The Pandemic Situation: Impact on Information Services in Indian higher education and digital transformation

Dr Neena Singh

G. B. University of Agriculture & Techn
Pantnagar, Uttrakhand, India
Email: nshill6@gmail.com

Abstract

The covid-19 crises has also brought new dimension, change in life style and work flow of people which is likely to remain a reality and part of our lives for some time, therefore addressing change and working in protected environment is going to be an important activity for libraries. The paper discusses the efforts made by Indian libraries in higher education to connect with the academic community through various online tools e-resources and remote access to address the change in pedagogy. The article also looks into the impact of changed situation on physical libraries, digital transformations, increased digital activity, expanding online services, creating awareness on freely available digital content and remote accessibility. Discusses the need for information literacy skills, and dealing with fake news/information that have been flooding during the pandemic, and the significance of social network sites for engaging the student community. The paper further looks into some of the challenges and how these can be transformed into opportunities to add new paradigm and bring innovative services in digital environment with special reference to Indian libraries. The author also highlights that Covid-19 pandemic like situation has given some crucial lessons for libraries to learn, like have plans and preparedness to handle library services from remote locations, have rich digital collection, dedicated web pages, good access to online platforms and also be more vocal for local information products.

covid19 , Corona -library resources; Challenges and opportunities- covid library services

Introduction
The Covid-19 pandemic across the world led to lockdown in several countries including India causing worst ever situation to academic institutions and knowledge resources. Libraries being central to academic have been facing very different situation broadly from managing restricted / full services earlier to complete closure amid pandemic scenario. Following National Government regulations libraries have either been forced to close or have chosen to close following risks to patrons and their staff. The situation is uncertain and unclear as to when it will be fully functional as before; though reopening is being initiated by many institutions with restrictions.

In this situation, the knowledge centers / libraries have to work hard to provide access to collections and services remotely and look into innovative ways to deliver services, expand online resources and provide patron support. Sincere efforts to promote digital content, access to digital libraries and open access resources is being encouraged to engage the patrons in the difficult times.

Though several information or reporting on functioning or role of digital libraries in pandemic may be available in media or news periodicals though scattered, scholarly articles are very few considering the fact that as we are still in the pandemic situation and many studies are in progression. This article tries to fill in the gap by highlighting the initiatives and innovations from professional point of view. The purpose of this article is to highlight the efforts made by the librarians/knowledge managers to promote information and library services amid the lockdown in India and what innovative approach or measures could be used to innovate and improve provision the services through different approaches in the uncertain situation. Data and information has been collected and analysed from sources like university websites, websites of Ministry of Human Resources and Development (MHRD), University Grants Commission (UGC), published reports, and latest periodicals.

It appears that this pandemic is unlikely to go completely in months to come, therefore libraries, would have to plan phase‑wise

reopening and restarting their library spaces keeping in view the government regulations of social distancing and other precautions of health norms, sanitization etc to deal with covid-19. The current leadership of the country has clearly stated that we have to keep moving the economy along with fighting against Covid-19 situation. In words of Mr. N. Modi, PM India, the nation has to deal with both aspects of life "Jhaan bhi aur jhaan bhi" (Life as well as the world), (1) and we cannot let our lives remain confined to around covid situation only.

The Covid-19 situation has not only brought paradigm changes in functioning of libraries but also a challenging situation before knowledge managers to rethink about expanding their online services and pay greater attention to the digital contents while not ignoring the physical resources. Libraries need to work closely to innovate and collaborate with partner libraries to transform digitally and bring out the best for their patrons to stay digitally connected. The author discusses some of the efforts made by Indian libraries of higher education.

Endeavours to Stay Connected

The libraries in higher education across India have been coping with the covid-19 situation in different ways to keep their patrons connected to learning resources despite all odds. When physical libraries were closed during lockdown or partially open during the unlock period with restrictions, efforts were made to make virtual resources accessible to support online classes/teachings. Lockdown, worldwide has increased the engagement of the information professionals and is a driving force for innovation and new ideas.

Library WebPages

The current covid-19 situation has impressed upon libraries to rethink and reorganized their learning resource much more digital focused than ever before. Such global pandemics have always given humanity some insight and scope to make improvements in future, how to deal with common challenges and at the same, time look into their strengths and opportunities. It's not all gloom and doom for the library community and its users, while physical

resources may have been closed, libraries can still offer wealth of digital content for those who have internet access elsewhere. (2) Smart phone/ mobile devices are a boon to access digital content from almost everywhere remotely even for those who do not have access to computer devices at home.

As classes goes online in pandemic, libraries looks for innovative channels to support teaching and stay connected with patrons. Indian libraries/ knowledge canters have been making some genuine efforts to stay digitally connected with their patrons and to support online teaching. Some libraries for example National Institute of Technology, Karnataka,(3) Indian Institute of Technology, Delhi,(4) and Madras (5) have highlighted open access resources on Covid-19 in their library websites, besides links to other open access resources provided by notable publishers like Oxford University Press (6) Willey Resources,(7) Tailor and Francis (8) etc. have also been provided to ease accessibility from home and remote locations.

Library webpage of National Institute of Technology, Karnataka

While some libraries did not emphasis their services and online resources through "dedicated library pages" during

pandemic, other have been proactive especially the libraries of Indian of Institutes of Technology (IIT) for example library of IIT Gandhinagar has a special web page on library resources and services that guides the patrons on using library resources during the pandemic .
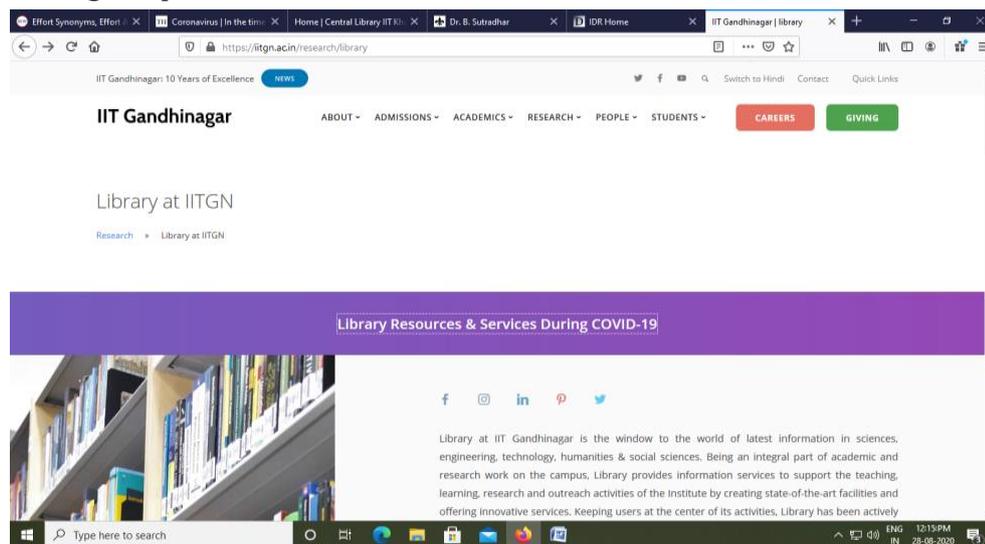
Exclusive library page in Covid-19 situation, IIT Gandhinagar library

Library website and web pages are important channels to create awareness about the library services in changed environment. Libraries have opportunities to explore best freely available or open access resources, if not subscribed during pandemic and provide links in their library webpage's for easy accessibility. Many libraries in India have been working on it especially those having budgetary constraints, Library of Uttrakhand University of Horticulture & forestry (UUHF) has provided links to open access sources like National Science digital library, wiki books, project Gutenberg that provides freely available e-books. Hyderabad University has provided link to open research library. Mizoram university as special web pages for library access in covid-19 situation highlighting access to Mizoram university e-library and other open access resources and subscribed resources from consortiums like e-Shodsindhu, DeLCON besides digital repositories like Shodganga and National Digital Library.
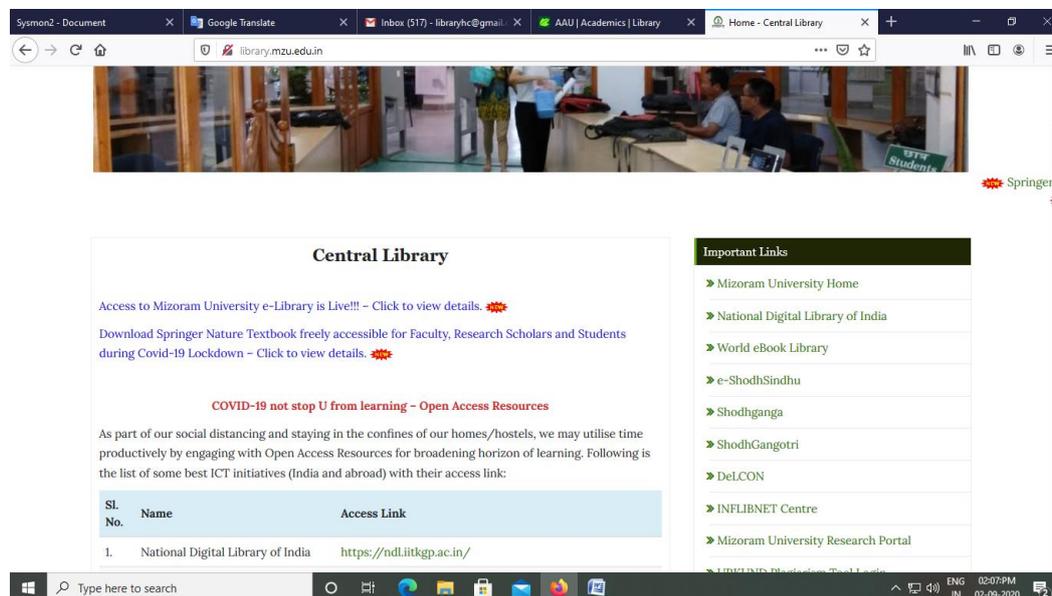
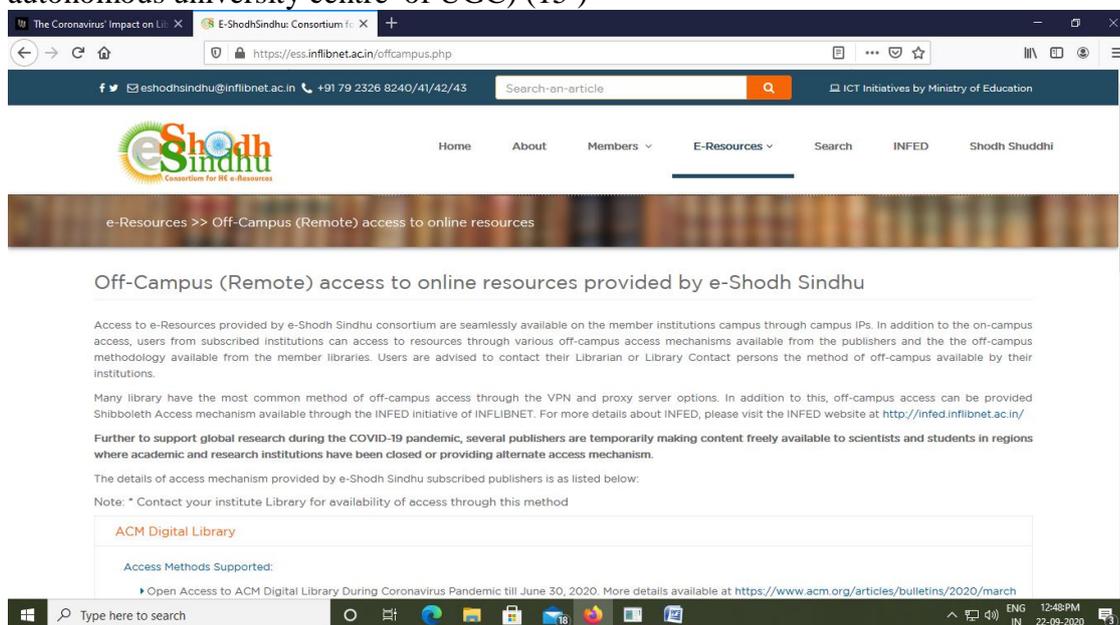Mizoram University dedicated library page for Covid-19 Open Access resources

Many conventional university library websites have provided access to both subscribed and open accesses resources though no special/dedicated page has been created for Covid -19 or pandemic situation, examples from notable universities are ; Delhi university library, (9) Hyderabad university library (10), Kumau university,(11) Pondicherry university library (12) these universities have provided notable links to open access resources.

Remote Access

Most university libraries / knowledge centers are making efforts to provide remote access to their resources. Major consortiums in India like CeRA, the Consortium for e-Resources in Agriculture Sciences (13) and E-Shodsindhu, the consortium of Higher Education (14) operating on IP addresses or official networks have started extending access to subscribed online resources through passwords and the shibboleth mechanism for remote accessibility in the pandemic period.

University libraries having off campus or constituent colleges located at different places made strategies and advisories to

provide remote access to their online resources through off campus access facilitated by Virtual Private Network (VPN) or proxy servers. The CeRA consortium provided password protected users Id to student community as well as the faculty member to access subscribed digital resources from the convenience of their homes.

In addition, public universities in the country funded by University Grants Commission (UGC) are being facilitated by Shibboleth Access mechanism for remote access without any cost through the INFED (INFLIBNET Access management federation) initiative of INFLIBNET (Information and Library Network–an autonomous university centre of UGC) (15)

     E-Shodsindhu providing access to online resources through INFED

Libraries of Indian Institute of Technologies in higher education spread across different places at Kharagpur, Gauhati, Ghandhinagar, and New Delhi are smarter in terms of technology, being funded by the central government they are rich in digital resources. These libraries are proving remote access to their resources through dedicated web pages; however, systematic downloading of e- resources is being discouraged by the libraries.
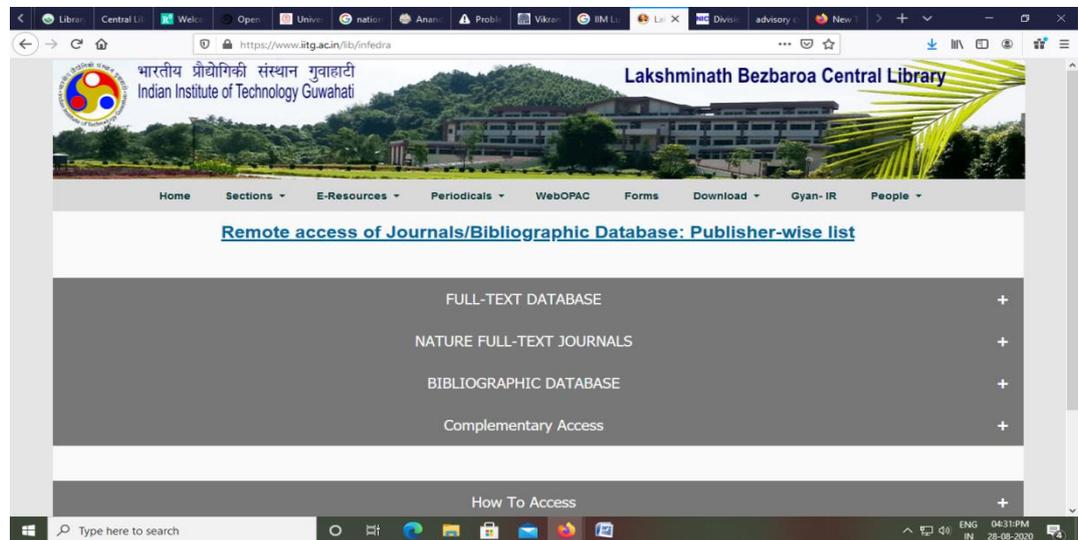
Indian Institute of Technology, Guwahati : Remote Access

Digital Library of India

The National, Digital library of India, popularly known as NDLI, reaches out to students amid covid-19 lockdown with 3.5 crore (35 million) academic content and is playing a significant role in supporting online teachings when students do not have access to physical learning resources to facilitate /enable them to study from home (16). Launched in 2016, as project supported by Ministry of Human Resources Development NDLI is an open virtual repository of learning resources searchable through a single window. The repository has valuable educational material for all academic levels including researchers and lifelong learners in almost all subjects' areas like social sciences, technology, law, literature, medicine, agricultural sciences etc. and India being a multilingual country, a special focus has been given to provide interface support for 10 most widely used Indian languages. (17)
NDLI created a special collection called "Corona Outbreak: Study from Home" containing both academic and research material to enable faculty and students to have continued access to content during the pandemic lockdown. The content can also be accessed through mobile devices using NDLS mobile application and the online portal accessible from www.ndls.gov.in. In addition to this

Ministry of Human Resource Development (MHRD) and the Indian Institute of Technology, Kharagpur have released the first of its kind open "Covid-19 Research Resources Repository" that can be accessed through the National Digital Library of India. The University Grants Commission (UGC) made wide publicity by notifying and directing the university heads and principals to share the details of "Covid-19 Research Repository" through institutional e- mails and websites in the month of May 2020, when the country was under complete lockdown. (18)

National Digital Library of India : Covid-19 Research Repository

Webinars and Training:

Library professionals have been actively involved in conducting webinars on interesting and emerging topics like digital copy writes, smart librarianship, e-learning, role of libraries in university ranking etc. more than 80 webinars were organized by different library associations, societies, library and information science departments, some of these are listed in LIS Link one of the largest academic and social network of LIS professionals in India (19). Social network like whattup groups of library professionals played an important role in disseminating information about the webinars platform and information about

joining the discussion. State level library associations like Madhya Pradesh Library Association conducted series of webinar /web series on interesting and applicable topics like "Role of libraries and librarians in ranking", Karnataka State Library Association (KALA) discussed "Knockdown the Lockdown, Up skill from home". Kerela State Library Association opens webinar on "Current and emerging trends in Library Science". At National level Indian Library Association in collaboration with Maharashtra University and College Library Association (MUCLA) conducted series of webinar cum special lecture on "Future libraries" (20). It is encouraging to note that Covid-19 situation imposed lockdown in the country ushered series of webinars and online discussion in different areas of knowledge management. It's been a great opportunity to refresh knowledge, collaborate and connect over virtual platform to re-skill, up-skill, to innovate and to stay relevant in the profession for an inclusive society.

Changed Life style

The Covid-19 crises has brought tremendous change in the life style of the people in terms of social distancing and personal hygiene, this will continue to remain a reality for quite some time to come, perhaps for an year or even more, unless the world gets the much awaited treatment to deal with the deadly virus. Library professionals have to work in this situation dressed with face shield, or face masks maintain physical distances, personal hygiene and also make this a habit for days to come. Fresh guidelines on maintaining physical distancing, personal hygiene and key health information have been notified through institutional mails and notice boards for patrons. Many libraries for instance G.B Pant University of Agriculture & Technology, Pantnagar; Central Marine Fisheries Research Institute, Mumbai have arranged thermal checks at the entrance gate and have installed sanitizer dispenser machines. The university has also mandated wearing face shields/ masks and working in isolation or keeping a safe distance at work place. The university libraries are open with reduced staff and library hours to facilitate clearance or dues from library for award of degrees to the students online. Libraries are

being sanitized on regular basis and library visits have been closed temporarily. Due to continued health and safety concerns surrounding covid-19 some libraries have closed reading and borrowing facilities and students are strongly encouraged to use online services and resources, viz. National Institute of Technology library Surathkal Karnataka (21), Rabindra Library Assam University, Silchar (22)
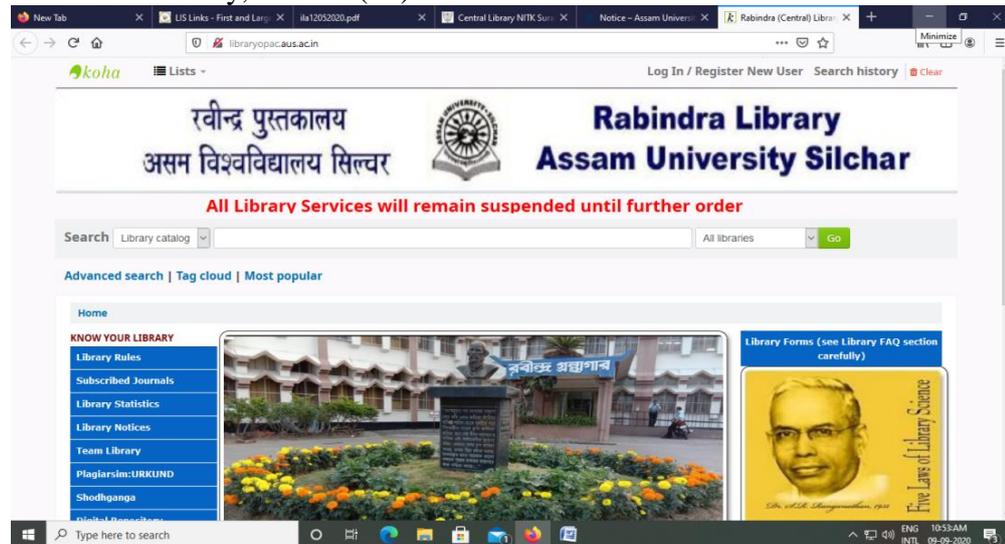
Rabindra library: Assam University library

Libraries working under restricted environment are arranging group clearance of students dues from library, as these are required for submission of project works or thesis and award of degrees. Books loaned before the lockdown are being returned by post or courier and are being sanitized, libraries also ensure to avoid immediate shelving.

Knowledge Management – Vocabulary trends
The covid-19 situation has expanded our vocabulary and has also given better understanding of the entire situation that helped us to stay safe informed and connected. Librarians being knowledge managers have to be familiar with latest trends in vocabulary to deal with emerging literature/ information materials on current

situation and also its technical processing for information retrieval. Some of the words that surfaced the media both print and electronic have been, hotspot, plasma therapy, bat corona virus, Corona warriors, lockdown, Red, Orange, Green zone, antibody kits, face shield/ face masks, screening, social distancing, self quarantine etc. Library reference team, have to be familiar with latest vocabulary/terms to address reference queries and also be prepared to guide patrons in literature search to provide valuable information and data in this context.

Best Practices required to engage patrons

The sudden lockdown announced by heads of different countries led to closure of all academic activities physically and forced universities to shift to digital platform for teaching or online classes. The unexpected changes in academic activities all of a sudden led many institutions of higher education in India to rethink about their digital infrastructure and remote access. Many libraries in India were not fully digitally equipped to handle the pandemic situation. Also, knowledge about online platforms for interaction with students or even teaching activities using platforms Zoom, Google meet or Webex is a new experience for both the librarians as well as the faculty. The necessary skills required handling these tools and platforms was perhaps the first time self learning experience for many faculty as well as the students through mobile devises. The paradigm shift in pedagogy or (physical class room to virtual platform) have also led libraries to support online teaching/classes through e-resources, remote access, and digital platforms or digital libraries. The libraries need to focus on trainings of their staff and skills to handle digital technologies and platforms. The pandemic situation has taught the information professionals to have preparedness   for handing this kind of situations in future.

Lockdown Driving Innovations:

The sudden lockdown in the country increased the engagement of the information professionals than ever before especially towards digital services and remote access. They have to explore new approaches and innovations to stay connected with academic

community and support the online instruction/classes. The paradigm shift in pedagogy i.e. from physical classroom to virtual platforms requires big focus from libraries on e-resources in general and e-textbook in particular. In general the libraries/ knowledge centres never close, if physically closed; they are 24x7 virtually open. However, it a big question whether they are able to fulfil the curriculum requirements of the students and the faculty members and remote accessibility of the subscribed resources.

The university authorities and heads may require mapping of e-books to curriculums as we are unsure as to how long the situation of restricted working conditions may last and even otherwise the hybrid style of reading and learning is the need of the present time.

Social Network and library services

Social network platforms like twitter, Face book, Instagram plays an important role in connecting and engaging the students with learning resources, especially access to e- resources and also solving their concerns regarding library resources and information need/requirement while attending online classes and exams. Not many libraries in India are active in social network sites or platforms.

Lockdown situation has compelled libraries to explore new approaches to connect with student community for providing services through social digital platforms from remote locations, especially when physical libraries are closed. Libraries may use the twitter or facebook pages to address reference questions from home and resolves students queries besides, notify information about open access resources from publishers and free access to their paid resources or use full links to free e-books or digital repositories. The user community can be engaged to social media platforms to share their covid stories as well share their problems or frustrations and seek clarifications. The librarians may also invite patrons feedback or opinion on digital resources, and participate in academic events like World book and Copyright day 23rd April, Librarians day etc. encourage events like "Lets read together" to promote online resources. Invite discussions on fake news and real news identify fake information, fake journals and

even universities and institutions. Libraries my also explore and develop # tags to engage students.

Raising Awareness

The worldwide lockdown has lead to working under restricted conditions either from remote location or from home. Sincere efforts are required to engage the student community and researchers with online resources/digital content. As teachers are adopting to online classless, and delivering digital content through online video lecture platforms like Google classroom, Zoom applications etc. supported by electronic mails and whattup group of students, libraries too need to come forward proactively to support teaching and research activities through online resources and create greater awareness about open access and subscribed resources for wider use. Some libraries provided information through e-mails, and others through library websites but were lacking on user awareness sessions.

Fortunately, many global heads of leading publishers have taken helpful initiatives to provide free or open access to their paid resources in wake of covid-19 situation. Association for Computing Machinery (ACM) digital library stated that there would be no fee for accessing or downloading work published by ACM. (23) Similar goodwill gestures have been shown by Proquest Research Companion,(24) Harvard Business Review e-book collection,(25) Emerald digital collection (26) etc. Consortiums like E-Sodhsindhu, CeRA have facilitated access by making it easier to login and access material outside official networks through passwords, beyond this, information provider like Internet Achieve made large volumes of their learning resources available with few limits to support academic community in difficult times. UNESCO education division is providing links to valuable educational resources and their achieve. The Document Delivery and Resource Sharing (DDR) section of IFLA has launched a new service to support sharing of resources across border as a way of reliving some of the disruption caused by the pandemic. (27)

The libraries through their awareness programs /campaign have to intensify resource sharing between member libraries in order to

accelerate access to research information and data. All that libraries have to do in difficult situation is to stay connected, create awareness and notify their user community about plethora of information sources and freely available scholarly research material accessible from remote locations or the convenience of their homes. The wealth of information and digital content should ideally be promoted and brought to the notice of the patrons through the dedicated pages of library websites that is likely to have greater visibility during Covid-19 crises and, also through Social media page like facebook, twitter or Instagram channels.

Information Literacy and Fake News

Since not all users are already familiar with digital tools, libraries have to be proactive in developing new online training material for patrons to develop critical thinking and information literacy skills they need to exploit most of the digital sources from remote locations.

Lary Wilkner, Manger proquest, states that today novice researchers are overwhelmed with too much information and data and is even harder when they are working remotely and don't have someone to turn to for immediate help to guide common challenges and help them overcome their frustration.(28) therefore, helping students build information skill during the pandemic is important for library teachers and also to transit from classroom teachings to distance learning platforms.

There are many resources for teaching media and Information Literacy (IL) through online channels for example Massive Open Online Courses (MOOC) hosted by Commonwealth of Learning platform (29) Libraries can host their own information literacy courses online through various e-learning platforms during the pandemic in order to help students to navigate and carry out their academic assignments and scholarly research activities at ease.

Series of webinars on misinformation, information overload, building list of useful open access resources and research material would be useful to patron learning from their homes. Libraries may also create a team of subject experts or subject librarians with phone and e-mail contacts easily accessible to the patrons from

library web pages to deal with queries and also help students community to build skills they will need to do scholarly research.

It is noted that several fake news has been flooded across social media channels in the wake of covid-19. The librarian role as teachers is inevitable to help its patron identify the right information/news and misinformation about covid-19 crises and dealing with pandemic. The special resource page of the library should also include an infographic to spot fake news being circulated on various platforms. The infographic should clearly explain, besides create awareness on some platforms like 'Alt-News' available at www.altnews.in, and 'Faculty' accessible from http://faculty.in to check fake news. Fact Hunt is another social journalism platform to debunk misinformation or fake information. The fact check links on library website are going to be very useful for the academic community especially during the pandemic when there is struggle between identifying real information and fake information/ news.

Many libraries associations and organizations both at national and international levels have been actively engaged in conducting webinars and online discussions on relevant topics to engage academic community. With uncertainty lying ahead in view of covid-19 crises libraries may look into possibilities for transforming their in-person continuing information literacy programs and professional development trainings through e-learning platforms and remote teaching.

Look into Challenges and Opportunities

The Covid-19 pandemic situation and shutting down libraries world over have left knowledge mangers to rethink about their services and digital wellbeing, they have to be better equipped for providing services remotely by using remote access tools. It's a good time for libraries to think smart and take covid-19 crises as an opportunity for digital transformation and convert their exiting libraries to much more digitally focused. Some library advocates are of view that the corona virus closure will spark more awareness of the services as the brick and mortar institutions offer. (30)

As it is unclear on how long the restrictions will last due to covid-19 crises, it is worth to have plans in place to cope with difficult situations and look into both short and long term changes that libraries will require. Smart libraries have to be more prepared with the challenges on how to manage remote working efficiently. They have to plan in advance and ensure that most of the staff, if not all, have the tool and necessary training to work effectively from home and stay in touch easily with patrons and other staff to remain connected and digitally inclusive.

While libraries have been struggling during the uncertain lockdowns, and suspending library services temporarily, they have to be prepared (have plans) for more hardships in future that is likely to come after the pandemic runs its course. At this point worldwide economic recession appears to be inevitable. Libraries may see their funding slashed during recession and may have to work with limited resources. Libraries will also have to work closely with partners for information sharing, consortium resources, open access materials and should be able to negotiate with global publishing leaders. Many libraries may face flat budget or even declining funds as funding bodies may not have much money to fund the institutions the way they did in good economic times (31). The pandemic has also given an opportunity for librarians to show case their knowledge and management skills. "Necessity is the mother of all inventions and discoveries"- a popular quote that explains that best can be achieved by when doors are closed and resources are limited. Libraries have to innovate and bring out the best to transform as and when required, they have the skills, and, using internet as a tool is not a limitation in present times.

Indian Libraries in higher education have the opportunity to collaborate and explore possibilities to create own indigenous digital platforms and information products. Libraries are largely dependent on information products and services from private publishers and vendors and, are paying a huge amount to avail their services. There are examples where librarian has shown exemplary work in networking. The World Cat is the largest union catalogue, for example, was developed by librarians and not any commercial house or company. Indian libraries have the strength

and potential to create suitable information products/databases and services. The National Digital Library of India is a unique example that has established itself as country's largest online platform or repository. The libraries have to go smart, explore new applications and devices that will add value and new dimensions to the information services without involving huge costs and investments. The mobile devices or smart phones have great potential to deliver information and engage patron's interest. The world's largest smart phone users, especially the younger community lives in India, the country is also second largest smart phone consumer in the world just next to China. (32) According to a market research from tecARC, India had 502.2 million smart phone users as of Dec 2019 which means 77% of Indians are now accessing wireless broadband through smart phone. (33)

The Indian libraries have the opportunity to create interesting mobile apps to access catalogues, digital resources and knowledge portals. Some other emerging applications in industries and business houses that are being used to deliver information and create awareness can also be applied to knowledge centers and libraries. Quick Retrieval popularly known as QR codes are low cost solution to deliver smart phone based services to attract young patrons and also adds great value to library services.

Dealing with economic recession the Indian government is now focusing on self reliance. Priminster Mr. Modi has stressed on being "Vocal about Local Products" (34) addressing the nation on May 12, 2020 he stated that "Time has taught us that we must make local the mantra of our lives" (35) Being self reliant will be crucial in times of economic crises. In this situation to cope with deduced grants the libraries/knowledge centers in higher education should look into resources and services to exploit open resources, open software; freely available e-books and expand online research materials through consortium subscriptions, Inter library lending, and DDR etc to support patrons. Digitizing physical resources and creating institutional repositories and discovery layers/union catalogues of bibliographical databases accessible over digital platform allows cost cutting and also remote accessibility. The Indian libraries need to look into resources and ensure that it is intensively promoted and used. Libraries have to

be more vocal to promote their national resources like existing National Digital Library head quartered at Indian Institute of Technology (IIT) Kharagpur ; E-Shodsindhu, (consortium for higher education) CeRA (Consortiums for e-resources in Agriculture), DeLCON (Department of Biotechnology consortium); Union Catalogues like, INDCat-Online Union Catalogue of Indian Universities; Agricat-Union Catalogue of Agricultural Universities and, Indian Digital Ensemble of Agriculture Libraries (IDEAL) platform besides digital repositories of research material like Shodganga, and Krishikosh. The idea to make 'Local to Global' needs to be encouraged, it is noted that Global brands were once local but when people supported and encouraged they became global, the best example is World Cat the largest bibliographical database (36) developed in United States by efforts of librarians and informational professionals.

Smart libraries are those that take challenges as opportunities and provide best learning resources and services with minimum investments and funds. Knowledge Centers /Libraries in higher education also need to explore and work towards creating innovative information products and also branding them to bring new dimensions to library services.

Conclusions

Shutting down of educational institution and the libraries world over, happening almost at the same time, is perhaps one of the most difficult /strange situation that humanity ever faced. In the wake of covid-19 crises there has been a paradigm change in working style leading to work remotely or work from home. When everything was under lockdown the digital world was most active and perhaps the only channel available to stay connected and engaged from remote locations. The academics and research institutions saw many transformations, while teaching moved to e-learning platform and distance learning. The libraries made impressive greater efforts to support teaching and research through e- resources, remote access and digital platforms.

The pandemic, has perhaps given an opportunity for the knowledge mangers to be essentially more digitally focused and

pay attention to strengthen their e-resources and digital tools to be able to perform in difficult situations and transform their services gradually to online platforms. The libraries have to ensure that they have all the tools and techniques to deliver services from remote locations and engage their patrons amid uncertain situations and be prepared to work under restricted environment. The covid-19 crises has also brought new dimension and change in life style and working conditions of people which is likely to be part of our lives for longer time, therefore, addressing physical distancing, personal hygiene, and working in protected environment is going to be an important activity for libraries in days to come.

The pandemic situation has also given some crucial lessons for libraries to learn, like have plans and preparedness to handle library services from remote locations, have rich digital collection and access to online platforms. Build 'real time chat' like function and 'ask librarian' features in their library web page to strengthen digital reference services and to engage patrons virtually.

Perhaps for the first time, work from home, or remote locations has been strongly encouraged in libraries and knowledge centers, although this fashion or working style has been prevalent in corporate sectors and open universities. It is noted that amid covid-19 crises libraries discovered the strength of remote access tools, digital content and online services. The pandemic situation has also given to understand that critical situations can be converted to opportunities to bring paradigm changes in information services and access to learning resources, create new dimensions, and value added information products to innovate and to expand services.

Smart thinking and innovative ideas can lead libraries to function remotely in the best possible way and still stay connected with their patrons virtually. Never the less, it is observed that difficult situations always leads to exploring new channels and tools to reach out goals and remain inclusive.

References:

1.Hindustan times. (2020) Jaan bhi aur Jhaan bhi : PM Modi messages CM at covid-19 lockdown. Access date 18 May 2020. Available at : http://www.hindustantimes.com

2.IFLA. (2020) IFLA : Covid19 and global library field . Access date 10 May 2020.Available at : http//www.ifla.org

3. Central Library. National Institute of Technology, Surithal, Karnataka. Access date 2 Sept 2020 Available at : https://library.nitk.ac.in/joomla/

4. Central Library. Indian Institute of Technology. New Delhi. Access date 29 August,2020.   Available at http://library.iitd.ac.in/

5. Central Library. (2020) Indian Institute of Technology. Madras. Access date 28 August,2020.   Available at   https://cenlib.iitm.ac.in/

6. Oxford University Press. (2020) Coronavirus,2020. Access date May 9 2020. Available at: http://global.oup.com

7. Wiley . (2020) Wiley offers free access to support educators, researchers . Access date May 11 2020.Available at :http://newsroom.wiley.com)

8. Taylor and Francis. (2020) Covid-19: resources and support for you, librarian resources. Access date   12 May 2020 Available at : http://librarianresources.taylorandfrancis.com

9. Delhi University Library system. (2020). Access date August 20,2020 Available at   http://crl.du.ac.in/

10. Indira Gandhi Memorial Library (2020) University of Hyderabad. Hyderabad.   Access   date   August   20,   2020,   available   at http://igmlnet.uohyd.ac.in:8000/

11. Ananda Rangapila library (2020). Pondicherry University. Pondicherry.   Access   date   August   25,   2020.   Available   at http://lib.pondiuni.edu.in/

12. Central Library (2020) Kumau University Nainital. Kumau. Access date August 21 2020, Available at http://www.centrallibraryku.in/

13. CeRA (2020) Consortia for e-Resources in Agriculture. Access date August 25, 2020. Available at https://jgateplus.com/search/

14. E-Shod Sindhu: Consortium for higher education electronics (2020) Access date August 25, 2020. Available at https://ess.inflibnet.ac.in/offcampus.php

15. INFED (2020) INFLIBNET Access Management Federation (2020). Access date August 25, 2020. Available at http://infed.inflibnet.ac.in/

16. Times of India. (2020) National Digital Library reaches out to students amid Covid. Access date August 24, 2020. Available at

https://timesofindia.indiatimes.com/india/national-digital-library-reaches-out-to-students-amid-lockdown/articleshow/75603272.cms

17. NDLI (2020) National Digital Library of India . Access date August 24, 2020. Available at https://ndl.iitkgp.ac.in/

18. UGC (2020) University Grants commission. Access date August 24, 2020. Available at   file:///C:/Users/admin/Downloads/6342175_Letter-NDLI-COVID-19-Academic--Research-Repository.pdf

19. LISLINK (2020) First and Largest Academic social network of LIS professionals in India. Access date August 28, 2020. Available at http://www.lislinks.com/events/event/listArchive

20. ILA and MUCLA (2020). Webinar cum Lecture on Future libraries. Access date August 28, 2020. Available at https://ilaindia.net/images/pdf/ila12052020.pdf

21. NIT, Karnataka (2020). National Institute of Technology Library, Surathkal. Access date August 28, 2020. Available at https://library.nitk.ac.in/joomla/

22. Assam University (2020) Rabindra Library, Access date August 28, 2020. Available at http://www.aus.ac.in/notices/

23. Pancake, Cherri.(2020) Open access to ACM digital library during corona virus pandemic. Access date 10 May 2020. Available at : https://www.acm.org/articles/bulletins/2020/march/dl-access-during-covid-19

24. Proquest .(2020) Research Companion is open to all students and educators through June 30. Access date May 11 2020. Available at http://www.proquest.com>pqblog

25. Harvard Business Review. (2020) Request free unlimited access to Harvard Business review e-books subscription collection. Access date 15 May 2020. Available at :http://more-ebsco.com

26. Emerald group publishing. (2020) Covid-19 update: a message from CEO . Access date 16 May 2020 Available at: http://emereldgrouppublishing.com

27. IFLA. (2020) IFLA : Covid19 and global library field . Access date 10 May 2020.Available at : http//www.ifla.org

28. Wilkner, Larry. (2020) Proquest Research Companion is open to all students and educators through June 30. 2020. Access date 10 May 2020. Available at : http://www.proquest.com>pqblog

29. Common Wealth of Learning .(2020) Common wealth of learning Moocs and free online courses. Access date 8 May 2020 . Available at : http://www.mooc-list.com

30. Ashworth, Boone. Covid-19 Impact on library goes beyond books.
Access date 27 April 2020. Available at : http://www.wired.com

31. Ashworth, Boone. (2020) Covid-19 Impact on library goes beyond
books. Access date 28 April 2020 Available at : http://www.wired.com
32. India now second largest smart phone consumer in the world (2019)
. Access data 15 May 2020. Available at : http://www.tandongroup.com
33. Ians. (2019) Smartphone users in India crossed 500 million in 2019
status report , Access date 12 May 2020. Available at :
http://www.news19.com
34. Times of India.(2020) Go local for vocal PM appeals to people .
Access date 12 May 2020.   Available at : http//www.tio.com
35. Bose, P.R.(2020) Be vocal about local -A calculated step to claim a
position in India in the global power order, The Hindu Business line.
Access date 16 May 2020. Available at :
http//www.thehindustanbussinessline.com
36. Worldcat.org : The world's largest library catalogue of library
community(2020). Access date 10 May 2020. Available at
:http://www.worldcat.org

End ....