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Vasantrao Naik Mahavidyalaya Institutional Repository: Best Practice for Encouraging Self Archiving

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Abstract: Information technology has facilitated preservation of the documents, i.e. digital preservation. Institutional repositories are becoming responsible for scholarly content in new ways. This paper highlights some of the initiatives taken in Vasant Rao Naik College
for the digital preservation of Rare Book. The article offers suggestions for how your library might best preserve local content.

Key Words: Digital Preservation, Institutional Repository, Digital Library, Open Source, D-Space.

Introduction

Information technology has played an important role in library and information science. Due to the developments in information technology, now, it is possible for libraries to provide several new services to the library users along with traditional services. Libraries are now able to provide information in print form as well as in digital form. The collection of any library is an invaluable heritage of human ideas, thoughts and the evidences of past developments human being. The past record is treated as a natural resource and is crucial to the present generation as well as to generations to come. Any loss to such material is very harmful. Therefore, conserving and preserving this academic cultural legacy becomes not only the academic assurance but also a moral responsibility of the librarians, information scientists, who are in charge of these repositories.

These repositories provide a centralized platform for storing, curating, and making accessible various types of institutional output, such as research papers, theses, and dissertations.

Some benefits of institutional repositories include:

- Centralization and organization of institutional output

- Long-term preservation and curation of research products

- Maximized availability and accessibility of research to users at no cost

- Increased visibility and impact of institutional research

The availability of open-source software platforms has made it easier for libraries to implement institutional repositories.

An Institutional Repository (IR) is a digital platform or database that collects, preserves, and provides access to the intellectual output of an institution, such as a university, research center, or library. This can include:

- Research papers and articles

- Theses and dissertations

- Conference papers and proceedings

- Technical reports

- Datasets

- Multimedia materials

The primary goals of an IR are to:

- Store and preserve institutional output for long-term access

- Increase visibility and impact of institutional research

- Provide open access to research products, promoting knowledge sharing and collaboration

- Support research assessment and evaluation

By hosting an IR, institutions can showcase their research achievements, promote open access, and ensure the long-term preservation of their intellectual output.

Basically, the primary issues in conservation and preservation are the need to extend the life of printed and non-printed materials by taking suitable conservation and preservation measures that hold back the deterioration of materials. These materials include books and periodicals, reference material, gazetteers, newspapers, technical reports, manuscripts, pothies, maps, typo sheets, survey sheets, pamphlets and so on.There is an old proverb that says **'prevention is better than cure.'** It is wiser to preserve an old book for the generation next in a digital form before it gets damaged.

Contents of DSpace: Documents for DSpace Repository

DSpace accepts all forms of digital materials including text,images, video and audio files. Possible content includes the following:

- Documents, such as article, preprints, working papers,technical reports, conferences
- Books
- Tesis
- Data Sets
- Computer programs
- Visualisation, simulator station and on the models

- Multimedia publications
- Administrative records
- Web pages
- Published Books
- Overlay Journals
- Bibliographic datasets
- Images
- Audio files
- Video files
- Reformatted digital library collections
- Earning objects

D Space is designed for ease-of-use with a web-based user interface that can be customised for institutions and individual departments.

What is a Digital Library?

According to Deegan, M. and Tanner, S. (2002), A digital library is

1. A digital library is a managed collection of digital objects.
2. The digital objects are created or collected according to the principles of collection development.
3. The digital objects are made available in a cohesive manner, supported by services necessary to allow users to retrieve and exploit the resources just as in the case of other library materials.
4. The digital objects are treated as long term stable resources and appropriate processes are applied to them to ensure their quality and survivability.

Why Digital Libraries?

- The fundamental reason for building digital libraries is that they provide better delivery of information than was possible in the past.
- The digital library brings the library to the user.
- Computer power is used for searching and browsing.
- Information can be shared.
- It is easier to keep information current.
- Information is always available.

Digital libraries (DL) are digitized versions of conventional media, such as text, images, audio/video, etc. DL hold any information that can be encoded as sequence of bits. Newspapers, scientific journals, books, question papers, thesis/dissertations, bibliographies, images, photos, audio/video resources, preprints/ reprints of the faculty members etc. all these documents if converted from analog media to digital media or if created through digital technology fall under the category of Digital Libraries.

Biographical Sketch of "Flora of Marathwada and other Institutional Repository".

The Collection of Ho.Vasantraoji Naik is having very precious collection in the Library .As well as The "Flora of Marathwada" was compiled by Dr.V.N. Naik and his Associate Team Members. This Book was published by Amrut Prakashan Aurangabad in 1998 in 2 volumes. The Flora of Marathwada includes 161 colorful photographs and description of several numbers of plants which occur in this region. The plants are identified and classified scientifically and given exact Botanical names. According to Dr.Vikram Khilare, Associate Professor, Dept of Botany, Vasantrao Naik Mahavidyalaya, Aurangabad, this book is the **Dyaneshwari**of Angiosperm Taxonomists of Marathwada.

Review of Literature

The creation of an institutional repository has become very common in academic libraries, due to the availability of a number of open-source software platforms that allow for simple implementations. Libraries decide to undertake such projects because they have realized that these can be used as a venue for the centralization, storage and long-term curation of all types of institutional output. It is also a way of maximizing availability, accessibility and functionality of the research product at no cost to the user (Johnson, 2002; Pickton and Barwick, 2006; Lyte et al, 2009).

The scientific environment is multi-disciplinary. DLs and IRs are built and they serve different disciplines. Forthis study, a bibliographic review was carried out regarding repository policies. More specific, IRs and userattitudes towards open access were examined though Mel Collier's work.(Collier, M. 2010).

Preservation is the process of safeguarding records for the benefit of current and future generations. Preservation is a set of preventive conservation activities aimed at prolonging the life of a record, book, or object while making as few changes as possible. It is a term that record offices, libraries, and museums use to describe how their collections are protected and maintained in good physical shape. This can be done through a variety of means aimed at both minimising the risk of loss of resources and slowing down as much as possible the processes of physical deterioration that affect most archives and library collections. The preservation of information resources can enhance and contribute to the success of information literacy when the users are free from the barriers hindering their accessibility (Alex-Nmecha& Owate, 2019).

Information resources preserved in various libraries play an important role in the process of intellectual development, learning, and research which expands users' perspectives in terms of learning, self-development, and evaluation (Odutola & Alegbeleye, 2019). This implies that if information resources are not properly preserved it would not be possible for library patrons to retrieve important information for academic, research, and consultancy services.

Statement of the problem:

After the preliminary survey the Researcher had found that, Library of every academic college has 2 to 4 copies of the books in bound but damage condition. Even University libraries have very limited copies and this numbers of copies are not enough for UG/PG and post PG researchers in Botany. To add to the seriousness of the problem it has been understood that the present valuable book has been out of print and is no more available in the market. So, it is foremost need to preserve this Scientific Epic before it gets more damaged and extinct.

The collection was valuable and hence needed to be digitized. Indeed, this was a challenging and promising task. Undertaking such kind an activity will not only help the Librarians, but the Researchers in Botany, especially the Taxonomists. Even The Hon. Pime Minister Narendraji Modi addressed, "the **Digital India** is an initiative by the Govt of India to ensure that Government Services are made available to citizens electronically by improving online infrastructure and by increasing internet connectivity.

Significance of the study

1. The study emphasizes on the preservation and Digitization of the rare books and Institutional Repositories

2. The study helps the researchers to get an instant and essay access to the rare books, institutional repositories, rare diagrams, Journals, Preivious Question Papers and photographs.

Aims and Objectives

1. To create, manage and preserve the collection in digitized form.
2. To make the digitized form available to the users.
3. To make the use of information easy and time saving to the Researchers
4. To preserve the information content as a back-up on a long-lasting medium. Here long-lasting would mostly mean more than 100 years.
5. To preserve the book for easy dissemination.
6. To enhance the resource sharing and networking among the digital libraries in the region and in this way making the information open to all.

Research Methodology:

The Experimental research methodology was selected for this research work. The present work deals with the Digitization and Preservation of rare book and instructional repositories. There have been significant efforts to develop digital libraries with the help of D-Space Software.

Evaluation of Digital Preservation of Rare Book "Flora of Marathwada" with D Space.

Building the digital collections and infrastructure required to access them is a challenge that every library has to face Libraries have expanded with the developments in information technology and creation of digital information resources. Information Technology tools provide opportunities for the libraries to store, process, and transfer and exchange information. Digital libraries are built around Internet and web technologies with electronic databases/e-documents. Increased usage of software, hardware and networking technologies, WWW and also highly evolved browsers have paved way for the creation of digital libraries at global level.

Vasantrao Naik Mahavidyalaya, Aurangabad at a Glance:

Vasantrao Naik Mahavidyalay, Aurangabad was started by Vasantrao Naik Shikshan Prasarak Mandal in 1972. It was the product of the vision of Samajbhushan Principal Rajaramji Rathod sir to start an institution for the advancement of socially and economically underprivileged. The college name of late Hon Vasantraoji Naik (Ex. Chief Minister, Maharashtra) who has been a source of inspiration for all of us. Vasantrao Naik Mahavidyalaya is affiliated to Dr. Babasaheb Ambedkar Maratheada University, Aurangabad. The college has been reaccredited by NAAC with CGPA of 2.70 on 4-point scale grade B+. The college provides education, training, consulting, and research facilities in Arts, Commerce, Science and management.

Benchmarking In Libraries:

The VNM Library with its modern collection of knowledge resources and innovative information services fills an essential role for students, faculty, and the surrounding community in their intellectual pursuits. It is a hybrid library with the state-of-the-art technological applications.

The library holds knowledge resources predominantly related to Arts, Science, Commerce, and management subjects. Library uses Bar Coded Circulation since 2005. The collection includes around **61,028 books** on Arts, Science, Commerce, and management subjects. The current subscription to periodicals includes 56 Indian journals. Other collection includes 75 management science subject study material CDs and other subjects 254 CD/VCD and DVDs. Through the Remote access of KRC Dr. BAMU, Aurangabad, INFLIBNET N-List, DELNET users can access the online databases.

The college Library have precious collection of Hon. Vasantraoji Naik's rare books, Collection of Faculty Speeches, Lecture series of audio/video, previous question papers, Journals and Magazines.

The library is actively engaged in organizing workshops, seminars activities. The details of library activities can be found in the following blogs. http://vnmlibrary.blogger.bom/this blogs contains reports, photographs & newspaper clipping

Digital Preservation:

D-Space supports bit preservation, where a digital file is carefully preserved exactly as it was created without the slightest change. While submitting documents in D-Space system keeps track of known bitstream formats and their support level. The repository provides a list of supported file formats. Supported formats include those that are documented standards (e.g., TIFF, AIFF, XML) or have published specifications (e.g., PDF, RIFF). Smith, M. (2006)

Digital Preservation Coalition defines "digitization as the process of creating digital files by scanning or otherwise converting analog materials. The resulting digital copy, or digital surrogate, would then be classed as digital material and then subject to the same broad challenges involved in preserving access to it, as "born digital" materials".

Digitization Process

The project followed three phases namely, Planning, Digitalization process and post digitalization process. The three phases followed in the project are summarized on the table hereunder.

Table No.1

Digitization Process

	Steps	**Key Activities**
1	Planning	• Identified the collection to be digitized in VNM Digital Library. (i.e. Flora of Marathwada and othe Institutional Repository.) • Access and Installation open-source software D-Space through proper technical person • Establishment of Book in scanned format. • Decided on the metadata standards.
2	Digitalization Process	• Availed required equipment (Separate P.C) • Scan books received in (Grey scale text and colour images) inpdf with quality control • Order to Experts of D-Space Team for actual process of built digital library. • Configuring D-Space for individual catalogers (collection creation, plugin, populating materials) • Selected materials to be digitized.
3	Post-digitization Processes.	• Migrating collection from cataloger's computer to main server • Design user Interface for each collection • Assessment and evaluation of the project. • Official Inauguration

Evaluation of D-Space:

The collection in DSpace is organised into communities, collections and items. The communities in DSpace include a high-level organizational structure whose only purpose is to divide collections into related groups. Each community contains one or more collections, which are containers for related items.

An item is a deposited object of any type: a published article, an image, audio, or video file, notes, a presentation, etc.

The first version of DSpace was released during November 2002. For the present study installation of 1.4.2 version was carried out and selected for evaluation study. This version was released on 11th May 2007. The latest version of DSpace is 1.5.2 which was released during March 2008. For this project researchers have selected D-Space version of 5.4 under copyright 2002-2013.

Barve Sunita (2008), has observed in her research study, the details of D Space features section wise.

Table No.2

Evaluation of D-Space

Sr.no	Important Features	Details about Features
1.	Content Acquisition	• DSpace supports adding all types of digital documents ranging from books, reports, journal articles, lecture notes, technical reports, thesis, images, audio/video files to data sets. • Dspace was especially designed for creating institutional repository of any organization. (Colleges, Industries)
2.	Content Management	• DSpace has proper workflow in place where it allows to create different submission roles for different groups/members within the repository.
3.	Metadata Submission and Support	• DSpace supports to add descriptive metadata for all digital objects that are added into the repository. DSpace by default supports the following metadata fields such as Author, Title, Other Title, Date of Issue, Publisher, Citation, Series/Report No., Identifier, Type, Language, Subject Keywords, Abstract, Sponsors, Description fields.
4.	Classification	• DSpace supports to group digital objects as per keywords. • DSpace does not support creating of class numbers. • DSpace does not support browsing based on class numbers.
5.	Information	Search & Retrieval
6.	Browsing	Following main component wise browsing facilities has in D Space. • Author/Creator/Contributor • Title of the document/Title of the book/Title of the article etc. • Issue Date/Date of Publication • Collection • Communities • Subject browsing
7.	Searching	Searching content via different metadata fields such as: • Author, title, subject, publisher etc. • Full text searching Yes • Boolean (AND, OR, NOT) searching • Basic search • Advanced search • DSpace supports boolean operators in search string. • Exact words/phrases searching • Proximity searching • Stemming • Fuzzy searching • Boosting the term • Support multilingual search and retrieval
8.	Sorting	• Author wise

		• Title wise • Issue Date wise • DSpace allow restricting access at different levels such as item level, collection level and community level.
9.	Access Control, Privacy and Management	• DSpace creates e-persons for all the members who register themselves through web browser. It is called as My DSpace. For each member DSpace holds email address, first and last name, list of collections for which the e-person wishes to be Notified of new items, password details etc.
10.	Authentication and Authorization	• DSpace default template can define different delegation of authorities such as submitter, accept reject step, accept/reject/edit metadata step, and edit metadata step, collection administrators, item template, and collection's authorizations.
11.	Interoperability	• DSpace supports OAI-PMH protocol for metadata harvesting. Since every item that is added into the DSpace repository have one Dublin Core descriptive metadata record, DSpace allows basic metadata interoperability across all of the items in DSpace.
12.	Ease of Deployment of each software	• The installation process of DSpace is added in Appendix B of this document.
13.	System Support/Maintenance	• Documentation is available on DSpace web site http://www.dspace.org • System administrator can configure different tasks easily from web user interface of DSpace
14.	Hardware/Software Requirements	• Atleast P4 machine, with 256 MB RAM and 40 GB hard disk.
15.	Backup/Restore facility	• The software does not have any backup function. End users have to take back up of bit stream and metadata fields on their own.
16.	User Friendly Interface	• The end user can customize the user interface as per end user's needs. • DSpace supports to localize user interface in any language.
17.	Usability	• It is easy to use the web interface of DSpace.
18.	Copyright/Policy Issues	• The software has a facility to keep track of all documents that are added into the repository along with their copyright details.

After the brief descriptive account of the Dspace Software, the actual wok of Digital Library has explained of Vasantrao Naik Mahavidyalaya, Aurangabad.

Building an VNMA Institutional Repository With D-Space:

An Institutional Repository is an online locus for collecting, preserving, and disseminating information in digital form for the intellectual output of an institution. An institutional repository may contain work of which the author or institution owns copyright, or for which permission has been obtained to include a copy of the work in the repository.

DSpace is designed to **Vasantrao Naik Mahavidyalaya, Digital Library.** The system's information model is built around the idea of Library "Communities".

"Communities" in D –Space are defined to be the different type of books which has been preserved. (i.e Biography and Autobiography, Book published by Faculty of VNMA,Research Project Book of Flora etc.) Each Community can adapt the system to meet its particular needs and manage the submission process itself.

In general, repository refers to a storage location and often for preservation. In digital library, repository stores digital contents and its metadata. The interface to repository is called the Repository Access Protocol (RAP).

Practical Example: It is Vasatrao Naik Mahavidyalya, digital library (fig-10), we see the http://192.168.10.170/jspui/In this, the naming authority assigned by Librarian, Dr. Veena M. Kamble to the digital library, to a document in the repository.

Practical Example: Home Page of Digital Library of VNMA.

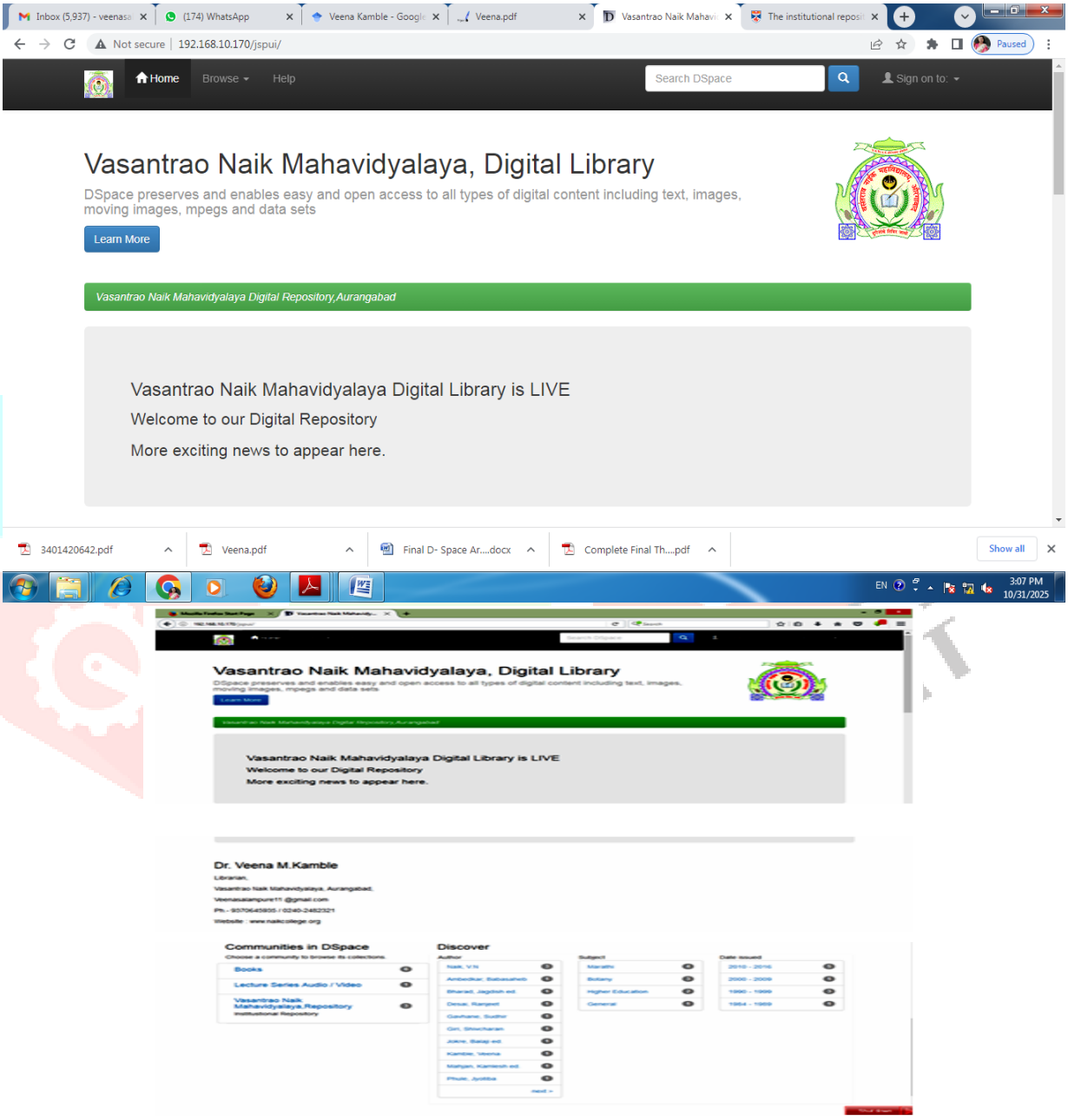


Fig-1 Home Page of Digital Library of VNMA.

The screen shoots the Home page of Vasantrao Naik Mahavidyalaya, Digital Library. After the logn in with library @localhost we had started submitting the document. (i.e rare Book pdf).

Step 1 and 2 - Storage location- Select storage location under a community.

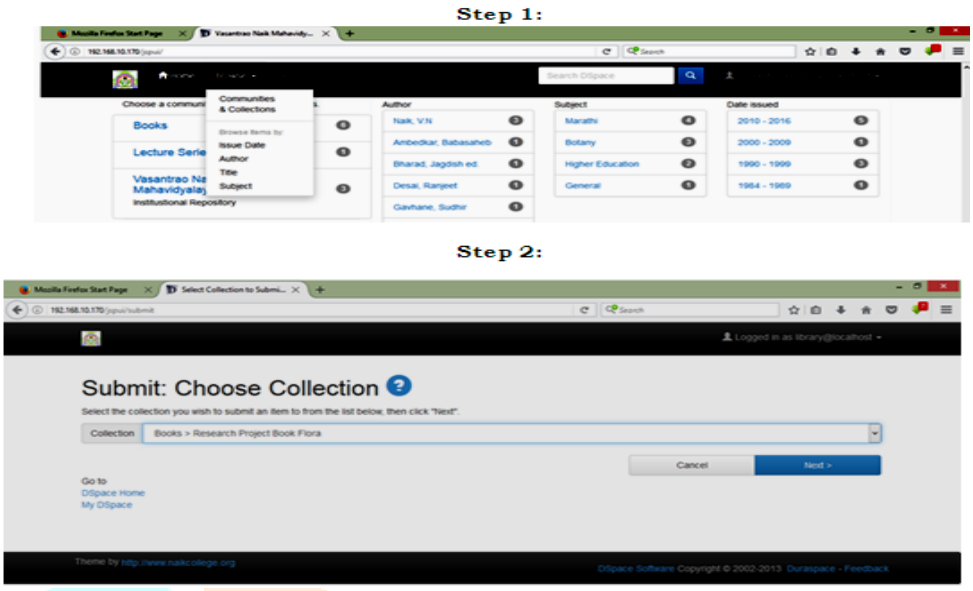


Fig -1 Storage location for Submission of document

Access of Newly Submitted Document from Home Page.

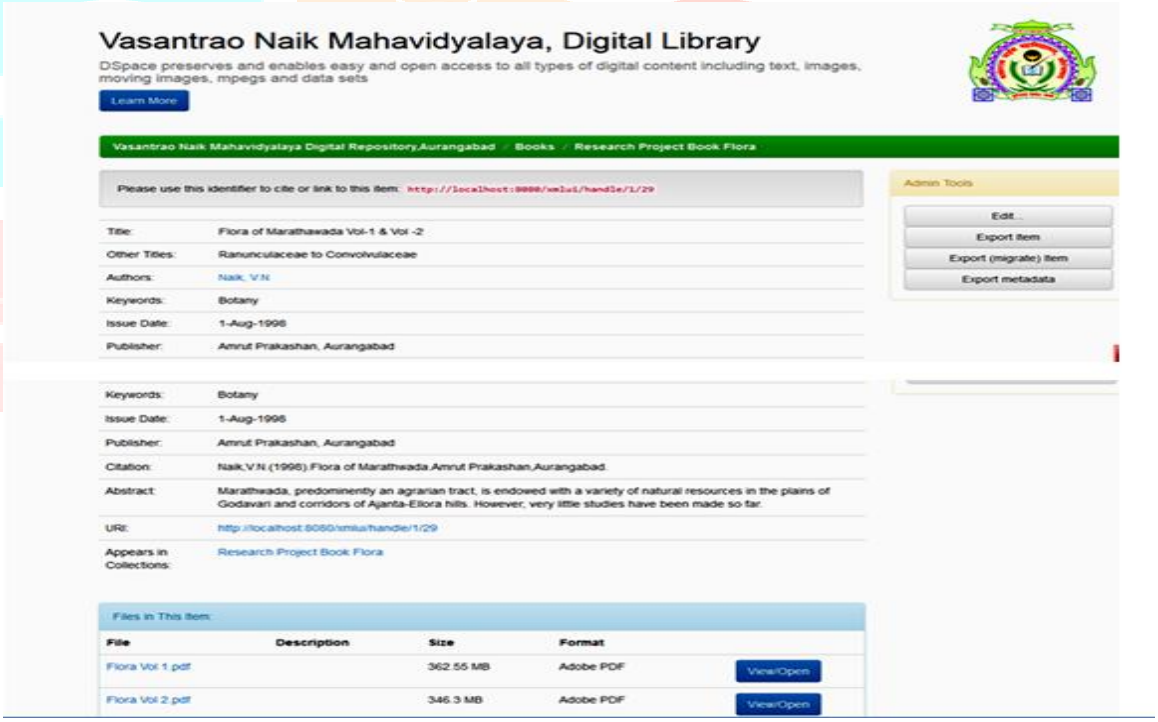


Figure -2

Complete Descriptions of newly added "Institutional Repositories".

Browsing and searching in DSpace

In this section we will discuss about the browsing and searching facility in DSpace.

Browse in DSpace:

Browse allows you to access the list of items in some specified orders. DSpace allows you to browse through

- By Community/Collection,
- By Title,
- By Author,
- By Date and

- By subject

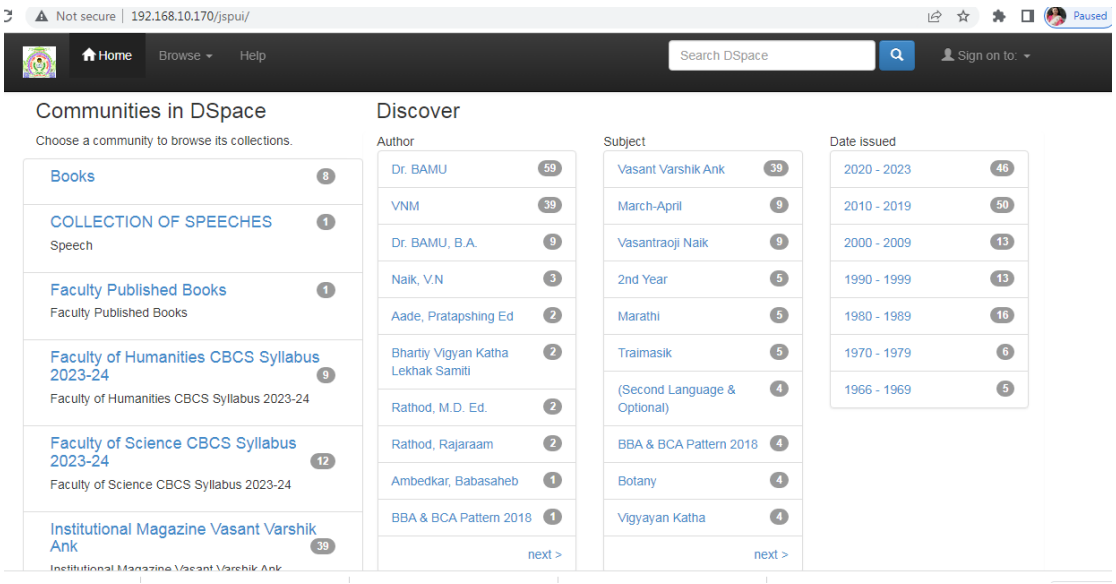
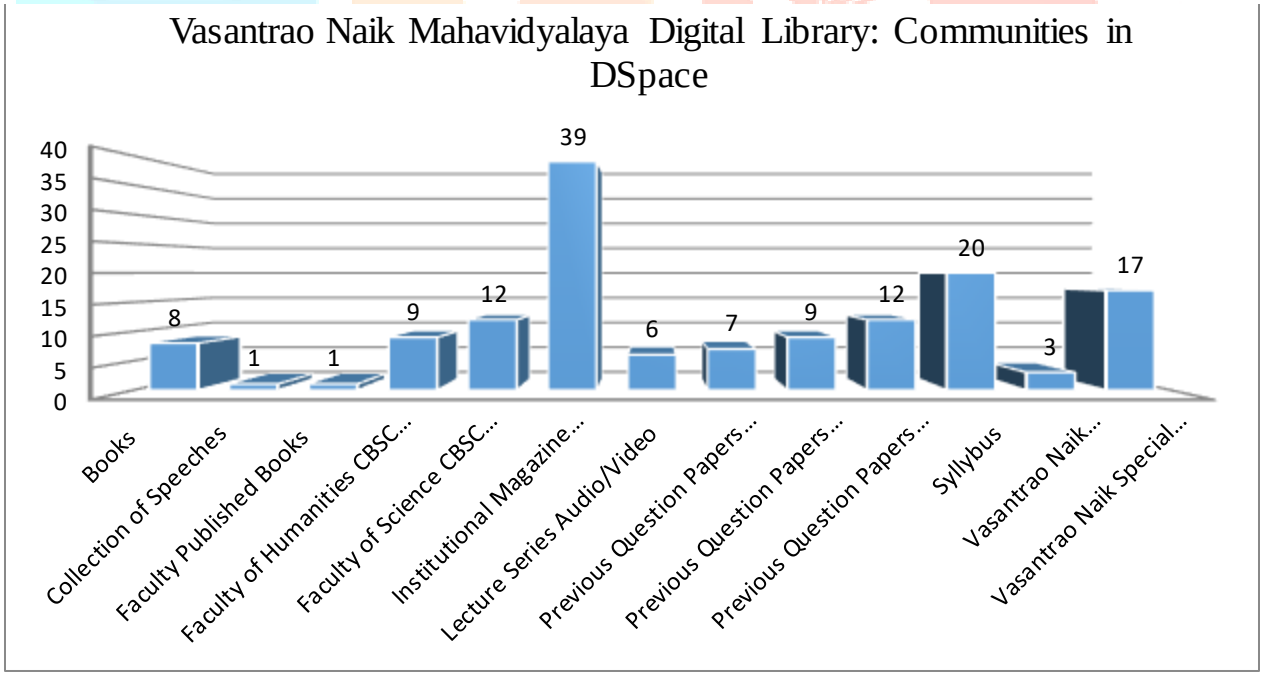


Figure -3

Browse facility

To search in DSpace repository, use the search box at the top right position of interface (see Fig-12). The query words you enter in the search box, like, it will be search against the Title, Author, Subject and Date of each item records.

Institutional Repositories of VNM:



Findings:

Therefore, in conclusion, researcher would like to summarize as under:

1. There is an old proverb that says **'prevention is better than cure.'** It is wiser to preserve an old book for the generation next in a digital form before it gets damaged.
2. The Vasantrao Naik Mahavidyalaya, Digital Library helps the researchers to get an instant and essay access to the rare books, institutional repositories, rare diagrams, Journals, Previous Question Papers and photographs.

3. The digital copies of the physical objects of cultural significance are the best digital captures of those physical objects which are already deteriorating due to handling, progress of time, changing weather conditions. The digital copies can help in reducing the handling original physical objects.
4. The digital copies can be easily made available to the scholars and researchers for their study across the globe with adequate access controls.
5. Benefits include lower costs, greater accessibility, and better prospects for long-term preservation of scholarly works.
6. To a great extent, electronic resources were available in the University of Calabar

This project has enhanced the use and access of digital information and create a system to communicate and preserve the intellectual output of the scholars and rare books and institutional Repositories of the VNMA. Digital preservation involves the creation and maintenance of library of emulators or the migration of archived content over a disruptive technology cycle. It is necessary for the long-time preservation.

This is actually being implemented that the Vasantrao Naik Mahavidyalaya Institutional Repository: Best Practice for Encouraging Self Archiving.

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