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Spring 9-11-2023

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Pandey, Parbati Ms and Margam, Madhusudhan Prof., "Guardians of the Past: Safeguarding a Nation's Heritage through Manuscripts and Rare Collections" (2023). *Library Philosophy and Practice (e-journal)*. 7960.

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# **Guardians of the Past: Safeguarding a Nation's Heritage through Manuscripts and Rare Collections**

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## **Abstract**

*Preserving a nation's traditional and cultural heritage is imperative to transcending generations. Manuscripts and rare collections serve as invaluable windows into the past, allowing us to connect with our ancestors, understand our roots, and appreciate the rich tapestry of our cultural diversity. In this ever-changing world, exploring innovative approaches to conserve, digitize, and promote access to these treasures for the benefit of present and future generations is crucial. Libraries must preserve these rare collections, which are essential for future generations. This paper mainly focuses on the important deterioration factors for paper objects and book materials. It provides various methods, tools, and techniques for conserving manuscripts and rare collections in libraries. In conclusion, this study recommends the essential skills and competencies that Library and Information Science (LIS) professionals should possess. These competencies are vital for preserving and restoring manuscripts and rare materials, ensuring their usability for future generations, thus contributing to preserving a nation's cultural heritage.*

**Keywords:** *Library Materials, Preservation, Tools for Preservation, Challenges of Preservation, Skills and Competencies for Preservation.*

## **1. Introduction**

Libraries serve as a sanctuary of knowledge where various intellectual properties are stored for present and future purposes. They are an “invaluable treasure for humanity since they safeguard facts, ideas, thoughts, achievements, and proof of human progress in various fields, eras, and directions” (Adelko et al., 2020). These libraries kept diverse collections, depending on the library type. However, they typically included paper objects, books, audiovisual materials, art and artefacts, digital prints and files, moving image collections, photographic materials, paintings, textiles, and other rare or valuable items. “Libraries derive value from their collections, which are built to achieve their primary objectives of conserving and preserving recorded information” (Adelko et al., 2020). The preservation of such materials is critical to ensuring their longevity and involves practices such as digitization, conservation, and environmental maintenance. Preservation is essential for the library to understand our past, culture, and identity and protect materials with

monetary value from theft and damage. Now, libraries also play the role of research centres, labs, and maker spaces—a foundation for research and innovation. Therefore, it is essential to protect libraries and their resources for present and future generations of researchers to gain knowledge.

## **2. Review of Related Literature**

Libraries devote considerable financial and human resources to acquiring materials and meeting the needs of information seekers. However, preserving and maintaining valuable and rare collections for future use poses a significant challenge. Unexpected natural and artificial factors contribute to the deterioration and destruction of library materials. The quality of documents, environmental conditions, handling processes, and frequency of use are the primary reasons for the deterioration of materials (Oo, 2016). Dust and particulate matter are the most significant causes of deterioration in library resources (Osunride & Adentula, 2017). Kabejja (2019) notes that “operating hours, violations of rules and regulations, lack of interception, and environmental conditions are also significant factors in the damage of library materials”. Ejiroghene (2020) distinguishes between “internal and external causes of deterioration, with external causes including biological, environmental, chemical, and mechanical factors”. In today's digital age, preserving and conserving library collections is challenging for libraries due to the lack of policies, regulations, and strategies, the reliance on hard copies, and the absence of disaster planning and recovery strategies. Rachman and Ratnasari (2022) noted that "sustainable preservation and conservation practices are essential for all libraries". They suggest that modern ICT technologies convert resources into digital form, reduce the burden of library spaces, and enhance the durability of library collections. Proper cleaning, dusting, ventilation, migration, and digitization of library materials are recommended for long-term preservation (Kabejja, 2019). Funding, skilled human resources, infrastructure, regulation, legal framework, and awareness are also essential factors in preservation (Ejiroghene, 2020). Gonzales (2022) recommends ongoing professional development for staff, ensuring sufficient storage space, managing environmental concerns, reformatting and transferring materials, creating plans for disaster recovery, and physically treating materials that need repair or restoration. In conclusion, numerous studies have focused on preserving and conserving library collections, focusing mainly on paper objects and book materials.

## **3. Objectives of the study**

- (i) To know the various deterioration factors for paper objects and book materials.
- (ii) To find out different methods for preserving paper objects and book materials.
- (iii) Identify the tools and techniques used to preserve paper objects and book materials.
- (iv) To determine the skills and competencies required to preserve and conserve paper objects and book materials.
- (v) To find the Challenges to preserving paper objects and book materials.

## **4. Methodology**

A qualitative research method is applied in this study. All the required information was collected from the literature survey. For this purpose, databases like Proquest, Emerald, and Google Scholar were used for the literature search.

## 5. Paper Objects and Book Materials

Paper objects and book items include manuscripts, letters, newspapers, ephemera, pamphlets, architectural reproductions, scrapbooks, and albums. Information about past histories, cultures, and much more is stored on paper. With the advent of the paper, most of the intellectual content was published. So many documents are published in the paper, even though the demand for e-content is very high. Most people globally prefer to read a book rather than a digital device. Paper objects are generally available in most libraries. These items take up massive amounts of space in libraries around the world. ~~This paper document is essential and contains some content.~~ Documents, manuscripts, letters, scrapbooks, and other collection items contain ink (for content) and often adhesives, at a minimum. Leather, paper, cloth, gelatin, wood, and metal items are also included in books and archives. Like the organic and mechanical nature of materials, they are highly vulnerable to damage and degradation, and less attention is paid to them. Other common human-created or natural factors that contribute to the unexpected deterioration of paper objects and book materials include:

- (i) **Environmental factors** are generally measured by humidity, temperature, and light. If these factors are unbalanced, library materials decay. High humidity levels can cause the paper to absorb moisture and become weak, and low humidity levels can make the paper fragile and prone to cracking. Fluctuations in temperature can cause deterioration over time. Low and high temperatures are not suitable for paper items. Intense light creates heat and causes the paper to fade, yellow, and stain.
- (ii) **Biological factors** mean that humans, insects, and bacteria such as mice, insects, rodents, and microorganisms can cause damage to paper objects and books. Mice and rats shred and chew pages. They also used paper for nesting. Silverfish eat the words on the page of a book. Users are also the enemy of library collections. Some users overwrite the text and bookmark by folding the paper of the dog's ear. Some users do not care when stacking out and holding the processor of a rare book. They also touch with dirty hands or turn their palms with spit, which is very bad. Due to climate or other reasons, biological factors such as bacteria, fungus, mould, germs, etc., harm paper items very soon.
- (iii) **Physical factors** also significantly reduce the use of paper items. The library kept different sizes and file formats of paper objects such as books, pamphlets, posters, loose leaves, and more. If the library cannot store these documents correctly, the life span of the paper may be reduced shortly. The style of the heavy books taken out of a rack, the reading space (table)

of such items, shelving methods, etc., are also reasons for damage. The lifespan of loose-leaf paper also depends on the storage methods. The lengthy paper is kept in a cylindrical container.

- (iv) **Chemical factors** are associated with some other materials. Adhesive and ink are contained in documents, manuscripts, letters, scrapbooks, and other paper items. Air pollution or mild dust reacts with paper quality and causes yellowing and ruin. After some time, ink letters also fade and lighten. Acidic materials like adhesive and paper itself also cause damage over time.
- (v) **Disaster** is another factor that destroys items. It is out of the control of human beings. It is hazardous how much we lose in a minute. Earthquakes, Fires, Landslides, Tsunamis, Typhoons, Winds, etc., may destroy whole or partially.

## 6. Methods for Preserving Manuscripts and Rare Collections

The preservation of library collections is a specialized task. Different procedures are applied for diverse file formats, types, and quality of documents. Paper items have a unique preservation method, whereas sound recordings and digital items differ. Some of the preservation activities for manuscripts and rare collections are as follows:

- (i) **Environment control:** Ideally, the temperature should be 60–68 degrees Fahrenheit, and the humidity should be 40-45%. However, the temperature and humidity may increase due to the geographic region, climate change, and season. The **ledges (Terai)** area is always hotter than the mountains and the Himalayan region. Too much heat and too much cold are not suitable for library materials. Proper ventilation is needed for air to pass. So, stable temperatures, humidity levels, low light, and fresh air are essential to protecting library materials.
- (ii) **Protect from light:** Artificial or direct sunlight can fade and deteriorate paper and ink, and also store materials in low-light environments to prevent UV (Ultraviolet) damage.
- (iii) **Handle with care:** Proper handling and maintenance increase the life span of materials. Make storage arrangements according to the document format. Remember to provide support or cradles if a heavy book exists. Rare books **handle challenge** only with clean and dry hands. Touching with a dirty hand also reduces the quality of the paper. Avoid pulling on the pages or covers. A neat and clean environment should be maintained in their space.

- (iv) ***Use proper storage materials:*** Paper documents come in different sizes and formats. Books and manuscripts also have diverse sizes. Newspapers, letters, ephemera, pamphlets, architectural reproductions, scrapbooks, and albums look differently. The paper quality also concerns how to preserve it. Lignin- and acid-free paper products should be kept in folders, envelopes, and boxes. Some items may have been kept in wooden cylindrical containers by rolling.
- (v) ***Conservation treatment:*** Conservation treatments like cleaning, mending, and rebinding library materials can assist in increasing the duration of materials. Cleaning is most important to protect against environmental and biological hazards. Documents and their spaces should be neat. Periodic screening is needed to short out the damaged items for mending, rebinding, and weeding out.
- (vi) ***Monitor the condition:*** Periodic inspection is needed for manuscripts and rare collections to find and reduce hazards. Naturally, all types of collections are going to shorten their lifespan. Therefore, proper care and handling, as well as storing the materials, are needed. Regular monitoring helps to address the issue immediately and prevent further damage.
- (vii) ***Develop a disaster plan:*** We face disasters without notification and alerting dates. Nobody knows what level of impact the disaster has, like earthquakes, landslides, fires, floods, etc. Therefore, the preservation section should have a plan to protect manuscripts and rare collections. This plan should include emergency contact information, clearing procedures, and instructions for saving damaged materials. It is also necessary to design and convert digital forms and adequately follow backup protocols to save rare collections from unexpected disasters.
- (viii) ***Digitization:*** Libraries should digitize library collections to protect the original copies. Library materials are available for use. Digitization helps to disseminate such materials to the users' place by creating multiple copies or remote access without the physical touch of the original documents. Cloud repositories are best for remote access and saving from disasters. Emerging technologies assist users in reading its originality.
- (ix) ***Environmental hazards:*** Libraries keep manuscripts and rare collections far away from water, fire, pests, and pollution. Avoid storing on the ground or underground floor to save from flooding—there are huge chances of flooding in the plain area region library. The library should protect manuscripts and rare collections from being handed down to future generations.

## 7. Technologies Used for Preservation

Now, technology is more critical to the preservation of library materials. The library must disseminate its collection, and library items are also for use. Another challenge is that regular handling of rare collections may cause them to spoil quickly and be impossible to preserve for future generations. Therefore, libraries have two challenges: one is promptly disseminating library items, and another is protecting and storing such materials for future use. Technologies provide the best solution for libraries. Cutting-edge and emerging technology offer the natural feeling of a library without touching or handling the original physical layout. Several technologies are available for preserving manuscripts and rare collections, and the only solution is digitizing manuscripts and rare materials in libraries (Table 1).

**Table 1: Technologies used for Preservation of Library materials**

Technology	Uses
Cameras, Scanner (Book, Flatbed Large Format, Microfilm/Microfiche, Portable Document)	<ul style="list-style-type: none"> <li>• To create high-resolution digital copies of manuscripts and rare books</li> <li>• To make 3-D representations of objects and documents</li> <li>• Used for research, reference, and preservation</li> <li>• Used for virtual and online access</li> </ul>
Data loggers, Hygrothermographs, light meters, UV light monitors, and particle counters	<ul style="list-style-type: none"> <li>• To track temperature, light, humidity, air quality, UV radiation, and other environmental factors</li> <li>• Used to alert librarians to potential problems and help them find immediate solutions</li> </ul>
KITODO, CONTENTdm, Archivists' Toolkit, PastPerfect, CollectiveAccess	<ul style="list-style-type: none"> <li>• To create bibliographic details of manuscripts and rare book collections</li> <li>• To track and manage the collections and make them accessible to users.</li> <li>• To catalogue, metadata, and preserve.</li> </ul>
Augmented and Virtual Reality	<ul style="list-style-type: none"> <li>• To create hidden experiences that allow users to interact with manuscripts and rare collections</li> <li>• To create immersive cultural heritage experiences</li> <li>• Making 3D representations of paper documents is useful for creating an immersive user experience.</li> </ul>

## 8. Challenges to preserving manuscripts and rare collections

Library items for future use are not stored for a single period. So, enormous resources, i.e., man, money, and materials, are used for preservation. It is also more challenging in developing countries. The following challenges are faced by libraries in the activity of preserving.

- (i) **Lack of funding:** Finance is vital to running the institution, its section, and its branch. All of the regular and extensive services are dependent on finance. Preservation includes various activities and needs staff with specialized job specifications. So, it may require extra financing to pay. Funds are also needed for the specified infrastructure, equipment, tools, and ICT. If

libraries have sufficient funds, they can manage and preserve them properly and provide better service to their users. Otherwise, it could be “more straightforward to handle” (Akintonde & Awujoola, 2022). Developing countries mostly face funding problems to preserve rare and valuable documents for future use.

- (ii) ***Lack of skilled personnel***: Preserving manuscripts and rare collections requires specialized knowledge along with general knowledge of libraries. Those librarians have the skills to preserve and conserve processes, handle emerging technology, and handle software and metadata. Therefore, “there is a pressing need for library staff with extra specialized knowledge and experience in preservation” (Baro et al., 2019; Awamleh & Hamad, 2022).
- (iii) ***Limited access to technology***: Technology is needed to store manuscripts and rare collections appropriately. To maintain humidity and temperature, convert digitized forms, provide accessible facilities to users, and many more areas use technology. Due to a lack of funds or geographical region, the required technology and support system may be unavailable.
- (iv) ***Political instability and conflict***: Political instability affects the governing body all over. They have no long-term vision or mission for such activities: political parties and their members conflict over nonsensical things. Political instability may disrupt the collection and preservation of materials. There may be a high risk of the most valuable items being stolen, damaged, or lost. Uncertainty about funds also became a challenge during this period.
- (v) ***Limited public awareness***: The public and policymakers must learn the value of preserving manuscripts and rare collections in developing countries. Therefore, more public support and government initiation are needed to preserve rare collections. Government bodies do not include a policy concerned with preserving.
- (vi) ***Climate and environmental factors***: Climate change is natural in some regions. Some areas have continuous hot or cold temperatures and seasonable environmental changes in geographical regions. Maintaining a stable climate is difficult in developing countries due to the failure to purchase climate maintenance technology like AC, humidifiers, etc.
- (vii) ***Initiation of institution***: Either unaware or careless, institutions must take action to preserve valuable library items. With initiation from the higher authority, it is possible.
- (viii) ***Professional ethics or attitude***: Staff are more responsible for implementing policy and strategy. Professional initiation, staff perception, or motivation are vital in accomplishing preservation tasks (Awamleh & Hamad, 2022).



## 9. Skills and Competencies for Preservation

Preserving paper documents is a challenging job. Theoretical knowledge with specialized skills, competency, and a positive attitude are needed from the librarian's side. Cherinet (2018) defined "blended skills as a synergy of passion, knowledge, skills, and cultural intelligence for future librarians". Besides this, archive librarians should have the following skills.

- (i) **Inspecting skills:** Library staff can inspect factors associated with preserving and conserving paper documents.
- (ii) **Technical skills:** Overwhelming tools and technologies are available for diverse purposes. Some are necessary to handle preserving systems like chemical formation tools, humidity control, air control technology, microscopes, etc. Library staff should have the skills to adopt such technologies to protect and conserve paper documents.
- (iii) **Communication skills:** Sometimes, librarians need to consult with chemists, suppliers, experienced professionals, or other libraries' concerned stakeholders to preserve the documents. Therefore, communication skills are prerequisite skills for the respective librarians.
- (iv) **Analytical and problem-solving skills:** There are so many obstacles that libraries might face in the preservation process. Library staff should have the skills to investigate the root cause of the problems and have an immediate solution for those issues. LIS professionals should know how to preserve policies and protocols. They should be aware of the international practice for preserving and conserving materials.
- (v) **Disaster management skills:** Disaster comes with more than early altering of the people. Librarians should have decision-making skills to save humanity and library collections as soon as possible. Preserving activity is a challenging job. Technical and chemical hazards may occur unexpectedly, harming humans and documents. Therefore, library staff have the skills to handle risks in such situations.
- (vi) **Digitization skills:** Now, converting and disseminating digital formats to users is the best solution to save rare collections for a long time. Different technological tools and applications, like cameras, scanners, and other applications, assist in converting and managing the digital form. Hence, "library staff must develop digitization skills" (Ocran & Afful-Arthur, 2021; Cherinet, 2018) to work in this section.
- (vii) **Automation and metadata skills:** Bibliographic and metadata information is most important for users' purposes. Library automation systems assist in managing bibliographic data very systematically. Library staff must handle the automation and repository

applications and enter the documents' metadata. Hence, “automation and metadata skills are library staff's most commonly needed skills” (Khan & Bhatti, 2017).

- (viii) ***Emerging technology skills***: Emerging technologies provide services very effectively and innovatively. Moreover, the trend toward adopting emerging technology in libraries is very high. These technologies help libraries provide innovative services. 3D printing, virtual and augmented reality, and artificial intelligence offer immersive interactive services to users. Blockchain is also beneficial for the security and surveillance of digital assets. LIS staff develop the skills to adopt such technologies in preserving and conserving processes.
- (ix) ***Continuous learning skills***: ICT has a significant impact everywhere. New preservation techniques and technologies are emerging continuously. Continuous professional development enhances the skills and knowledge of LIS staff. Therefore, library staff in the preservation section should have continuous learning habits. They should have a zeal for professional development.

## 10. Recommendations

Preservation is a crucial phase of library management to ensure library materials are available for future generations. It says that "*every problem has a solution*". There are several alternative solutions to reduce the problems. Based on the above challenges, some of the answers are herewith.

- (i) ***Training and capacity building***: Skilled human resources are the capital of any institution. They play a vital role in carrying the institution to its peak. Lifelong learning practices build the capacity of staff. Some particular types of jobs need separate training from other common ones. So, government bodies, professional associations, and libraries should conduct professional development programs like training, conferences, and workshops to enhance the skills and knowledge of library staff (Khan & Bhatti, 2017) working in the preservation field.
- (ii) ***Public awareness and advocacy***: Advocating for preserving rare collections helps generate funds and support. Aware people understand the importance of cultural heritage and rare collections. Awareness can be increased by including source content about preserving such collections (Awamleh & Hamad, 2022). Therefore, concerned bodies should spread awareness by conducting a public program. Now, social media has become a vital source for disseminating information.
- (iii) ***Use of open-source technologies***: Due to financial constraints, preserving rare collections has become challenging in developing countries. Furthermore, managing the archiving sources with an ICT application is possible. Therefore, libraries should consider adopting open-source applications instead of proprietary ones. It will “reduce the high cost of buying

software” (Ocran & Arthur, 2022). Another benefit is that libraries can customize open-source applications per the institutions' requirements.

- (iv) **Government support:** Rare collections include the history, culture, value, and integrity of the past. We have to save and transfer such groups to future generations to understand the actual truth of the past. Therefore, the government should have a policy to support preserving and conserving such documents. Government policy motivates libraries to make strategies for the same.
- (v) **International partnerships:** Preserving rare and valuable library collections is more challenging due to investing considerable resources in developing countries. The concept of international partnerships between two countries assists in bringing in resources, expertise, and funding for preservation, which is very beneficial for such countries. By implementing this concept, libraries from developing countries can mutually collect, organize, manage, and share information.
- (vi) **Disaster preparedness:** Libraries should develop a disaster preparedness plan to save collections from natural disasters and other emergencies. The plan includes an emergency response and rescue team, the location of storing collections, the server location of the digital backup, and environmental monitoring systems to detect possible threats.
- (vii) **Good infrastructure:** With infrastructure, preservation is possible. Therefore, concerned authorities should develop standard infrastructure according to the type of collection and library plan, which is very necessary.
- (viii) **Funding support:** The limited funds stop many works and plans. A considerable amount may be invested in preservation for staffing, technology, environmental control, etc. Therefore, Management should provide sufficient funds to reduce burdens, and libraries should also make further plans for storage and preservation according to society's demands and standards.

## 11. Conclusion

Preserving manuscripts and rare collections is an indispensable mission, profoundly influencing our comprehension of history, culture, and identity. This solemn duty falls upon libraries entrusted with safeguarding these invaluable treasures for posterity. The approach employed for preservation varies depending on each source's unique nature and condition, demanding a repertoire of skills and knowledge from library personnel to shield these information treasures from potential harm.

One particularly commendable solution in the preservation arsenal is digitization, a powerful tool for safeguarding rare manuscripts and fragile paper documents. This method facilitates the

efficient organization and widespread dissemination of these irreplaceable collections, ensuring their accessibility for future generations. Nevertheless, libraries grapple with formidable preservation challenges, encompassing a scarcity of skilled human resources, inadequate technological infrastructure, subpar facilities, limited public awareness, and insufficient financial resources. In this critical endeavour, professionals in the field of library and Information science play a pivotal role. They are the custodians entrusted with storing, protecting, and disseminating the wealth of knowledge contained within these cultural, historical, and profoundly significant collections. A comprehensive understanding of preservation techniques and the sophisticated applications of digitization proves invaluable in preserving cultural treasures that resonate with countries worldwide. We can fortify our commitment to conserving and sharing our cultural heritage by embracing these techniques. In conclusion, this study highlights the essential skills and competencies necessary for Library and Information Science (LIS) professionals to ensure the preservation and usability of manuscripts and rare materials for future generations, thus contributing to preserving a nation's cultural heritage.

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