

THE NATIONAL DIGITAL LIBRARY OF INDIA (NDLI): A SINGLE WINDOW PLATFORM FOR EDUCATION

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The concept of library is changing from 'library within a wall' to 'library without a wall', i.e., "Digital Library". Digital library could transmit information to their users through network and users will access the information from anytime and anywhere at place of work. Digital library is always immediately adopting new technology for providing electronic information as well as presenting new forms of communication. Considering importance of digital library Ministry of Human Resource Development, India developed National Digital Library India (NDLI). The objective of the NDL India is provides all language information content, specially also hold up regional language content information. It also gives help to all educational level disciplines from primary to post graduate, all types of researchers along with lifelong learners of various academic courses. This article emphasizes various services offered by NDLI for access to electronic books, magazines, articles, audios and videos. It is an attempt to communicate the services and systems of NDL India. This article can be useful to the community of students, teachers and users.

Keywords: Keywords: National Digital Library, NDL India, National Digital Library of India, E-learning platform

INTRODUCTION OF NDLI

Ministry Digital of Human Resource Development (MHRD), India has made the National Library of India (NDLI) project on behalf of the National Information and Communication Technology (NMEICT) scheme to develop an institutional pool of educational resources similar to the single Windows platform in Education. It expands by the Indian Institute of Technology Kharagpur under the protection of the Ministry of Human Resource Development (MHRD), India. NDLI launched in May 2016 and it was dedicated to the nation on 19/06/2018 by the Union Human Resource Minister Prakash Javadekar. The National Digital Library of India is a single window platform containing textbooks, articles, videos, audio books,

lectures, simulations, fiction, model answers self-assessment, and solutions of various educational boards and National Council of Educational Research and Training (NCERT).

NDL India is developed to support to all academic levels users of all educational branches including researchers and life-long learners in different popular vernacular languages such as Bengali, Hindi and other languages. NDL India is developed to help students to prepare for their study, research and entrance and competitive examinations like Joint Entrance Examination or JEE and all other kinds of learning resources for schools, colleges, universities, teachers, students, lecturers and lifelong learners at anytime, anywhere(24x7) on free of charge. NDLI Provide immersive E-learning resources with 10 local Indian languages on all disciplines like Science, Arts, Humanities, Engineering, Medical, Law etc.

There are many digital libraries available in India, but this library is known as a different library from the rest of the libraries in respect of educational level, language as well as content, medium of content in a single-window.

NOTE: NDLI does not store contents; it only ingests metadata for Search & Browse. The content (Full-text) is delivered from Source.

SERVICES OF NDL INDIA

NDL India contents at Born-digital object, Digital surrogate of a physical object and Digital metadata of physical object with NDLI does not store contents; NDLI only ingests metadata for Search & Browse and Content (Full-text) is delivered from Source. It accesses More than 106

types of learning resources in multidisciplinary subject domains like Arts, commerce, Science, Technology, Humanities, Agriculture, and others. Whereas NDL provide customize service in integrated environment for learners in 24x7. With the help of this user can access the right information in right resource in minimum time and minimum effort. The National Digital Library of India carries out several activities to achieve optimal utilization of electronic resources. The National Digital Library of India has provided various services like content borrowing service, Multi-lingual Search, Personalized Learning. NDL India also provides the open services via Mobile App, which is able for extension of content creation.

CONTENT BROWSING SERVICE

Search : The search window allows you to find e-journals, e-books etc. available under the digital library repository for registered users or college. You can find your information by entering any of the keywords of your study or the title, author, publisher of the journal.

Browse : The search and browse window service allows the user to search for information without the help of a librarian, an information expert or any library person. This service allows various search options for the convenience of the user. In this option the user can choose to search by subject, by source and by education resource.

By Type : This option lets you browse content by text type, such as text, video, image, audio, presentation, simulation, application and animation.

- Click on the Content Type icon to browse specific content. You can also use the refine browse results facility for this.
- Click on the option shown on the left (e.g. author / source)
- Click on the item of interest to refine the search results
- Selected filters will appear at the top of the search results panel

Table 1: Type of content

Sl. No.	Contents Types	No. of Items
1	Text	62944786
2	Video	601012
3	Image	386036
4	Audio	244740
5	Presentation	177836
6	Simulation	11457
7	Animation	1230
8	Application	1094

By Subject

In this option the user can browse the content as per their interest of the subject and according to his level.

1. First you click on the “level topic” option then select your required topic from the dropdown list.
2. To refine your chosen topic, click on the second level topic option and select a required

topic. If you want to refine again, click on the third level topic option and select a topic from the list. Once this process is complete, you can also refine your results for it. Click on the author / source option on the left side of the screen.

3. If you want to improve the results you get, click on the item of interest to you
4. Selected filters will appear at the top of the search results panel.

Subject Domain

The subject domain serves and disseminates the scholarly reading material of interdisciplinary subjects in digital formats. It is divided into three-tier hierarchical system. The first level consisting of ten subjects, the second and third levels consisting of various related sub-subjects of the main domain. The user can easily update their results with advanced browsing results with restriction, author, academic degree, difficulty level, educational level, file format, language, learning resource type, source, and content type options.

By Source

1. You have to browse your required content from the given sources such as ACM digital library, ASME, ASCE, IEEE, IITs(JEE), GATE, NPTEL, NCERT by click on source icon button on sides. The list of available NDL sources is given in box to view. To refine browse results follows with following steps.
2. Click on a facet Source that appears on the left.
3. Click the one source of your interest to refine search results, **list of all sources** box to view list of all sources integrated to NDLI.

Table 2: Subject Domain

Sl. No.	Subject Domain	Related sub-subjects	No. Items
01	Computer Science, Information & General	Computer Science, Programming, Library and Information Science and other Domains	15425854
02	Philosophy and Psychology	Education, Research and related topics, Metaphysics, Ontology, Cosmology, Teleology, physiognomy, Psychology, Logic and Ethics.	609488
03	Religion	Philosophy and theory of religion, Concepts of God, Science and religion, Social and ecclesiastical Theology and Other areas	228464
04	Social Sciences	Sociology and Anthropology, Factors affecting social behavior, Political Science, Economics, Law, Public administration and military Science, Etiquette and folklore and Related domain	5444036
05	Language	International language, Linguistics, Etymology, Dictionary Phonology & phonetics, Language & other domains	181719
06	Natural Sciences & Mathematics	Mathematics, Astronomy & allied Sciences, Chemistry and allied Sciences, Earth Sciences, Paleontology, Physics sciences, Life sciences and related areas	9787295
07	Technology	Medicine & health, Human Physiology, personal Health & safety, Pharmacology and therapeutics, Surgery and related specialties, Agriculture Technology, Chemical Engineering, Civil and Mechanical Engineering and Others.	12506642
08	The Arts; Fine & Decorative Arts	Civic and Landscape art, Architecture, sculpture, Graphic arts and decorative arts, painting, Photography, Music, Recreational and performing arts and other domains	1740152
09	Literature & Rhetoric	English & old English Literature, literatures of different languages and other related areas	953648
10	History & Geography	Geography and travel, Biography, Genealogy and insignia, History of ancient world and other	947761

User can search required information as per their educational level through any learning resources which is given by NDL-India in various format like Text, audio, video, images etc. To refine this information, users need to use filtering options such as Access Restriction,

Author, Subject Category, Educational Level, File Format, Learning Resource Type, and Content Type.

The table 03 shows the Source wise learning resources at educational level with various contents. Total 244 learning resources are given

Table 3 : Source wise learning measures resources

Sources	No. Items	Educational Level				Learning Resources Type					Content Type				
		I-X	XI-XII	UG- PG	Oth	Books	Journals	Articles	A/V Lectu re	Oth	Text	Audio	Video	Images	Oth
ACM digital library	432387	0	0	432387	0	0	51	416292	7	16037	431483	6313	2418	157	7984
ASCE	29958	0	0	29958	0	0	23	28528		1407	29958	0	0	0	0
ASME	221337	0	0	221316	21	0	32	217260		4045	221284	20	0	0	33
Board of Secondary education	3930	1139	2770	0	0	1349	0	0	1142	1418	2767	0	1140	0	0
British Medical Journal	4044 29	0	0	0	1129		1	223592		180836	404429	0	0	0	0
CSIR (16 institutes)	42356	0	0	42356	0	824	0	32303	36	9193	42312	0	41	0	03
DESIDOC	4675	0	0	4675	0	0	4675	0	0	0		0	0	0	4675
DOAJ	2620170	0	0	2620170	0	9077	7142	2481975		121976	2620170	0	0	0	0
ERIC	1071925	0	0	0	0	0	0	103022	0	968903	1071925	0	0	0	0
GATE	183	0	0	0	0	0	0	0	0	183	183	0	0	0	0
IEEE Xplore	3314809		0	3310111	4698	0	351	3304195	0	10263	3310365	0	0	0	4444
IIM (02 institutes)	11459	0	0	9925	1534	1354	0	3202	0	6903	0	0	0	0	11459
IIT (14 institutes)	70591	0	0	70591	0	113	45962	10	24506	70581	10	0	0	0	0
IIT-JEE-	37	0	0	0	37	0	0	0	0	37	37	0	0	0	0
Kristi Kosh India	138322	0	0	138322	0	13334	0	10498	0	114490	138269	0	0	53	0
NCERT	4511	2569	1942		0	4296	0	0	0	215	4511	0	0	0	0
NPTEL	100200	0	100200	0	0	0	0	0	59198	41002	40669	212	61126	0	1807
NBT	92	0	0	0	0	92	0	0	0	0	92	0	0	0	0
NSDL-	39687	122020266	15844	12929	122049039	276	112	661	2752	35886	35804	593	9809	8779	-15298
Nature India	1766	0	0	1766	0	0		224	0	1542	1766	0	0	0	0
Springer link	2139729	0	0	2139729	0	0	1458	1950009	0	188262	2139729	0	0	0	0
Spoken Tutorial	719	0	719	719	0	0	0	0	0	719	0	719	0	0	0
Taylor & Francis online	100877	0	0	100877	0	0	153	90755		9969	0	100877	0	0	0
UGC-NET	4210	0	0	0	4210	0	0	0	0	4210	4210	0	0	0	0
UPSC (17 type Exam)	1630	0	0	0	1630	0	0	0	0	1630	1630	0	0	0	0
WHO-	2628502	0	0	2628502	0	14	1986	2592486	0	2628387	0	196	8	0	2628298

Table 4: Learning resources

Sl. No.	Type of Items	No.Items	Sr.	Type of Items	No.Items
01	Activity	48292	55	Map	1491
02	Albums	98	56	Media Articles	74
03	Almanac	3546	57	Medical Act	02
04	Annual Reports	32283	58	Model Answers	268
05	Appendix	1291	59	Monograph	18292
06	Articles	36430452	60	Music Notation	65195
07	Audio books	220656	61	Newspaper	3315011
08	Audio Lectures	3325	62	Newspaper articles	5325070
09	Autobiography	1826	63	Newsletter	10736
10	Bibliography	10047	64	Notes	1159843
11	Biography	12962	65	Notice	76029
12	Book Review	78844	66	Painting	3896
13	Booklet	5063	67	Patent	150988
14	Books	6306032	68	Periodicals	14551
15	Broad cost	7132	69	Photograph	357060
16	Brochures	262	70	Plan	9887
17	Calendars	4798	71	Play	3275
18	Case Study	185987	72	Podcast Presentation	309
19	Catalogues	57384	73	Poetry	20719
20	Chapters	330688	74	Posters	9539
21	Charts	332	75	Preprint	21703
22	Collections	8371	76	Presentation	204795
23	Conference Proceeding	155395	77	Proceedings	134774
24	Correspondence	28839	78	Project Reports	5727
25	Dataset	241929	79	Question	1627
26	Directory	1642	80	Question Papers	36150
27	Discussion	26364	81	Question Set	37788
28	Educational Apps	532	82	Quiz	2505
29	Educational Games	2183	83	Recording	77
30	Emails	165	84	Report	1224670
31	Exercises	23822	85	Research Highlight	2726
32	Films	09	86	Review	54250
33	Gazetteer	2096	87	Scripts	88285
34	Graphs	90	88	Self Assessments	4239
35	Handout	67	89	Series	3873
36	Hands-on	3096	90	Simulations	7673
37	Historical Records	533481	91	Solutions	50571
38	Indicator	490	92	Source code	105022
39	Issue	19569	93	Specimens	1536
40	Journals	207316	94	Standards	12313
41	Journal Reviews	01	95	Story	18545
42	Key table	531	96	Summery	6591
43	Lab Material	9728	97	Survey	2841
44	Law Act	874423	98	Syllabus	1791
45	Law judgments	870097	99	Synopsis	20057
46	Law Reports	6302	100	Teacher's manual	2651
47	Law Scribe	620	101	Technical Manual	852
48	Leaflet	3184	102	Technical Reports	716487
49	Lecture Notes	22475	103	Thesis	737560
50	Lesson Plan	5109	104	Training Manual	765
51	Letters	183882	105	Video Lectures	469927
52	Magazines	22094	106	Visual Artwork	828
53	Manual	5628	107	Web Course	17316
54	Manuscripts	6487			
TOTAL ITEMS					61546067

in NDL India along with primary to post graduate educational level as well as carrier & technical study in various contents. Out of these some learning resources are given in following table as an example. NDL provides various techniques of searching like federated and filtered search, hence users can get right information from right resources with minimum time and effort.

Learning resources Service

This service provides soft copies of learning resources as well as constantly monitors the use of e-resources and provides these resources along with metadata. Many such useful steps have been

taken by NDLI to ensure utilization of resources by all member institutes. The NDL India provides access to the following 61546067 numbers of items with 107 types of learning resources like books, articles, audio lecture, theses, Question paper, Video lecture, etc, in multiple formats such as PDF, HTML, DOC, PPT, XLS, ZIP, JPEG/JPG, PNG, MP3, FLAC, MP4 etc.

Subject Category wise Distribution of Learning Resources

For browsing the contents by learning resource click on a learning resource type icon and chose the required learning resource. This

Table 5: Learning Resources

Sl. No.	Learning Resources	Total Items	Subject Category									
			Cs,I & GW	PP	REL	SS	LAG	Ns & M	TECH	AF & DA	Lit & R	H & G
1	Article	36430452	4663353	501960	34093	1820909	29382	8119541	10643780	47684	57012	48293
2	Audio Book	220656	120	152	235	400	1483	138	134	311	9544	653
3	Book Review	78844	2122	4960	432	13017	398	10532	5764	355	546	475
4	Case Study	185987	3929	12423	54	19753	53	159749	163340	37	14	205
5	Books	6306032	1596616	62501	184421	749652	91859	431848	347531	266001	683973	476891
6	Conf. proceeding	155395	30453	821	6586	1704	16688	89078	1030	443	556	112
7	Education App	532	57	5	0	137	0	458	104	0	0	13
8	Gazetteer	2096	80	0	01	1748	0	01	24	01	0	37
9	Law Acts	874432	0	0	01	326164	0	0	0	0	0	0
10	Magazine	22094	7249	18	07	3780	11	1893	7303	770	106	1261
11	Manuscript	6487	189	28	125	108	164	33	139	55	268	107
12	Patent	150988	32	0	00	22	0	210	8343	0	0	0
13	Presentation	204795	468	14	0	129	16	8671	16304	24	18	12
14	Question1 Papers	36150	3614	288	114	4281	3434	8686	13522	704	2533	662
15	Reports	1224670	35947	850	203	60235	40	43046	82595	2837	617	1514
16	Standards	12313	669	0	129	0	0	11042	9013	10	0	0
17	Technical Reports	716487	4293	8	0	727	14	1822	136908	104	01	19
18	Thesis	737560	103806	12188	901	83064	17893	179033	175133	4090	27174	12825
19	Video Lecture	469927	35771	2627	222	28157	14933	125492	92245	14104	6821	4156
20	Web Courses	17316	955	01	0	1163	16	4957	11824	0	0	01

Notes:- **CsI&GW**- Computer Science, Information and General Work, **P&P**- Philosophy and Psychology, **Rel**-Religion, **S & S**- Social Science, **Lang**-Language, **Ns & M**-Natural Science and Mathematics, **Tech**- Technology, **AF&DA**- Arts Fine and Decorative Arts, **Lit & R** –Literature and Rhetoric, **H &G**-History and Geography

table demonstrates the subject category wise distribution of learning resources. NDL India is categorized in 104 plus types of learning resources of 10 subjects such as article, audio and video lectures, annual reports, album, books, Judgment of law, technical report and manual, set of data, various monograph paper solutions, manuscripts, question papers, web courses, and thesis, etc. In the table 05, I have taken samples of 20 learning resources out of those 107 learning resources and given item wise information about all these 10 subjects. User can clear up the results with refine browse option with the help of available metadata such as author, difficulty level, educational level, educational degree, formats, language, type learning resource, sources, content types, and access restriction etc.

CONCLUSION

In the present era, due to information explosion, demand of users and development in information communication Technology (ICT) Digital Libraries are useful for sharing the resources. NDL India have continuously increasing e- learning resources and developing e-library services in dealing with problems faced by libraries and information centers such as collection of information documents which are published at national as well as international level, problems of increasing information needs of the academicians and researchers, publications in various forms and format. Apart from this, it is observed that NDL India has taken care of the interests of students, teachers and researchers by facilitating e-journal, e-books, video and audio etc. at all educational levels. It consists of 212 journals, 6247 books, 3289 videos, including

57298 articles, published by 119 publishers and is the main source of access to current and recent information. It is also observed that NDL India provides the original link to authors' e-mails that are useful to academicians, scientists and researcher for collecting the full text article.

Today's libraries are facing various problems in the new digital publishing environment, such as different forms of information, increasing the cost of journals, reducing library budgets. Therefore, professionals are facing a major problem with this condition. Therefore, the urgent need of the times is that the library should come together to share resources and develop advanced information providers centers in the library sector. It is on this background that NDL India is built and thus NDL India is the best single window platform for academics, researchers and distance learners.

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