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## Online Library Services in Government College University Lahore during COVID-19 with Zero Budget: Best Practices

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# **Online Library Services in Government College University Lahore during COVID-19 with Zero Budget: Best Practices**

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## **1 Abstract:**

### **1.1 Goal:**

The main objective of this study was to investigate the usage of online library services provided by GC University Library Lahore through the implementation of the best practices to respond to COVID-19 challenges for satisfying information and research needs of the community via online tools on account of the closure of educational places countrywide having utilized smart approaches.

### **1.2 Design/methodology/approach:**

The current study was based on best practices of online services provided by GC University Library, Lahore during COVID-19. In March 2020, the university was suddenly closed due to COVID-19. In this uncertain situation, Chief Librarian held a meeting and decided to provide online library services urgently. For this purpose, second author of this study designed a form in

"Google Forms". In the second phase, the link was placed on the library website. For facilitating library users, a pop-up of this link was designed. At the third and final stage, a letter was circulated among all departments of the university about this newly launched service. Data regarding all the queries were gathered in an excel sheet attached with Google Form utility. In July 2021, data of 602 respondents were analyzed to know about the best practice of this utility. Data were analyzed quantitatively by using MS Excel.

### **1.3 Findings:**

Findings revealed that 30 (4.98%) respondents were faculty members belonging to different departments of the university while 572 (95%) participants were students from different disciplines. 287 (47.6%) queries for required information resources were for digital format, 187 (31.06%) queries for the material in the electronic format while 128 (21.26%) queries were received for providing material in printed format. Total 602 queries were received via the Online Library Request Form. Results show that the top 05 departments that sent queries through the Online Library Request Form belonged to the disciplines of Botany (30.7%), English (8.8%), Urdu (6.97%), Political Science (6.47%), and Sustainable Development Study Centre (5.98%). Requests for the printed books were responded positively with 87%, Digital Books (94%), Articles (84%), E-dissertations (86%), Scanned Material (93%), and Web Resources (92%).

### **1.4 Originality/Value/Implication:**

This study is unique as it shows the usage of the university's library resources and services during COVID-19 challenging times through the best practices. The study has practical implications for the policy-making authorities to design innovative services in university libraries to satisfy the diverse needs of the users during any challenging situations like COVID-19.

**Keywords:** Library Services during COVID-19, Online Library Service in University Libraries, Smart Library Services through the Best Practices

## **2 Background to the Study & Introduction:**

The disease of Coronavirus started in Wuhan, China, in December 2019. The deadly virus has brought havoc in almost all countries of the world. Different waves of this contagious disease have affected the individual lives, professions, businesses, routine matters of society around the globe. Soon after the start of COVID-19, a flood of misinformation started and people began believing in here-say rather than the accurate news. Not only pandemic took place but also info-demic ([BBC News, 2020](#)). Many precious lives were lost on account of this horrible virus. All routines of life were badly disturbed. The virus brought a great disaster in the life of common people. All businesses were badly affected. Many private-sector employers lost their jobs ([Taylor, 2020](#)).

Several steps were adopted worldwide on account of the outbreak of this horrible virus and also in Pakistan including lockdown social distancing, quarantine, closure of educational institutions for physical classes. Traditional methods of teachers came to an end in the universities of Pakistan. On-campus learning was switched over to online teaching through Zoom, Microsoft Teams, and other tools. COVID-19 brought a revolution in the field of learning and teaching as several innovative steps were taken to facilitate the students' community efficiently during intense challenging times. COVID-19 created opportunities in the field of teaching for the educationists of Pakistan. Having realized the needs in accordance with the testing times, online teaching methods were applied and the students of the universities across the country embraced this change as no alternative method of learning existed. Old fashioned mentors also began teaching through online moods. They attended training workshops for the purpose of grabbing required skilled for adequate online teaching ([Mahmood, 2021](#)).

### **2.1 Government College University Lahore: An Overview**

Government College University Lahore, the most prominent and historical educational institution of Pakistan, also went through the phase of challenges during the first spike of COVID-19 particularly as it was the time when no standard online methods and procedures for teaching in the local scenario did exist and the university was popular in the promotion of historical traditions rather than the adoption of innovative technological tools for the provision of e-learning to the students and research scholars. Before the outbreak of COVID-19, the university had never started any online instruction courses before. There was no tradition of online teaching before. The

majority of the faculty members were not entirely sure whether they would be able to carry out the task of online teaching efficiently or not. The institution had a wonderful reputation across the world for showing worth-mentioning achievements however modern techniques of teaching did not exist at all. This institution is the leading seat of learning in the sub-continent. This educational place is famous for historical traditions and methods of imparting knowledge and skills. People across the world feel pride in becoming “Ravians” (Alumni of the university are known as Ravians). The most brilliant and shining students get admission to Government College University Lahore. The university has produced some of the greatest minds who have served humanity through wonderful achievements ([HEC rankings, 2012](#)).

In every sphere of life, this institution has introduced history-making personalities including Allama Muhammad Iqbal (National Poet of Pakistan), Prof. Dr. Abdus Salam (Nobel Laureate in the field of Physics), Dr. Hargobind Khorana (Nobel Prize Winner in the field of Chemistry), Muhammad Zafarullah Khan (Former President of UN General Assembly), Ishfaq Ahmad (Nuclear physicist who served at CERN), Nawaz Sharif (Former 3 times PM of Pakistan), Zafarullah Khan Jamali (Fifteenth PM of Pakistan), Yousaf Raza Gillani (Eighteenth PM of the country), Moeenuddin Ahmad Qureshi (Former Caretaker Prime Minister of Pakistan), Inder Kumar Gujral (Former Prime Minister of India), Syed Ahmed Shah Patras Bokhari (First Representative of the Nation to the UN), Faiz Ahmad Faiz (A Great Revolutionary Poet), Ashfaq Ahmed (A Leading Literary Figure); ([Daily Times, 2019](#)), Muhammad Ajmal (Founder of Psychology in the Country), Ghulam Mustafa Sufi Tabassum (Academic & Poet), Dr. Israr Ahmed, Maulana Tariq Jamil (Famous Islamic Scholars); Mustansar Hussain Tarar, Bano Qudsia, Qudrat Ullah Shahab, Wasif Ali Wasif, Malik Ram, Sahir Ludhianvi, Nasir Kazmi, Khushwant Singh (Renowned Writers); Hanif Ramay, Shahbaz Sharif, Ishaq Dar, Ahsan Iqbal, Aitzaz Ahsan, Lord Malhi, Swaran Singh (Noted Political Figures); Dev Anand, Chetan Anand, Balraj Sahni (Actors); Noon Meem Rashid (A Legendary Poet), Aftab Iqbal, Hamid Mir, Mansoor Ali Khan, Mubashir Luqman, Najam Sethi (Popular Journalists); Javaid Iqbal (Former Judge of Supreme Court), M. R. Kayani (Former Chief Justice of Lahore High Court), Naseem Hasan Shah, Mian Saqib Nisar, Asif Saeed Khan Khosa (All 3 were Former Chief Justice of Pakistan); Shafqat Amanat Ali Khan, Hadiqa Kiani, Ali Zafar, Waris Baig (Singers) ([https://en.wikipedia.org/wiki/List\\_of\\_Ravians](https://en.wikipedia.org/wiki/List_of_Ravians)); Rameez Raja, Inzamam-ul-Haq, Amir Sohail, Majid Khan, Abdul Qadir, Rehan Butt, Aisam-ul-Haq (Prominent Sportsmen); Ganga Ram

(Renowned Civil Engineer & Architect), Major Shabbir Sharif (Recipient of Nishan-e-Haider), Yahya Khan (Former President & Army Chief), Gen. Raheel Sharif (Former Army Chief), and Lt. Gen. Hamid Gul (DG of ISI) ([https://m.facebook.com/story.php?story\\_fbid=386818606237420&id=100774778175139](https://m.facebook.com/story.php?story_fbid=386818606237420&id=100774778175139)).

During the nuclear experiments in 1998, 60 scientists were Old Ravians who took part in atomic explosions. Their team leader, Dr. Samar Mubarikmand, was also a former student of this great institution. The university has a glorious history of meeting many milestones ([The Nation, 2017](#)).

## **2.2 Initiatives Adopted by GC University Lahore during COVID-19 Times to Facilitate the Students, Research Scholars & Library Users:**

Many revolutionary and ground-breaking steps were taken by Prof. Dr. Asghar Zaidi (TI), the 31<sup>st</sup> head, of the GC University Lahore to initiate new changes in the university keeping in view the demands of the modern age. Dr. Zaidi took charge of the leading institution of the region in October 2019 (the 4<sup>th</sup> Vice Chancellor of this historical seat of learning). Soon after taking charge of the most popular educational institution of Pakistan, he was faced several challenges particularly the breakout of COVID-19 that affected learning places worldwide and damaged the traditional existing system of learning & instruction in Pakistan. Dr. Zaidi, before joining GC University Lahore, had been associated with the world's top institutions including the University of Oxford, London School of Economics, Seoul National University, University of Southampton, Erasmus University Rotterdam, and Tilburg University. He had a profound exposure to different parts of the world and was expert enough to implement changes following the demands of the challenging times. With his high vision, he initiated remarkable projects to combat the testing situations. It is pertinent to mention that Dr. Zaidi was also a Ravian and well-aware of the traditions of the great historical institution. He was not only aware of the wonderful old traditions but also expert and skilled to implement the new innovative techniques and approaches in the university via leadership traits ([https://en.wikipedia.org/wiki/Asghar\\_Zaidi](https://en.wikipedia.org/wiki/Asghar_Zaidi)).

Some worth-mentioning measures adopted by GC University Lahore after the breakout of the pandemic and closure of educational places countrywide are stated as following:

i. Hand sanitizers were supplied free of cost. The disinfectant spray was provided to the hospitals. Mental Health Helpline was set up. A 400-bed quarantine center at the university's new campus was set up ([https://gcu.edu.pk/vice\\_chancellor.php?pg=vc\\_biography](https://gcu.edu.pk/vice_chancellor.php?pg=vc_biography)).

ii. On May 22, 2020, an awareness seminar on GCU Online Teaching Policy was conducted. Arrangements of the Online System were briefed. Learning Management System (LMS) was elaborated. Information was disseminated about Digital Learning Environment. 04 basic components of online teaching were mentioned that included technology, students' willingness, well-shaped courses, and well-trained teachers. The assessment examination policy of online teaching was also briefed. The role of the library in an online learning environment was briefed. Questions of the participants were responded to. (<https://www.youtube.com/watch?v=RXmfwOaIAzY>).

iii. Online Classes at GCU were initiated on June 01, 2020. Learning Management System was developed to facilitate the learners. The Vice Chancellor addressed the community through social media. Faculty members of the university were trained for online teaching for the first time in the history of the university. Different technological tools including Zoom, Microsoft Teams were applied for the best delivery of online lectures. Online library services were integrated with the e-learning system of the university (<https://www.youtube.com/watch?v=gPqRnaV2Rkg>).

iv. On June 3, 2020, as many as 411 online lectures were attended by around 7,100 students from the University's 23 different departments. The university's academic faculty utilized Virtual Library for teaching online courses (<https://www.facebook.com/gcuniversitylhrpk/posts/3151248681608841>).

v. A webinar on Online Teaching: New Assessment Policy of GCU was held in which important aspects were shared. Virtual library services were shared and the digital role of the library staff was discussed (<https://www.facebook.com/gcuniversitylhrpk/videos/248725613075005>)

- vi. A webinar on Online Teaching during Closure of Universities from November 26, 2020, was conducted to brief about Virtual Learning and respond to the questions of participants. Best practices of online learning were disseminated keeping in view the experiences gained through 1<sup>st</sup> spike of the virus. Digital library resources were shared that could be utilized off-campus for completing assigned research-based activities (<https://www.facebook.com/gcuniversitylhrpk/videos/440008100694889>).
- vii. New methods, procedures, technological tools, courses, literacy sessions, training programs, series of webinars, online information resources, etc. were introduced to support the students during intense times. Hybrid policies were also utilized partially with strict implementation of SOPs for ensuring safety measures ([https://gcu.edu.pk/vice\\_chancellor.php?pg=vc\\_biography](https://gcu.edu.pk/vice_chancellor.php?pg=vc_biography)). A significant step to promote research geared towards societal impact was implemented. Students were encouraged to write dissertations “Challenges and Opportunities in the Covid-19 World”. Different departments of the university were assigned the task of producing quality research based on COVID-19 challenges and opportunities.

### **2.3 GC University Library Lahore: An Overview**

GC University Library Lahore is a major library of Pakistan regarding resources and services. It was established in 1872. There are at present more than 3, 51, 164 books in the library in print format. The library has received more than 59 personal collections of popular personalities. It has all volumes of Nuqoosh Magazine. It has received more than 25,000 hand-written literary letters. The library has a rich collection of Archives. GCU Library Lahore is the only member of World Digital Library, a cooperative project of UNESCO and Library of Congress. 17 rare books are available there in full-text format at WDL Portal. The library is pioneering in starting formal & informal resource-sharing projects with leading libraries including DELNET, COMSATS University Library, Punjab University Main Library, LUMS Library, e-Library Lahore, etc. Access to 27 leading online databases through HEC has been provided which provide more than 55000 peer-reviewed journals. The library has been declared the best library of Pakistan by ISSR, UK. GCU Library Website won the first position in a competition organized by Elsevier and HEC, Islamabad ([Shahzad and Naeem, 2016](#)).

GCU Library Lahore adopted maximum initiatives to facilitate the University's Learning Management System and to meet the information and research needs of the whole community not only off-campus but also on campus so that no hurdles might take place in quality learning and teaching. GCU Library kept implementing the latest trends and emerging technologies in the best interests of all the stakeholders. Best practices were followed by GCU Library Staff to serve the community efficiently, quickly, smoothly, and at par with the demands and needs of the existing situations. This study presents an overview of all the best practices that were implemented by GCU Library Lahore to serve the community.

### **3 Research Objectives:**

The following objectives of the study were set:

- To know the usage of online services implemented by GC University Library Lahore through the best practices
- To offer recommendations for implementing smart library services for meeting users' diverse needs efficiently

### **4 Review of Relevant Literature:**

This section analyzes international and national studies conducted related to the library services offered in academic institutions during COVID-19 challenging situations:

#### **4.1 Review of International Studies:**

The spread of Corona Virus Disease on a massive scale affected learning activities in all countries of the world. Educational activities are closely associated with libraries particularly at the university level and consequently, the moods of library services changed on account of changing circumstances. Libraries went through the phase of challenges as well as opportunities. Routine operations of the libraries were changed. Innovative library services were launched to assist online learning programs. Library leaders in the universities brought revolutionary changes keeping in view the changing needs of the community (IFLA, 2020).

Libraries began to implement the best practices for the provision of innovative services to the end-users and to keep the academic faculty engaged. Resource sharing among libraries increased through ICTs. Different tools began to be applied for satisfying the information and research needs of the users and to play a supportive role in the online learning system of the institutions. COVID-19 changed the concepts of librarianship. A new era of librarianship started. New technological tools were introduced to serve the users (Hinchliffe and Worf-Eisenberg, 2020).

Hansa (2020) indicated that all libraries were making their best efforts to serve the users having utilized specific methods. Situations differed in different countries and likewise in libraries too. Every library applied its styles of organizing information resources and virtual services to facilitate the respective organizations, users, research scholars, and faculty members. Library resources were integrated with online teaching courses. Users' friendly websites were developed. Virtual Reference Services (VRS) were initiated. Services through smart devices were started to be offered. Value-added services were implemented to serve all types of users efficiently.

Schwartz (2020) highlighted the need for proper planning to offer satisfactory services to the users. Mixed services could also be provided as some specific information resources could not be provided in e-form to the users. Academic libraries needed to offer services keeping in view the organizational needs while public libraries needed to shape services in accordance with the needs of the public on the whole. It was a dire need of the current times to organize digital services so that users might serve well through modern-driven methods and techniques.

Samanta (2020) mentioned that COVID-19 had created challenges for all over the world and disturbed all fields of life including education and librarianship. The spread of the virus could not be easily stopped. Instead of waiting for the end of the virus, it was need of the time to reshape library resources and services so that users might be served nicely and no problems could take place in accessing required information resources. Measures on an urgent basis were intensely required to be implemented in the libraries for the provision of services to the users via smart devices and tools.

Chisita (2020) stated that library professionals are dependent upon multiple approaches to provide information resources to end-users keeping in view the changing needs of users. They

needed to make effective utilization of social media channels as promotion of the library's resources has become quite easy due to online marketing techniques. Both print and online resources are needed to be utilized so that the diverse needs of the users may be met efficiently. Library professionals need to develop online networking sharing so that requests for the library's material may be met without having faced financial barriers. Librarians can play a vital role in scholarly communication having utilized various information resources and can be of great value for the users' demands for information resources. Library Consortium is highly valuable in the current situations as one library can't meet all needs of the students, research scholars, and the academic & administrative faculty. Together, libraries can better perform routine functions, and new innovative tools, methods, techniques, etc. may be developed having applied the best practices at par with the demands of the present times.

Guo, et. al. (2021) identified approaches that were implemented by academic libraries of China to serve the users during COVID-19 testing times. Multiple methods and approaches were utilized to manage the tough situations. User's friendly websites were developed. Maximum information resources were displayed on the web pages of the academic institutions. Social media tools were utilized excessively to spread awareness among users about existing resources and services. The majority of the libraries began offering online services. Virtual Reference Services (VRS) to support research-related projects. E-books-collection- building-service was initiated as a suitable alternative to print books.

Kosciejew (2021) explored the responses of the international community of library and information science related to the COVID-19 pandemic. Special sessions were conducted by the communities of library and information science to spread awareness among the public about misinformation. A new era of civic literacy began. Library services were migrated to online moods. Services were maintained in e-formats. The Challenge of misinformation was encountered efficiently. Users' information and research needs were placed on priority. Usage of smart devices was made to a great deal. Technological tools were applied to satisfy the diverse needs of the users. Library professionals, academic faculty, and vendors of different databases were interconnected to support the end-users. Suppliers of online databases got remote access to databases for providing easy access to the researchers so that they could bring completion to research-based activities off-

campus conveniently. Formal and information resource-sharing networks were initiated to perform satisfactory services.

Zhou (2021) highlighted that significance of online information services of the libraries had increased due to COVID-19-challenging-circumstances. The rapid spread of the virus had changed the traditional concepts of librarianship. Online services were being designed to better facilitate the users. Online courses were being developed. The importance of library guides had been enhanced. The role of academic libraries had become more dynamic. Librarians working in the university libraries needed to implement the latest technological tools for re-shaping, re-building the library's resources and services in the best interests of the respective organization. Even after the end of the pandemic, online services may be given significance so that users may not face physical barriers to access relevant material for completing their assignments, activities, research articles, dissertations, etc.

#### **4.2 Relevant Studies Conducted by National Authors:**

The virus affected Pakistan on a large scale as the attitude of the people was strange and they didn't consider this pandemic seriously. The majority of the inhabitants of Pakistan even did not take precautionary measures to avoid this disease. They put not only their lives at risk but also started creating risk for the lives of other associated people. Most of the Pakistani people acted irresponsibly during the pandemic and did not act upon the directions as given by National Command Operation Center (NCOC). Different homemade remedies were applied by the residents of Pakistan to face the dangerous virus. (Abid, Bari, Younas, Javaid, and Imran, 2020).

Rafiq, Batool, Ali, and Ullah (2020) investigated the response of library professionals related to services and methods applied by them to satisfy the information and research needs of the users. This study was based on a qualitative research design. Interviews were held from the Heads of the selected university libraries. Thematic analysis was done. Results of the study revealed that university libraries had developed friendly websites, re-shaped information resources, and made sophisticated planning for offering online services to the users. During the pandemic, sufficient utilization of the social media channels was not done by the majority of the libraries in the country. Off-campus, services were provided by university libraries through online connectivity. There was usually a sense of burden upon library professionals on account of virtual

services round the clock. New challenges were addressed through effective leadership. The university library professionals faced several challenges while providing off-campus services. These hurdles included connectivity issues, internet speed barriers, unavailability of VPN, etc. During uncertain times, librarians remained under stress too. The study suggested value-added services during challenging times.

Ali and Gatiti (2020) explored the role of medical sector librarians during the challenging situations of COVID-19-rapid-spread. Pakistan was also badly affected due to different waves of the virus. This challenge changed the traditional services of libraries around the world. The role of the librarians in Pakistan became more crucial than ever before due to the changing situations. Medical librarians began spreading resource learning literacy among the users. Current Awareness Services (CAS) began to be delivered more efficiently. Online information resources got popularity among the medical community. The traditional role of the libraries working in the health sector ended and a new era of medical librarianship began.

Ahmed and Merchant (2021) conducted study on COVID-19 and Pakistani academic libraries. The study concluded that COVID-19 brought not only challenges for Pakistani librarianship but also several opportunities because a new age of innovative services, methods, techniques and procedures took place and it was the end of traditional approaches. Libraries have become now learning institutions as these provide life long learning and support in academics to a great deal. HEC, Pakistan should develop a centralized portal for the academic libraries in Pakistan so that libraries might also facilitate the users via innovative approaches without facing financial burdens. Capacity building of the library professionals is highly necessary so that they may work in digital environment and perform smart services.

Ameen (2021) revealed the practices, approaches, techniques, methods, tools which were applied by the libraries of Pakistan to cope with the challenging situations viz a viz COVID-19. The researcher also highlighted the attitude of library practitioners regarding the adoption of technological tools, barriers being faced by them, and opportunities that occurred on account of difficult situations. It was mentioned that online databases began to be provided through VPN so that users might access online journals, e-dissertations, and electronic books without physical barriers. Library professionals became active in the provision of required information resources to

the community because survival was not possible without playing a supportive role in the online learning system. Some publishers also provided off-campus access to databases to facilitate the users so that they could complete their research-based tasks. The usage of online information resources increased. Libraries having sufficient financial resources began to acquire and build digital collections in accordance with the needs of the present challenging times that took place due to COVID-19 and traditional moods of services were entirely changed on account of the same and librarians had to bring an eminent change in their working attitude so that they could meet users' needs efficiently and play a leading role in the provision of requisite material to the students, research scholars, and the faculty of concerned learning-places by showing innovative approaches having applied diverse methods via the implementation of best practices to enhance their visibility.

## **5 Best Practices Implemented by GCU Library Lahore during COVID-19 Testing Times to Support Online Learning Environment:**

Following measures were taken to switch over traditional physical library services to digital services soon after the closure of Government College University Lahore:

- i. On March 27, 2020, an e-mail was sent to all chairpersons of the university to ensure full cooperation from the library keeping in view online teaching. Academic Heads were asked to send the list of required books to be taught during online courses so that the same might be provided in digital format.
- ii. On April 8, 2020, free digital research- resources were uploaded at the University Library Website so that relevant tasks might be put into compliance without facing any barriers that had taken place on account of the rapid increase in coronavirus victims. All free digital books, research articles, reports, journals, theses/dissertations, etc. might be accessed through a single click at: (<http://library.gcu.edu.pk/FreeDB.htm>)
- iii. On April 10, 2020, a pop-up was created at the library website ([library.gcu.edu.pk](http://library.gcu.edu.pk)) for making the website more user-friendly and for the provision of easy access to all users, and research scholars to the information resources in digitized format.

- iv. On April 27, 2020, GCU Library got remote access to different databases including IEEE (<https://ieeexplore.ieee.org/Xplore/home.jsp>), Institute of Physics (<https://iopscience.iop.org/>), Wiley Online Library (<https://onlinelibrary.wiley.com/action/showLogin?uri=%2F>), Science Direct (<https://www.sciencedirect.com/>), Pro Quest Dissertations and Theses Global (<https://search.proquest.com/pqdtglobal/?accountid=135034>), Pro-Quest EBook Central (<https://ebookcentral.proquest.com/lib/hec-ebooks/home.action>), Pro-Quest Business Premium Collection (<https://bit.ly/BPC-PK>), ASTM (<https://compass.astm.org/>) and OVID (<https://ovidsp.ovid.com/>) to facilitate the researchers to make completion of their research-related tasks.
- v. From 1<sup>st</sup> of June 2020, to support the students and researchers of oriental languages, GCU Libraries (Central, Post Graduate, and Life Sciences) began offering on-site services to assist in online teaching so that the faculty, researchers, and the students might bring compliance to the relevant tasks without facing any barriers. Hybrid services were initiated. All users were encouraged to visit the library in case of any urgency having followed all safety measures. Information Resources might also be reserved before coming. Scanning facility for the oriental-languages- material began to be offered so that concerned users might meet their needs. Social distance was ensured inside of the libraries of the university. Hand sanitizer bottles were installed at different venues. All safety measures were adopted with strict regulations.
- vi. On the 4<sup>th</sup> of June 2020, the library designed an Online Request Form to access Library Material for supporting the University's Online Teaching Program so that the faculty members, researchers, and students might not face any problems in accessing the required material. This form included simple fields i.e. title of the publication, author/editor, publishing details, e-mail of the user, etc. This form could be accessed via: ([https://docs.google.com/forms/d/e/1FAIpQLScK9jzUmFDayeVXzbEyRbn800-RO\\_lqtsXIO0ILEh7iUain4w/viewform](https://docs.google.com/forms/d/e/1FAIpQLScK9jzUmFDayeVXzbEyRbn800-RO_lqtsXIO0ILEh7iUain4w/viewform))

- vii. On 9<sup>th</sup> August 2020, GCU Virtual Library was updated and integrated/aligned with all the major courses- content being taught at the university through online modes. All virtual resources may be accessed through: [library.gcu.edu.pk](http://library.gcu.edu.pk)
- viii. From March 2020 onward, GCU Library conducted several webinars in the collaboration of international organizations covering diverse topics to cultivate research skills and other necessary expertise amongst the students, research scholars, and faculty members.
- ix. Online Resource Sharing Networking was initiated with leading libraries of the country and across the world to ensure the provision of required information resources to the students and academic faculty.
- x. Library services were initiated to be provided through different mobile apps. Smart devices were utilized to provide quick information delivery.
- xi. Information Literacy Sessions were conducted for all the departments of the university to spread resource learning, searching techniques, citation management, etc.
- xii. All faculty members were provided Current Awareness Services (CAS) and Selective Dissemination of Information (SDI).
- xiii. ICTs were utilized to an optimum level for providing services to the community.

## **6 Methodology:**

The current study was based on the best practices of online services provided by GC University, Lahore during COVID-19. In March 2020, the university was suddenly closed due to COVID-19. In this uncertain situation, Chief Librarian held a meeting and decided to provide online library services urgently. For this purpose, one of the authors designed a form in "Google Forms" (**Figure 2.0**) and added an email of the Chief Librarian for receiving queries. It was then decided that email (queries) should be received by at least three professionals including Chief Librarian. For this purpose, a "*Google Form email notification add-on*" was installed and added the emails of the Chief Librarian, one Senior Librarian (Principal Author of the article), and one Librarian (2<sup>nd</sup> Author of this study).

## **6.1 Pilot Testing**

After this, the first phase of pilot testing was started and pilot testing was done by sharing the link with ten respondents and they were asked to send their queries. All the queries were received on three emails and three Focal Persons responded to those queries.

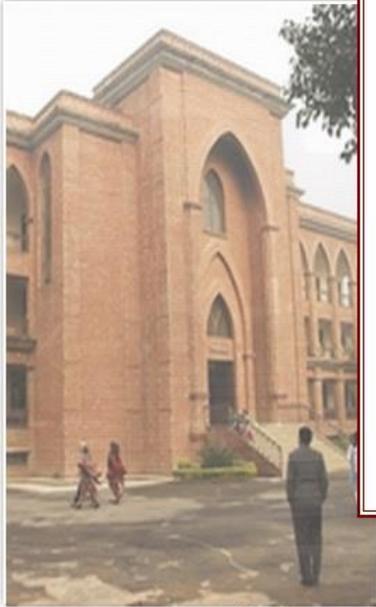
At the second phase, the link was uploaded on the library website and this link appeared as "*Online Library Material Request Form*". For facilitating library users, a pop-up of this link was designed. When a user opened a library website, a pop-up automatically appeared before the user at the site (**Figure 1.0**). After this, a pilot testing of the second stage was started and ten library users were asked to send their queries via the "*Online Library Material Request Form*". It was found that all setup was functioning accurately. At the third and final stage, a letter was circulated among all the departments through e-mail and WhatsApp Group of the university about this newly launched service.

## **6.2 Data Analysis**

Data regarding all the queries were gathered in Excel Sheet attached with Google Form utility. In July 2021, data of 602 respondents were analyzed to know about the best practices of this utility. Data were analyzed quantitatively by using MS Excel.

### **Figure 1.0**

#### ***Pop-up of Online Library Material Request Form***



Images of GCU Libraries



### Online Library Material Request Form

[Click Here](#)

### For Free Online Research Resources

[Click Here](#)

### Off Campus Access to HEC and Open Access Online Databases

[Click Here](#)



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Figure 2.0

*Online Library Material Request Form*

## Book/Article Request Form For GCU Lahore Faculty Members and Students

In case of any issue please feel free to contact Chief Librarian GC University Lahore: [muhammadnaeem@gcu.edu.pk](mailto:muhammadnaeem@gcu.edu.pk)

 [onlineadmission@gcu.edu.pk](mailto:onlineadmission@gcu.edu.pk) (not shared) [Switch account](#) 

\* Required

I Need Book/Article in \*

Choose

Title of Book/Article \*

Your answer

Author/Editor \*

Your answer

Year of Publication

Your answer

Journal/Publisher Name

Your answer

URL of Book/Article (in case of electronic format)

Your answer

Your Name \*

Your answer

I am a \*

Choose

Department \*

Your answer

Email Address \*

Your answer

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## 7 Findings:

This section of the study presents results, findings, and interpretations.

### 7.1 Demographic Description:

Table 1.0 reveals that 30 (4.98%) respondents were faculty members belonging to different departments of the university while 572 (95%) participants were students from different disciplines. It shows that the ratio of queries from students was higher than the academic faculty of the university because the majority of the faculty demanded required information resources through informal channels rather than the usage of the Online Library Request Form that was designed to receive queries from the population.

287 (47.6%) queries for required information resources were for digital format, 187 (31.06%) queries for the material in the electronic format while 128 (21.26%) queries were received for providing material in printed format. Findings show that digital format was frequently needed by the library's users.

**Table 1.0**

*Detail of Respondents and Required Format*

<b>Demographics</b>	<b>Detail</b>	<b><i>f</i></b>	<b><i>Percentage</i></b>
Type of User	Faculty Member	30	4.98
	Student	572	95
Required Format	Any format (Printed or Digital)	287	47.6
	Electronic format	187	31.06
	Printed format	128	21.26

## 7.2 Department Wise Distribution of Queries:

Table 2.0 shows that a total of 602 queries were received via the Online Library Request Form. Results show that the top 05 departments that sent queries through the Online Library Request Form belonged to Botany, English, Urdu, Political Science, and Sustainable Development Study Centre (SDSC). Department of Botany was at the top with 185 (30.7%) queries. Department of English stood second with 53 (8.8%) online queries. Department of Urdu was at no. 03 with 42 (6.97%) queries. Department of Political Science made 39 (6.47%) queries for material whereas Sustainable Development Study Centre made 36 (5.98%) queries.

Queries from other departments included Biotechnology 06 (0.9%), CASP 5 (0.8 %), Chemistry 20 (3.3%), Computer Science 21 (3.4%), Philosophy 01 (0.1%), Economics 28 (4.6 %), Electrical Engineering 01 (0.16 %), Electronics 03 (0.4%), Examinations 04 (0.6%), Intermediate 09 (1.4%), Geography 08 (1.32%), History 17 (2.8%), Biotechnology 09 (1.4 %), Islamic Studies 09 (1.4%), Sociology 01 (0.1%), Management Sciences 03 (0.49%), Mathematics 06 (0.99%), Microbiology 03 (0.49%), Persian 01 (0.16 %), Philosophy 12 (1.99%), Physics 12 (1.99%), Psychology 22 (3.65 %), Punjabi 02 (0.33%), Sociology 08 (1.32%), Statistics 10 (1.66%) and Zoology 26 (4.3%).

**Table 2.0**

*Department Wise Distribution of Queries (n=602)*

<b>Department</b>	<i>F</i>	<i>Percentage</i>
Biotechnology	06	0.9
Botany	185	30.7
CASP	5	0.8
Chemistry	20	3.3
Computer Science	21	3.4
Philosophy	01	0.1
Economics	28	4.6
Electrical Engineering	01	0.16

Electronics	03	0.4
English	53	8.8
Examinations	04	0.6
Intermediate	09	1.4
Geography	08	1.32
History	17	2.8
Biotechnology	09	1.4
Islamic Studies	09	1.4
Sociology	01	0.1
Management Sciences	03	0.49
Mathematics	06	0.99
Microbiology	03	0.49
Persian	01	0.16
Philosophy	12	1.99
Physics	12	1.99
Political Science	39	6.47
Psychology	22	3.65
Punjabi	02	0.33
SDSC	36	5.98
Sociology	08	1.32
Statistics	10	1.66
Urdu	42	6.97
Zoology	26	4.3

### 7.3 Statistics of Information Sources Provided:

Table 3.0 reveals response delivery rate. Requests for the printed books were responded positively with 87%, Digital Books (94%), Journals (93%), Magazines (92%), Articles (84%), Press Clippings (95%), Research Reports (79%), Printed Dissertations (100%), E-dissertations (86%), Dictionaries (100%), Encyclopedias (98%), Newspapers (91%), Archives (94%), Gazettes (100%), Subject Guides (78%), Personal Collections (100%), Reports (84%), Conference Proceedings (73%), Book Reviews (96%), Book Chapters (87%), Magazine Articles (97%), Scanned Material (93%), Presentations (94%), Referencing Styles Manuals (100%), Handbooks (79%), and Web Resources (92%).

**Table 3.0***Delivery Response Rate*

<b>Sr. No.</b>	<b>Information-Resource-Type</b>	<b>Delivery-Response-Rate</b>
1.	Printed Books	87%
2.	Digital Books	94%
3.	Journals	93%
4.	Magazines	92%
5.	Articles	84%
6.	Press Clippings	95%
7.	Research Reports	79%
8.	Printed Dissertations	100%
9.	E-dissertations	86%
10.	Dictionaries	100%
11.	Encyclopedias	98%
12.	Newspapers	91%
13.	Archives	94%
14.	Gazettes	100%
15.	Subject Guides	78%
16.	Personal Collections	100%
17.	Reports	84%
18.	Conference Proceedings	73%
19.	Book Reviews	96%
20.	Book Chapters	87%
21.	Magazine Articles	97%
22.	Scanned Material	93%
23.	Presentations	94%
24.	Referencing Styles Manuals	100%
25.	Handbooks	79%
26.	Web Resources	92%

## **8 Discussion and Conclusion:**

COVID-19 that started from China in late 2019 caused pandemic and created several challenges for all fields of life including educational sector where all types of educational places were closed keeping in view the precious life and health-safety of the students and education & research related matters were badly disturbed as off campus online information resources did not exist to a good deal and both the students and teachers & information professionals were not mentally ready well before time to initiate online learning and digital information services to meet the diverse needs of the users for enabling them to make compliance of relevant tasks without having faced physical barriers as on campus services were not being provided and entry of the students was strictly banned in the learning places of Pakistan because the government of Pakistan was ensuring strict compliance of the Standard Operating Procedures (SOPs) for saving precious lives and to avoid any unmanageable situation in upcoming times because situations could become worse if on site facilities continues to be delivered to the students, research scholars and the faculty members so keeping in view the welfare of all people, hard decisions were carried out however these challenges proved a blessing in the sense that a new era of librarianship & innovative online/digital services took place and traditional resources were replaced with digital information resources and manual services were switched over to online services in order to effectively respond to COVID-19 challenges for the purpose of playing a supportive role in e-learning system of the universities having followed the best practices through the designing of library guides, online library request form, user's friendly websites, implementation of technological tools, value-added services, innovative techniques, around the clock provision of digital services, development of institutional repositories, scanning of manual books as per requirement from the side of the users, remote access to online databases including IEEE Xplore, Science Online, Pro Quest for Theses & Dissertations, Wiley Inter Science, Springer Link, OVID; provision of Current Awareness Services (CAS), Delivery of Selective Dissemination of Information (SDI), usage of Information and Communication Technologies (ICTS), service via smart devices, usage of Artificial Intelligence (AI), Semantic Technologies, Virtual Reality, Data Mining, Big Data, digitization of print collections, Online Resource Sharing Networking, Inter Library Loan, Memorandum of Understandings (MoUs) with leading local & international publishers for the access to required databases and information resources, Virtual Reference Services (VRS), Telephonic services, smart phone services, building of online collections, new acquisition patterns, series of webinars

covering diverse topics in the best interests of the university's community including referencing & citation management using Mendeley and EndNote, resource learning sessions, online information searching techniques, writing an effective literature review, writing & publishing research, motivational talks, production of research having societal impact, awareness sessions about COVID-19, online resources and services, operational workstations from home, usage of social media tools, Facebook live lectures, digital platform to provide adequate remote services, Internet of Things (IoT), Blockchain technology, hybrid services in case of emergency & urgency, Information Literacy (IL) sessions, initiation of Adhoc services, information delivery system, remote log in for getting access to licensed e-resources, expanded services, maximum free virtual services, open access resources, research repositories, uploading of tools at web pages for accessing free digital books, journals, dissertations, reports, journal articles, newspapers articles, book chapters, book reviews, conference proceedings, datasets, electronic resources, government documents, presentations, monographs, research reports, trade publication articles, web resources; online videos, trail access to leading databases, free access to helpful software, access to free scholarly resources, one window search forum, customized online services, technical assistance for utilization of advanced technological tools, provision of special services to the Visually Impaired Students (VIS) through the provision of scanned material, online information resources, digital services; flexible & innovative role of library human resource, precautionary measures to avoid the spread of virus, audio services, online tutorials, renewal of the issued books, help in producing quality conscious research, checking of plagiarism through Turnitin Software, e-mail alerts, alerts through WhatsApp group, virtual tours of the libraries and information centers, virtual events, role of the library as digital community engagement center, users centered services, digital learning environment, building of e-platform to deliver services, implementation of emerging technologies and tech-led approaches, life-long learning activities, libraries as knowledge hubs, role of library associations and organizations, 3 D Print lab, Virtual Library Cards, reference databases, news services, customized digital courses, research assistance, online user training, and positive & dynamic role to support the educational community, RSS feeds, Instant Messaging (IM), Wikis, Blogs, integrated ICT applications, leveraging organization, mushrooming of information systems, strategic alliances, HTML Feeds, Streaming Media, Podcasting, Vodcasting, SMS Enquiry Service, Tagging, Social Bookmarking Services, Ambient Intelligence, Calm Technology, Ubiquitous Computing, Edge Computing, Computer Vision, Multi Experience

Interfaces, Augmented Reality Sales Tools, Remote Communication Tools, Virtual Experience Tools, IM Technology Integration, Intent Intelligence Platforms, Collaborative Work Management Software, LinkedIn Automation, MA accessibility, Assistive technology keyring, Portable devices, Adaptive Learning Algorithms, Asynchronous Learning, Microlearning, Live Streaming, Learning games & simulations, free online courses, Civic technology, Digital data storage, Exascale computing, SONOS, Magnetic data storage technologies, Exocortex, Li-Fi, Machine vision, Mobile collaboration, Optical computing, hybrid forensics, Serverless computing, natural language processing, quantum computing, service delivery optimization, Chatbots, cybersecurity threat detection, marketing automation, smart buildings, Nearpod VR, and research tools, electronic resource management, creation of web-based multimedia, makerspaces, Espresso book machine, web scale discovery services, open source software, usage of APIs, usage of VOIP, and frequent usage of web-analytics, etc. so that library's users of the university level might not face barriers in meeting required information resources for making completion of their ongoing assignments, projects, theses/dissertations, research articles, class work, term papers etc. and shine in academics by producing quality conscious work to the concerned teachers, supervisors and competent authorities of the university in order to meet set objectives and vice versa the university might also play its dynamic role to produce innovative graduates in the market who might lead from the front through the initiation of the innovative projects to uplift the concerned organizations and perform dedicated services to play vital role in national development and to become valuable civilians which is the ultimate purpose of a good university as to not only produce genius minds but also to cultivate such universal traits that might prove beneficial for the humanity in general so that rather than placing a focus upon personal development, social progress and dynamic changes to reform the community and the world through revolutionary and history-making moves might be focused in the best interests of the individuals, society, country, international community, and the mankind for carrying on great traditions of the initiation of innovative projects.

The findings of the students indicated that a few departments utilized the online services of the university's library to a great deal because they were required to make completion of research-based projects before deadlines. Academic Heads of the university spread awareness among the faculty members and students of their departments about initiatives of the library related to online innovative services as a WhatsApp group had been formulated of all the teaching and

administrative Heads following the vision of the Vice Chancellor and all updates were disseminated through the same for bringing efficiency in all operations. The departments that sent less queries through the Online Library Request Form required extensive training regarding the usage of online tools for broadening their outlook and to avail all the available facilities to shine in academics.

In New Normal, university libraries are adopting both online and offline services to satisfy the needs of different types of users at their convenience so that they might complete their assigned tasks easily through the usage of print & digital collections. University librarians need to make clear policies about the services that are to be delivered to end-users. They need to reshape library routine operations.

Library Staff of GCU Libraries, Lahore Pakistan is well-prepared to embrace new changes to provide adequate services to the users according to changing needs. Effects of the COVID upon library's services are long-lasting so proper planning is to be made by library professionals for managing such challenging situations efficiently in future times. As libraries around the world have been transformed so innovative technologies relevant need to be applied so that users may gain maximum benefits. Digital technologies need to be adopted via creative learning spaces.

University libraries around the country having the same domain need to make resource-sharing collaborations to facilitate the users. Library professionals should conduct training activities through cooperation. Library practitioners should convince the publishing houses for nominal charges via consortia. ICT infrastructure and ICT Personnel should be enhanced because COVID-19 has changed the functionality of the libraries. Librarians having a traditional mindset can't excel in librarians and may not show their visibility. Innovative technologies should be utilized for the delivery of effective library services in the new normal. Librarians should realize the significance of ICTs because the majority of library users are dependent upon virtual platforms. Library professionals should develop required IT skills for implementing the latest technological tools in the university libraries to support the users in making compliance with their relevant projects. They should be equipped with digital skills to provide value-added services to the users. Users should also be trained to make effective utilization of online information resources via the latest technological applications. Artificial Intelligence (AI) and integrated library system are of

great value for meeting the information and research needs of the users. Library professionals can use data generated via adaptive learning tools for meeting the needs of the research scholars.

The following figure 3.0 shows the key best practices which need to be implemented by library professionals working in the universities for facilitating the users during COVID-19 testing times:

**Figure 3.0**  
*Key Best Practices for University Libraries*



## **9 Delimitation & Limitation:**

This research is based upon the best practices applied in GC University Lahore Libraries during COVID-19 challenging situations. All technological tools where were open-source and free of cost were implemented to facilitate the end-users. Practices adopted by other university libraries of the country have not been covered. All databases could not be provided through Virtual Private Network (VPN) due to certain restrictions by the concerned publishers.

## **10 Recommendations:**

Following recommendations based on findings of the study, experts' opinions, users' reflections, literature analysis, and work experience are furnished to further enhance value-added services for the university's community:

1. The financial resources of the library should be increased.
2. Teachers should encourage their students to utilize the maximum digital resources of the university's library.
3. Digital collections should be enhanced.
4. Assignments should be given to the students related to HEC Digital Library to enhance the usage of existing resources.
5. The institutional repository should be developed.
6. The infrastructure of the libraries (Central Library, Post Graduate Libraries, Life Sciences Library, Departmental Libraries, and Hostel Libraries) should be upgraded.
7. Acquisition procedures and policies should be made easy.
8. Integrated systems should be implemented.
9. Academic and administrative faculty members should utilize online resources and services of the university's level to the optimum level for the promotion of reading and research culture.
10. Short Term Professional Development Courses (PDC) should be implemented for the manpower performing services in all libraries of the university (GCU Lahore) at regular intervals.
11. Information Commons should be developed.

12. Resource learning sessions need to be conducted at regular intervals throughout the year among the university's community.
13. Internet lab should be expanded.
14. The Shortage-issue of Library Human Resources should be solved.
15. Special awards should be given to the efficient library workers on annual basis by the competent authorities on recommendation of the top administration of the library.
16. Emerging technological tools should be implemented to better serve the information and research needs of the users.
17. There should be a separate section for the faculty members of the university in the libraries for comfortable study.
18. There should be specific discussion corners for the research scholars for scholarly communication in the libraries.
19. The library should be provided full-time staff to function in the evening shift so that Evening- Programs-Students may be facilitated efficiently.
20. The library should be provided more space to offer maximum accommodation capacity, fix new arrivals, and conserve personal collections.
21. More Users Centered Services (UCS) are needed to be provided through smart devices, artificial intelligence, and semantic technologies.
22. A Webmaster needs to be recruited for reshaping the existing website of the library so that more user's friendly services may be provided through sophisticated web pages.
23. Remote access to Online Databases should be provided to the users through a Virtual Private Network (VPN).
24. Robotic Section should be developed in the library to serve the community via Artificial Intelligence.
25. There should be a Conference Hall in the Library to conduct events, talks, sessions related to Information Literacy and organize professional development activities through national and international collaborations.
26. HEC, Pakistan should develop a centralized portal for the university libraries in Pakistan to empower the library workforce so that users may be served more efficiently.

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