of governance, infrastructure, financial soundness, teaching and learning, research, etc. And issues grades ranging from A++ to C based on these parameters. Institutions are graded under four categories, viz. A, B, C and D, denoting Very good, Good, Satisfactory and Unsatisfactory levels respectively. An institution with a grade D means it is not accredited.

University of Kerala

Initially called University of Travancore, a public university run by the Kerala State. It was established in 1937 after an official declaration by Chithira Thirunal Balarama Varma, the Maharajah of Travancore, who also came to become the first Chancellor of the university. It was the first university in Kerala, and one of the first among 16 in the country. Currently, the university has more than 150 affiliated colleges (60 Arts and Science colleges, 2 Law colleges, 17 Engineering Colleges, 9 MBA/MCA Colleges, 37 Teacher Training Colleges, 4 Medical Colleges, 4 Ayurveda colleges, 2 Homeopathy Colleges, one Siddha Medical College, 3 Dental colleges, 10 Nursing Colleges, 4 Pharmacy Colleges, 2 Fine Arts Colleges, and a Music College.), sixteen faculties and 43 Departments of teaching and research in addition to study centres and other departments under its umbrella. It also has a National College of Physical Education affiliated to it.

It was ranked 22nd in the NIRF 2019 ranking, followed by 23rd in 2020 and 27th in 2021.

First accredited by NAAC in 2003, with a B++ grading, it was without accreditation since 2008. The university received an A grade NAAC accreditation in 2015 with a CGPA of 3.03 on four point scale. And in June 2022, it received re-accreditation by NAAC with highest grade of A++ scoring 3.67 points out of 4, making it the first university in the State to receive the highest rank in NAAC assessment thus making it eligible to get projects worth up to Rs 800 crore from the UGC.

As the NAAC guidelines for Universities states, “ Though it is institutional accreditation that the NAAC does, the assessment of a library, a vital sub-unit, is a key step that integrates itself with the overall evaluation. Library is the fulcrum of support for the entire range of academic activities on an educational campus. In today’s high-tech learning environment, the

library as a learning resource is taking up increasingly more academic space and time in the life of a learner. In times ahead, this will be even more so. All this plays up the need for scientific evaluation of a library so that its role as the centrepiece of academic development is protected and enhanced. It is in this context that the NAAC has after wide consultations evolved a set of guidelines on quality indicators, to help academic libraries to be always in their best form.

In the process of institutional accreditation, libraries have a crucial role. The services of the libraries have been expanding as they contribute significantly to the learning process, particularly, the e-learning process.

In the accreditation process, evaluation of libraries is an essential component, where the collection, services and their outreaching capacity are monitored. In the recent past, significant developments have been reported in library and information services and the libraries are shouldering newer responsibilities in higher education. Hence the standards for assessing the quality of library services need to be updated. It is true that libraries largely support learning, teaching and research processes in institutions”.

It is in this backdrop, that the NAAC has developed a set of objective indicators to facilitate assessment of the Library and Information Services of academic institutions.

A. MANAGEMENT OF LIBRARY AND INFORMATION SERVICES

- a. Number of days the Library is kept open
- b. Working hours
- c. Library Advisory Committee
- d. Manpower development
- e. Infrastructure of the Library
- f. ICT Infrastructure and Know-how
- g. Overall policy of the institution on library
- h. Budget

B. COLLECTION AND SERVICES PROVIDED TO USERS

- (i). Collection
- (ii). Services

C. EXTENT OF THE USE OF SERVICES

D. BEST PRACTICES FOR UNIVERSITY/AUTONOMOUS COLLEGE LIBRARIES

The Kerala University Library

The University of Kerala has its Main Library near its city campus and caters to all students, staff and public. It was established in 1942 and is the biggest and oldest university library in the State. The library stocks a collection of over 350,000 books with 5000 titles being added annually every year. The library also subscribes to around 500 journals/ magazines / magazines; 43 foreign Journals, more than 400 Indian periodicals, 35 magazines and 20 Newspapers. The library also stocks bound volumes of more than 1000 journal titles. UGC Infonet Digital information services is also provided. It stocks a unique set of Kerala Studies in its special collection among others such as General Biographies, Women' Studies, UN and World Bank Publications, Government publications and bound volumes of rare books and newspapers and journals. The rare books collection is in the process of digitizing. The Manuscript Library of the University has over 65,000 works mainly palm leaf manuscripts. Also in its Manuscripts collection are paper manuscripts, copper plates, writings on birch bark, bark of Amyris agallocha and textiles. The library is managed using Koha open source library management system.

The library has its own exclusive website www.kulib.in. The website is very detailed and advanced and meets the requirements of its members. The library website is available only in English. The navigation bar is provided on every page of the website. The navigation bar provides the following links to the other pages of the websites.

[Home](#)

[About Us](#)

[Collection](#)

[Services](#)

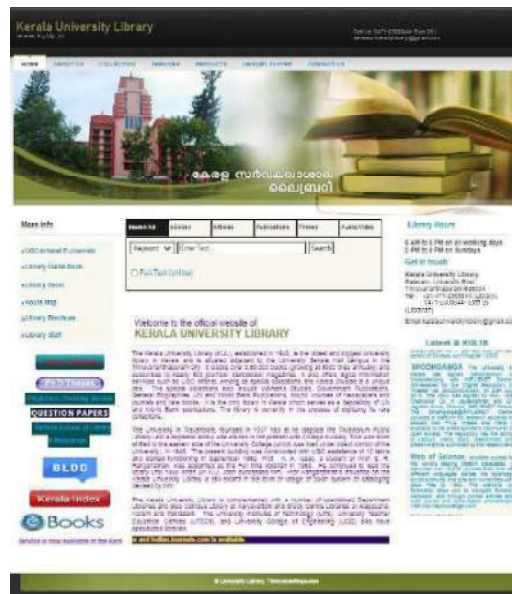
[Products](#)

[Library System](#)

[Contact Us](#)

a. Home (Homepage)

The Homepage of the website gives a brief description and history of the library. It provides links to all other pages of the website and links to the library e-resources for easy navigation. The Homepage also displays links to the WebOPAC, Ph.D Theses, Plagiarism Checking Service, Shodhganga member ID, Previous Question Papers, Remote access to library e-resources, Blog service, Kerala Index, link to e-books, basic information such as Library hours, Contact details of the Library, Latest News and a Search facility of its resources. The Homepage also provides access to UGC Infonet e-journals, Library guide book, Library rules, Route map, Library Brochure and Library Staff directory.



b. About Us

The 'About Us' page gives a brief description of the Library, its history, timeline, and organisation of the library into 11 sections of the library, viz.

Sections

Circulation Section

Acquisition section

Technical section
Reference section
Periodical section
Documentation and Information Services section
Information Technology section
Kerala Studies Section
UN & World Bank Section
Research Section and
Maintenance Section (Stack Room).

c. Collection

The 'Collection' page gives information about the collection of books, Journals, maps, microfilms, CDs, Theses, Dissertations, etc. It also provides information about the kinds of reference sources available at the library such as Encyclopedias, Dictionaries, Biographies, handbooks, etc. It also briefs about the category of special collection available at the library.

Special Collections

Kerala Studies
Women studies
Government publications
General Biographies
Bound volumes of Newspapers
UN & World Bank Publications
Theses
Bound volumes of periodicals (Science& Social Science)
Closed Reference (Rare Books)



d. Services

The 'Services' page lists the services provided by the library.

Bibliographic services

CD-ROM search

Current awareness service

Current Content services

E- Journal services

Extension services

Indexing services

Inter library loan services

Internet services

Lending of Books

OPAC search

Reference service

Referral service

Reprographic services

User Education programmes

World Bank e-library service



e. Products

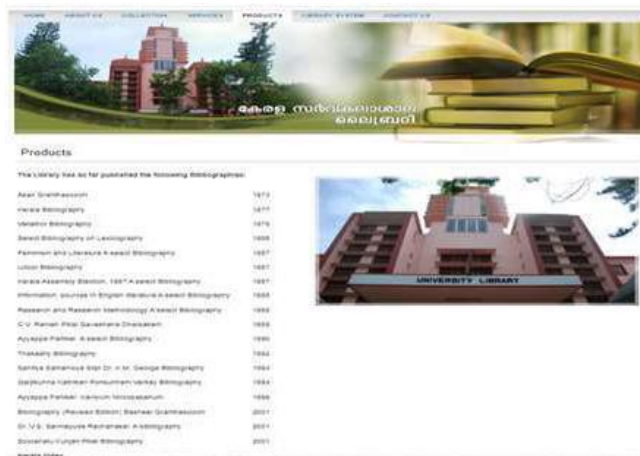
The 'Products' page displays the list of Biographies published by the library.

Asan Granthasoochi	1973
Kerala Bibliography	1977
Vallathol Bibliography	1978
Select Bibliography on Lexicography	1986
Feminism and Literature A select Bibliography	1987
Ulloor Bibliography	1987
Kerala Assembly Election, 1987 A select Bibliography	1987
Information sources in English literature A select Bibliography	1988
Research and Research Methodology A select Bibliography	1988
C.V. Raman Pillai Gaveshana Dharsakam	1989
Ayyappa Paniker A select Bibliography	1990
Thakazhy Bibliography	1992
Sahitya Samanwya Silpi Dr. K.M. George Bibliography	199

Garjikunna Kathikan Ponkunnam Varkey Bibliography	1994
Ayyappa Paniker: Kaviyum Niroopakanum	1999
Bibliography (Revised Edition) Basheer Granthasoochi	2001
Dr. V.S. Sarmayude Rachanakal: A bibliography	2001
Sooranatu Kunjan Pillai Bibliography	2001

Kerala Index

‘Kerala Index’ a quarterly publication which contains an index of articles of research value on topics relating to Kerala prepared from newspapers and magazines subscribed by the library.



f. Library System

The ‘Library system’ page gives the information about the library and its branches. The University library is spread across three branches.

Campus library

The Campus Library at Kariavattom campus was started in 1976 to extend the facilities to the campus community. It now rests on a two storey building with an area of 1238 sq. M. It has a collection of more than 7000 books and 60 periodicals subscriptions. The campus library came to being as a reference section stocking important reference books for the various courses and also materials for research scholars. The library provides other services such as reprographic, internet and UGC-Infonet E-Journal services.

Department Libraries

The University library also has department libraries for all the 43 teaching departments. The department libraries are spread across the 2 major campuses of the University, the Campus at Kariavattom (34), and the Senate House campus (6). The remaining ones are at the Department of Music, Govt. Women's college campus, Vazhuthacaud (1), Department of Education, Thycadu (1).

Study Centre Libraries

The University study centres at Alappuzha, Kollam and Pandalam also have their own separate libraries catering to the reference needs of PG Students, Research Scholars, SDE students, UITs, B.Ed Centres, IMK extension centre etc and Faculty members under it in the respective districts.

g. Contact Us

The 'Contact Us' page gives the Address, Phone numbers and email id of the library

Links to e-resources

The Homepage of the library website provides links to various other e-resources.

UGC-Infonet E-Journals

The link gives member access to databases and e-journals from a variety of sources

Bibliographic Database

American Mathematical Society (Mathscinet)

BIOSIS (Biological Abstracts)

Web of Science

Royal Society of Chemistry

Analytical Abstracts

Catalysts & Catalysed Reactions

Chemical Hazards in Industry

Laboratory Hazards Bulletin

Methods in Organic Synthesis

Natural Products Update

Electronic Journal Platforms

American Chemical Society

American Physical Society

Blackwell

Emerald (LIS Collection)

Institute of Physics

MEDICAL JOURNALS (1380 free journals)

Oxford University Press

Project Muse

Science Direct (Cell Press)

Springer Online

American Institute of Physics

Annual Reviews

Cambridge University Press

Euclid

J-STOR

Nature

Portland Press

Royal Society of Chemistry

Society for Indl. & Appl.Maths. (SIAM)

Taylor & Francis Online Journals

Gateway Portals

Knimbus

Ingenta

J-Gate Plus

JCCC

Open Access Journals

General List of Open access eprints

PubMed Central (PMC)

Networked Computer Science Technical Reference Library

Citebase

BioMed Central

BBS Prints Interactive Archive

Cognitive Science

Public Library of Science

arXiv

CogPrints

CERN Document Server (CDS)

The Economics network (RePEc)

HighWire Press Free

Citeseer

Eprints.org archives

Directory of Open Access Journals

Library Guide Book

The Library guide book gives a brief description of the library along with a brief history, It also provides a downloadable book in pdf format containing detailed information about the library, library system followed, the organisation of the library, the library procedures and what the library offers.

Library rules

The 'Library rules' link takes you to the rules to be followed by members. It also provides a downloadable pdf for later reference.

Route map.

The 'Route map' link gives the location map of the library and the Palayam locality.

Library brochure

The 'Library brochure' link takes you to the downloadable brochure about the library.



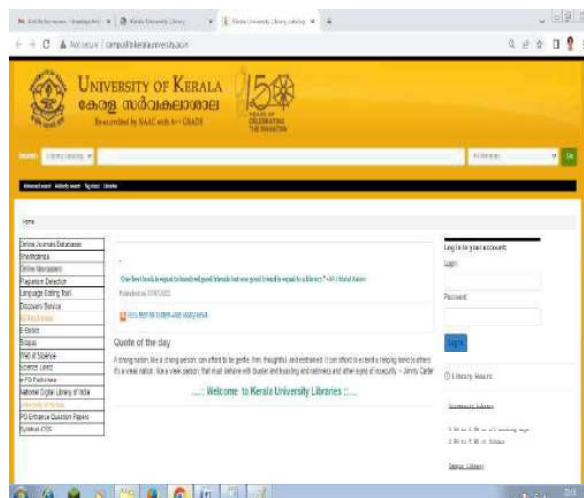
Library Staff

This link gives the Staff directory as to the who's who at the library.

Other important links

Other important links placed in the homepage are;

'**Online Catalogue**' which gives access to the WebOPAC.



‘Search bar’ to search through the list of resources. The search facility permits search of ebooks, articles, Publications, Theses and audio & video, though keyword search.



‘Ph.D Theses’ link gives access to the Shodhganga reservoir of Indian theses

‘Plagiarism Check Service’ link provides the downloadable Instructions for Plagiarism check.

‘Question Papers’ link directs the user to the Google Drive storage of question papers of previous years.

‘Remote access of Library e-resources’ provides off campus access to faculty members to the subscribed electronic resources through e-ShodhSindhu and other publishers

List of subscribed e-resources by University of Kerala:

- American Chemical Society (ACS)
- American Institute of Physics
- American Physical Society (APS)
- Annual Reviews
- Emerald
- EBSCO Discovery Services and EBSCO host Research Database
- EPWRF (E P W Research Foundation)
- IEEE Xplor

Indian Journals

IOP

J-gate Plus

JSTOR

Nature

NotNul :Hindi Database

Oxford University Press

Project Muse

Royal Society of Chemistry

SAGE

Scopus

Springer

Science Direct

Taylor and Francis

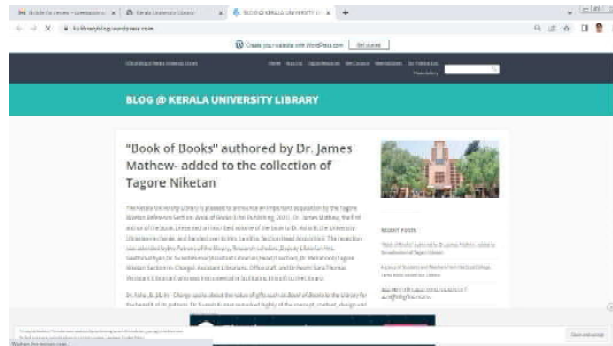
Web of Science

Wiley

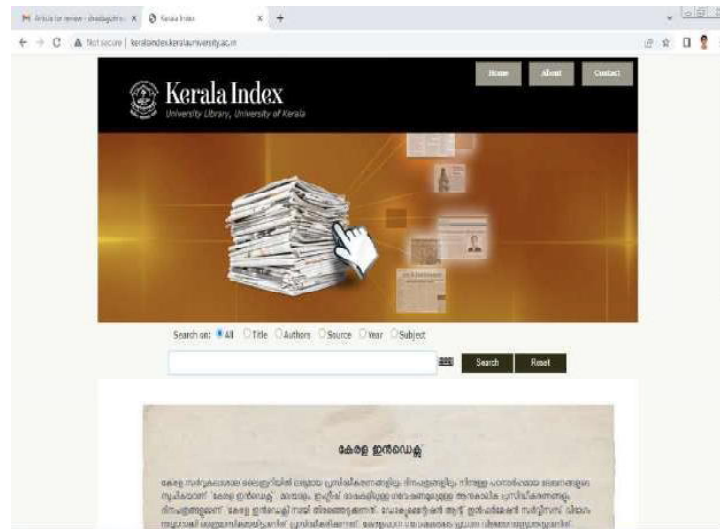
Library subscribes the electronic resources through e-ShodhSindhu as well as from the publishers. The Off-Campus Access service is provided to the faculty members to seamlessly



'**Blog**' link provides access to the library blog, 'Blog@keralauniversity', with the site address, <https://kulibraryblog.wordpress.com/>, powered by Wordpress.



'**Kerala Index**' link directs the user to lookup library articles from Kerala. It provides a Search facility within.



'**e-books**' link directs the user to the E-Books subscribed in Kerala University Library. The page gives access to 329 of the e-books subscribed by the University.

'**Latest@KULIB**' provides a scrolling view of the latest news of the library

Every page displays the authority of design and maintenance of the website and the copyright statement.

In March 2022, Higher Education Minister launched University's library network that brings together all the resources of the libraries under the University under one network.

The 'One University, One Library' network links nearly 10 lakh books, rare documents, theses, government publications, journals and others that have been stocked in the 56 libraries including the Kerala University library in Palayam, the campus library in Kariavattom, the libraries in 44 teaching departments, 7 inter university centres and the study centers in Kollam, Pandalam and Alappuzha. Users can also reserve the books and renew membership from home. In a recent study, 'Attitude of Users Towards E-Resources: A Study based on Kerala University Library', conducted by Abdulla A. , Amrutha Madhu V.V. , Anju S. Nair, Assistant Professors, Department of Library and Information Science, University of Kerala, it was found that 94.17% of the respondents sought the needed information from online sources. They observed that out of 120 respondents, 81.67% sought information from 'e-journal', followed by, 74.17% using 'e-book' for seeking information. 64.17% respondents used E- Newspapers' and 22.50% 'E-Thesis and Dissertations. 5.83% 'online databases' for finding information.

The study also revealed that 52.50% respondents were satisfied with the available e-resources, followed by 45.00% fully satisfied. Only 1.67% were less satisfied and 0.83% dissatisfied with the e-resources.

Conclusion

Just as NAAC accreditation is becoming an unavoidable part of every institution, the grading of institutional libraries also a relevant part for accreditation. And in this era of ever changing world of information technology, library websites being a mirror of the library are growing to become more than what the physical library can cater to. The larger chunk of the user community look to this online medium for their information requirements and so it is in fact a duty of the library management to ensure that the library website is well equipped to meet what the information seeker seeks from the library. The Library of the University of Kerala has adapted to the growing technology and has used all possible means available to meet the user needs.

References

- Abdulla, A., Amrutha Madhu V.V., & Anju S. Nair. (2022). Attitude of Users Towards E-Resources: A Study based on Kerala University Library. *International Journal of Innovative Research in Technology*, 8(9), 706-713
- About us. (n.d.). NAAC. <https://naac.gov.in/index.php/en/about-us> (n.d.). Kerala University Library. <https://www.kulib.in>
- Barman, S. R. (2022, February 14). *New guidelines: Institutes that complete one year can seek provisional NAAC accreditation*. The Indian Express. <https://indianexpress.com/article/india/institutes-that-complete-one-year-provisional-naac-accreditation-7772063/>(n.d.). NAAC. <https://naac.gov.in/docs/Guidelines/Library-Guidelines-Universities.pdf>
- University Grants Commission :: Inter University Centres (IUC). (n.d.). Retrieved July 09, 2022, from <https://www.ugc.ac.in/page/naac.aspx> (n.d.). Major Initiatives | Government of India, Ministry of Education. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf.

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Shodh-Chakra — Researcher Perspective

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Shodh-Chakra

Shodh-Chakra is an effort of the Information and Library Network (INFLIBNET) Centre, guided by the University Grants Commission (UGC), to assist the academic community throughout the research life cycle. Shodh-Chakra offers a one-of-a-kind environment for the researcher, guide/supervisor, and university to manage a research scholar's research lifecycle. This will function as a digital workplace for researchers to collect, store, organise, and cite their research findings. The process of using the portal begins with the signing of an agreement between the University and the INFLIBNET Centre. Furthermore, researchers can log into the system and use the Shodh-Chakra functions.

Researchers Manual Registration

Fig :Researcher Registration Page

Researchers must first register by inputting basic information such as their First Name, Last Name, Email Address, Mobile Number, University, Department, and so on. Enter the Captcha text and press the Register button.

Fig :Sign in Page

After entering these details, you will receive an email with a username and one-time password that will allow you to log in and reset your password by clicking on the change password option. There are two sorts of credentials: those issued by the university and those self-registered

by the research scholar; in the case of self-registration, the involved university will authorize and validate your registration. You will be able to access the site once it has been verified by the institution.



Fig : Researcher's Dashboard

The Figure shows the researcher's dashboard after successfully logging into the portal. The dashboard will assist researchers in creating their research profile by allowing them to enter the research topic, synopsis, scholarship, keywords, and so on. The dashboard displays the complete research procedure, from literature gathering through thesis submission. Researchers can use Shodhganga, Crossref, and other open access resources incorporated with the Shodh-Chakra to search for literature.

Fig :Profile Creation

The goal of creating profiles for researchers is to retain research-related information and make recommendations on literature searches and

related areas of research. After selecting the profile, the researcher must provide the following information: first name, last name, email address, mobile number, date of admission, gender, upload photo, insert address and click the submit button to store the data.

Fig:Information about Research Topic/Title

The researcher will be able to select/enter the title/topic of the research as well as co-guide details. In the profile section, the research scholar will also be able to store his or her ORCID ID and Researcher ID.

Fig. Synopsis of Research

Research synopsis uploaded by the researcher may be accepted or rejected.

Fig :Information about Scholarship/Fellowship

The research scholar can keep track of the fellowship/scholarship received for the research project. Because these details are verified by the university, it will be locked after submission and can only be edited by the university administrator. The system displays YES and NO options; if the researcher chooses yes, a few more fields will be displayed. Once these details are entered, click the submit button.

The screenshot shows a web form titled 'KEYWORDS & METADATA'. At the top, there are navigation tabs: Profile, Topic/Title, Synopsis, Scholarship/Fellowship, Keywords & Metadata (active), Course Work, and Add Objective. A 'Dashboard' button is in the top right. The form contains the following fields:

- Category 1***: A dropdown menu with the selected value 'Computer science, Information & general works'.
- Category 2***: A dropdown menu with the selected value 'Computer science, Information & general works'.
- Keyword**: A text input field containing 'Security Test'.
- Keywords**: A section with a 'Subject*' label and a text input field containing 'Network will help to fetch all the thesis for researchers'. There are 'Add/Remove' and 'Delete' buttons next to the input field.
- Submit**: An orange button at the bottom left.

Fig :Keywords and Metadata

The Keywords and metadata tab will assist researchers in selecting the appropriate subject category and keywords for their research work. The system will retrieve relevant literature from various resources integrated into the portal and prompt the user on the dashboard.

The screenshot shows a web form titled 'COURSE WORK'. At the top, there are navigation tabs: Profile, Topic/Title, Synopsis, Scholarship/Fellowship, Keywords & Metadata, Course Work (active), and Add Objective. A 'Dashboard' button is in the top right. The form contains the following fields:

- Current Status***: A dropdown menu with the selected value 'Completed'.
- Start Date**: A text input field containing '01-04-2022'.
- End Date**: A text input field containing '20-04-2022'.
- Remarks***: A large text area with the placeholder text 'Text'.
- Submit**: An orange button at the bottom right.

Fig :Coursework Related

Under the profile section, the coursework tab will assist research scholars and universities to track of coursework-related information.

Fig :Research Objectives

The objective section of the profile management section will assist researchers and guides to track of the completion of research work and establishing the research work's target. The researcher can choose the name of the guide, and the progress of the objective..

Fig :Related Thesis from Shodhganga

As shown in Figure, the system will communicate with the live Shodhganga database, and the results will be displayed on the screen. Select the relevant one and click the 'Add to Favorite' button to save it in the resource under 'My Library.' Researchers can read the full text of a selected thesis by clicking on the 'View' button. Researchers can annotate directly from the result page by clicking the 'Add with Annotation' button. This feature will assist researchers in creating annotations on the fly for future use.



Fig :Knowledge Resources-Research Ethics

‘Research Ethics’ is the first tab in the knowledge resources. The screen displays e-text and videos related to research ethics, and researchers can read and watch all of the modules listed on the left side of the screen, as shown in figure.

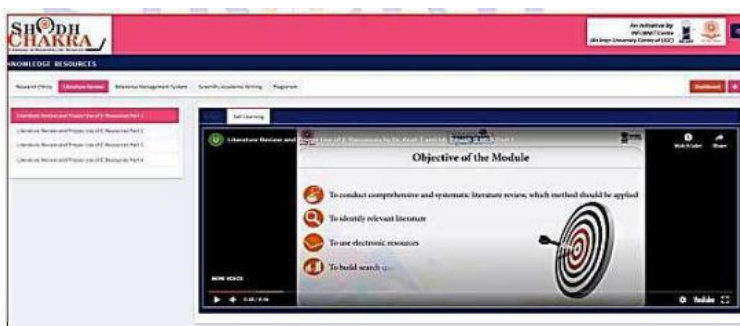


Fig :Knowledge Resources- Literature Review

The second tab under knowledge resources is ‘Literature Review,’ which will assist researchers in conducting effective and efficient literature searches on specific research topics, as illustrated in figure..



Fig :Knowledge Resources-Reference Management

The third tab in the knowledge Resources is titled 'Reference Management System.' This will assist scholars in understanding the tools and procedures for using various reference management software such as Mendeley and Zotero. The modules under reference management would also be useful in mentioning while composing the research paper and thesis chapters.



Fig :Knowledge Resources- Scientific / Academic Writing

Scientific/academic literature is the fourth tab. Academic writing is an art, and the modules in the scientific/academic writings category cover significant areas of academic writing.

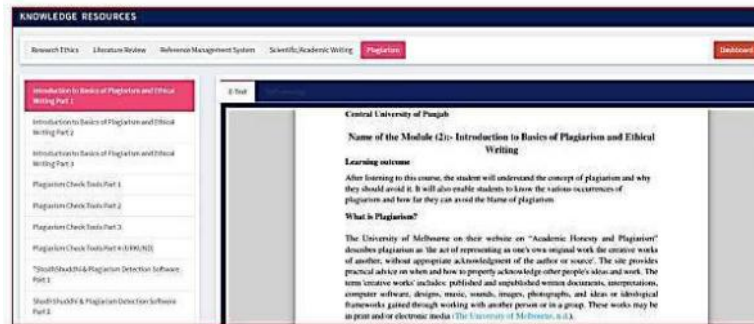


Fig :Knowledge Resources-Plagiarism

'Plagiarism' is the fifth and final tab in the knowledge resources. Plagiarism is one of the most important topics for a researcher to comprehend before beginning any research activity. Expert-recorded films provide an in-depth understanding of how to avoid infringement in research activities.

Resource Aggregation

The resource aggregation area makes it easier for researchers to identify relevant resources from many categories and save them in ‘My Favorite’ for future use and reference. This tool will assist academics in locating published papers from several databases, including Google Scholar, Scopus, and Open Access sites.

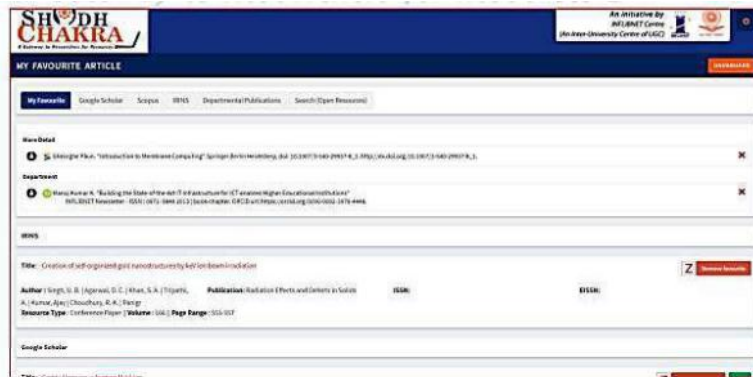


Fig :My Library – Favourite Resources

‘My Favorite’ is the first tab in the resource aggregation section. This tab will hold all of the resources that have been marked as Favorite. Figure depicts the information of the saved resources under my preferred tab.

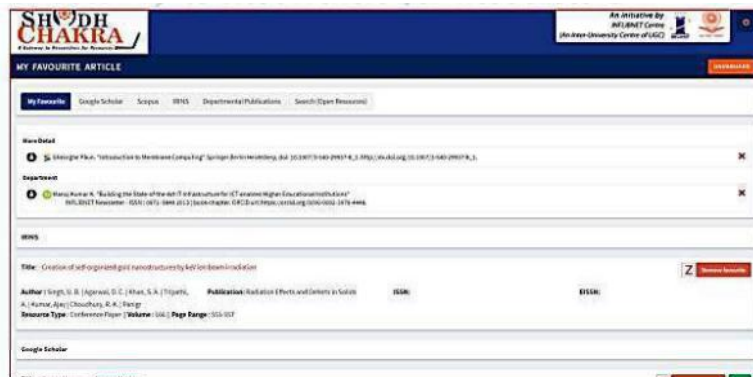


Fig :Favourite Resources – Google Scholar

‘Google Scholar’ is the second tab under resource aggregation. Google Scholar is connected with the resource aggregate tab via API. It

will provide a straightforward search window with three fields: Google Scholar ID, Title, Author, and Keywords. Researchers can enter an acceptable word and choose a field in which to conduct the search. The system will get the results, which can then be added to favorites by pressing the “Add to Favorites” button, as illustrated in figure.

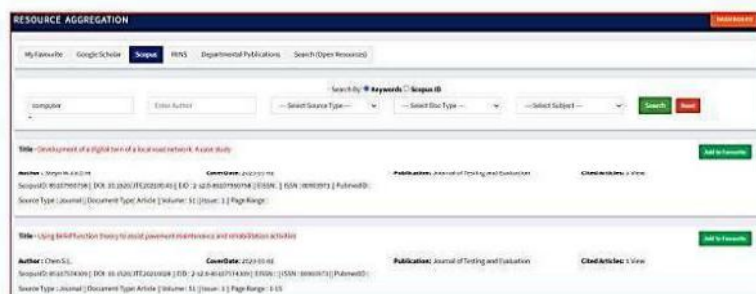


Fig :Favourite Resources – Scopus

‘Scopus’ is the third tab under resource aggregation. Scopus is a database that indexes and abstracts millions of publications and assigns citation scores to each research work. The Shodh-Chakra retrieves and displays bibliographic information for the searched terms on the screen. In order to use the article later, researchers can choose whether it is relevant and mark it as a favorite.

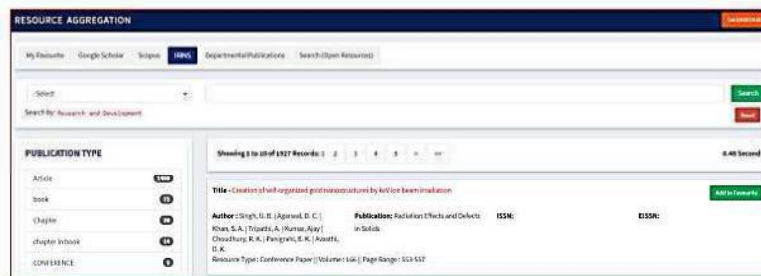


Fig :Favorite Resources – Indian Articles

‘IRINS’ is the fourth tab. On the IRINS portal, research profiles of faculty members from the majority of Indian academic institutions have been generated. IRINS has been connected with Shodh-Chakra to allow researchers to conduct searches in the IRINS and save the results as a favorite for future use.



Fig :Favorite resources – Department Resources

All materials published by peers from the same department of the native institute of researchers will be listed in the departmental publications. A researcher can save a favorite in my library area for future reference.

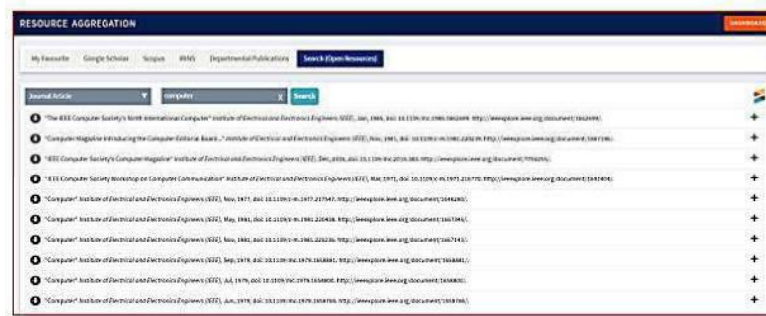


Fig :Favorite Resources – Open Resources

The fifth tab assists scholars in locating bibliographic information for open access works. Shodh-Chakra will populate the metadata of the resources, and the entire text of an individual article can be retrieved using the DOI.

Publications (Journal/Workshop/Conference)

‘According to current UGC standards, a research researcher must publish publications in journals, conferences, and seminars/workshops. Researchers are unaware of the number of journals that are published; conferences are being planned. The publication section would assist researchers in searching for and adding to their preferred journals, conferences, and workshops/seminars where they may submit their research papers for publication and presentation.



Fig : My Favourite Journal

‘My Favorite Journal’ displays a list of all journals that have been designated as favourites. A researcher can save his or her preferred/required journal.



Fig :Search Journal

The journal tab allows the researcher to search for journals based on title and keywords. The UGC Care List, Scopus, and Web of Science will be used to retrieve the results. Figure 24 shows how a researcher might choose a relevant article and mark it as a favorite.

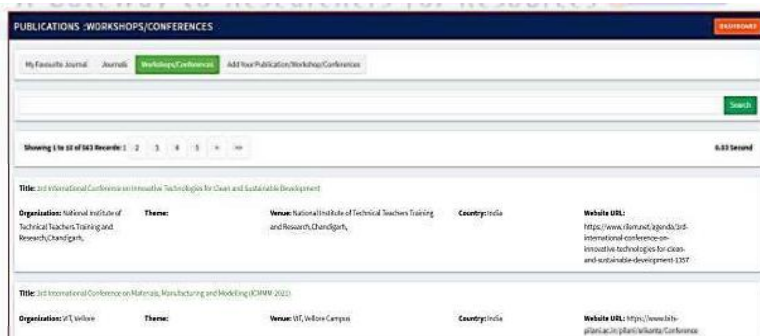


Fig :Workshops & Conference

According to current UGC standards, the researcher must deliver at least one research paper at the conference. It can be tough to find future conferences on various subjects. The Shodh-Chakra collects information about upcoming conferences from academic institutions and compiles it under the workshop and conference page. The researcher can save it as a favorite for future reference.

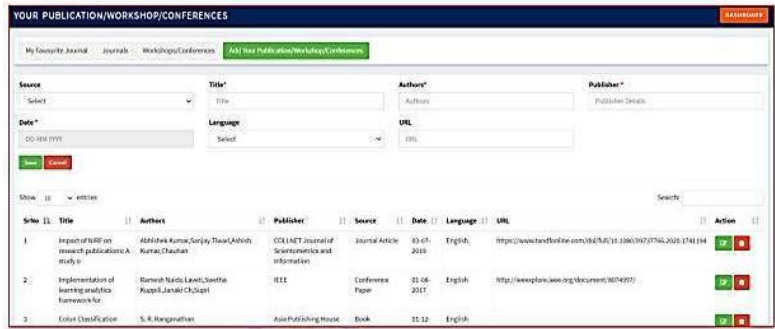


Fig :Adding Research Publications/Conference Papers

Researchers can save a list of articles from journals and conference proceedings. This function allows the researcher to keep track of all personal publications in one spot.

A. Reference Management

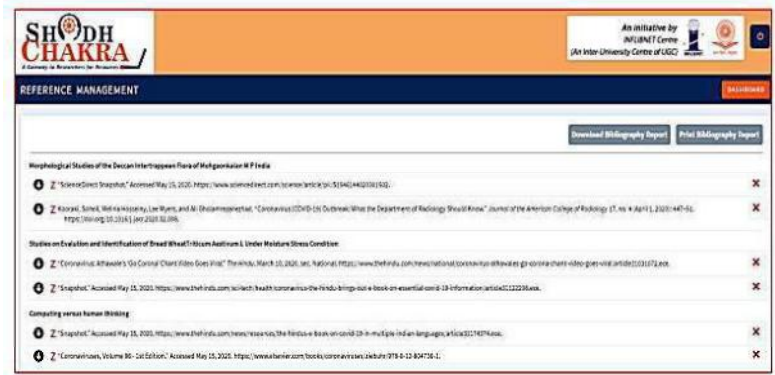


Fig :Adding References

The handling of references for the collected/referred material is a critical task. All documents referred to for an ongoing research project must be cited. The Shodh-Chakra contains an integrated Zotero Reference Management tool for managing all research resources.

Thesis Submission

Fig :Thesis Submission

The submission of a thesis to the university for the award of a degree is the final stage in a research scholar's research journey. Through Shodh-Chakra, the research scholar will be able to submit all documents, including the registration receipt, pre-submission report, course work completion certificate, plagiarism report, and finally the thesis. The researcher can only submit documents to the Guide and the University.

Fig :Submission related Documents

Researchers can save full-text documents in the 'Drive' section of 'My Library.' These documents may be distributed to the research supervisor.

Full Text Thesis

The screenshot displays the 'MY FAVOURITE RESOURCES/JOURNAL' section of the Shodh Chakra platform. It features a navigation bar with 'Full text thesis', 'Knowledge Resources', and 'Research Publication'. Two entries are listed:

Title	University	Department/Subject	Author	Guide/Organizations
Morphological Studies of the Decar Intertrappean Flora of Khatgolparahar HP India	Bharat Gadge Baba Amravati University	Botany	Bobade NB	Patil the EV
Studies on the effect of antibacterial activity and anticancer activity of Aegle Marmelos, Solanum Nigum and Cassia Fistula	Harsh University	Microbiology	Vernekar, D	Kamulkaran, C M

Fig :My Favourite Full-text Thesis

The 'My Library' section provides all of the resources that have been recognised as favourites by various categories. Full-text thesis marked as a favourite from Shodhganga will be presented on the full-text Thesis tab.

The screenshot displays the 'MY FAVOURITE RESOURCES/JOURNAL' section with the 'Knowledge Resources' tab selected. It shows a single entry:

Title	Author	Publisher	ISSN	ISSN
Creation of self-organized polychromosomes by helion beam irradiation	Singh, B. B. (Agrawal, D. C.), Khan, S. A., Tripathi, A., Kumar, Ajay (Choudhary, R.K., Panig)	Radiation Effects and Defects in Solids		

Resource Type: Conference Paper | Volume: 198 | Page Range: 553-557

Fig :My Favourite – Knowledge Resources

Under the 'My Library' 'Knowledge Materials' tab, the resources marked as favorites under knowledge resource are displayed.



Fig :My Favourite – Creating Notes

Researchers can make remarks in the 'Note' section of 'Guide Interaction.' This will allow research scholars and guides to debate research-related issues on the portal. Both the researcher and the guide can make and share notes with one another.



Fig :My Favourite – Shared Notes

The notes shared by Guide can be accessed by selecting the Shared Notes option in the Interaction with Guide area, as shown in figure.

Conclusion

The Shodh Chakra platform has been designed to aid and assist reach scholars and mentors in managing their whole research schedule and work cycle, from literature evaluation through research submission. Researchers will be able to collect, organize, save, and cite their study work, thanks to the platform. The Shodh Chakra platform is accessible online. Universities and institutes will be required to submit information about their research scholars in order to have access to the platform via the official website.

**PROFILE
MANAGEMENT
SYSTEMS**
For Researchers and Academician

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Ess Ess Publications

New Delhi

PROFILE MANAGEMENT SYSTEMS
For Researchers and Academicians

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4

Grow with 'KUDOS' : The Best Way to Maintain Your Online Profile and Enhance Your Research Visibility

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for Women, Dindigul, Tamilnadu, India*

INTRODUCTION

A researcher decides upon a hot-button issue in the chosen domain of research, conceive the idea, conduct a thorough review of literature, carry out a sincere data collection process, conduct a wonderful statistical analysis, present logical discussion and interpretation of data and choose a journal with high impact factor, before publishing a paper. Then, post-publication promotional activities have to be undertaken. These measures are carried out with the aid of various tools with the intention of increasing their research visibility. They include: open access publications, institutional repositories, own blogs, social media tools, social networking sites and online profile management systems like Google Scholar, ORCID, Publons, Vidwan, Academia and Research Gate. Apart from these tools we have new tools like Impactstory that helps the researchers to count their altmetric scores and Kudos that helps the researchers to enhance their research visibility.

Kudos is a free service (as of now, with limited features) that enables the researchers to create online profile for them with their personal information and their publications. With kudos, we can search, upload or import our publications and check for their both citation scores and altmetrics scores. We can provide the title in plain language, we can write why their paper is important, what is unique in their paper, offer a laymansummary of their paper, pen on their own perspectives about the paper, annex images suitable to the theme of the paper, add links to a variety external related resources, share links in various social media and decide upon the audience boundary. We can create and connect to various social media accounts in Kudos.

KUDOS : THE NEW TOOL

The new tool is run by Kudos Innovtions Ltd., London.

Kudos was developed to help researchers ensure their publications get found, read and cited in a world of information overload. Founded in 2013 by three publishing and technology professionals, Kudos has gone from strength to strength, winning major industry prizes for innovation. Today, Kudos is used by researchers all over the world to build global readership and attention for their work.

Kudos works with publishers, universities, corporations, funders, metrics-providers and other intermediaries to help aggregate efforts around researchers to build impact for their work. By doing so we help strengthen partnerships between researchers and their affiliated organizations and other service-providers.

Kudos is the only platform dedicated to dissemination across the multiple networks and channels available to researchers for sharing information about their work. We are also the only platform that aggregates all the most relevant metrics about that work in one place, and maps outreach activities against those metrics. A recent *study* has shown that

explaining and sharing via Kudos takes on average 10 minutes and leads to 23% higher growth in full-text downloads (<https://www.growkudos.com/about>).

Kudos helps us to

- Tell the story of your research
- Showcase your research, build a global audience across multiple sites and track readership and engagement – all from one powerful platform.
- Kudos helps the research community communicate for impact, to ensure that knowledge is found, understood and applied by a broad audience.

OBJECTIVE

To demonstrate how to create your profile in KUDOS and what can be done in Kudos to enhance your research visibility

METHODOLOGY

The Kudos website was used by the researchers to create a profile. A self-experimental model was adopted by the researcher.

CREATING PROFILE AT KUDOS

Figure 1 : Go to <https://www.growkudos.com/> - the home page of Kudos platform

Figure 2 : Click ' Get Started for free' . The option is available in the home page of the platform.

Figure 3: If you are a registered user, type your email and password and click 'Sign In'. You may even sign in using your facebook, twitter or linkedin account also.

Figure 4: If new to Kudos, click ' Register for free' . Type your first name, last name, mail id, pass word and click ' Create my account' .

Figure 5: You receive a message on your successful

joining of Kudos. Enter you institutional affiliation details. If you don't want, you can skip this.

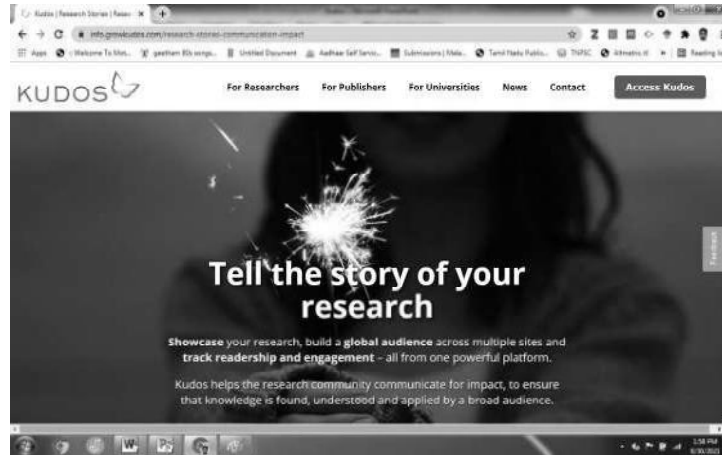


Fig. 1

Some of the research stories our users are telling:



Fig. 2

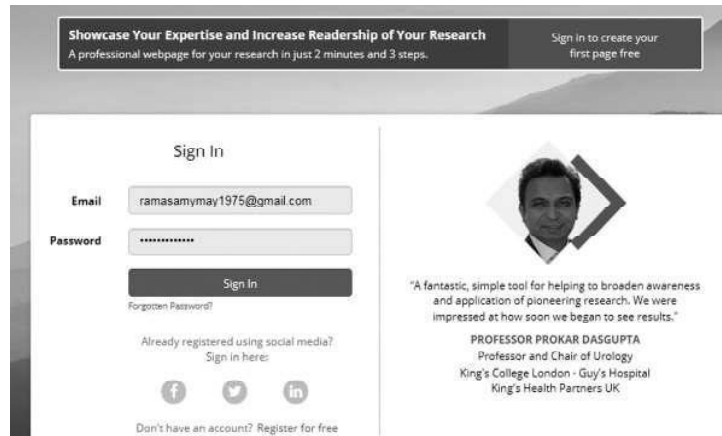


Fig.

Register now for your free Kudos Account.

First Name	Last Name
Email Address	
Choose a password (Min. 4 characters)	
Create my account	

By creating your account you agree to our terms of service.

Already have an account? Sign in now

Fig. 4

Congratulations, you've joined over 380,000 authors and researchers using Kudos to increase the impact of their publications.

Add your institutional affiliation now

Please enter your primary institutional affiliation so we can add it to your Kudos profile

🔍 Type a few words and select your institution from the list

Skip this step

Fig. 5



Fig. 6

Figure 6 : Activation link is sent to your given mail id. Open your mail id and click the activation link to enter into Kudos platform.

Figure7: This is the dashboard of your profile page. Here you can add publications, enter your details and have settings for your pages.

Figure8: Four options are available in the dashboard. A) Publications B) Projects Pro C) Profile and D) Settings. Out of these four items, Projects Pro is meant for the premium users. Free users may use other three options

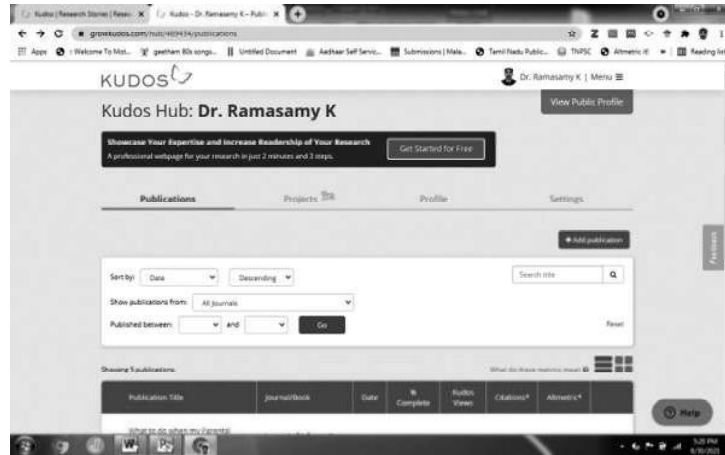


Fig. 7

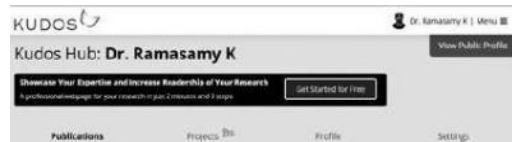


Fig. 8

Public profile



change
Remove

Title:	<input type="text" value="Dr."/>
First name:	<input type="text" value="Ramasamy"/>
Middle name:	<input type="text"/>
Last name:	<input type="text" value="K"/>
Role:	<input type="text" value="Faculty Member"/>
Subject area:	<input type="text" value="Library and Information Science"/>
Country:	<input type="text" value="India"/>

Save

Fig. 9

Figure 9: You can add such information as Title (Mr., Ms., Dr.), First name, middle name, last name, subject area (select from the drop down menu) and country (select from the drop down menu)

Figure 10 : Select the role from the drop down menu (research fellow, reader, professor, lecturer, professor, govt. employee, graduate student etc.). Then, click save.

The screenshot shows a form with the following fields and values:

- Title:** (empty)
- First name:** (empty)
- Middle name:** (empty)
- Last name:** (empty)
- Role:** Faculty Member (selected from a dropdown menu)
- Subject area:** Library and Information Science (selected from a dropdown menu)
- Country:** India (selected from a dropdown menu)

The dropdown menu for 'Role' is open, showing the following options:

- Please Select
- Association or Advocacy group
- Consultant
- Business / Corporate Professional
- Emeritus
- Faculty Member** (highlighted)
- Government Employee
- Graduate Student
- Health Care Professional
- Lecturer
- Media Professional
- Post-Doc
- Professor
- Reader
- Research Associate
- Research Fellow
- Undergraduate
- Other

Fig. 10

Institutional affiliation

Your current institutional affiliation:
**M V MUTHIAH GOVERNMENT ARTS COLLEGE
 FOR WOMEN, DINDIGUL, TAMILNADU,
 INDIA**

Please type your institution name so we can
 add it to your Kudos profile.

Institution name

Fig. 1

Figure 11: Once the basic data is filled, we can search for our institution. When you type the first few letters of your institution, it appears, If not, the platform prompts you to type the name of the institution. If you type the name of the institution and click 'Save', then the institutional name will be added to the Kudos profile.











Featured publications

★ Feature publications on your Public Profile. Select publications by clicking the stars on your Publications tab.

Fig. 12

How to find me

Enter links to your public profiles to help readers find your work.

	<input type="text" value="Link to ORCID profile"/>
	<input type="text" value="Link to ResearchGate profile"/>
	<input type="text" value="Link to Academia.edu profile"/>
	<input type="text" value="Link to Mendeley profile"/>
	<input type="text" value="Link to Twitter profile"/>
	<input type="text" value="Link to Facebook profile"/>
	<input type="text" value="Link to LinkedIn profile"/>
	<input type="text" value="Link to Youtube profile"/>
	<input type="text" value="Link to website or blog"/>
	<input type="text" value="Your email address"/>

Save

Fig. 1

Figure 12 : This shows whether you have selected publications by clicking the stars on your publications tab in the dashboard. The featured publications will be shown as separate entities than other items.

Figure13: We can enter links to our public profiles to help readers find your work. ORCID profile, researchgate profile, academia profile, mendeley profile, twitter profile, facebook profile, linkedin profile, youtube profile, our website or blog and email address are the public profiles that can be linked to your Kudos profile.

Figure14: Then, click on 'Settings' menu available on the top portion of the webpage you are currently working. Setting page has five items. The first item is social media accounts. Click and get connected with twitter, facebook and linkedin so that any publication added in kudos profile will be automatically shared in these social accounts.

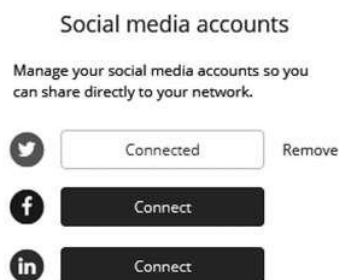


Fig. 14

Figure 15: You may change your email address by entering the new email id and clicking the option 'Change Address'. If you want to change the password of your kudos profile account, you may do so by entering your current password and new password and clicking on the option 'Save'.

Figure16: You can connect your Kudos profile with your ORCID account. If you want to disconnect your kudos profile from ORCID account, that also can be done here by clicking the option 'Disconnect ORCID'. If you want to get email update

on your performance in kudos, guidance to improve your visibility and general news about Kudos, you can check the relevant boxes and click 'Save'.

The screenshot displays two sections of a user profile settings page. The top section, titled "Email address", shows the current registered email as "ramasamymay1975@gmail.com". Below this, there is a text input field labeled "New email" and a "Change address" button. The bottom section, titled "Change password", contains two password input fields: "Current password" and "New password", each with a "show" link. A note below the fields states "Must be at least 4 characters long". A "Save" button is located at the bottom of this section.

Fig. 15

Your ORCID is connected with Kudos

A rectangular box containing the ORCID logo (a circle with 'iD') and the ORCID ID number "0000-0002-7483-4943".

Manually import from ORCID

Email subscriptions

Select which Kudos emails you want to receive. Please note, in certain circumstances, it can take up to 30 days for any changes to affect automated email sends.

- Updates about my work and how it is performing
- Tailored guidance for how I can improve
- General news and updates about Kudos

Save

Fig. 16

Figure 17: Click 'Publications' menu and you will land here. Here, your publications can be added. Your added publications can be searched. The added publications can be sorted by publication title, journal, date, % complete, kudos views, citations and altmetric scores. You can select publications from all journals or from selected journal to be shown in the publication page. You can select to show publications published between any two periods (years).

Publication Title	Journal/Book	Date	% Complete	Kudos Views	Citations*	Altmetric*
☆ What to do when my Parental Organization does not Own a Digital Reposti...	Journal of Information Technology Review	2019	0%	2	0	Metrics
☆ Open Access Institutional Repositories in Malaysia as Registered in Open...	International Journal of Scientific Research	2012	0%	0	0	Metrics

Fig. 17

Publication Title : title of your paper ; **Journal/book** – name of the journal or book ; **Date** – year of publications of th

item; % complete – if all the steps are completed in your profile creation for that particular article, then this becomes 100%; kudos views – numbers of times your kudos profile page (that particular publication) is viewed by the people; citations – citations received and altmetric – altmetric scores for the publication.

ADDING PUBLICATIONS

Click 'Add Publication' button available on the top right corner of the current page.

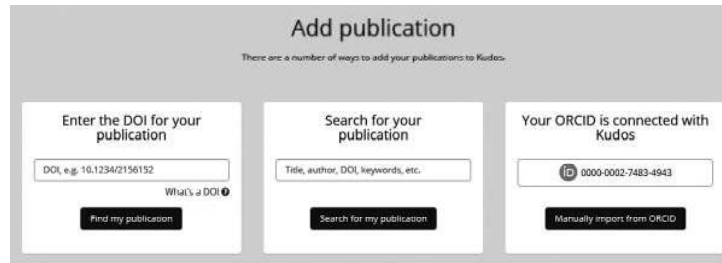


Fig. 18

Figure 18 : There are three ways by which your publications can be added to Kudos : a) By entering the DOI of our research articles b) By searching and fetching your publications by typing the title, names of authors, DOI and keywords and c) By importing publications directly from your ORCID ID.

Figure 19: Enter the DOI of your publication and click 'Find my publication'.



Fig. 1

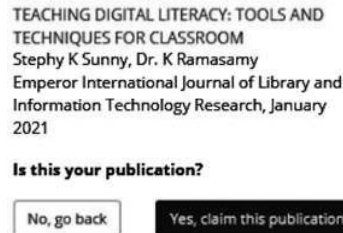


Fig. 20

Figure 20: The concerned paper appears. If that is your publication, click 'Yes, claim this publication'. If that is not your publications, click 'No, go back'.

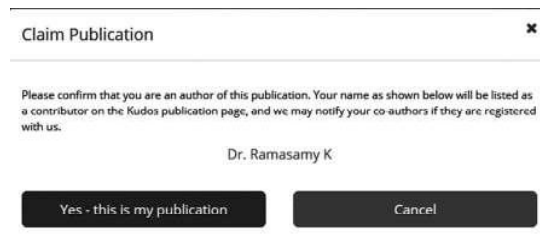


Fig. 21



Fig. 22

Figure 21 : If you clicked 'Yes', confirm it again by clicking 'Yes-this is my publication'.

Figure 22: This is the second method of searching for and adding your publications to Kudos profile. After typing the names of authors, click 'Search for my publication'.

Figure 23 : The publications that match the names you typed appear. If you want to include them into your profile, click 'claim'. If you want to remove any item from your kudos profile (mistaking added previously), click 'Unclaim'. Th

papers with the option 'Unclaim' are the ones that were already added in your kudos profile.

Search for your publication

padma ramasamy Search

Sesamum
Padma Nimmakayala, Ramasamy Perumal, Sujatha Mulpuri, Umesh K. Reddy
Wild Crop Relatives: Genomic and Breeding Resources, September 2010 Claim

Open Access Institutional Repositories in Malaysia as Registered in Opendoar: A Study
Padma, P Padma, P, Ramasamy, K Ramasamy, K
International Journal of Scientific Research, June 2012 Unclaim

Buccal Mucosa Carcinoma: A Comparative Relative Risk Analysis between Tobacco and Non Tobacco Users
Ramasamy Padma
JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH, January 2017 Claim

Fig. 23

Figure 24: All the added publications are now available in your dashboard. Click any one publication.

Figure 25: You will land here with a message to showcase your work to help reach broader audience.

Publication Title	Journal/Book	Date
☆ TEACHING DIGITAL LITERACY: TOOLS AND TECHNIQUES FOR CLASSROOM	Emperor International Journal of Library and Information Technology Research	2021
☆ What to do when my Parental Organization does not Own a Digital Reposito...	Journal of Information Technology Review	2019
☆ Open Access Institutional Repositories in Malaysia as Registered in Open...	International Journal of Scientific Research	2012

Fig. 2

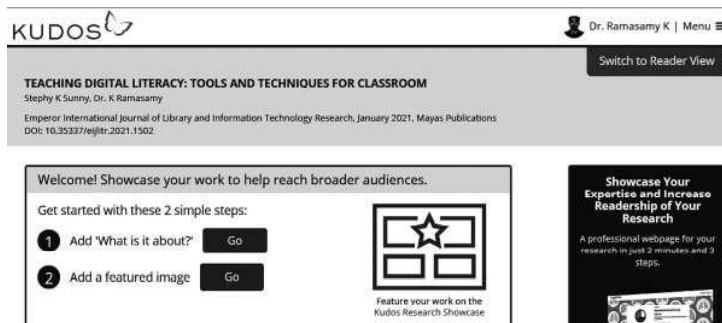


Fig. 25

HOW TO SHOWCASE YOUR WORK?

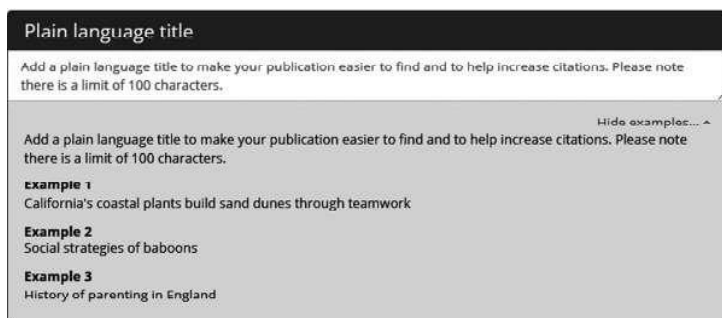


Fig. 26

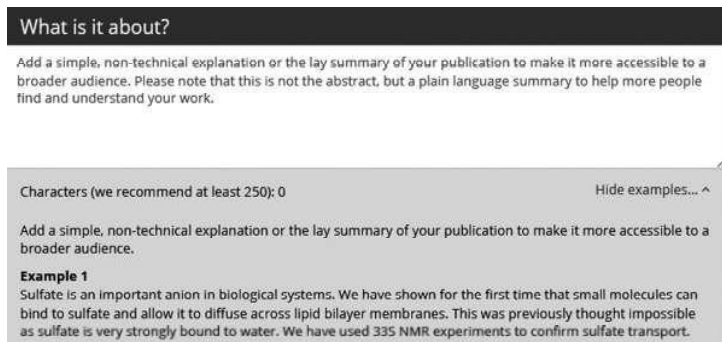


Fig. 27

Figure 26: Give a plain language title so that the readers will be able to understand it without any problem. The actual

title may be complex or technical. But, here we can present our title in a very simple language.

Figure 27: Provide an explanation or simple summary of your paper to make it reach a wider audience. You are not supposed to present the abstract of your paper. You are just writing in layman language an explanation of your work so that the readers are able to find and understand your publications.

Figure 28: Write a couple of sentences on why your work is important. You can give the uniqueness of your work. You can attract the attention of the users on the special features of your work.

Why is it important?

Add an explanation of what is unique and/or timely about your work, and the difference it might make to help increase readership.

Hide examples... ^

Add an explanation of what is unique and/or timely about your work, and the difference it might make to help increase readership.

Example 1
We define rules for determining which of a molecule's conformational options will be adopted in its crystal structure. This is important in crystal engineering, to anticipate crystal packing and engineer crystals to exhibit targeted structures and properties. Two significant findings are that: a) molecules often do not adopt their lowest energy conformer in the solid state and b) we identify and quantify a preference for molecules to adopt extended conformations in the solid state.

Fig. 28

Perspectives

Add your own personal perspective about this publication. Note that this is your opportunity to comment as an individual, whereas the 'What's it about?' and 'Why is it Important?' sections are jointly created by one or more authors.

Hide examples... ^

Add your own personal perspective about this publication. Note that this is your opportunity to comment as an individual, whereas the 'What's it about?' and 'Why is it Important?' sections are jointly created by one or more authors.

Example 1
Writing this article was a great pleasure as it has co-authors with whom I have had long standing collaborations. This article also led to rare disease groups contacting me and ultimately to a greater involvement in rare disease research.

Fig. 2

Figure 29 : You write few lines explaining your perspective on the paper. This is so required especially when you have co-authored the papers with others. This is the place for you to record your own individual perspectives, rather than that of the combined vision of all the authors taken together.

Image

Add a featured image

Add an image to your publication page so we can include it on the Kudos Research Showcase.

This will help more readers find your work and has been shown to increase engagement and readership. Search our image library for an image:

Fig. 30

If you can't find a suitable image, try using a more generic term like abstract, pattern



Fig. 31

Figure 30 : Add an image that suits and best depicts the content of your research paper. Type the keyword and click ' Search ' to get an album of images to choose from

Figure 31: Choose the image you feel very opt to express your article theme / content.

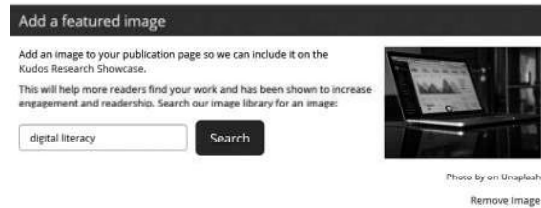


Fig. 32



Fig. 33

Figure 32: Select an image, click save and then the chosen image appears to here with a provision to remove the image, if required.

Figure 33: Share and post papers to multiple channels. We can share our links with twitter, linkedin, facebook, wechat etc. We can share a link of the paper with various social media tools. We can share labels too.

Figure 34: Choose your audience- the geographical area from where you expect the people / researchers to read your paper. If you want the entire globe to read your paper, select all the continents or one or two continents of your choice.

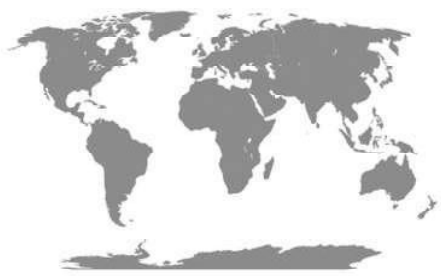
Figure 35: You may add links to online resources. If you want to add links to external resources such as presentations, videos, images, press release, interviews, project, URL, open access version, figures, data sets or related publications, you can do so

Audience

Geographic regions of interest

Make it easier for people to find your work. If your work relates to specific geographic regions, please select them below. If your work is universally applicable, select all geographic regions.

- Africa
- Antarctica
- Asia
- Australasia
- Europe
- North America
- South America
- [Select all](#)



Save

Fig. 34

Resources

Links to online resources

Add external resources such as presentations, videos, interviews, figures, data-sets or related publications

Resource type

Resource title

Resource URL (must start with http:// or https://)

Resource description

Please only link to content that is legally available to be linked to.

Cancel Save

Fig. 3

Choose the resource type (presentation, videos etc., from the dropdown menu), give a title for the resource, give the resource URL, and provide a description of the resource and click 'Save'.

VIEW PUBLIC PROFILE

Click the option 'View Public Profile'

Dr. Ramasamy K | Menu ☰

[View Public Profile](#)

[Edit Public Profile](#)

Dr. Ramasamy K
 M V MUTHIAH GOVERNMENT ARTS COLLEGE FOR WOMEN, DINDIGUL,
 TAMILNADU, INDIA
 Faculty Member, Library and Information Science
 India

My Publications

<p>TEACHING DIGITAL LITERACY: TOOLS AND TECHNIQUES FOR CLASSROOM Emperor International Journal of Library and Information Technology Research January 2021</p>	<p>What to do when my Parental Organization does not Own a Digital Repository?: A Case of ... Journal of Information Technology Review February 2019</p>	<p>Open Access Institutional Repositories in Malaysia as Registered in Opendoar: A Study International Journal of Scientific Research June 2012</p>
---	---	--

Fig. 36

Figure 36: My profile page is ready with all my added publications.

Figure 37 : Click a paper and you will land here. The selected image appears below the publication.

Figure 38 : The information you included for the publication (title in plain language, what is it about, why is it important, your perspective) appears under the image. If the reader is interested, they can click 'Read Publication' to get the full paper

NIRI (National Institutional Repository of IIMs) : A Proposal For an 'IIM-IR Library Consortium
 Padma, P Padma, P, Ramasamy, K Ramasamy, K
 Indian Journal Of Applied Research, October 2011, The Global Journals
 DOI: 10.15373/2249555x/feb2014/77

Institutional Repository for IIMs

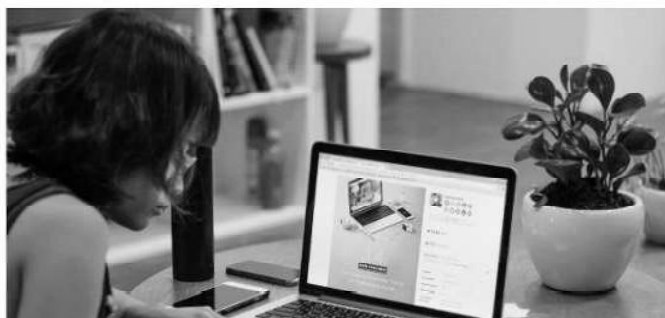


Fig. 37

What is it about?

Steps involved in creating an institutional repository for Indian institutes of managements

Why is it important?

this will act as a base for the faculty members and research scholars to share their knowledge, ideas, current projects and skills

Perspectives



Dr. Ramasamy K
 M V MUTHIAH GOVERNMENT ARTS COLLEGE FOR WOMEN, DINDIGUL, TAMIL-NADU, INDIA

i think this is a good idea to have a repository for all the management institutes - a single-window approach for assimilating indigeneous knowledge

[Read Publication](#)

Fig. 38

PUBLICATION METRICS

'Metrics' button is available for each publication in your dashboard. Click 'Metrics' for above publication and you will get a lot of metrics from Kudos.

Figure 39 : The publication metrics such as number of shares, clicks on shares, views on kudos, clicks on Read publication button, alrmetric score and cross ref citations are given for the selected paper

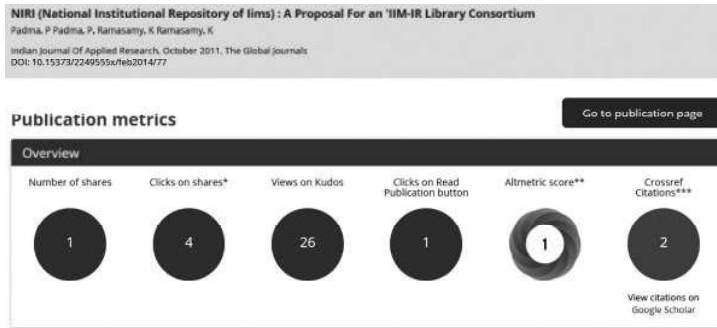


Fig. 39

Figure 40: The cumulative activity reports for the paper have data about full text downloads, abstract views, share referrals, kudos views, action taken by the authors and admin activity.

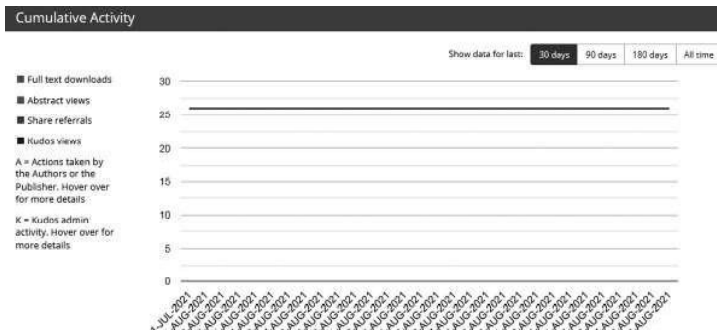


Fig. 40

Figure 41: This shows the altmetric scores for the selected paper. The present paper is tweeted once and has two readers on Mendeley. These scores can be seen for last 30 days, 90 days, 180 days or all time.

URL for public profile : https://growkudos.com/profile/ramasamy_k

URL for admin dashboard : <https://growkudos.com/hub/469454/publication>



Fig. 41

CONCLUSION

Online profile management systems have come into existence to help the researchers to showcase their research productivity to outside world. Kudos is a new, modern and innovative service that can be used by the researchers to add their publications, create links to various profile and social media tools and write a set of pieces of writing so as to enhance their research visibility. It is not just any other profile where you can add more of your personal details and list of all your research works. Kudos goes beyond that. Kudos has only little provisions for including your personal information. But we can add lot of new and interesting things about your research publications such as plain language title, uniqueness of our publications, our perspective of our papers, image, external resources etc., for each and every one of publications in Kudos. These descriptions will propel and motivate more readers to view, download, read, share, tweet and cite your research publications. Use Kudos to create and maintain online profiles for you and your publications and enhance your research visibility.

REFERENCES

<https://growkudos.com/hub/469454/publications>

Kudos – Dr. Ramasamy k – public profile. (n.d.). Retrieved July 8, 2022, from https://growkudos.com/profile/ramasamy_k

Ltd, K. I. (n.d.). Kudos – About. Retrieved July 8, 2022, from <https://info.growkudos.com/about>

Emerging Trends for Sustainable Development in Libraries

A Perspective of Self - Reliant Learning

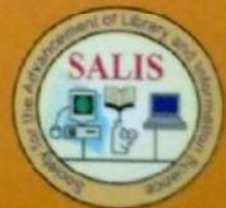
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- ❖ Rev. Dr. D. Thomas Alexander SJ
❖ Dr. T. Raja ❖ Dr. K. Ramasamy ❖ Dr. A. M. Venkatachalam



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(SALIS) Tirunelveli Chapter



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Mr. E. Sugirthakumar

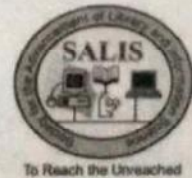
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Society for the Advancement of Library and Information Science (SALIS)
Tirunelveli Chapter

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**OPEN ACCESS ONLINE RESOURCES FOR SUSTAINED PROGRESS:
A STUDY ON MHRD INITIATIVES AS A VIABLE MEANS OF
SELF - RELIANT LEARNING**

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Abstract

The contribution of ICT for Library and Online Reading is overwhelming that "Libraries are the sustainably growing Organisms" would have been the fifth Law of Library Science if it happens to be framed in this Era. The contemporary challenges of library is eased by the open Access Online resources. The technology aids in equal, open access for online resources, national or international learners. The Ministry of Human Resource Development of Government of India has thoughtfully designed Online Open Access Initiatives for the immense benefit of the Education and Research community of the country. EPgPathshala, Shodhganga, SWAYAM, CEC and NDLI are some of the initiatives which can be used by any person, any time and through any device which helped the whole nation to cross the pandemic period efficiently. This paper analyses and compares the MHRD initiatives and its access in the past five years in India with the help of Google Search Trends. It throws light on the search pattern which indicates improved self-reliant learning.

Keywords – MHRD Initiatives, Online Reading, Open Access Initiatives, and self-reliant Learning.

Introduction

As every country's progress lies on the knowledge base and its efficient and effective usage by the citizens, the Ministry of Human Resource Development of Central Government started recognizing for open access initiatives since 1984. The Consortium for Educational Communication or CEC is the foremost initiative of UGC to provide educational and informational services through electronic media at its early phase and now through web. Each Initiative has been designed with a futuristic insight and gradually brought out for the public use with the help of ICT tools. The rich resources in every initiative are open and free to all, irrespective of Age, Gender, Religion or Educational Background. These initiatives collectively contribute to achieve the goal of any kind of country thus the sustained development of Library is ensured. The search trends of these resources in the country during the past five years is compared and analyzed. The access of the resources through Google search engine in Tamil Nādu is highlighted.

MHRD and its Initiatives: An Overview

The Ministry of Human Resources and Development focuses on the upgradation and skilling of the citizens. The Ministry has always strived to reach the mass to provide information services at its best. ICT opened new avenues to provide services in zero cost. As per the chronological order, UGC-CEC is the first ever initiative for Information/knowledge services.

AVOIDING LINK ROT WITH PERMA.CC: A HEURISTIC APPROACH

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Abstract

Perma.cc is a web tool that can be used by the researchers and faculty members to preserve the web pages referred by them in their academic and research works by creating a permanent link to those web pages. The present study gives an introduction about the non-available web links (Link Rot) and illustrates a step by step procedure to create link for both individual web pages and group of web pages in Perma.cc with relevant screenshots. Self-exploration method was adopted by the researcher.

Keywords : Link rot ; Perma.cc ; Preserving Web Pages ; Broken Links

Introduction

Whatever related literature was used by the researchers and faculty members in their research works are to be properly cited i.e. acknowledged in a given style both as in-text citation and as a reference. Researchers use a lot of web resources these days including web pages of prominent sites. The links of these webpages are added in the list of references. If these web pages are removed or migrated or broken or damaged, the readers will not be able to access those webpages referred by the researcher. So, different mechanisms are used by the researchers to ensure that the links to the select web pages are permanently available. Perma.cc is one such tool that can be effectively used by the research community to preserve the required webpages.

Link rot (and "reference rot") happens when you cite to an online source that later disappears or changes. It's a big problem, especially for academic scholarship and judicial opinions, which depend heavily on citations to stable sources that readers can access. For example, a study conducted by researchers at Harvard Law School found that more than 70% of the links in a sample of law journals and 50% of the links in Supreme Court opinions no longer work.

About Link Rot

Link rot is a slang term for hypertext links that are broken. Link rot is created when a Web page is moved, taken down or reorganized. Clicking on a rotten link usually results in a 404 error, which includes a message that the page cannot be found. Link rot, also spelled linkrot, is also referred to as link death or links to nowhere.

About Perma.cc

Perma.cc is a service that helps prevent link rot. We can use it to preserve the online sources we cite and to make those records accessible to our readers.

How does Perma.cc work?

We can give Perma.cc the URL of the page we want to preserve and cite. Perma.cc software visits that URL, preserves what's there, deposits it into their collection, and gives us a unique URL (e.g. "perma.cc/XYZA-9876") - a "Perma Link" - that points to the record in their collection.

We then can use that Perma Link in our citation to give readers access to a stable, accurate record of the source we referenced, even if the original disappears from the web.

VISUAL LITERACY EMPOWERED LMS AND CMS FOR INFORMATION RETRIEVAL

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Abstract

The Learning Management System (LMS) is a software application that helps educators manage and deliver content and track student progress. The Content Management System (CMS) is a software application that helps organizations manage their digital content. One of the key features of these systems is their ability to support information retrieval and visual literacy. On the other hand, visual literacy refers to the ability to interpret and understand visual information. Visual literacy abilities could be learned, taught, and developed using the periodic table of visualization. The VL has the capability to read/ write, encode/ decode, to think/ interpret information visually

Keywords : Visual Literacy, LMS, CMS, Information retrieval

Introduction

The aptitude to read, write, and think critically regarding information is defined as information literacy. It is a vital skill that everyone requires in order to succeed in school, at work, and in life. The American Library Association produced the information literacy standards, which are utilized by educators across the country. Visual literacy abilities may be taught using the periodic table of visualization. Everyone may learn how to detect and evaluate visual information by looking at the various items in the table.

The Learning Management System (LMS) is a software application that helps educators manage and deliver content and track student progress. It is often used in online learning environments, but can also be used in face-to-face classrooms. The Content Management System (CMS) is a software application that helps organizations manage their digital content. It includes tools for creating, editing, organizing, and storing content. It can be used to manage website content, documents, and other digital assets. Both LMS and CMS have different features and functionality, but they share some commonalities. Both systems can be used to create, edit, and store digital content. With the advent of the internet and digital media, more and more people are turning to online sources for their information needs. This shift has had a major impact on libraries and the way they operate.

Review of Literature

"Avgerinou's research study (2001a & b, 1999) yielded 11 VL abilities, as follows: Visualization, Critical Viewing, Visual Reasoning, Visual Discrimination, Visual Thinking, Visual Association, Visual Reconstruction, Constructing Meaning, Re-Constructing Meaning, Knowledge of Visual Vocabulary & Definitions, and, Knowledge of Visual Conventions."

"In the Miller-Young and Bowman (2017) study, faculty members from diverse disciplines were interviewed and the transcriptions were qualitatively analyzed for common themes. These themes were collapsed into three main overarching categories: ways of thinking, ways of practicing, and ways of being (Miller-Young and Bowman 2017)."



Rev. Dr. D. Thomas Alexander S.J. Principal, SXCE

Rev. Dr. D. Thomas Alexander, currently working as Principal of St. Xavier's College of Education (Autonomous) has twenty two years of experience as teacher educator. Earlier he has served as the Director of Alumni Association of SXCE, Director of Fr. Ursard Library and Director of Jesuit Council for Educational Research and Training before assuming the present position. He has also served as member of NAAC, University and Government inspection committees. He is instrumental in making SXCE an autonomous and the minority institution. He has published more than 50 articles / papers as author / Co-author and he has also edited monographs for 10 seminars. He was the Convener of many UGC sponsored Seminars and Workshops. He has been the most sought after Resource person for Seminars / Youth related Workshops / Camps / University Refresher Courses. His areas of interests are: Moulding the prospective youth / teachers in commitment, compassion and competence (as a different / unique teacher), personality development programme, soft skills and social analysis. He serves as the member of academic and governing bodies of many colleges and presently serves as managing editor of the UGC-CARE-Listed journal on Research and Reflection on Education (RRE) of the college.



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Dr. A. M. Venkatachalam, President, SALIS Director (Library) K.S. Rangasamy College of Technology, Tiruchengode

Dr. A.M. Venkatachalam is currently working as a Director (Libraries), K.S.R Educational Institutions and Librarian & Director (Library & Student Affairs), K.S.Rangasamy College of Technology, Tiruchengode. He has 20 Years of experience as College Librarian and 5 Years experience of Director of Libraries. He did his doctorate in Library and Information Science at Alagappa University, Karaikudi. He is the recipient of Tamil Nadu Best Young Librarian Award (2009), SALIS -Best Librarian Award (2022), SALIS-Best Extension Service Award (2022). He has published 15 Technical papers in International and National journals. He has Presented 54 Technical Papers and attended more than 40 International, National Conferences, seminars and Workshops. He has organized National Conference and received the grant from DRDO, RRRLE. He has served as the editor and Associate Editor of Various conference proceedings. He has also served as the Associate Reporter General of various national conferences. He has served as the Chair person and Session Rapporteur in Various Conferences and seminars. During his service in KSR Institutions, he organized 185 + programme in 8 years. He also organized 4 State Level Readers Conclave. He is a gold Medalist in Undergraduate level. His area of interest is Resource Sharing and Networking. He is a life member of various professional bodies. Apart from his academic career, he is also running a NGO in the name of "Namathu Bharatham Trust" in his native and he is serving the needy people.



.....
S. Vijayalakshmi
Savita
Balamurugan Balusamy
Rajesh Kumar Dhanaraj *Editors*

AI-Powered IoT in the Energy Industry

Digital Technology and Sustainable
Energy System

 Springer

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Chapter 13 Powering the Geothermal Energy with AI, ML, and IoT



K. Ezhilarasan and A. Jeevarekha

Abstract
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Keywords
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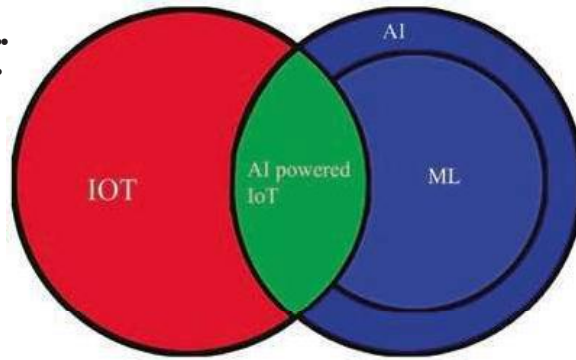
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Fig. 13.1



13.2 Highlights of AI, ML, and IoT

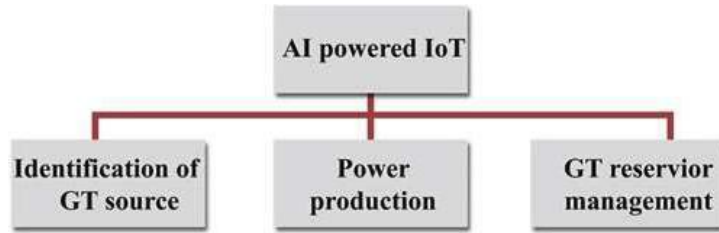
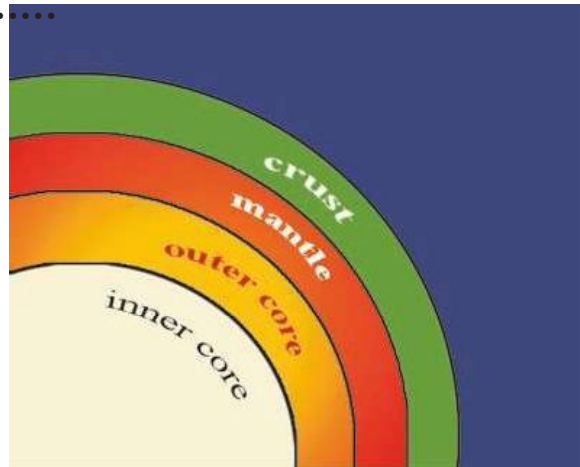


Fig. 13.2

13.3 Overview of GT Energy

Fig. 13.3



13.4 Hotspots of GT Energy

13.5 Power Production

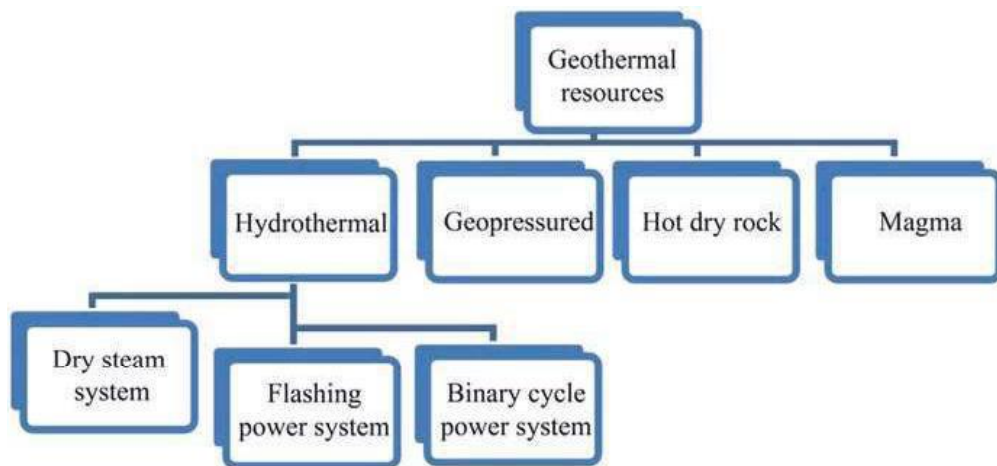


Fig. 13.4

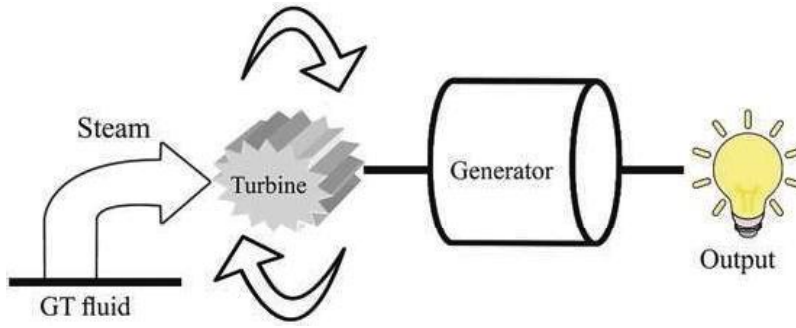


Fig. 13.5

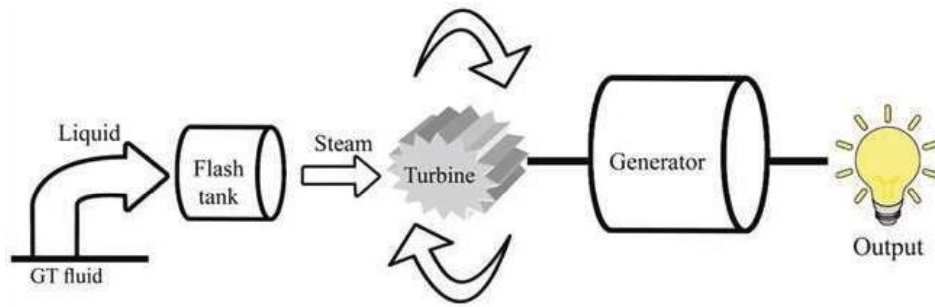


Fig. 13.6

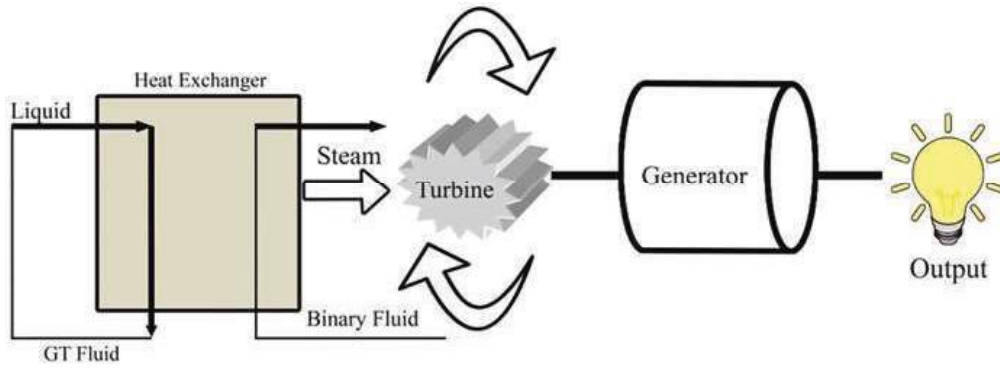


Fig. 13.7

13.6 Advantages and Disadvantages

13.8 AI-Powered IoT

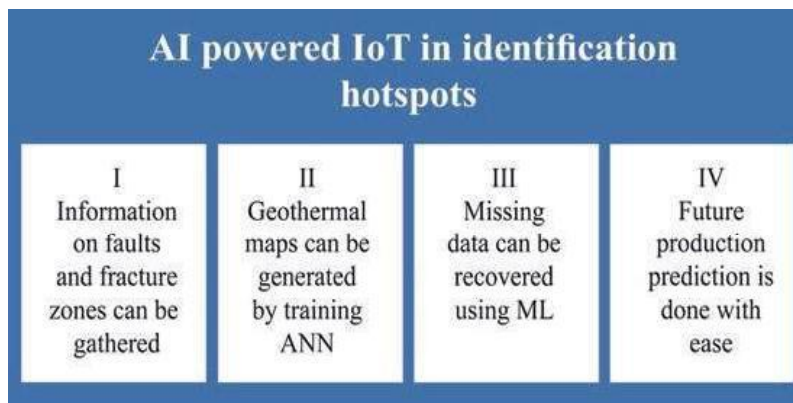
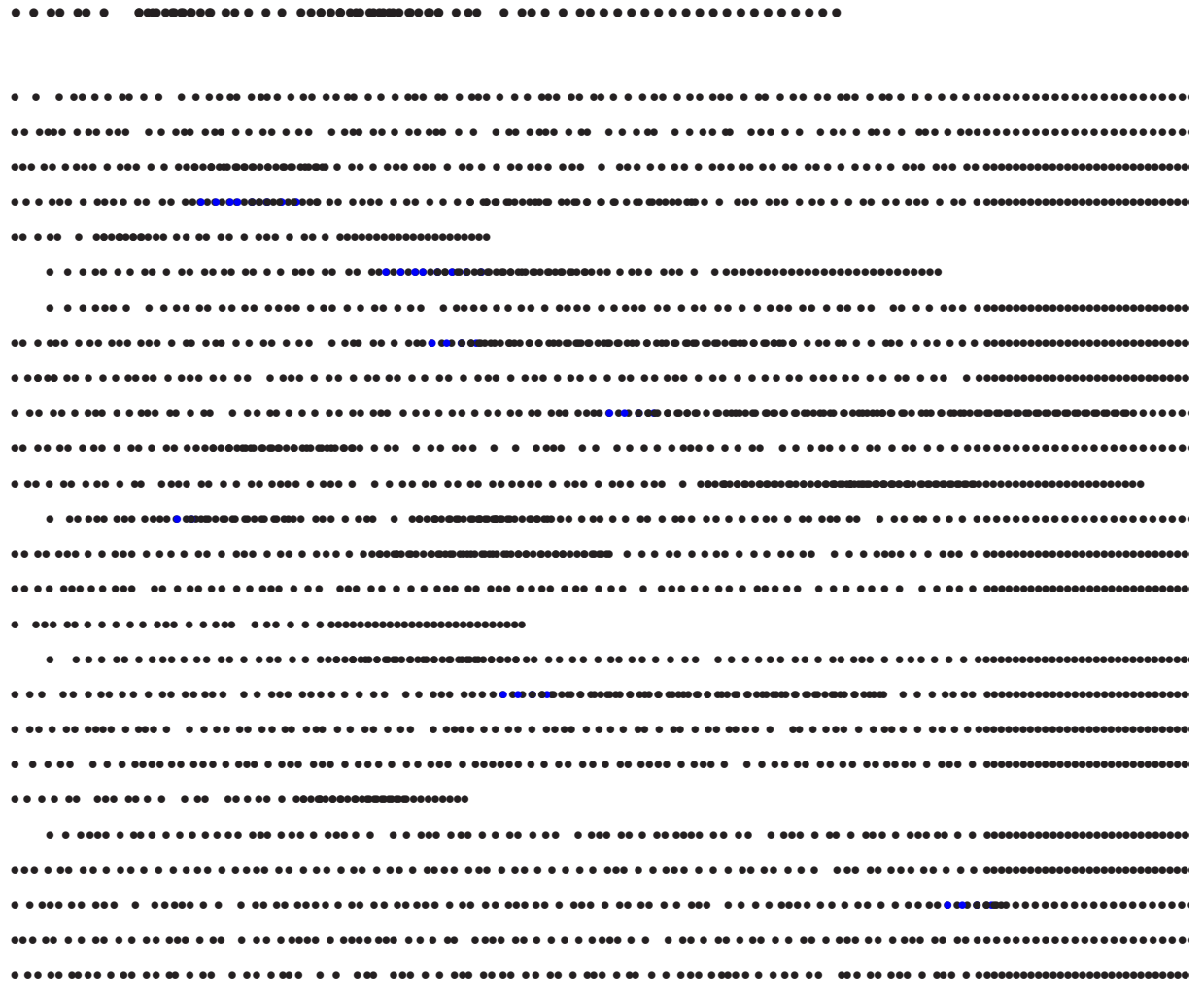


Fig. 13.8

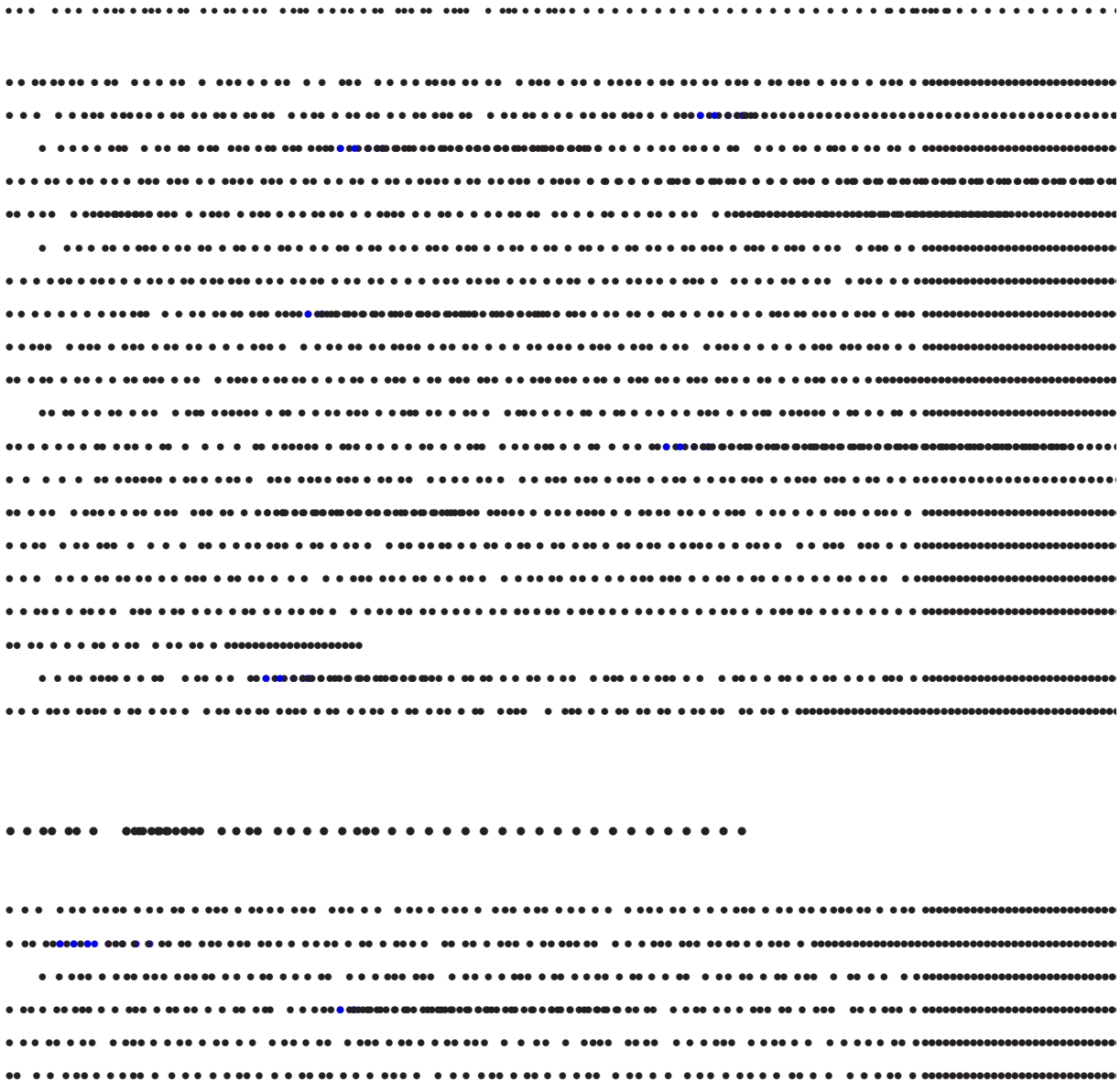
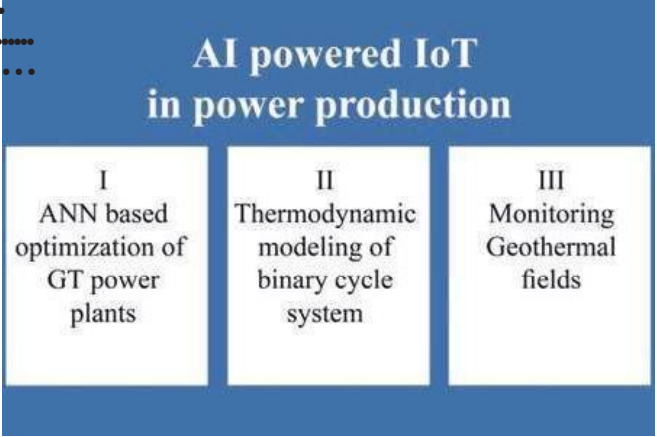


Fig. 13.9



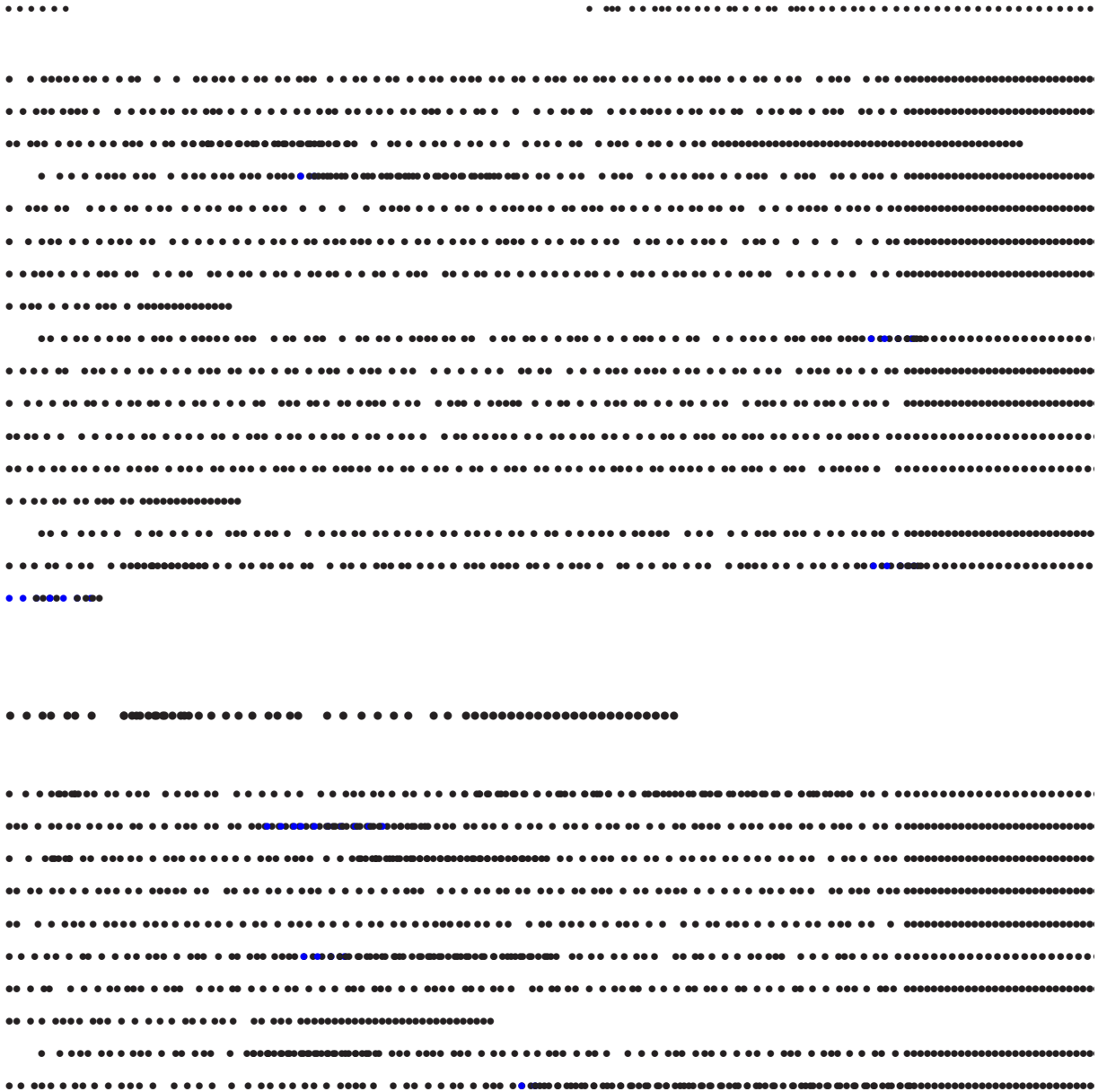
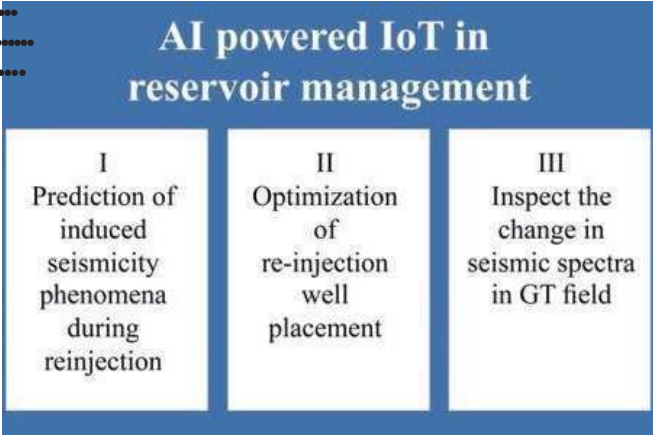


Fig. 13.10



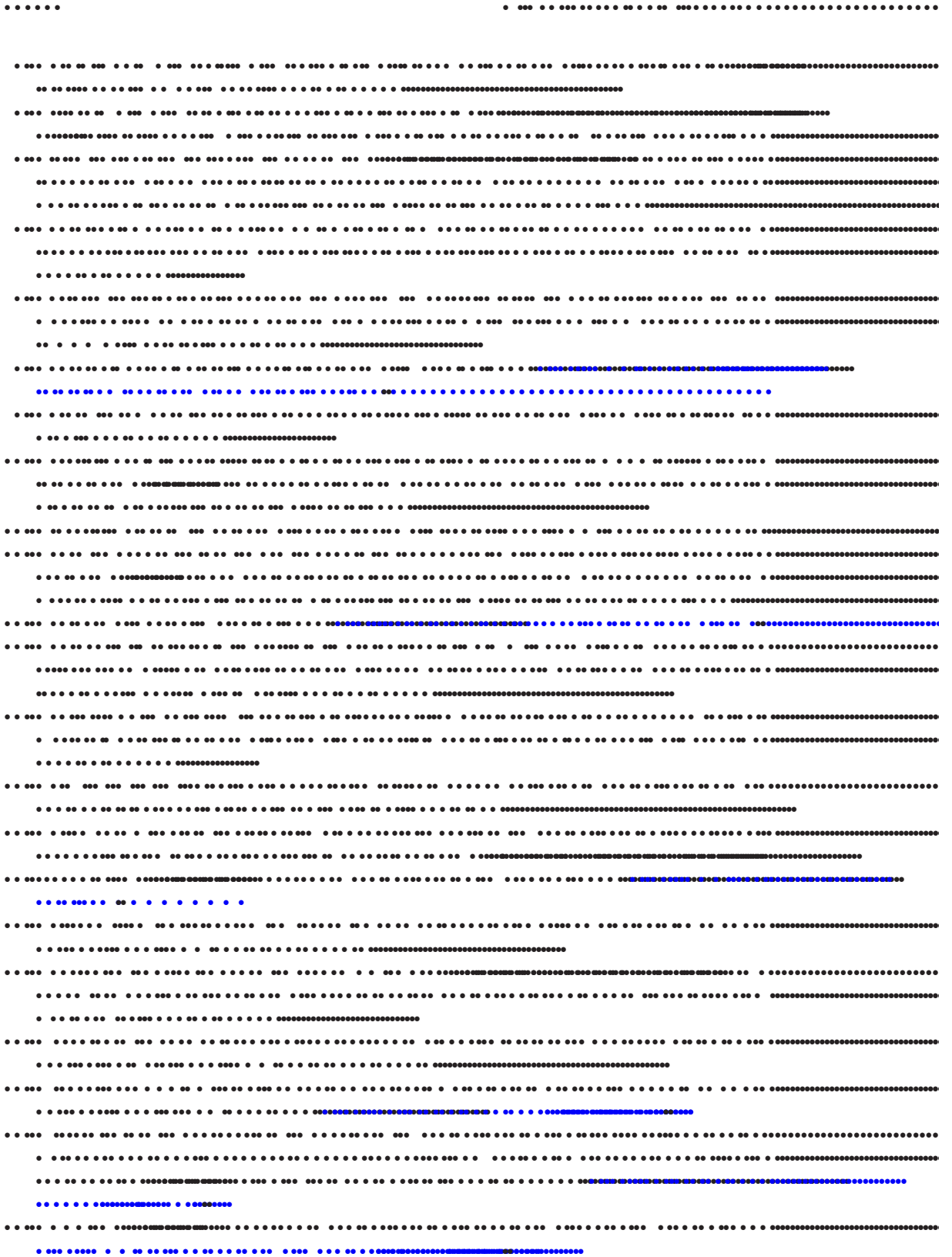
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13.9 Conclusion

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A. Jeevarekha-
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**PROCEEDINGS OF THE
INTERNATIONAL CONFERENCE**

On

**RECENT INNOVATIONS IN APPLICATIONS OF
MATHEMATICS**

26th July 2023

Organized by

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VERTEX COLORING OF GRAPH USING INCIDENCE MATRIX

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Abstract

Graph coloring is one of the potential area of research in Graph theory. The vertex coloring problem is one of the fundamental problem on graphs which often appears in various scheduling problems like file transfer problem on computer networks. Various algorithms for vertex coloring, edge coloring, total coloring etc., are described by various researchers. In this paper, a simple approach is proposed to color all the vertices of a graph with the minimum number of colors. This approach help us to find chromatic number of a graph using incidence matrix.

Keywords: Vertex coloring, Chromatic number, Incidence matrix.

2010 AMS Subject Classification: 05C15

1. Introduction

A graph is an abstract structure which consists of vertices and edges, each edge joins two vertices called ends of the edge. It can be used to represent various combinatorial or topological structures that can be modelled as objects and connections between those objects. A graph structure is very suitable for representing relationships between objects in the abstract, and a large number of combinatorial problems can be modelled as problems on the graph structure [11].

In Graph theory, coloring is an important area which has been extensively studied. Coloring theory started with the problem of coloring the countries of a map in such a way that no two countries that have a common border receive the same color. If we denote the

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countries by points in the plane and connect each pair of points that correspond to countries with a common border by a curve, we obtain a planar graph. The celebrated Four Color Problem asks if every planar graph can be colored with four colors. It seems to have been mentioned for the first time in writing in an 1852 letter from A. De Morgan to W.R. Hamilton. Nobody thought at that time that it was the beginning of a new theory. The first proof was given by Kempe in 1879 [12]. The fundamental parameter in the theory of graph coloring is the chromatic number $\chi(G)$ of a graph G which is defined to be the minimum number of colors required to color the vertices of G in such a way that no two adjacent vertices receive the same color. If $\chi(G) = k$, we say that G is k -chromatic. The edge-coloring problem is to color all edges of a given graph with the minimum number of colors so that no two adjacent edges are assigned the same color [10].

2. Preliminaries

Some basic definitions and their remarks are presented in this section to understand this approach in a better way.

2.1 Definition

Painting all the vertices of a graph with colors such that no two adjacent vertices have the same color is called the *proper coloring* or simply *coloring* of a graph.

A graph in which every vertex has been assigned a color according to a proper coloring is called a *proper colored graph*. A graph G that requires k different colors for its proper coloring, and no less, is called a *k – chromatic graph*, and the number k is called the *chromatic number* of G and is denoted by $\chi(G)$ [4].

2.2 Definition

Let G be a graph with n vertices and m edges. *The incidence matrix* $A(G)$ is defined by $A(G) = [a_{ij}]$ where,

$$\begin{aligned} [a_{ij}] &= 1, \text{ if } v_i \text{ is incident with } e_j, \\ &= 0, \text{ if } v_i \text{ is not incident with } e_j \end{aligned}$$

Note:

- A graph consisting of only isolated vertices is 1 – chromatic.
- A graph with one or more edges (not a self – loop) is at least 2 – chromatic.
- A complete graph of n vertices is n – chromatic.
- A graph consisting of simply one circuit with $n \geq 3$ vertices is 2 – chromatic if n is even and 3 – chromatic if n is odd.

2.3 A simple approach for graph coloring

Several authors developed algorithms for vertex coloring, edge coloring, total coloring etc., using different approaches. In this section a new algorithm for vertex coloring using incidence matrix is presented in detail.

Algorithm:

Step 1:

Construct an Incidence matrix for the given graph.

Step 2:

Find the sum of the elements in each row of the matrix. Select the row that has maximum value.

Step 3:

Case (a)

If the maximum value is unique, then go to step 4.

Case (b)

If there is a tie in the maximum value, select anyone arbitrarily and go to step 4.

Step 4:

Assign new color to the vertex corresponding to the row of the identified maximum value and delete the row then go to step 5.

Step 5:

Look for the columns with single ones in the reduced matrix and mark the row associated with single ones then strike off the columns.

Step 6:

Select the vertices associated with the unmarked rows in the reduced matrix obtained in step 5.

Case (a)

If there is no unmarked rows then go to step 2.

Case (b)

If there is only one unmarked row assign the same color to the vertex and delete the corresponding row and columns with single ones. If there is no column in the reduced matrix assign new color to the remaining vertices and stop the process. Otherwise go to step 2.

Case (c)

If there are more than one unmarked rows in the reduced matrix then check the degrees of the vertices associated with each unmarked row. Assign same color to the vertex which has maximum degree and delete the row then go to step 5. Repeat the process until all the vertices have been colored.

Illustration:1

Consider a graph with 6 vertices and 9 edges as shown in the figure 1. Find proper coloring of a graph using the above algorithm.

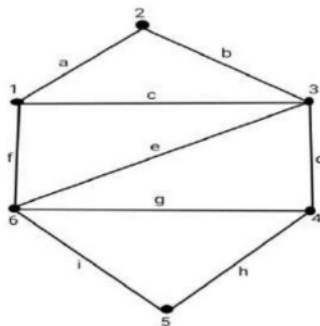


Figure:1 (6,9) graph

Solution:

As per the first and second step of the algorithm construct an incidence matrix and compute the sum of the elements in each row of the corresponding matrix is shown in the table 1.

Table 1: Incidence matrix of (6,9) graph

	a	b	c	d	e	f	g	h	i	deg
1	1	0	1	0	0	1	0	0	0	3
2	1	1	0	0	0	0	0	0	0	2
3	0	1	1	1	1	0	0	0	0	4
4	0	0	0	1	0	0	1	1	0	3
5	0	0	0	0	0	0	0	1	1	2
6	0	0	0	0	1	1	1	0	1	4

Table 1 shows that the maximum value is 4. By case (b) of step 3, there is tie in the third and sixth rows and the associated vertices are 3 and 6 respectively. Select anyone arbitrarily. Let us choose third row and the corresponding vertex is 3. By step 4, assign new color (say Red) to the vertex 3 and delete that row. By step 5, the columns ‘b’, ‘c’, ‘d’ and ‘e’ have single ones associated with the vertices 1,2,4 and 6. Strike off the columns and neglect the marked vertices. By step 6, select the unmarked vertex 5. By case (b) of step 6, there is only one unmarked row in the reduced matrix. Assign the same color (say Red) to the vertex 5, delete the corresponding row and columns with single ones say ‘h’ and ‘i’. Again by step 2, the reduced incidence matrix and the sum of the elements of each row of the uncolored vertices are given in table 2.

Table 2

	a	f	g	deg
1	1	1	0	2
2	1	0	0	1
4	0	0	1	1
6	0	1	1	2

Table 2 shows that the maximum value is 2. By case (b) of step 3, there is tie in the first and fourth rows and the associated vertices are 1 and 6 respectively. Select anyone arbitrarily. Let us choose first row and the corresponding vertex is 1. By step 4, assign new color (say Pink) to the vertex 1 and delete that row. By step 5, the columns ‘a’ and ‘f’ have single ones associated with the vertices 2 and 6. Strike off the columns and neglect the marked vertices. By step 6, select the unmarked vertex 4. By case (b) of step 6, there is only one unmarked row in the reduced matrix. Assign same color (say Pink) to the vertex 4 and delete the corresponding row and columns with single ones say ‘g’. The remaining vertices 2 and 6 are distinct and there is no columns in the reduced matrix. By step 4, assign new color (say Green) to vertices 2 and 6. The resulting graph is shown in figure 2.

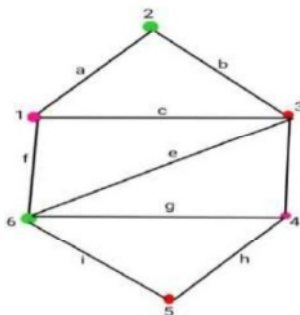


Figure:2

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By the proposed method, the vertices of a given graph is colored with minimum three colors and its chromatic number is 3.

3. Conclusion

In this paper we have presented a simple approach for finding chromatic number of a graph using incidence matrix. The illustration discussed here can clearly indicate the perfection of the simple approach for proper coloring of given graphs. Further a computer based algorithm can be developed in future by using any computer languages which will make more easier to color any larger size of graphs.

References

- [1] Amit Mittal, Parash Jain, Srushti Mathur, Preksha Bhatt, Graph coloring with minimum colors an easy approach, In the proceedings of the 2011 International conference on communication systems and network technologies, (2011) 638 – 641.
- [2] Br'elaz. D, New methods to color vertices of graph. Communications of the ACM 22, 251-256. (1979).
- [3] Charu Negi, Ajay Narayan Shukla, Vertex coloring problem approach using adjacency matrix, International journal of engineering technology science and research, 4(12) (2017) 97 – 101.
- [4] Dr.T.Ramachandran, “Vertex Coloring of Graph Using Adjacency Matrix” etal. Journal of Engineering Research and Application, ISSN:2248-9622, Vol. 10,Issue 4,(Series -V) April 2020, pp. 01-05
- [5] Hertz, A. and D. de Werra (1987), Using tabu search techniques for graph coloring Computing 39(4), 345-351.
- [6] Johnson, D. S., C. R. Aragon, L. A. McGeoch, and C. Schevon Optimization by simulated annealing: An experimental evaluation; part II, graph coloring and number partitioning, (1991, May-June).
- [7] Johnson, D. S., C. R. Aragon, L. A. McGeoch, and C. Schevon, Optimization by simulated annealing: An experimental evaluation; part II, graph coloring and number partitioning. Operational Research 39(3), 378-406, (1991, May-June).

Proceedings of the International Conference on Recent Innovations in Applications of Mathematics (ICRIAM 2023) – 26th July 2023

[8] J. A. Bondy, U. S. R. Murty, Graph theory with applications, The Macmillan press limited, Great Britain (1976).

[9] Nysret Musliu, Martin Schwengerer, Algorithm selection for the graph coloring problem, 1-15.

[10] Shin-ichi Nakano, Xiao Zhou and Takao Nishizeki, Edge-Coloring Algorithms, Graduate School of Information Sciences Tohoku University, Sendai 980-77, Japan

[11] Tina beseri, Izmir Institute of Technology, Turkey, Edge coloring of a graph, July, 2004.

[12] Vitaly I. Voloshin Troy University, Troy, AL Invited Lewis-Parker lecture at the annual meeting of AACTM; Jacksonville State University; Jacksonville, AL; Graph Coloring: History, results and open problems February 28, 2009

ICISH 004

Optimization of Fuzzy integrated Inventory model with green technology using Kuhn-Tucker approach

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Abstract: This paper derives an integrated inventory model with shortage, Carbon Emission and Green Investment in a fuzzy environment. A green investment is used to limit carbon emissions, we tried to obtain optimal cost relative to optimal lot size and Effect of controlling carbon emissions using fuzzy Kuhn-Tucker method. The models are analysed based on several cost components and evaluated using numerical examples.

Keywords: Kuhn-Tucker method, optimization, fuzzy

ICISH 015

An Inventory model with time dependent demand and partial backorder using Lagrange Method

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Abstract: In this paper, we study an inventory model for items that have a power demand and where shortages are allowed. Some of inventory parameters are appropriated heptagonal fuzzy numbers. The objective of this paper is to maximize the return on inventory investment defined as the ratio of the profit per unit time over the average inventory cost. Further to achieve the optimal solution using Lagrange method. These optimal solutions that maximize the return on inventory investment are, in general, different from those that minimize the total inventory cost per unit time. Finally, a numerical example of the optimal inventory model with respect to the system input parameters are given to the proposed model.

ICISH 016

Minimal Split Domination number of some special graphs

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Abstract: In this paper, presented the idea of minimal split dominating set in a graph $G(V,E)$. A set S of vertices of G is a split dominating set of G 's, if the sub graph $\langle V-S \rangle$ is not connected. A minimal split dominating set in a graph G is a split dominating set that contains no split dominating set as a proper subset. A minimal dominating set of minimum cardinalities is a minimum split dominating set and consists of $\gamma_{SD}(G)$ vertices and further investigate the split dominating set and split dominating number of various special graphs like Bidiakis cube, Durer graph, Golomb graph and etc.