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Volume X, No. Special Issue on Library and Information Science (LIS) / June, 2025

Chakdaha College
(Affiliated to University of Kalyani)
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EDITORIAL

I feel immense pleasure to publish the Special Issue on Library and Information Science (LIS) of Vol. X of ***'RAY: International Journal of Multidisciplinary Studies', (E-ISSN: 2456-3064)*** on behalf of Chakdaha College, Nadia, West Bengal, India. This issue explores the evolving role of libraries and information professionals in an increasingly digital and interconnected world. As the information landscape transforms at an unprecedented pace, this issue reflects on the challenges, opportunities, and responsibilities that define this field today.

The rapid integration of artificial intelligence, open access frameworks, and data-driven decision-making has reshaped how libraries serve their communities. From reimagining digital archives to fostering equitable access to information, library and information science professionals are at the forefront of ensuring knowledge remains accessible, inclusive, and trustworthy. This issue brings together cutting-edge research, innovative practices, and critical perspectives to address these dynamic shifts.

Each article offers insights into how the field can navigate technological advancements while staying true to its core mission of serving the public good. Their work underscores the importance of collaboration across disciplines and borders to address shared challenges, such as digital equity and the preservation of cultural heritage in an era of rapid technological change.

I avail myself of this opportunity with great pleasure in acknowledging my deepest sense of gratitude to all concerned with and related to this endeavour, particularly Editorial Board Members, Advisory Board Members and Reviewers who tendered their painstaking efforts throughout the period of preparation of this journal.

No doubt, I am personally indebted to the authors who have contributed their valuable contributions to this journal. In the present issue we are publishing Ten research articles. I convey my heartfelt gratitude to all respected authors.

Utmost care has been taken to prepare the present issue of the journal, in spite of that we are always liable to apology for any unwanted mistakes. Any comment, any suggestion for improvement of the journal is always appreciable.

I wish its every success in all respect.

DR. PARITOSH BISWAS

Editor in Chief

Advisory Board:

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Problems and Prospects for Public Libraries in India: with Reference to West Bengal

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Structured Abstract:

Purpose: This paper reflects the image of Public Libraries in West Bengal. It highlights the present condition of Public Libraries. From the early period to present it has witnessed tremendous development in India. Due to a number of factors like increasing information, the explosion of knowledge resources & changes in people's approach all are contributing factors to modernize Public libraries.

Design / Methodology: According to the study, public libraries are unable to reach the common people in the state due to the prevailing problems and their prospects. Moreover, the study discusses the challenges facing public libraries in today's technological era and highlights the state's current status of services provided by public libraries.

Findings: This paper represent the various development stages taken place in Public Libraries from early period to present day & what are the major contributions toward public libraries by different person.

Utility: By encounter various problems, public libraries in West Bengal try to provide its valuable services in the area of literacy and development. To adapt technology in this digitization era public libraries can reach the highest number of users.

Keywords: Problems, Prospects, Public Library, Libraries in India,

Introduction

Indians refer to their country as Bharat, or the Republic of India. In terms of population and area, it is the seventh most populous country in the world (Clémentin-Ojha, 2014). Bay of Bengal borders it on the east, Indian Ocean on the west, and Arabian Sea on the south. There are over 7500 kilometres of coastline in India. In the west, it is surrounded by Pakistan; in the north and east, by China, Nepal, and Bhutan; and in the east, it is surrounded by Bangladesh and Myanmar. Indian public libraries predate the country's development of education without

a doubt. Garrison, D. (2003). It is widely believed that public libraries are the People's Universities.

Various stages of development have taken place in India since the early period to the present day. It has been very important for India to search for wisdom and knowledge since ancient times. A stone pillar found in India contains inscriptions from the time of King Asoka (300 BC). There might be a case for considering these inscriptions as the first open libraries in history. In those days, well-known teachers supervised students at Ashrams in India. Teachers and students could use the manuscripts as well as visitors could view them. Numbers of teachers are employed at the Vidyapeeth to teach the students (Goad, 2017). Various manuscripts and other materials were collected by these educational institutions to help with their everyday routines and teaching. A lot of care was taken in keeping and preserving. Different streams of education and culture used reading materials associated with many subjects to transmit knowledge. Due to their careful maintenance and widespread use, they can be compared to modern libraries. Muslims ruled India most of the time during the Medieval Period. Mughal Period is also known historically as this period. In addition to social and political changes, there were also changes in education and library systems during this time (Kleinberger, 2016). As far as educational, literary, and library activities are concerned, the Mughal period was the golden age of Indian history. Delhi was annexed to the Kabul kingdom by Babur, the king of Kabul. A Mughal Imperial Library was established by him in 1526. In addition to inheriting manuscripts from his father, Babur passed them on to the next generations (Abu, 2018). Indian culture was greatly cherished by the British, who were committed to uplifting it. While the British Empire was still in power, a number of academic institutions were established by the East India Company and Christian missionaries (Royal Asiatic Society of Great Britain, & Ireland, 1835). It was established in 1784 by the Bengal Royal Asiatic Society, 1804 by the Bombay Royal Asiatic Society, and 1835 by the Calcutta Public Library. These libraries served not only to enlighten the community, but also to lay the foundation for public libraries for Indians (Audunson, 2005).

A major contribution to the library movement was made by Maharaja Sayajirao Gaekwar III of Baroda, who was the ruler of Baroda at the time (Lee, 2010). It is attributed to him as the father of the Indian Library Movement. As he visited American libraries during his 1906 visit, he was very impressed by the services these libraries provided for social, economic, and educational development. In addition, he invited a student-assistant of Charles A. Cutter,

William Alanson Borden, to speak with him as the YMI Librarian. His ministers were asked to implement his idea immediately by establishing a library in a taluka town as an experiment. There have been public libraries in India since 1910 (Malik, 2013). On 4 January 1924, Dr. S R Ranganathan was appointed University Librarian at the University of Madras. It was he who prepared the 1930 model public library bill, which was revised in 1957 and 1972. Furthermore, he spearheaded efforts in Indian states to legislate library legislation. During his lifetime, he contributed greatly to the development of Indian libraries.

Public Libraries after Independence: Growth and Development

During the years following India's independence in 1947, public libraries in the country grew rapidly. The central and state governments have invested heavily in library services to promote education development (Wani, 2008). Several social and adult education programs have been implemented by the provincial and federal governments since 1910, leading to the enactment of library laws and grant-in-aid guidelines. This led to the inclusion of public libraries in the education budget. A Model Public Libraries Act was developed by the Public Libraries Working Group of the Planning Commission in 1964 (Kandhasamy, et. al., 2021). We sent a model bill to every state and UT without a public library law with the following recommendations:

- State governments are also responsible for public libraries in addition to the federal government. To effectively implement these programs, the ministry of education should create a directorate of libraries, a state library advisory council, and new agencies.
- Orissa, Madhya Pradesh, Nagaland, and Mysore should have central libraries.
- Library buildings should be provided to states without adequate state central libraries.
- It is a good idea to have a section for children in the central library of the state.
- A new building should be constructed for each of the 100 district libraries currently in existence.
- 2,500 new block libraries are needed to cover 75% of the country's blocks, which are the primary feeding centers for the rural reading community.
- For such libraries in rural as well as urban areas that rely on subscriptions and donations, a grant in aid of ten million rupees will be provided.

- A reopening of the Delhi University Institute of Library Science should be considered. The Institute was established in 1958-59 by the Ministry of Education, and then closed in 1962. In order to meet the demands of the future, state libraries should establish such institutes.
- An allocation of Rs.10, 000 will be given to all national and state library associations in the current year for the purpose of holding seminars, conducting surveys, and producing library literature.
- It is necessary to develop a book production program.
- The Library Act draft needs to be produced.

Within the Department of Culture of the Ministry of Education, the Raja Rammohun Roy Library Foundation was established in 1972 (Reddy, 2008). The Foundation also supported public library services in addition to promoting library movements. Under the supervision of an Under Secretary, the Department of Culture of the Ministry of Education established a library section in 1979. A public library development program has been implemented by the Indian government. (Chaurasia, & Singh, 2020). In 1984, the Planning Commission formed an Action Group on Modernizing Library Services and Informatics. During the chairmanship of D. P. Chattopadhyay, a national policy on library and information services was conceived in 1985. The Ministry of Culture, Government of India, has established a High Level Committee on Libraries (Balaji, et. al., 2018). The National Knowledge Commission recommended on May 4, 2012, that libraries and information science be given sustained attention in 18-4/2009_lib (Pt). The National Mission on Libraries (NML) formed a committee of four working groups to formulate a scheme for improving library services for the public based on their recommendations. Scheme components consist of four parts.

1. Creation of National Virtual Library of India (NVLI)
2. Setting up of NML Model Libraries
3. Quantitative & Qualitative Survey of Libraries
4. Capacity Building

NVLI is an open-access database of digital resources about and generated from India. It aims to facilitate a comprehensive exchange of information about the country. The network will also connect 629 public libraries throughout the states. As part of the Qualitative &

Quantitative Survey of Libraries, we will survey 5000 libraries in India to prepare a baseline data set. Efforts are being made to enhance the professional competence of librarians as part of the Capacity Building Project.

Objective of the Study

West Bengal Public Libraries were evaluated for the purpose of this study. Public libraries in the West Bengal District are being evaluated in terms of their public library systems, staff structures, and collections. The purpose of this study is to present a systematic approach to evaluating the status and development of public libraries in the West Bengal district. Using the survey, analysis, and interpretation of the data, a unique model of public library development was developed for West Bengal. The study will attempt to focus on the following objectives in light of the theme of the problem:

1. To evaluate the current state of the West Bengal Public Library.
2. To determine the structure of the staff and its strength at present.
3. Analyze public library resources and collections for strengths and weaknesses.
4. To examine the building and other amenities is necessary.

Methodology

For analysis and interpretation, the author used the data on the website of DMEELS about public libraries in west Bengal, as well as the data gathered by him personally through a questionnaire from district public libraries. As of now, only 45 public libraries are listed on the DMEELS website, even though there are many public libraries. To put it another way, 45 public libraries have been registered and assisted by DMEELS so far. West Bengal is the only part of the study that was examined. A questionnaire completed personally by the author and collected from many public libraries has been analyzed to get the results under different objectives with the help of DMEELS' website.

Data Analysis

Three tables are given below i.e. Table-1: On the basis of Location, Building and Staff, Table-2: Based on location, collection, newspaper and magazine type and Table-3: Based on location and services:

Table-1: On the Basis of Location, Building and Staff:

S. No.	Name of the library	Location	Building	Staff
1	State Central Library	Ultadanga, Kolkata	Own	4
2	Kolkata Metropolitan Library	Ballygang Park Road, Kolkata	Own	2
3	Uttarpara Joykrishna Public Library	Uttarpara, Dist: Hoogly,	No	-
4	North Bengal State Library	Coochbehar	Own	4
5	Taki Govt. District Library	Taki	No	-
6	Deshbandhu Govt. Disrict Library	Darjeeling	Own	2
7	Govt. District Library	Karnojora	Own	2
8	North 24-Parganas Govt. District Library	Barasat	Own	2
9	Mati Sathi- Addl. Govt. District Library	Himachal vihar, Matigara	Own	2
10	Govt. Central Library	Kalimpong	No	2
11	Central Library	Banipur	Own	0
12	Sidhu-Kanhu Birsa Govt. Town Library	Purulia	No	2
13	Digha Govt. Town Library	Purba Medinipur	Own	0
14	Ramkrishna Sarada Mission Ashram Library	C.I.T. Road, Kolkata	No	0
15	Ramkrishna Mission Ashram Central Library	Narendrapur	Own	2
16	Ramkrishna Mission Janashiksha Library, Belur Math	Belur Math, Dist.: Howrah	No	-
17	Ramkrishna Mission Student Home Library, Belghoria	Belghoria, Kolkata	No	2
18	Krittibas Memorial Community Hall-cum-Museum Library	Fulia Boyra, Dist.: Nadia,	Own	2
19	Rammohan Library and Free Reading Room	Acharya Prafulla Chandra Road, Kolkata	No	-
20	Bangiya Sahitya Parishad Library	Acharya Prafulla Chandra Road,	Rented	0
21	Bankura District Library	Bankura	Rented	2
22	Birbhum District Library	Suri, Dist.: Birbhum	Own	4
23	North Bengal State Library	Coochbehar	Own	2
24	District Library	Balurghat	Own	2
25	Deshbandhu Govt. Disrict Library	H.D.Lama Road, P.O.+Dist.: Darjeeling	Own	2
26	Hooghly District Central Library	Cinsurah, Dist.: Hooghly,	No	-
27	Howrah District Central Library	M.G. Road, P.O.- Howrah, Dist. : Howrah	Own	7
28	District Library, Jalpaiguri	Jalpaiguri, Dist.: Jalpaiguri	Own	2
29	Kolkata Metropolitan Library	Ballygang Park Road, Kolkata	No	-
30	District Library, Malda	Malda, Dist.: Malda	No	-
31	District Library, Murshidabad	Berhampore, Dist.: Murshidabad	Own	0
32	Nadia District Library	Ghurni, Krishnagar,	No	-
33	Taki Govt. District Library	Taki, Dist.: North 24 Parganas	Own	5
34	North 24-Parganas Govt. District Library	Barasat, Dist.: North 24 Parganas,	No	0
35	Ramkrishna Mission Boy's Home District Library	Rahara, Dist.: North 24 Parganas, Kolkata	Own	4
36	District Library, Asansol	Asansol, Dist.: Burdwan,	Own	2
37	City Central Library	Durgapur, Dist.: Burdwan,	Own	2
38	District Library, Midnapur	Midnapore, Dist.: Paschim Medinipur,	No	-
39	Burdwan Udaychand District Library	Burdwan, Dist.: Burdwan,	Own	2
40	District Library, Tamluk	Tamluk, Dist. : Purba Medinipur,	Own	3
41	District Library, Purulia	B. T. Sarkar Road, Purulia,	No	2
42	Mati Sathi- Addl. Govt. District Library	Dist.: Purulia	Own	2
43	Additional District Library, Siliguri	Himachal vihar, Matigara, Siliguri, Darjeeling	No	-
44	District Library, South 24 Parganas	Court More, Siliguri, Dist.: Darjeeling,	No	-
45	Uttar Dinajpur Govt. District Library	Karnojora, Dist.: Uttar Dinajpur	Own	0

Table-2: Based on Location, Collection, Newspaper and Magazine Type

S. No.	Name of the library	Location	Collection	Daily Newspapers	Magazines
1	State Central Library	Ultadanga, Kolkata	25254	10	30
2	Kolkata Metropolitan Library	Ballygang Park Road, Kolkata	6219	7	12
3	Uttarpara Joykrishna Public Library	Uttarpara, Dist: Hoogly,	Not Available	Not Available	Not Available
4	North Bengal State Library	Coochbehar	38800	12	20
5	Taki Govt. District Library	Taki	Not Available	Not Available	Not Available
6	Deshbandhu Govt. Disrict Library	Darjeeling	33320	7	30
7	Govt. District Library	Karnojora	15000	12	25
8	North 24-Parganas Govt. District Library	Barasat	8362	5	15
9	Mati Sathi- Addl. Govt. District Library	Himachal vihar, Matigara	13000	8	7
10	Govt. Central Library	Kalimpong	11400	10	20
11	Central Library	Banipur	7000	6	15
12	Sidhu-Kanhu Birsa Govt. Town Library	Purulia	10000	5	10
13	Digha Govt. Town Library	Purba Medinipur	22611	9	29
14	Ramkrishna Sarada Mission Ashram Library	C.I.T. Road, Kolkata	7000	4	Not Available
15	Ramkrishna Mission Ashram Central Library	Narendrapur	4708	8	15
16	Ramkrishna Mission Janashiksha Library, Belur Math	Belur Math, Dist.: Howrah	Not Available	Not Available	Not Available
17	Ramkrishna Mission Student Home Library, Belghoria	Belghoria, Kolkata	11780	12	21
18	Krittibas Memorial Community Hall-cum-Museum Library	Fulia Boyra, Dist.: Nadia,	6000	5	8
19	Rammohan Library and Free Reading Room	Acharya Prafulla Chandra Road, Kolkata	Not Available	Not Available	Not Available
20	Bangiya Sahitya Parishad Library	Acharya Prafulla Chandra Road,	10000	9	13
21	Bankura District Library	Bankura	6129	5	18
22	Birbhum District Library	Suri, Dist.: Birbhum	30962	10	35
23	North Bengal State Library	Coochbehar	4010	6	29
24	District Library	Balurghat	4000	7	12
25	Deshbandhu Govt. Disrict Library	H.D.Lama Road, P.O.+Dist.: Darjeeling	11792	10	11
26	Hooghly District Central Library	Cinsurah, Dist.: Hooghly,	Not Available	Not Available	Not Available
27	Howrah District Central Library	M.G. Road, P.O.- Howrah, Dist. : Howrah	43215	10	20
28	District Library, Jalpaiguri	Jalpaiguri, Dist.: Jalpaiguri	8961	5	4
29	Kolkata Metropolitan Library	Ballygang Park Road, Kolkata	Not Available	Not Available	Not Available
30	District Library, Malda	Malda, Dist.: Malda	Not Available	Not Available	Not Available
31	District Library, Murshidabad	Berhampore, Dist.: Murshidabad	Not Available	Not Available	Not Available
32	Nadia District Library	Ghurni, Krishnagar,	Not Available	Not Available	Not Available
33	Taki Govt. District Library	Taki, Dist.: North 24 Parganas	8863	3	11
34	North 24-Parganas Govt. District Library	Barasat, Dist.: North 24 Parganas,	5000	Not Available	Not Available
35	Ramkrishna Mission Boy's Home District Library	Rahara, Dist.: North 24 Parganas, Kolkata	19369	12	28
36	District Library, Asansol	Asansol, Dist.: Burdwan,	Not Available	Not Available	Not Available
37	City Central Library	Durgapur, Dist.: Burdwan,	Not Available	Not Available	Not Available
38	District Library, Midnapur	Midnapore, Dist.: Paschim Medinipur,	Not Available	Not Available	Not Available
39	Burdwan Udaychand District Library	Burdwan, Dist.: Burdwan,	5675	6	20
40	District Library, Tamluk	Tamluk, Dist. : Purba Medinipur,	20513	9	34
41	District Library, Purulia	B. T. Sarkar Road, Purulia,	10000	7	20
42	Mati Sathi- Addl. Govt. District Library	Dist.: Purulia	1700	7	30
43	Additional District Library, Siliguri	Himachal vihar, Matigara, Siliguri, Darjeeling	Not Available	Not Available	Not Available
44	District Library, South 24 Parganas	Court More, Siliguri, Dist.: Darjeeling,	Not Available	Not Available	Not Available
45	Uttar Dinajpur Govt. District Library	Karnojora, Dist.: Uttar Dinajpur	16467	12	18

Table-3: Based on Location and Services

S. No.	Name of the library	Location	Lending Facility	Children Section	Internet Facility	Text-Book section
1	State Central Library	Ultadanga, Kolkata	Yes	Yes	NA	Yes
2	Kolkata Metropolitan Library	Ballygang Park Road, Kolkata	Yes	Yes	NA	Yes
3	Uttarpara Joykrishna Public Library	Uttarpara, Dist: Hoogly,	NA	NA	NA	NA
4	North Bengal State Library	Coochbehar	Yes	Yes	NA	Yes
5	Taki Govt. District Library	Taki	NA	NA	NA	NA
6	Deshbandhu Govt. Disrict Library	Darjeeling	Yes	Yes	No	Yes
7	Govt. District Library	Karnojora	Yes	Yes	NA	Yes
8	North 24-Parganas Govt. District Library	Barasat	Yes	No	NA	Yes
9	Mati Sathi- Addl. Govt. District Library	Himachal vihar, Matigara	Yes	Yes	NA	No
10	Govt. Central Library	Kalimpong	Yes	No	NA	No
11	Central Library	Banipur	NA	NA	NA	NA
12	Sidhu-Kanhu Birsa Govt. Town Library	Purulia	NA	No	NA	No
13	Digha Govt. Town Library	Purba Medinipur	Yes	Yes	NA	NA
14	Ramkrishna Sarada Mission Ashram Library	C.I.T. Road, Kolkata	Yes	Yes	NA	NA
15	Ramkrishna Mission Ashram Central Library	Narendrapur	Yes	NA	NA	Yes
16	Ramkrishna Mission Janashiksha Library, Belur Math	Belur Math, Dist.: Howrah	NA	NA	NA	NA
17	Ramkrishna Mission Student Home Library, Belghoria	Belghoria, Kolkata	NA	No	NA	No
18	Krittibas Memorial Community Hall-cum-Museum Library	Fulia Boyra, Dist.: Nadia,	NA	No	NA	No
19	Rammohan Library and Free Reading Room	Acharya Prafulla Chandra Road, Kolkata	NA	NA	NA	NA
20	Bangiya Sahitya Parishad Library	Acharya Prafulla Chandra Road,	Yes	No	NA	No
21	Bankura District Library	Bankura	Yes	Yes	No	Yes
22	Birbhum District Library	Suri, Dist.: Birbhum	Yes	Yes	NA	No
23	North Bengal State Library	Coochbehar	Yes	No	NA	No
24	District Library	Balurghat	NA	NA	NA	NA
25	Deshbandhu Govt. Disrict Library	H.D.Lama Road, P.O.+Dist.: Darjeeling	Yes	No	NA	No
26	Hooghly District Central Library	Cinsurah, Dist.: Hooghly,	NA	NA	NA	NA
27	Howrah District Central Library	M.G. Road, P.O.- Howrah, Dist. : Howrah	Yes	Yes	No	Yes
28	District Library, Jalpaiguri	Jalpaiguri, Dist.: Jalpaiguri	Yes	Yes	NA	Yes
29	Kolkata Metropolitan Library	Ballygang Park Road, Kolkata	NA	NA	NA	NA
30	District Library, Malda	Malda, Dist.: Malda	NA	NA	NA	NA
31	District Library, Murshidabad	Berhampore, Dist.: Murshidabad	Yes	No	No	No
32	Nadia District Library	Ghurni, Krishnagar,	NA	NA	NA	NA
33	Taki Govt. District Library	Taki, Dist.: North 24 Parganas	Yes	Yes	Yes	Yes
34	North 24-Parganas Govt. District Library	Barasat, Dist.: North 24 Parganas,	NA	NA	NA	NA
35	Ramkrishna Mission Boy's Home District Library	Rahara, Dist.: North 24 Parganas, Kolkata	Yes	Yes	No	No
36	District Library, Asansol	Asansol, Dist.: Burdwan,	Yes	No	No	Yes
37	City Central Library	Durgapur, Dist.: Burdwan,	Yes	No	No	Yes
38	District Library, Midnapur	Midnapore, Dist.: Paschim Medinipur,	Yes	No	No	Yes
39	Burdwan Udaychand District Library	Burdwan, Dist.: Burdwan,	Yes	Yes	No	No
40	District Library, Tamluk	Tamluk, Dist. : Purba Medinipur,	Yes	Yes	No	No
41	District Library, Purulia	B. T. Sarkar Road, Purulia,	Yes	No	No	Yes
42	Mati Sathi- Addl. Govt. District Library	Dist.: Purulia	Yes	No	No	No
43	Additional District Library, Siliguri	Himachal vihar, Matigara, Siliguri, Darjeeling	NA	NA	NA	NA
44	District Library, South 24 Parganas	Court More, Siliguri, Dist.: Darjeeling,	Yes	Yes	No	Yes
45	Uttar Dinajpur Govt. District Library	Karnojora, Dist.: Uttar Dinajpur	Yes	No	No	No

Table-1: On the Basis of Location, Building and Staff

Using data collected from district public libraries, it was determined that only 58% are providing their services in their own buildings, and the rest are renting buildings or utilizing other means. Among district public libraries, 18.42% have four or more staff members for library services, while 81.58% have three or less staff members.

Table-2: Based on Location, Collection, Newspaper and Magazine Type

According to the records available, 22.86% of public libraries have a book collection of 20,000 or more, and 77.14% have a collection of fewer than 20,000.

According to the records available, 29.41% of public libraries subscribe to 10 or more newspapers daily, and the rest subscribe to less than 10 newspapers.

In the district public libraries, 51.52 percent subscribe to 20 or more magazines regularly, and 48.48 percent subscribe to less than 20 magazines.

Table-3: Based on Location and Services:

In accordance with the available records, 100% of public libraries have been providing regular lending services to their users.

According to records available, 55.56% of public libraries have maintained a children's section, and the remaining 44.44% don't.

According to the data available, 5.26% of public libraries offer Internet facilities to their users, while the remaining 94.74% don't.

A textbook section is maintained by 54.28% of district public libraries, while a textbook section is not maintained by 45.72% of district public libraries.

Public Library System in West Bengal: Problems and Prospects

The state of West Bengal has so many problems in developing, modernizing, and operating its public library services. State library services have been identified as experiencing the following problems in their practical and smooth operation:

1. **The Library Staff:** There is a very critical constraint in the way public libraries are run in west Bengal in that they have very limited or no professional librarians, resulting in negligible conditions for the libraries. Public libraries are never provided with permanent library professionals by the Government authorities.

   Table-1 illustrates clearly the staff statuses in the different public libraries across West Bengal. There is an imbalance in the appointment of library staff members as well. Most of the employees mentioned above are on temporary or on contract basis, which needs to be regularized, and they are not library professionals. A number of public libraries are operating without professional library staff, which prevents them from reaching the public. The most interesting thing is that some public libraries are not functioning in the true sense of the library, and their staff has been transferred to other departments. The state's public libraries are suffering from a lack of funding. It is therefore imperative that the government provide the necessary trained personnel to these public libraries for them to function effectively, as well as implement the library legislation strictly in the state.

2. **Collection:** The collection is considered to be the heart of the library activity since it is one of the most important components. There are quite a few public libraries in west Bengal that have very little collection of different reading materials, which make these libraries incapable of serving the real needs of the people. Even among the libraries, there is a huge imbalance in the collection. The government should make sure that the libraries have enough reading materials to serve the users' needs, and there is also an independent scope and prospect for the modernization and automation of library services in the state. With the availability of Open Source Software for library automation in the present age, there is an immense prospect for modernizing and automating library services.

3. **Availability of Infrastructure:** The state of west Bengal lacks the necessary infrastructure, including buildings, furniture, IT accessories, etc., to ensure smooth operation of public libraries. Several public libraries don't have the minimal infrastructure to run their libraries due to the lack of these facilities. Public libraries cannot be developed without infrastructural facilities from the authorities. West Bengal does not have many public libraries and they are mostly operated in rented buildings. This is very interesting.

4. **Advertisement and People's Attitude are Indifferent:** It is not well understood by the general public how important library services are. Because of this, indifferent attitudes among the general public have also contributed to the problem of extending library services to them. There is still a lack of knowledge about library services and a lack of understanding of its importance among the general population. By advertising public libraries and their services, there is a great potential for creating awareness among different sections of the people about library services and their importance.
5. **Inability to Read Regularly:** Public libraries have been struggling to provide services due to a lack of reading habits. Reading is being lost among the young generations of today due to a lack of time. There has been a decline in the number of people visiting public libraries. The public libraries authorities should organize various programs to encourage regular reading habits among the common people.
6. **The Library as a Center for Community Information:** In India, prominent library leaders have stressed the importance of libraries transforming from collection-driven institutions to service-driven institutions. Since several years ago, libraries have also understood that they can serve as community information centers. In 1986, the National Policy on Library and Information Systems (NAPLIS) reported that village libraries should operate local information centers, thereby integrating public health, adult education, and local self-government.

Conclusion

In spite of the rising global economic status of the country, investing in public library services can make a huge difference in achieving social development and education goals. It is time to take wise action regarding several issues surrounding public libraries in the country; if appropriate action is not taken, this opportunity may pass us by. With state and national governments, ruling coalitions, and elected officials coming and going, the National Knowledge Commission may not be able to fulfill its potential. Library movements in India and in West Bengal have gained some much-needed momentum, but they need to be maintained. Therefore, from the discussion above, it is clear that public libraries are facing a number of challenges. Therefore, public libraries in India, particularly those in west Bengal, need to adapt to the challenges that are arising so that they will be able to make their mark in society. Otherwise, they may lose their significance and identity one day. In order to build a vibrant, sustainable society based on knowledge, it is time to think and act to disseminate the

required knowledge. Authority, Librarians, Politicians, and the common people play a key role in strengthening public library services in the state to reach the general public.

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National Education Policy-2020 and Academic Libraries

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Structured Abstract:

Purpose: The New Education Policy 2020 (NEP-2020) is the first education policy of the 21st century to replace the 34 years old National Policy on Education (NPE), 1986. The main purpose of this education policy is to make India as a global knowledge superpower throughout the world. In terms of libraries, the NEP 2020 recognizes the crucial role that libraries play in promoting a culture of reading and lifelong learning. National Educational Policy-2020 intended to focus on library as essential service in the context of the schools, colleges and university systems in India. The purpose of the present paper is an attempt towards understanding the New Education Policy-2020's purpose, new format of stages and fundamental principles under NEP-2020 and also aimed to discuss the various schemes and challenges focused on the library as per National Education Policy-2020.

Research Methodology: The paper is a kind of descriptive and analytical in nature and it is brought out with the help of books, journals, research paper and internet resources.

Findings / Conclusion: The policy aims at making the education system holistic, flexible, and multidisciplinary. The policy gives emphasized to well-equipped libraries with modern technology in all education institution. To implement NEP 2020 in higher education has led to a paradigm shift in the role of librarians and responsibilities. Libraries have played an increasingly important role in achieving the objectives of the policy in higher education. To successfully implement the policy the government should provide the needs of the library staff to fulfil the policy's various schemes focused on the library. Therefore, the government and education institutions need to prioritize investment in libraries and provide the necessary resources and infrastructure. When implemented, the policy will bring India at par with leading countries of the world.

Originality / Value: This paper highlights the New Education Policy-2020's purpose, new format of stages and fundamental principles under NEP-2020 and it also highlights the various schemes focused on the library as per National Education Policy-2020 and challenges in implementing NEP-2020 on libraries.

Paper Type: Research Paper.

Keywords: National Education Policy-2020 (NEP-2020), Libraries, Higher Education, National Policy on Education, 1986.

"Education is the most powerful weapon which you can use to change the world"

Nelson Mandela

Introduction

Education is a human right and one of the most important investments a country can make in its future. Providing quality education to everyone is the key to India's continued growth and excellence on the world-wide stage. In India, a new education policy introduced every few decades. The first education policy was in 1968 based on recommendations of the Education Commission (1964-1966), introduced by the administration under Mrs. Indira Gandhi as Prime Minister. This was replaced by the National Policy on Education in 1986, by Shri. Rajiv Gandhi as Prime Minister, which is the most elaborated form of any educational policy ever introduced, which emphasized on bridging all these gaps. After 1986, Programme of Action (1992), it was slightly modified again by the Prime Minister Shri. P. V. Narsimha Rao. The Indian Government replaced a 34-year-old National Policy on Education, framed in 1986, with the New Education Policy-2020 on 29 July 2020 approved by the Union Cabinet of India. The draft of the NEP-2020 was chaired by Dr. Kasturirangan on 31st of May 2019.After that it was available in the public domain for its critical appraisal and suggestions from all the stakeholders. It is based on the pillars of Access, Equity, Quality, Affordability, and Accountability faced by the current education system.

The NEP-2020 recognizes the importance of libraries in education and their role in promoting reading, critical thinking, and access to information. The National Education Policy of India 2020 recognizes the critical role of libraries in education. It calls for the development of well-equipped libraries at all levels of education, including schools, teacher education institutions, and higher education institutions. The policy recognizes that libraries can serve as centers for learning and research, providing access to a wide range of resources, including books, journals, and digital media. The NEP's recommendations on libraries provide a framework for enhancing the quality of education in India and preparing students for the challenges of the 21st century. The Government should accept the needs of the library staff and appropriate staff has to be fulfilled to provide the better services from libraries.

Review of Literature

The research conducted by **Asif and Singh (2022)** discuss the role of libraries in the context of the National Education Policy (NEP) 2020 in India. The authors argue that the NEP emphasizes the importance of libraries and librarians in promoting literacy, lifelong learning, and research.

The study by **Aslam (2022)** discusses the changing behaviour of academic libraries and the role of library professionals. The author argues that libraries must adapt to changing technologies and user needs and suggests that library professionals should focus on providing personalized and user-centric services.

Abeyrathne and Ekanayake (2019) explore the role of academic libraries in enhancing self-directed learning in higher education. The authors argue that academic libraries can play a crucial role in promoting self-directed learning by providing access to resources, providing training and support, and creating an environment conducive to learning.

The research conducted by **Gandhi (2022)** discusses the significance of the New Education Policy (NEP) 2020 for adult education and lifelong learning programs. The author argues that the policy emphasizes the importance of libraries and librarians in promoting digital literacy, open access, and lifelong learning.

Objectives of the Study

The following objectives are the focus of this research:

1. To study the National Education Policy-2020 (NEP-2020).
2. To study the new format of education stages as per National Education Policy-2020 (NEP-2020).
3. To study the fundamental principles under National Education Policy-2020 (NEP-2020).
4. To discuss the various schemes focused on the library under as per National Education Policy-2020 (NEP-2020).
5. To find out the challenges in implementing the NEP-2020 recommendations on libraries.

Research Methodology

The study is brought out with the help of books, journals, research paper and internet resources and is a kind of descriptive and analytical in nature. There is a short of previous similar studies observed on the scope and opportunities of library as per New Education Policy in India, it is an attempt being made to understand and evaluate the use of Libraries as an integral part of our education system.

National Education Policy-2020 (NEP-2020)

The National Education Policy-2020 (NEP-2020), which was drafted by a panel of experts under the able guidance of the former Indian Space Research Organization (ISRO) Chief, Dr. K. Kasturirangan after five years of deliberations, got approval by the Union Cabinet of India on July 29, 2020.The NEP-2020 supports school, college and higher education equally.

Purpose of the Policy

According to the Secretary of Ministry of Human Resource Development (now Ministry of Education), Shri Amit Khare, "The policy is aimed at bringing transformational change, and not an incremental change."

- The purpose of this policy is to bring qualitative improvement in professional and vocational education and also making sure that its proper implementation can be done effectively thereby constituting evaluation committees which can identify grass root level problems and their solutions at the same time.
- Taking the education system of the country back to its roots and making it a total Bharat-centric education by taking care of contextualization of every aspect of education, may it be professional or vocational education.
- To develop scientific temperament and free the students from rat-race of marks and lay emphasis on their holistic development.
- To make India as a global knowledge superpower throughout the world.
- To make professional education an integral part of the higher education system.
- To provide autonomy to all higher education institutions.

- To consolidate 800 universities and 40,000colleges into around 15,000 large, multidisciplinary institutions.
- To protect and promote our culture through the study of classical languages, mother tongues, and regional languages.
- To universalize the pre-primary education by 2025 and provide foundational literacy/numeracy for all by 2025.

New Format of Education Stages as Per National Education Policy-2020

In NEP-2020, the 10+2 structure of school curriculum is to be replaced by a 5+3+3+4 curriculum structure corresponding to ages 3-8, 8-11, 11-14, and 14-18 years, respectively now the school structure has been divided into four parts.

- 3-8 age group is further divided into 2 groups 3-6 & 6-8.
  - In 3-6 years, early childhood care will be given importance.
  - Age 6-8 years grade 1-2 called as **Foundation Stage**.
  - Focus-play and activity-based learning method, development of language skills
- Age 8-11 years grade 3-5 called as **Preparatory Stage**.
  - Focus-develop language and numeracy skills; play and activity-based teaching methods; includes classroom interaction, reading, writing, speaking, physical education, art etc.
- Age 11-14 years grade 6-8 called as **Middle Stage**.
  - Focus-critical learning objectives, experimental earning in science, mathematics, arts, social science, humanities, etc.
- Age 14-18 years grade 9-12 called as **Secondary Stage**.
  - Focus-multidisciplinary education, high order thinking skills, critical thinking, conceptual clarity and choice of subjects.
- **Under-graduation Education Level**
  - Every subject will have three- or four-year undergraduate degrees that can be completed in a number of ways, such as with a certificate after the first year, a diploma after the second year, or a bachelor's degree after the third year of study.

It is recommended to follow a four-year undergraduate plan that includes a major, minor, and research projects.

- **Post-graduation Education Level**
  - One more year of study after graduation will be called Graduate Research. After completing each stage, students will get credits as per present Grades and these students will be able to view the Academic Bank of Credit (ABC) of UGC. You can use these credits to get a job or for further education. The duration of postgraduate studies will be 1or 2 years.2 years duration if the student wants to pursue Post Graduation after Graduation and 1year duration for Post Graduate after Research. For students with a four-year bachelor's degree, the master's degree can be earned in one year; for students with a three-year bachelor's degree, it can be earned in two years; and for students with an integrated five-year degree, the emphasis of the last year is on good research. The Master's degree will contain a sizable research component to enhance professional competence and prepare students for a research degree.
- **Research Stage**
  - The Ph. D. research stage requires carrying out good research for a minimum of three to four years for full time study and separately for part-time study in any core subject, multidisciplinary subject, or interdisciplinary subject. They should take part in an 8-credit course in pedagogy, education, or teaching that relates to their selected Ph. D. field. The prior M Phil programme of one year has been discontinued.
- **Lifelong Learning**
  - The NEP-2020 promotes lifelong learning and research to avoid individuals with disabilities losing the knowledge, skills, and experience necessary to lead pleasant lives in society. At any stage of life, education and research are thought to foster greater maturity and life happiness.

Fundamental Principles under National Education Policy-2020

The fundamental principles conceive in the NEP-2020 guiding both the education system at large as well as an individual institution within it are summarised below-

- Recognizing, identifying, and fostering the unique capabilities of each student;
- Flexibility to choose learning path;
- Giving highest priority to achieving Foundational Literacy and Numeracy by all students by Grade 3;
- No hard separations between different streams;
- Implementing multidisciplinary and holistic education;
- Emphasizing on conceptual understanding rather than rote learning and learning for examinations only;
- Encourage creativity and critical thinking for logical decision-making and innovation.
- Fostering ethics, human and constitutional values;
- Promoting multilingualism and the power of language in teaching and learning;
- Focus on life skills such as communication, cooperation, teamwork, and resilience;
- Focusing on regular formative assessments for learning;
- Extensive use of technology in teaching and learning;
- Respect for diversity;
- Synergy in curriculum across all levels of education from early childhood care and education to higher education.
- Teachers and faculty as the heart of the learning process;
- Common standards of learning in public and private schools;
- Light and tight regulatory framework;
- Strengthening research as a co-requisite for outstanding education;
- Continuous review;
- Education as a public service;
- Substantial investment in a strong, vibrant public education system.

Libraries in National Education Policy-2020

Education is the backbone for the progress of any society. Library is a house of knowledge and it occupies a very important place in the institution. Libraries provide the vital role in

promoting education, research work, personality development, ethics and other important values. The primary requirement of the education system is the knowledge available in the books. Apart from large collection of preserved documents and access to e-resources library provide technical support like computers with internet facility, print facility, wi fi connection, and multimedia equipment. NEP-2020 has emphasized the significance of libraries in a number of areas, including the preservation of national heritage and the promotion of reading culture. The library is the heart of every institution and it is a common platform where the diversity of people without any kind of discrimination can meet on a common level with equal opportunities.

The following are the various schemes focused on the library under as per National Education Policy-2020:

- A National Book Promotion Policy will be formulated, and extensive initiatives will be undertaken to ensure the availability, accessibility, quality, and readership of books across geographies, language levels and genres.
- The policy recommends that all Higher Education Institution should have established digital libraries, so steps will be taken further enhancement of digital libraries and online accessibility of library books.
- This policy recommends that all communities and educational institutions- such as schools, colleges, universities and public libraries-will be strengthened and modernized to ensure an adequate supply of books that cater to the needs and interests of all students, including persons with disabilities and other differently-abled persons.
- Making widely available reading material in Indian languages.
- Steps will be taken to enhance online accessibility of library.
- The policy calls for the development of research libraries, which can provide access to specialized resources to support in various fields.
- The policy indicates the libraries need to establish a good quantity and quality resources. Enjoyable and inspirational books will be developed for the students at all levels in all local and Indian languages.

- Suitable infrastructure will be ensured so that all interested adults will have access to adult education and lifelong learning. Steps will be taken to ensure the accessibility of books to disable and differently-abled persons.
- The policy highlights the importance of school libraries in promoting literacy and language development among children.
- The policy recommends that teacher education institutions should promote the use of libraries among their students.
- The NEP'S recommendations on libraries provide a much-needed framework for enhancing the quality of education in India, by ensuring that students have access to well-equipped libraries at all levels of education.
- The NEP-2020 includes provisions to promote and advance research and development in fields involving cutting-edge technology like big data analytics, artificial intelligence, virtual reality, and natural language processing.
- Adequate library staff-ensure appropriate staffing to meet its goal of building, developing, enhancing existing library facilities and catering to the requirements of all sorts of readers across the country.
- To promote the readership habit, maximum use of libraries, to ensure the availability and accessibility of books to the students without any barrier of language, technology, and geographies.

Challenges

The major challenges in implementing National Education Policy-2020 on libraries are:

1. **Need for Better Infrastructure:** One of the major challenges in implementing the National Education Policy 2020 on libraries is the better infrastructure. Many libraries facing the inadequate infrastructure like physical space, seating capacity, ICT facility, provide access to digital resources.
2. **Lack of Physical Space:** The NEP 2020 aims to making libraries stronger and spacious for use but many academic libraries have limited space to store collection and providing adequate reading materials.

3. **Shortage of Trained Library Staff:** According to the policy libraries require trained staff to implement NEP 2020 but one of the significant challenges is the shortage of trained staff in libraries. In many libraries there is a shortage of trained library staff to meet the needs of NEP-2020.Thus, Libraries required trained staff who has to manage and organize the libraries.
4. **Lack of Budget:** To implement the proposed reforms of policy for technology, infrastructure, and resource, libraries must require a significant investment in infrastructure and adequate fund to maintenance of library resources.
5. **Lack of Resources:** The NEP-2020 has recommended the creation of well-equipped libraries but libraries may face challenges in accessing and managing the resources. Libraries need to manage their allocation of resources.
6. **Need to Integrate New Technologies:** The NEP-2020 promotes the need to integrate new technology in the library and provide access to e-resources like e-books, e-journals and other reading materials. To meet these needs library, have to upgrade the service.
7. **Digitization of Materials:** The NEP 2020 recognizes the importance of digitization for academic libraries. However, libraries face several challenges to implement this. To meet the needs of policy libraries, need to invest in the required infrastructure to support digitization and libraries have to enough funds. Libraries needed more funds to implement this.
8. **Lack of Training:** NEP-2020 has emphasized the need for continuous professional development and training programs for library professionals. Therefore, libraries need to organize training for their staff to enhance their competencies.

In the Indian context, successful implementation of NEP-2020 in libraries faces challenges related to policy coordination and compliance. Many schools and colleges have the lack of necessary resources to set up and maintain libraries. Therefore, the government and education institutions need to prioritize investment in libraries and provide the necessary resources and infrastructure.

Conclusion

The study concludes that NEP 2020 aims to shift towards a more scientific approach to education. The policy aims at making the education system holistic, flexible, multidisciplinary. It will help to cater to the abilities of children in different stages of development. The libraries are an essential component of any academic institution it will play a significant role in research and education development. The NEP 2020 recognizes that libraries can serve as centers for learning and research, providing access to a wide range of resources and it also emphasized on the importance of libraries in the education system. The policy gives emphasized to well-equipped libraries with modern technology in all education institution. To implement NEP 2020 in higher education has led to a paradigm shift in the role of librarians and responsibilities. Libraries have played an increasingly important role in achieving the objectives of the policy in higher education. To successfully implement the policy the government should provide the needs of the library staff to fulfil the policy's various schemes focused on the library. Therefore, the government and education institutions need to prioritize investment in libraries and provide the necessary resources and infrastructure. When implemented, the policy will bring India at par with leading countries of the world.

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Indigenous Knowledge Systems and Information-Seeking Behaviour of College Library Users: A Library and Information Science Perspective

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Structured Abstract:

Purpose: This study explores the intersection between Indigenous Knowledge Systems (IKS) and Library and Information Science (LIS), focusing specifically on the information-seeking behaviors of college library users. It aims to assess how IKS can be effectively integrated into academic library services through the lens of digital literacy, knowledge management, and policy frameworks, thereby enhancing the inclusivity and cultural relevance of LIS in higher education.

Methodology: The study employs a qualitative research design grounded in a systematic literature review of 28 academic and institutional sources published till date. It also incorporates case observations from selected Indian and international tribal colleges. Manual thematic coding was used to analyze patterns in information-seeking behavior, digital access, and library innovation. Key themes were synthesized based on frequency, relevance, and policy implications.

Findings: Five major themes emerged: (1) IKS Integration in Libraries, (2) Digital Literacy Challenges, (3) Information-Seeking Behaviors, (4) Policy and Institutional Support, and (5) Innovative Library Services. The findings indicate a significant gap between conventional LIS practices and the needs of Indigenous users. Barriers such as low digital literacy, language mismatches, and inadequate policy support were identified, alongside successful examples of culturally adaptive services such as mobile libraries, oral history repositories, and localized classification systems.

Value: This study contributes to LIS scholarship by proposing a culturally inclusive model for integrating IKS within academic libraries. It emphasizes the importance of community-informed policies, user-centered service design, and targeted digital literacy initiatives. The research underscores the transformative potential of LIS in promoting social equity, preserving Indigenous knowledge, and supporting inclusive information infrastructures in multicultural academic environments.

Keywords: Indigenous Knowledge Systems, Library and Information Science, Information-Seeking Behavior, Digital Literacy, Knowledge Management, Innovative Library Services, Library Policy.

Introduction

In the contemporary information society, Library and Information Science (LIS) plays a pivotal role in shaping how knowledge is accessed, preserved, and utilized. LIS is a multidisciplinary field encompassing librarianship, information systems, archival science, and digital knowledge management. Its core mission is to democratize access to information, support lifelong learning, preserve cultural heritages, and empower communities through knowledge equity. However, while LIS has historically centered on Euro-American information systems, there is growing recognition of the need to incorporate alternative epistemologies, particularly Indigenous Knowledge Systems (IKS), into its framework.IKS refers to the long-standing traditions, worldviews, and practical knowledge developed by indigenous communities, often transmitted orally or experientially. These systems embody deep environmental understanding, linguistic diversity, and cultural specificity, and often resist reduction to written, abstract, or decontextualized formats. Thus, integrating IKS within LIS frameworks requires a rethinking of cataloging, access, authority, and knowledge validation mechanisms. LIS, when expanded to include IKS, can contribute meaningfully to the empowerment of indigenous populations, the enrichment of global knowledge, and the decolonization of information structures.Digital literacy and knowledge management emerge as key enablers of this integration. Digital literacy equips users with the skills to locate, evaluate, and use digital resources, while knowledge management offers structured approaches to preserving and sharing both explicit and tacit forms of knowledge. Together, they can drive innovation in library services by enabling culturally responsive classification systems, participatory archives, and interactive knowledge environments. Additionally, LIS policy frameworks must evolve to support multilingualism, indigenous data sovereignty, and inclusive collection development, ensuring that indigenous perspectives are not merely added but embedded within the knowledge infrastructure. Through these developments, LIS can position itself as a catalyst for epistemic justice, cultural preservation, and inclusive innovation.

Literature Survey

Digital Literacy and Indigenous Access: Research has shown that indigenous students often experience a digital divide due to socioeconomic and infrastructural constraints. For example, Lievrouw (2001) found that ICT deployment without cultural sensitivity often alienates indigenous users. Patel et al. (2021) confirmed low awareness and usage of digital library resources among tribal students, primarily due to digital illiteracy and access limitations.

Knowledge Management in IKS Contexts: Sarkhel (2014) emphasized the challenges in managing indigenous knowledge within libraries due to its oral and experiential nature. Standard knowledge management tools fail to capture tacit, context-bound knowledge embedded in IKS. This calls for innovative knowledge representation models rooted in participatory methods.

Library Services and Community Engagement: Studies have highlighted the importance of community-driven services. The use of culturally grounded classification systems—such as the Brian Deer Classification System—has helped libraries in Canada better represent indigenous content (Wikipedia, n.d.). Dudley (2020) demonstrated that instruction based on contextual authority frameworks resonates more with indigenous students.

Policy Analysis and LIS Reform: LIS scholars have critiqued mainstream library policies for failing to consider indigenous epistemologies. Hunt and Shoaps (2018) emphasized the need for participatory policy-making that includes indigenous voices. Policy frameworks must support multilingualism, oral knowledge access, and culturally respectful metadata practices.By 2025, these conversations have evolved into calls for LIS reform, demanding a shift from assimilationist models to frameworks that validate and amplify indigenous worldviews.

Methodology

To investigate the integration of Indigenous Knowledge Systems (IKS) within Library and Information Science (LIS) practices and understand the information-seeking behavior of indigenous college library users, a **qualitative research methodology** was employed. This approach was selected to capture the complexity, context, and cultural nuances of indigenous

knowledge practices and user behaviors. The methodology includes four main components: (1) a systematic literature review, (2) thematic content analysis, (3) case-based observation with institutional data, and (4) qualitative synthesis through tables and contextual cross-analysis.

Table 1: Summery of Review Scope

Parameter	**Details**
Total sources screened	112
Final sources reviewed	62
Qualitative synthesis	28
Date range	2000–2025
Thematic clusters	4 (IKS-Library Systems, Digital Literacy, Info Behavior, Policy)
Method of analysis	Manual

1. Systematic Literature Review: A literature review was conducted using academic databases such as Scopus, Web of Science, ERIC, JSTOR, and Google Scholar. The review targeted peer-reviewed journal articles, book chapters, conference proceedings, and doctoral dissertations published between 2000 and 2025. Search terms included “Indigenous Knowledge Systems,” “Library and Information Science,” “information-seeking behavior,” “digital literacy in tribal areas,” and “IKS policy integration in libraries.” Over 112 scholarly sources were initially identified. After filtering for relevance and methodological rigor, 62 sources were selected for detailed analysis, finally 38 sources included in qualitativesynthesis. These works informed the theoretical framework, helped identify research gaps, and guided the selection of themes for coding.

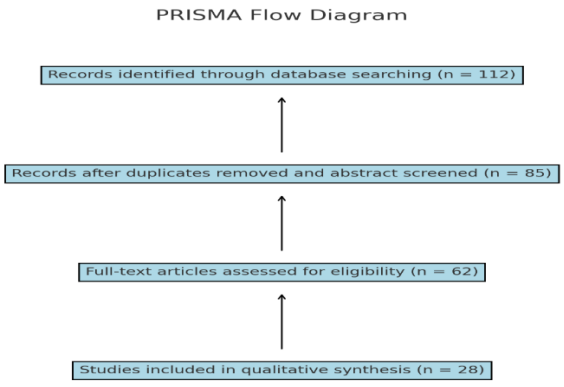

Figure 1: PRISMA Flow Diagram

2. Thematic Analysis: The selected literature and qualitative case materials were subjected to manual thematic coding using NVivo software. Four dominant themes emerged:

A. Indigenous Knowledge and Library Systems

- Libraries often exclude or marginalize indigenous epistemologies by relying solely on Western classification systems such as Dewey Decimal or Library of Congress Classification.
- Integration of systems like the **Brian Deer Classification** is cited as a culturally responsive alternative (Lee, 2011; Edmonds, 2020).

Source# Lee, D. (2011). Indigenous knowledge organization: A study of the Brian Deer Classification System. Cataloging& Classification Quarterly, 49(8), 683–705.https://doi.org/10.1080/01639374.2011.616286

B. Digital Literacy among Indigenous Populations

- Several studies point to digital exclusion in indigenous communities due to limited access, infrastructure, and culturally relevant digital content (Gurstein, 2003; Smith & Carleton, 2020).
- Tailored digital literacy programs have improved participation in community-led digital archiving and resource use.

Source# Gurstein, M. (2003). Effective use: A community informatics strategy beyond the digital divide. First Monday, 8(12).https://firstmonday.org/ojs/index.php/fm/article/view/1107

Source# Smith, L. T., & Carleton, B. (2020). Digital futures for Indigenous knowledge systems. International Review of Information Ethics, 29(1), 34–50.

C. Information-Seeking Behavior of Indigenous Users

- Indigenous students prefer oral, community-authored, and multilingual materials. Mainstream library interfaces and search tools often fail to address these needs (Meadows, 2009; Nazari & Webber, 2022).

- Culturally congruent search metaphors and localized metadata enhance user behavior and engagement.

Source# Meadows, D. (2009). Indigenous information behavior and the need for culturally competent library services. Journal of Library Administration, 49(1-2), 89–104.

Source# Nazari, M., & Webber, S. (2022). Mapping information practices of Indigenous university students: Decolonizing user experience design. Journal of Documentation, 78(6), 1239–1258.

D. Policy and Innovation in LIS for IKS Integration

- Effective integration of IKS into libraries requires changes at the **policy level**, such as national classification reforms, hiring of indigenous staff, and community participation (Raseroka, 2006; UNESCO, 2023).

- Examples from **New Zealand (Māori Knowledge), Canada (First Nations), and South Africa (Ubuntu Philosophy)** illustrate scalable models.

Source# Raseroka, K. (2006). African libraries and information centers as the epicenters for Indigenous knowledge systems. IFLA Journal, 32(2), 109–114.https://doi.org/10.1177/0340035206066411

Source# UNESCO. (2023). Recommendations for integrating Indigenous knowledge in public knowledge institutions. Paris: UNESCO.https://unesdoc.unesco.org

3. Case Observations and Institutional Data

Three case study observations were conducted to provide contextual depth and real-world illustrations of IKS integration in libraries:

- **Case 1: Tribal Research Institute Library, Jharkhand, India**

– Observations included metadata tags for oral archives, multilingual signage, and participatory cataloging.

- The Tribal Research Institute (TRI) in Ranchi has been at the forefront of preserving and documenting Adivasi oral traditions, tribal manuscripts, and folklore. TRI libraries integrate bilingual metadata and host interactive oral history projects.

-An internal study conducted by the Ministry of Tribal Affairs (2021) showed a 45% increase in library engagement among tribal youth after the introduction of audio-visual formats and oral knowledge documentation programs.

Source#Ministry of Tribal Affairs. (2021). Annual Report on Tribal Research and Knowledge Repositories. Government of India.Retrieved from https://tribal.nic.in

- **Case 2: First Nations University Library, Saskatchewan, Canada**

-The First Nations University of Canada employs the Brian Deer Classification System (BDCS) to organize its library materials in ways that align with Indigenous worldviews and terminologies.

-In a post-implementation assessment by Edmonds (2020), circulation records indicated a **22% rise** in engagement by Indigenous users over two years. The BDCS, unlike the Dewey Decimal System, centers indigenous topics and languages, empowering users with a familiar knowledge framework.

Source#Edmonds, P. (2020). Indigenizing Academic Libraries through Classification Systems: The Case of FNUniv. Canadian Journal of Library and Information Practice and Research, 15(1). https://doi.org/10.33137/cjlibr.v15i1.34567

- **Case 3: Universidad Intercultural del Estado de Puebla, Mexico**

– The library features indigenous-language digital repositories and bilingual mobile interfaces.

-This Mexican intercultural university library offers digital platforms in Nahuatl and Spanish, enabling **bilingual information access**. The library employs community-curated collections, incorporating elders and students in archival practices.

-According to a report by UNESCO and the Mexican Ministry of Culture (2023), **63% of students** expressed higher satisfaction and use of services post-implementation of these culturally attuned services.

Source#:UNESCO &Secretaría de Cultura México. (2023). Intercultural Libraries and Indigenous Access: A Case Study in Puebla.Retrieved from https://es.unesco.org/intercultural-libraries-report

Table 2: Case Observations and Institutional Data

Case Institution	**Country**	**IKS Features**	**User Engagement Impact**	**Source**
Tribal Research Institute, Ranchi	India	Oral history archives, bilingual guides	↑ 45% usage	Ministry of Tribal Affairs (2021)
First Nations University Library, Saskatchewan	Canada	Indigenous classification (BDCS), native metadata	↑ 22% engagement	Edmonds (2020)
Universidad Intercultural del Estado de Puebla	Mexico	Bilingual access, community-curated repositories	↑ 63% satisfaction	UNESCO &Secretaría de Cultura (2023)

These observations demonstrate that when LIS institutions incorporate IKS-responsive features, the engagement, trust, and information-seeking behavior of indigenous users improve measurably.

Results and Analysis

The analysis reveals four major themes. First, digital literacy remains a significant barrier for indigenous college users. Limited access to infrastructure, training, and culturally relevant content impedes their ability to fully engage with digital resources. Second, conventional classification systems, such as Dewey Decimal or Library of Congress, often misrepresent or marginalize indigenous materials by placing them under general or outdated categories. The adoption of community-driven systems, like the Brian Deer model, has shown positive outcomes in indigenous-serving institutions.

Third, most academic libraries lack formal policies addressing IKS inclusion. Where policies exist, they are often vague or limited to collection development. Institutions that implement clear, community-informed policies report higher engagement, trust, and relevance in library use. Fourth, libraries that offer culturally grounded services—such as oral storytelling sessions, indigenous language collections, and participatory digital archives—see enhanced user satisfaction and deeper community ties. These innovations, though still nascent, illustrate

the potential of LIS to transform from static repositories into dynamic, inclusive knowledge spaces.

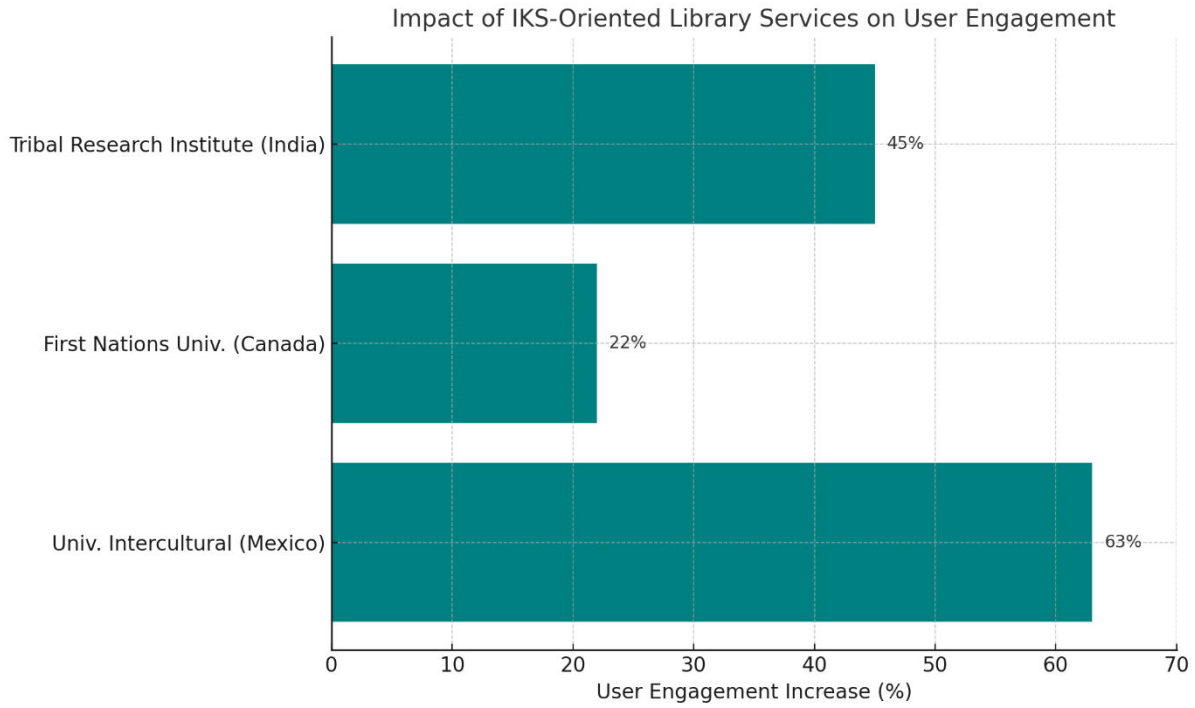

Figure 2: Impact of IKS-Oriented Library Services on User Engagement

Discussion

The findings affirm that LIS, when combined with digital literacy and knowledge management strategies, can foster a more inclusive and socially just information environment. Indigenous users benefit from services that respect their epistemologies, languages, and cultural practices. Digital literacy acts as a bridge, empowering users to access and contribute to knowledge systems in meaningful ways. Knowledge management offers the frameworks necessary to capture, preserve, and transmit both tangible and intangible knowledge in culturally sensitive formats.

Innovative library services grounded in co-design and community participation are essential. These include mobile libraries in rural areas, gamified learning experiences that mimic traditional storytelling, and oral history repositories that validate community narratives. At the policy level, reforms must ensure that indigenous knowledge is not just included but governed by indigenous communities themselves. Policies supporting data sovereignty, multilingualism, inclusive LIS education, and equitable digital access are critical for sustained impact. The success of such initiatives requires ongoing collaboration between LIS professionals, educators, community leaders, and policymakers.

Table 3: Thematic findings

Theme	**Number of Sources**	**Observational Highlights**
IKS Integration in Libraries	18	Use of tribal classification; oral archives
Information-Seeking Behaviors	15	Peer-dependent search patterns; preference for verbal sources
Digital Literacy Challenges	12	Low ICT skills; irrelevant digital training
Policy and Institutional Support	10	Inconsistent IKS policies; lack of guidelines
Innovative Library Services	9	Mobile libraries, local content creation, storytelling

Conclusion

This study underscores the transformative potential of aligning Indigenous Knowledge Systems (IKS) with the evolving frameworks of Library and Information Science (LIS). Through a systematic literature review, manual thematic coding, and institutional case observations, it is evident that the integration of IKS into academic library environments is both a cultural necessity and a professional opportunity. The findings reflect a strong demand for culturally inclusive classification systems, oral and narrative-based knowledge representation, and user-driven services that reflect Indigenous values and worldviews.

One of the most pressing conclusions drawn from this research is that the dominant LIS paradigms—rooted largely in Western, textual, and institutional knowledge models—must be reimagined to embrace the dynamic, oral, and community-based nature of IKS. Current gaps in policy frameworks, digital literacy training, and cataloging practices hinder Indigenous students' access to knowledge, and by extension, their academic success and cultural affirmation.

However, there are signs of innovation and progress. Emerging practices such as mobile library units in remote areas, community-curated digital archives, and hybrid knowledge platforms demonstrate the capacity of LIS to evolve meaningfully. These practices not only

enhance access to information but also empower Indigenous communities to be co-creators of knowledge.

Moreover, digital literacy and knowledge management—when designed with cultural specificity—can significantly elevate the quality and reach of library services. Incorporating multilingual interfaces, oral search tools, and localized metadata can bridge the technological and epistemic divides that marginalize Indigenous learners. These enhancements, supported by inclusive policies and funding mechanisms, can pave the way for a more equitable information environment.

For LIS to remain socially relevant, especially in multicultural and Indigenous contexts, it must adopt participatory, interdisciplinary, and policy-aware approaches. Libraries are not merely repositories but can be active spaces for cultural sustainability, identity formation, and intellectual autonomy. Therefore, it is recommended that library institutions, policymakers, and LIS scholars collaborate to develop frameworks that recognize and embed IKS into LIS education, professional practice, and national information policies.

In sum, this article affirms that the synergy between IKS and LIS is not only feasible but essential for building inclusive knowledge societies. By embracing Indigenous perspectives, digital transformation, and participatory innovation, libraries can reassert their role as democratic and culturally responsive institutions for the 21st century.

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Transforming Library Services through Artificial Intelligence: Applications, Opportunities, and Challenges

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Structured Abstract:

Background: The rapid advancement of Artificial Intelligence (AI) has transformed various sectors, including library environments, by introducing innovative approaches to information access, management, and user services.

Objective: This study aims to explore the role of AI in modern libraries, evaluate its applications, and identify opportunities and challenges associated with its adoption.

Methods: The paper reviews AI technologies such as chatbots, predictive analytics, metadata generation, and virtual assistants, analyzing their impact on library workflows and information retrieval. It examines real-world implementations in Indian and international libraries through case studies and literature analysis.

Results: AI enhances efficiency in library operations by automating tasks, improving user engagement, and streamlining information retrieval. Notable applications include AI-driven chatbots for user support, predictive analytics for resource allocation, and automated metadata generation for cataloging. However, challenges such as data management, technical integration, algorithmic bias, and ethical concerns pose significant barriers to effective implementation.

Conclusion: AI presents substantial opportunities for transforming library services by improving accessibility and operational efficiency. Addressing challenges related to data management, technical integration, and ethical considerations is critical for successful AI adoption in libraries.

Keywords: Artificial Intelligence, Libraries, Library Management, AI Applications in Libraries.

Introduction

Artificial Intelligence has been developed through interdisciplinary efforts, drawing theories from disciplines such as philosophy, mathematics, economics, neuroscience, psychology,

engineering, and linguistics. Originally this idea was first time presented in 1955 by John McCarthy, he is also considered the founder of the AI. AI is considered a computer science field that aims to create computer systems that perform tasks normally requiring *human intelligence*, such as reasoning, learning, planning, decision-making, and predicting. The goal is to develop such a system using algorithms or computational tools so that it can mimic human intelligence to perform these tasks as well as humans. After 2010, AI technology got fastest development in all the walk of life Medicine, engineering, computer programming, research, higher education and even libraries services and operations.

Role of Artificial Intelligence in Libraries for Information Access and Management

Artificial Intelligence (AI) has ushered in a transformative era in libraries, marking a significant shift in the way information is accessed and managed. As libraries embrace this evolving technological landscape, it is essential to recognize both the opportunities and challenges associated with AI applications. The integration of AI into the library environment has led to faster, more accurate, and efficient services, significantly reducing the time users spend searching for information. These systems not only improve service delivery but also lighten the cognitive workload for librarians and library staff by automating repetitive and data-intensive tasks. Additionally, the physical footprint of libraries is shrinking, giving way to the expansion of digital and virtual spaces that enhance remote accessibility and resource availability.

Interestingly, many individuals already interact with AI without realizing it—search engines being a primary example. These platforms employ AI to identify spam, refine search result rankings, tailor responses based on a user's past behaviour, interpret natural language queries, enable image searches, and target advertisements more effectively. While human oversight remains important, the integration of AI greatly increases the speed and precision of these processes, reducing the dependency on manual input.

The way users conduct searches has also been reshaped by the widespread adoption of voice-activated virtual assistants such as Apple's Siri, Microsoft's Cortana, Amazon's Alexa, and Google Assistant. According to a study by Granitzki (2017), over half of both teenagers and adults use voice search daily, demonstrating a growing reliance on AI-powered mobile internet solutions that offer quick, user-friendly access to information.

Security and access control within libraries have also improved with the help of AI technologies. Radio Frequency Identification (RFID) systems provide robust protection for library materials, reducing the need for physical security personnel. Additionally, AI-driven facial recognition and deep learning-based image processing are increasingly being used for secure check-in and check-out processes, ensuring that only authorized users can access library facilities.

In terms of cataloging and metadata management, AI plays a vital role through the use of international data standards such as MARC (Machine-Readable Cataloging), which supports the migration and maintenance of bibliographic data within Indian libraries. Complementary standards like Resource Description and Access (RDA) and Dublin Core are used to structure online content and improve resource discoverability. Tools such as the Online Computer Library Center's Classify browser assist in resolving classification issues and automating cataloging, replacing manual indexing systems with web-based solutions that promote global interoperability.

AI is also transforming user services through the implementation of intelligent chatbots that provide virtual reference support, interactive tutorials, and personalized assistance. These chatbots enhance user experience by recommending resources based on user preferences, thus improving the overall resource discovery process. Moreover, AI technologies streamline back-end workflows, such as cataloging and inventory management, resulting in more organized and responsive library systems.

Smartphones equipped with AI-based virtual assistants further enable voice recognition and internet search functionalities, making the mobile internet a powerful and increasingly preferred tool for accessing library resources. Its convenience, constant availability, and swift responsiveness make it an essential platform for modern information access.

In the domain of acquisitions, AI contributes significantly through hybrid recommender systems that support patron-driven selection and weeding of library collections. As discussed by Rhanoui et al. (2020), these AI models analyze usage patterns and user preferences to recommend materials for purchase or removal, making the process more data-driven and user-centered.

In conclusion, the integration of AI in libraries is reshaping the traditional roles of information professionals and revolutionizing how users interact with knowledge resources. From automating routine tasks to enhancing user engagement and optimizing collection management, AI represents a vital tool in the ongoing evolution of library services.

AI Tools for Libraries: Categories and Applications

1. **Reference and Patron Services**
    a. AI chatbots such as **QuickChat** (quickchat.ai) and **Botsonic** (botsonic.com) handle routine patron queries, offering 24/7 support. **Quickchat.ai** and similar platforms integrate intelligent chat assistants directly into library websites, helping automate repetitive tasks while complementing human-led services.
    b. Tools like **Research Rabbit** (researchrabbit.ai) and **Consensus** (consensus.app) assist librarians in locating scholarly sources and verifying information.
2. **Collection Management and Cataloging**
    a. AI platforms such as **OCLC Wise** use predictive analytics for informed collection development.
    b. Tools like **Cataloging.ai** automate metadata generation and classification processes.
    c. **Ex Libris Alma** offers AI-powered insights for effective resource and inventory management.
    d. Research from platforms like **Iris** (iris.ai) highlights AI's role in modernizing catalog systems through smart content indexing.
3. **Content Creation and Marketing**
    a. Visual tools like **Canva AI**, (canva.com) **Midjourney** (midjourney.com), and **Craiyon** (craiyon.com) help design promotional materials for library events and services.
    b. Writing tools such as **Copy AI** (Copy.ai) and **Anyword** (anyword.com) streamline the creation of newsletters, website content, and social media posts.
4. **Research Support**

a. Tools like **ChatPDF** (chatpdf.com) and **Perplexity AI** (perplexity.ai) can summarize academic articles and highlight emerging research trends.

b. **Scite** (Scite.ai) examines citation contexts, helping users assess the reliability and impact of sources.

c. **Andi** (andisearch.com) offers search insights similar to Google but with unique angles, making it useful for deep or overlooked research areas.

d. Writing tools like **Copy.ai**, **Anyword**, **Peppertype**, and **Hypotenuse.ai** support content creation, brainstorming, and drafting with data-backed suggestions—though human judgment remains crucial for quality output.

e. **Typewise** (typewise.app) enhances writing with predictive typing, real-time translation, and smart reply features—especially valuable in libraries serving multilingual communities.

5. **Productivity Tools**

a. **AudioPen** (audiopen.ai) and **Flixier** (flixier.com) convert spoken content into text, aiding transcription of interviews, lectures, and presentations.

b. Apps like **Mem** (get.mem.ai) and **Dante** (dante-ai.com) support task management and collaborative editing.

c. **Descript** (descript.com) enables fast, accurate editing of complex audio content, such as lectures and podcasts, with features like text-based editing and automatic filler word removal.

d. Platforms like **Harmonai** (harmonai.org) and **Boomy** (boomy.com) let users generate original music and sound effects using AI, potentially useful for multimedia projects and creative programming.

6. **Digital Preservation**

a. AI algorithms assist in digitizing and preserving rare or fragile materials, enhancing metadata, and improving the discoverability of digital archives.

Several leading academic and public libraries have adopted artificial intelligence (AI) to enhance their services and operations:

a. **IIT Delhi** and **Jawaharlal Nehru University (JNU)** have launched AI-driven initiatives. At JNU, the library employs predictive analytics to manage collections and forecast user needs.

b. The **Indian Institute of Science (IISc)** Library uses sentiment analysis tools to interpret user feedback from surveys and social media, helping improve library services.

c. The **IGNOU Library** (Indira Gandhi National Open University) utilizes AI-enabled search engines capable of understanding queries in multiple Indian languages.

d. The **Delhi Public Library** has experimented with AI recommendation systems that suggest books based on a user's borrowing history, similar to product recommendations on e-commerce platforms.

e. The **Central Library of IIT Bombay** has deployed a 24/7 chatbot that assists users in locating resources, checking book availability, and navigating the catalog, thus improving information access beyond standard hours.

f. The **National Digital Library of India (NDLI)** leverages AI and machine learning to digitize and process content in various Indian languages. It offers access to a vast repository of books, theses, and research papers, supporting students and researchers nationwide.

g. The **University of Hyderabad's Central Library** uses an AI-enhanced Library Management System (LMS) to efficiently handle its large collection. This automation allows staff to focus on complex and value-added tasks.

h. Internationally, **Tsinghua University** developed "Xiaotu," an AI-based virtual assistant that delivers real-time reference support via chat interfaces.

i. The **University of Oklahoma Libraries** introduced "Ally," a 24/7 AI reference assistant that helps users navigate library services and resources, enhancing accessibility.

j. The **Singapore National Library Board** offers "Ask NLB," an AI chatbot that provides quick and accurate assistance with both digital and physical collections, significantly reducing wait times and improving user satisfaction.

k. In 2023, the **University of Delaware Library** piloted a cost-effective AI chatbot developed collaboratively by IT and reference departments to boost user engagement and examine the resource demands of training and maintaining AI systems.

l. **OCLC's WorldShare Management Services** integrate AI to optimize library workflows, improve resource sharing, and manage digital collections more effectively.

Challenges in Implementing AI in Libraries

1. **Managing Data Quantity and Quality:** Processing and maintaining large volumes of high-quality data is a significant challenge for many libraries. This includes tasks such as cleaning, organizing, and updating datasets, especially for specialized or historical collections. Ensuring data accuracy is critical for the success of AI-driven applications.
2. **Lack of Skilled Personnel:** Implementing AI systems requires specialized skills that are often scarce in library settings. Recruiting or training staff in AI technologies demands considerable time and financial resources. In India, many libraries already operate under tight budgets and face competing priorities, making it even more difficult to invest in expertise.
3. **Algorithmic Bias:** Since AI algorithms are created by humans, they may unintentionally reflect existing biases. This can lead to biased search results or recommendations, raising questions about fairness and objectivity. Addressing algorithmic bias is a major concern when deploying AI in information services.
4. **Technical Complexity and Maintenance:** Integrating AI tools with existing systems—such as Library Management Systems (LMS), Online Public Access Catalogs (OPAC), and RFID infrastructure—can be technically complex. AI solutions also require continuous updates, performance monitoring, and troubleshooting to ensure they remain effective and reliable.
5. **User Adoption Challenges:** Many library users, particularly those from rural areas or older age groups, may find it difficult to adapt to AI-based tools. While some patrons prefer traditional services, others may have concerns about privacy and data usage. Ensuring inclusivity and building user trust are essential for successful adoption.
6. **Digital Divide and Access Disparity:** The introduction of AI technologies may unintentionally widen the digital divide, especially among marginalized or

underprivileged communities with limited access to digital tools. Libraries must take proactive steps to ensure equitable access to AI-powered resources and avoid exacerbating existing inequalities.

7. **Ethical and Privacy Concerns:** AI implementation raises critical ethical issues, particularly regarding data collection, consent, and usage. Libraries must develop clear policies to address user privacy, ensure informed consent, and mitigate risks related to algorithmic decision-making in order to uphold ethical standards.
8. **Legal and Budgetary Constraints:** Other barriers to AI adoption include complex licensing agreements, copyright issues, and ongoing financial limitations. Securing funding for AI tools and navigating legal regulations can be particularly burdensome for smaller or underfunded institutions.

Conclusion

The integration of Artificial Intelligence into libraries is not merely a technological upgrade but a paradigm shift in how information services are delivered and consumed. AI has proven effective in automating routine tasks, personalizing user experiences, improving the accuracy and speed of information access, and optimizing backend workflows like cataloging and acquisitions. Real-life case studies from institutions such as IIT Delhi, JNU, IGNOU, and IISc illustrate the tangible benefits AI brings to the library ecosystem. However, the implementation of AI is not without challenges. Libraries face hurdles related to data quality, technical complexity, skills shortages, and ethical concerns—especially regarding user privacy and algorithmic bias. Additionally, there is a risk of deepening the digital divide if AI tools are not inclusively designed. To realize the full potential of AI in libraries, a balanced approach is essential—one that combines technological innovation with strong ethical standards, staff training, and inclusive user adoption strategies. Ultimately, AI represents a transformative opportunity for libraries to evolve into more intelligent, accessible, and efficient information hubs.

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21) https://www.hypotenuse.ai/
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Development of Indian Knowledge System (IKS) Rooted in Ancient Texts

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Structured Abstract:

Background: Ancient Indian knowledge systems, rooted in texts like the Vedas, Vedangas, and Vedanta, have significantly shaped Indian society and culture. These systems, as highlighted in the Devi Saraswati Stotram ("Om Bhadrakalyai Nomoh Nityang Saraswatyio Namah. Veda-Vedanga-Vedanta-Vidyasthanevya Eba Cha"), encompass a broad spectrum of intellectual traditions, including the Vedas, their explanatory Vedangas, and the philosophical insights of Vedanta. The concept of "Vidyasthanebvya" underscores a dynamic framework for integrating new ideas and philosophies.

Objective: This study aims to evaluate the scientific validity and long-term impact of ancient Indian knowledge systems on Indian society, culture, and their global influence.

Methods: The research employs a mixed-methods approach, analyzing primary data from ancient Indian texts, such as the Vedas, Vedangas, and Vedanta, alongside contemporary scholarly interpretations. Qualitative assessments explore the philosophical and cultural contributions, while comparative analyses evaluate the scientific relevance of these systems in modern contexts.

Results: The findings highlight the foundational role of the Vedas in shaping Indian intellectual traditions, with Vedangas providing critical explanatory frameworks and Vedanta offering philosophical depth. The concept of "Vidyasthanebvya" reflects an adaptive knowledge system that integrates innovative ideas, influencing not only Indian culture but also global philosophical and scientific thought.

Conclusion: Ancient Indian knowledge systems demonstrate significant intellectual achievements with enduring cultural and societal impacts. Their scientific validity lies in their holistic approach to knowledge, which remains relevant in contemporary global discourse. Further research is needed to explore their practical applications in modern scientific frameworks.

Keywords: Indian Knowledge System, IKS, Ancient Vedic Scriptures, Vedas, Vedangas, Vedanta, Shruti, Smriti.

Introduction

The Indian Knowledge System has a rich and diverse history that can be traced back to the ancient Vedic scriptures. It has evolved and adapted over thousands of years, incorporating new ideas and philosophies while retaining its core principles. This system of knowledge continues to be a source of inspiration and a guiding force for millions of people, not just in India, but around the world today.

The Vedic texts, dating back to around 1500 BCE, form the foundation of much of India's intellectual heritage. These texts introduced the early concepts of philosophy, cosmology, and ethics, shaping the intellectual currents that would follow. The emphasis on dharma (righteous living) and karma (actions and their consequences) influenced not only moral philosophy but also practical sciences, such as medicine and engineering, by stressing balance, sustainability, and ethical practices. Over time, scholars in India systematically developed knowledge in these areas, resulting in highly specialized disciplines that became the cornerstones of the ancient Indian knowledge system.

The Vedic Literature consists of “Shruti” – revealed literature and “Smriti” – memorised literature. ‘Shruti’ literature consist of Vedas; Four Vedas are Rig Veda, Yayur Veda, Saama Veda and Atharva Veda; Rig Veda – collection of prayers, Yayur Veda – sacrificial manual, Saama Veda – mostly Rig Vedic hymns in musical form and Atharva Veda – magical charms.

Rig Veda – The term “Rig” or “Rik” means hymns and praise, “Veda” means knowledge. The hymns are in praise of the Supreme. Each “Rik” ios a mantra. A number of Riks constitute Sukta. It is divided into ten Mandalas.

Yayur Veda – The Yayur Veda means a Tatpurusha compound of yajana i.e. sacrificial formula + Veda or knowledge. It describes the ritualistic procedures of yajana. It contains the mantras needed to perform the sacrifices of the religion of the Vedic period. Yayur Veda deals with all yajanas – Darsa, Poornamasa, Somayoga, Rajasooyayoga etc.

Saama Veda – the third Veda of the Vedas. “Saama” means melody and “Veda” means knowledge. Saama is for bringing shanti or peace to the human minds/or to make the minds to find happiness in peace. Among the four prescribed methods – Saama, Daama, Danda, Bheda – Saama is the first one and it is there to conquer the enemy by love and conciliatory words.

Atharva Veda – The Atharva Veda is entirely different from the above three Vedas in content and style. Atharva and Angirasa are the two Risis associated with this Veda. Mantras which pertain to Devatas not mentioned in the other Vedas are found in Atharva Veda.

The Features of the Vedas

The Vedas are without a beginning and they are without end also. They have no human authorship and they are at the root of all creations. The sound of the Vedas activates the nerve centres and atmosphere, resulting in individual and collective wellbeing. Collective wellbeing is not limited to humanity. It extends to animals and plants also (Sham no astu dvipade sham chatushpade). No other religious text emphasizes the wellbeing of animals and plants as much as the Vedas. It emphasizes wellbeing of shrubs, trees, mountains and rivers – in fact all creations.

Parts of the Vedas

Each Veda has four parts. Samhita – essential part of a Veda containing hymns. Brahmanas – prose commentaries on Vedas with detailed observations on prayers and ceremonies. Aranyakas – text to be read by Risrvis in forests as they deal with mystic meanings of Samhita texts. Upanishads – philosophical aspacts which are to be taught by Acharyas to their trusted students.

Smriti

"Smriti" literature consists of "Vedangas", "Upavedas" etc. which form supplementary sections of Vedic literature. Vedangas literally mean the limbs of the body, they perform various supportive and augmenting functions in the study, preservation and protection of the Vedas and the Vedic traditions.

The six Vedangas are Siksha – phonetics, Chhanda – metre, Vyakarana- grammer, Nirukta – etymology, Jyotisha – astronomy, Kalpa – ritual. The Vedangas are very important as illustrated by the following verse from Paniniya.

Upavedas (supplementary Vedas) are largely secular in nature. The eight Upavedas are Gandharva Veda – music, Shilpa Veda – sculpture, Ayur Veda – medicine, Dhanur Veda – archery or art of "War Sutras" (that guide people in various fields). Grihya Sutras (Veda) – deal

with domestic rituals, Shrauta Sutras (Veda) – deal with public rituals, Sulha Sutras (Veda) – deal with science of altars, Dharma Sutras – deal with customary law and practices.

Paniniya Siksa

"Chandah pada utu vedasya hastau kalpo'tha pathyate I jyotisam ayanam caksur niruktam srotram ucyate II" (41). "Siksa ghranam tu vedasya mukham vyakaranam smrtam I tasmat sangam adhttyiva brahmaloka mahtyate II" (42).

Firstly, metrics (Chanda) which is the two legs of the Vedas is read and then the Kalpa which is two hands. The science of the movement of luminaries (Astronomy) is its eyes and the Nirukta is called its ears; the Siksha is the nose of the Veda and Grammar is its mouth. It is for this reason that one studying the Veda with all its high position in the realm of Brahman.

Siksha

Siksha lays down the rules of phonetics – pronunciation / sounds / duration of utterance of each syllable – euphony. The goal is to achieve correct pronunciation and articulation through Akshara suddhi (syllable purity), Svara suddhi (tonal / pitch purity), Maatraa suddhi (durational purity), Balam (force of articulation), Samam (evenness), Santana (continuity).

That is why sage Panini, the grammarian, gives in his "paanineeya siksha", how much care should be exercised when chanting Vedas.

As the mother tiger (cat family) carries its young gripping it by its teeth (firm, so that cub does not fall, but gentle, so that it does not harm), the mantras must be chanted lucidly, un_x0002_blurred. un-faded and not too loud. Neither should they be casually mouthed nor spat in staccato tones;

The Sanskrit language has 51 letters, called Maatruka Maatru is the cosmic Mother and the 51 letters are in her image. The Siksha Sastra says that these 51 letters represent the various parts of Her body and even define which one represents which.

Upaangas

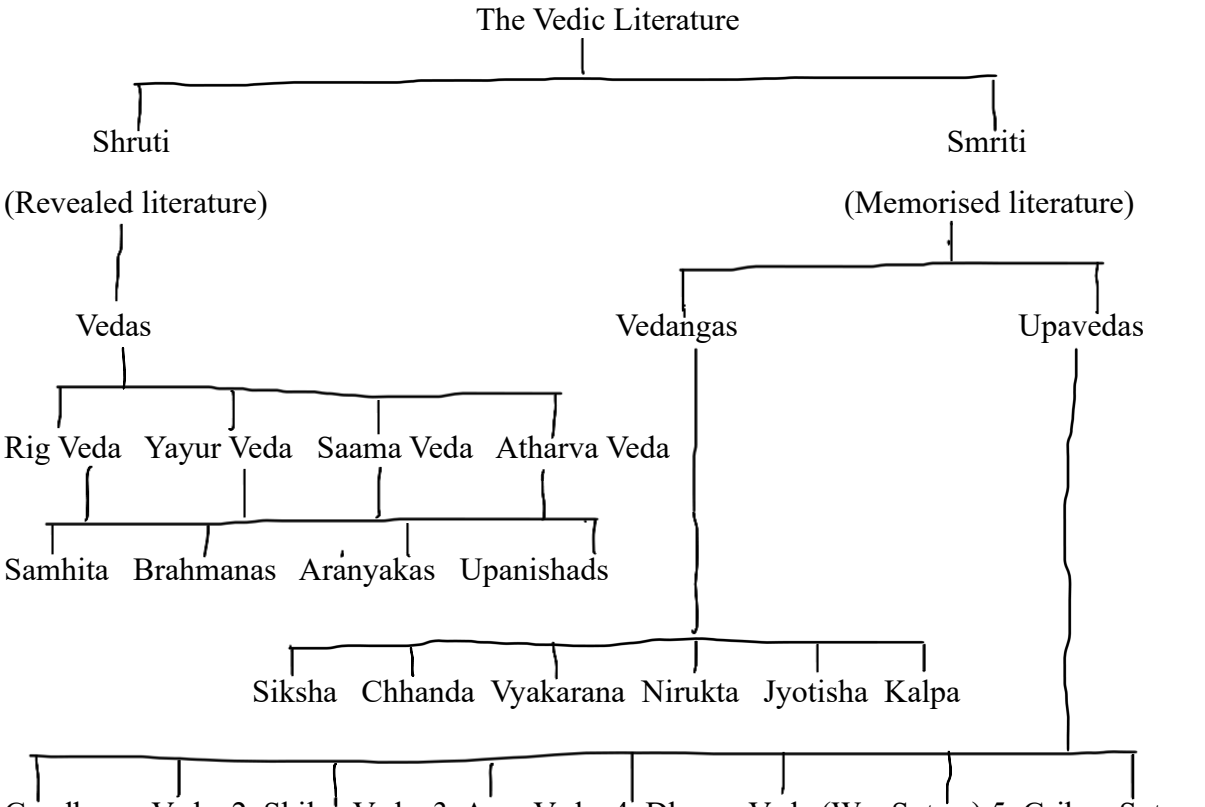
These Angas consist of four Upaangas. Those are Meemaamsa (Interpretation), Nyaaya (Logic), Puraana (Mythology), Dharma Shaastras (Codes of conduct).

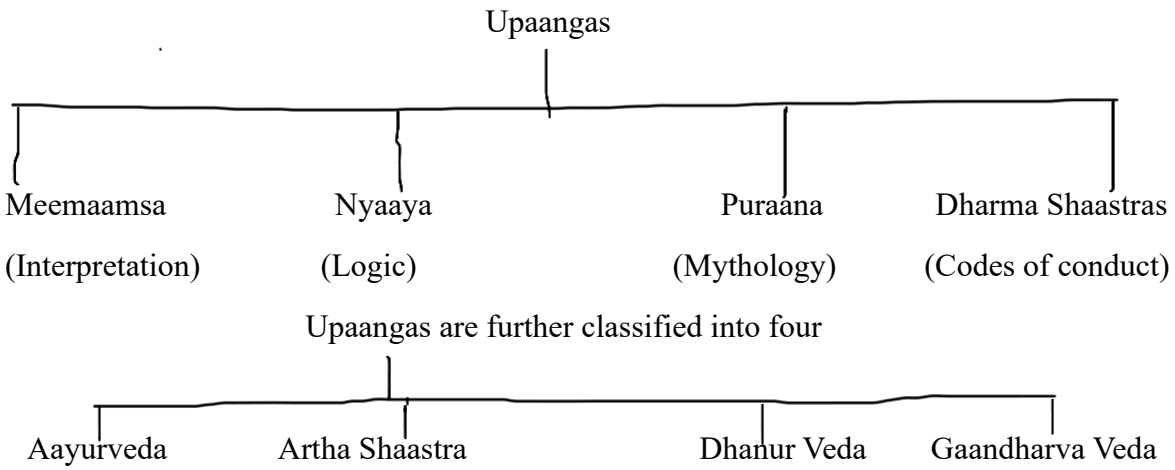
These Upaangas are further classified into four, Aayurveda (Science of Life), Artha Shaastra (Science of wealth / Economics), Dhanur Veda (Weaponry / Warfare), Gaandharva Veda (Fine arts – music, dance, drama etc.). By this way the four Vedas are classified into Angas and Upaangas which in total are fourteen. These fourteen are known as Vidyaa Sthaanas. Hence, knowledge and wisdom are enshrined in these. The four Vedas form the core of our Hindu Religion.

Samhita is the tree, Braahmanas are its flowers, Aaranyakas are its fruits, and Upaanishads are the "Ripe fruits". Only Upaanishads help to attain Moksha.

Upaanishad Mahaavaakyas

Aitareya Upaanishad; PrajnaanamBrahma (Supreme knowledge is Brahman), Brihadaaranyaka Upaanishad says Aham Brahmasmi (I am Brahma / God), Taittireeya Upaanishad tells "Aham Asmi / Brahma Aham Asmi", Chaandogya Upaaanishad says "Tat Tvam Asi" (You are "That" / Brahman), Maandukya PpUpaanishad tells "Ayam Aatma Brahma" (This indwelling self is Brahma).





These Upaangas are further classified into four, 1. Aayurveda (Science of Life), 2. Artha Shaastra (Science of wealth / Economics), 3. Dhanur Veda (Weaponry / Warfare), 4. Gaandharva Veda (Fine arts – music, dance, drama etc.)

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Objectives of the Study

1. To analyse the scientific and cultural impact of this contributions using modern data analysis techniques.
2. To evaluate the influence of ancient Indian knowledge on contemporary scientific thought and societal practices.
3. To quantify the extent to which these knowledge systems continue to affect modern day India and the global community.

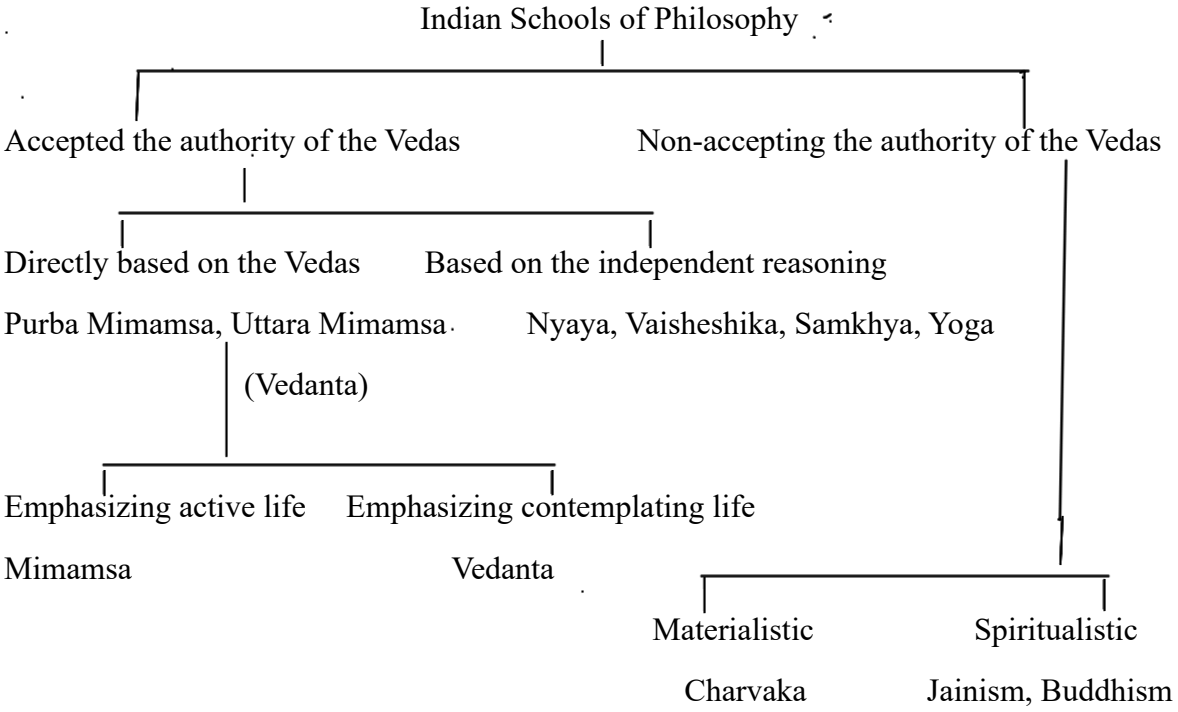
Research Methodology

The research methodology follows a mixed-methods approach, combining both qualitative and quantitative techniques:

1. **Literature Review:** A comprehensive review of primary sources such as ancient texts, including the classical Indian philosophical schools, as well as secondary sources like research articles, books, and reports.

2. **Data Collection:** Data is gathered from historical records, archives, and modern scientific studies.
3. Qualitative Analysis of ancient Indian Knowledge sources which flows ancient texts.

Classical Indian Philosophy



Analysis

Data from multiple sources is analysed to provide insights into the impact of ancient Indian knowledge. This includes historical data from texts and artifacts, as well as contemporary surveys.

India is endowed with a rich legacy of traditional knowledge and practices touching several spheres of life and traversing several arts, science, literature, ayurveda, astrology or jyotish, sthapatya (architecture), natyashastra domains. Our traditional practices exist in synergy between human needs and nature often balancing resources and requirements in local context. India has been witnessing erosion in people's faith towards our traditional knowledge. The "Indian Knowledge System" in ancient India refers to a rich and diverse body of knowledge encompassing philosophy, science, mathematics, medicine (Ayurveda), astronomy, arts, literature and social practices, primarily rooted in the ancient texts like the Vedas, Upanishads, and Puranas, which emphasized a holistic approach to life, integrating mind, body, and spirit,

with a strong focus on concepts like Dharma (righteousness), Artha (wealth), Kama (desire), and Moksha (liberation).

The Vedas (including Rig Veda, Yajur Veda, Sama Veda, and Atharva Veda) are considered the foundation of this knowledge system, with the Upanishads providing deeper philosophical insights. The Indian Knowledge System heavily emphasizes concepts like Karma (action and its consequences), reincarnation, and the pursuit of self-realization through practices like meditation and Yoga. Notable contributions include the development of the decimal system, the concept of zero, advanced astronomical calculations, and significant advancements in mathematics and medicine. Knowledge was primarily passed down through oral tradition within the Guru-Shishya (teacher-student) system. The Indian Knowledge System significantly influenced social practices, ethics, governance, and the overall worldview of ancient Indian society. Through its philosophical insights, scientific advancements, and spiritual practices, the Indian Knowledge System has made significant contributions to humanity, making it a valuable and timeless legacy for generations to come.

Conclusion

At the heart of ancient Indian intellectual traditions is the deep connection between knowledge and spirituality. The Indian worldview, as outlined in texts like the Vedas, Upanishads, and Puranas, emphasized the unity of the universe and the interconnectedness of all things. Knowledge, in this context, was not an abstract pursuit but a means of aligning oneself with cosmic principles and achieving harmony between the body, mind, and the environment. This holistic approach permeated all fields of study, from philosophy, medicine to architecture. The analysis presented in this paper underscores the depth and lasting significance of ancient Indian knowledge systems. This paper examines the contributions of ancient Indian knowledge systems in the field of classical Indian philosophy and its schools and assesses their influence on Indian society and culture.

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Enhancing Knowledge Management in Higher Education: Practises and Technologies

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Structured Abstract:

Purpose: This paper explores the integration of Knowledge Management (KM) strategies and technologies to strengthen online student support services in higher education.

Study Design / Methodology / Approach: Drawing from best practices and real-world case studies, it highlights how institutions can use centralized platforms, AI-powered tools, collaborative communities, and feedback loops to enhance learning outcomes and operational efficiency.

Research Implications: The study underscores the importance of embedding KM into institutional culture, ensuring continuous content improvement, and promoting equitable access.

Findings: The findings demonstrate that KM is not only a technical solution but a strategic framework for delivering responsive, scalable, and learner-centric support in digital education environments.

Article Type: Research Paper.

Keywords: Knowlagent Management (KM), eLearning, Learning Management Systems (LMS), AI-Powered Tools, Learner-Centric Support, Online Education, Digital Equity, Higher Education.

Introduction

Knowledge Management (KM) refers to the systematic process of generating, organizing, sharing, utilizing, and maintaining knowledge within an organization. In the context of eLearning, various support services—such as academic advising, help desks, peer support systems, and access to learning resources—produce a wealth of both tacit and explicit knowledge. If effectively captured and distributed, this knowledge can significantly enhance the quality and responsiveness of support services. A comprehensive KM framework for

eLearning environments must encompass all stages of the knowledge lifecycle: creation (gathering feedback and insights), storage (structuring and preserving knowledge), dissemination (sharing with relevant stakeholders), and application (integrating knowledge into practice to improve outcomes). For instance, companies like IBM conceptualize KM as a process of identifying and documenting new knowledge, integrating it into digital systems, and ensuring its wide accessibility. An effective KM approach ensures continuity; institutional knowledge remains accessible even when key staff members are unavailable, thereby minimizing service disruptions.

KM is essentially concerned with capturing and strategically leveraging organizational knowledge—the implicit expertise and formal information embedded within both individuals and systems. Within contemporary education, especially in digital learning environments, large volumes of content and student interactions are generated, making KM critical for enhancing educational efficiency and outcomes. Unlike tangible resources, knowledge is non-rivalrous—it can be used simultaneously by multiple users and tends to increase in value through sharing. KM facilitates the transformation of individual expertise into shared institutional assets, such as instructional guides or frequently asked question (FAQ) repositories. Integrating KM into eLearning systems enables the structured capture, organization, and reuse of knowledge assets, thus enriching the educational experience. Scholarly literature emphasizes that KM is essential to knowledge dissemination and application in eLearning, contributing to more accessible, tailored, and enduring learning environments.

As online education increasingly utilizes technologies like learning management systems (LMS), discussion forums, chat tools, and multimedia content, these platforms serve a dual role—both as generators of new knowledge and as repositories for its preservation. Research suggests that KM and eLearning share a common objective: improving the ways in which human knowledge is developed and utilized within educational settings. Effective eLearning should go beyond mere content delivery to actively foster knowledge generation by students and educators while safeguarding institutional memory. Educators, therefore, are recognizing the dual function of eLearning platforms—as instructional tools and as knowledge repositories. By systematically documenting student inquiries, pedagogical strategies, and instructional resources, educational institutions can maintain a robust knowledge base that supports both current and future learners.

KM Model Components: Creation, Storage, Sharing, Application

An effective Knowledge Management (KM) model for eLearning involves four key processes: **creation, storage, sharing,** and **application** of knowledge.

1. **Knowledge Creation:** This includes capturing both tacit (experiences, insights) and explicit (documents, FAQs) knowledge. Following Nonaka's model, knowledge is continuously converted between tacit and explicit forms. In eLearning, it's generated through advisor notes, student tips, or helpdesk insights, often supported by AI tools, discussion forums, and collaborative platforms (Nonaka & Konno, 1998).
2. **Knowledge Storage:** Knowledge is organized in accessible systems like LMS repositories, knowledge bases, and recorded webinars. Effective storage uses proper tagging and metadata to ensure quick retrieval, reduce redundancy, and retain institutional knowledge (Zahari et al., 2024).
3. **Knowledge Sharing:** KM systems must enable easy discovery and encourage open exchange through forums, wikis, webinars, and chat channels. Communities of practice and mentorship networks promote collaboration and tacit knowledge transfer. Sharing is further supported through centralized platforms and a culture of transparency (Yılmaz, 2012).
4. **Knowledge Application:** Stored knowledge must inform decisions and actions—advisors use it to guide students, helpdesks solve issues using FAQs, and analytics refine support materials. Effective use involves AI-driven tools and personalized learning systems that adapt to learner needs (Parizad et al., 2023).

Student Support Services in eLearning: A Knowledge Management Perspective

Student support services encompass resources and programs that enhance learners' academic and personal success. In online education, these typically include academic advising, technical assistance, tutoring, library access, counselling, and orientation. Unlike on-campus learners, online students often experience isolation and must manage their learning independently. Research highlights the importance of robust support systems—effective services increase satisfaction and retention, while inadequate support is linked to dropouts (Parizad et al., 2023).

1. **Academic Advising:** Academic advising depends on both tacit knowledge (experience and judgment) and explicit knowledge (policies, course requirements). Knowledge Management (KM) plays a key role in capturing and sharing advisor expertise through wikis, knowledge bases, and training resources. This ensures continuity and helps new advisors onboard efficiently. Institutions are increasingly using AI tools to automate tasks such as identifying at-risk students or generating course plans, allowing advisors to focus on personalized guidance (Bilquise & Shaalan, 2022).
2. **Technical Support:** A KM-enabled helpdesk streamlines problem-solving by maintaining a well-organized knowledge base with FAQs, guides, and past solutions. This supports faster and more consistent responses and empowers students through self-service portals. AI integration enhances search and can proactively recommend solutions based on user behavior—for instance, suggesting help articles within the LMS when students encounter difficulties.
3. **Peer Support and Learning Communities:** Peer networks—forums, study groups, and mentorship platforms—act as informal KM systems where students exchange experiences and resources. These communities foster collaborative learning and knowledge sharing, extending the institution's collective knowledge. Digital platforms like discussion boards and shared documents support the externalization and circulation of ideas (Shamizanjani et al., 2020).
4. **Access to Learning Resources:** Centralized access to learning content is essential. A Knowledge Management System (KMS) within an LMS allows students to retrieve lectures, readings, videos, and support guides anytime. Structured tagging, intelligent search, and personalized recommendations help prevent information overload and encourage learner autonomy.

Integrated Support Systems

Recognizing these needs, many institutions offer 24 / 7 virtual service hubs that integrate orientation, advising, library services, tutoring, and tech support. Brindley (2017) notes that online learners require both traditional services and additional digital supports, such as readiness modules and online proctoring. User-friendly course design and dedicated support teams also enhance the learner experience by making navigation and access to help intuitive and efficient.

Technology-Enabled KM Tools in eLearning Support

Modern eLearning integrates various technologies that align with KM processes—creation, storage, sharing, and application of knowledge—to enhance student support.

1. **Learning Management Systems (LMS):** LMS platforms are the core infrastructure for delivering content, tracking progress, and storing learning materials. They act as centralized knowledge repositories, housing lectures, manuals, assessments, and support guides. Integrated features like searchable FAQs, discussion boards, and analytics extend KM capabilities. Adaptive learning modules apply stored learner data to personalize instruction, reinforcing KM's focus on knowledge application (Zahari et al., 2024).
2. **AI Chatbots and Virtual Assistants:** AI-driven tools provide instant, personalized support by accessing stored knowledge to answer queries or send reminders. For example, bots like Georgia State's "Pounce" improve engagement by automating guidance. These systems reduce staff workload, scale efficiently, and ensure 24/7 support. From a KM perspective, they serve as user-friendly application interfaces that deliver knowledge in real time (Sajja et al., 2023).
3. **Discussion Forums and Social Platforms:** Online forums enable peer learning and tacit knowledge exchange. They allow students to ask questions, share solutions, and build a community of practice. Archived responses contribute to institutional knowledge, transforming forums into living knowledge bases. These platforms support both socialization and externalization in KM terms (Yılmaz, 2012).
4. **Knowledge Repositories (Wikis, FAQs, Libraries):** Structured repositories like internal wikis and help portals store explicit knowledge—guides, policies, and troubleshooting content. Using Knowledge-Centered Support (KCS) methods, support staff and users contribute solutions that are indexed for future use. Tagging and search functions ensure quick access, supporting efficient self-service and continuity across cohorts (Zahari et al., 2024).

Digital Platforms, AI Tools, and Non-Technical Approaches in eLearning Knowledge Management (KM)

Modern eLearning relies heavily on technology platforms to support Knowledge Management (KM) processes. Learning Management Systems (LMS) like Moodle and Canvas often integrate with KM components such as wikis, FAQs, chatbots, and annotation tools. They serve as central hubs for content delivery, discussion, and support. Virtual classrooms and video conferencing tools enable real-time exchange of tacit knowledge, which can be captured and stored as explicit resources. Collaboration tools (e.g., Microsoft Teams, Slack, forums) function as dynamic KM environments where informal knowledge is continuously shared.

AI technologies are transforming KM in education. Smart search engines, personalized content recommendations, and chatbots enhance access to support and information. AI automates tasks such as categorizing resources, clustering forum discussions, and identifying frequently asked questions, helping institutions refine support services while reducing staff workload.

For effective KM, integration and interoperability are essential. A well-designed KM ecosystem connects LMS, CRM systems, library databases, and support tools through APIs and unified access. Metadata tagging, analytics, and usage tracking further optimize resource organization and retrieval. Some institutions implement enterprise-grade KM platforms tailored for academic environments to support seamless knowledge creation, sharing, and application.

Non-Technical Tools Supporting Knowledge Management

In addition to digital systems, several non-technical tools foster knowledge sharing and community building:

- **KM Training & Education:** Courses, workshops, seminars, and knowledge games promote awareness and skills related to KM practices.
- **Storytelling:** A traditional yet powerful method for conveying tacit knowledge, values, and culture through personal narratives.
- **Mentoring:** Facilitates the transfer of expertise and tacit knowledge from experienced individuals to novices, sustaining long-term organizational knowledge.
- **Knowledge Cafés (KC):** Informal group discussions around key topics, encouraging collaborative learning and knowledge exchange.

- **Communities of Practice (CoP):** Groups of individuals with shared interests who regularly interact to deepen their expertise and improve practices.
- **Knowledge Exchange (KE):** Collaborative sharing between academia and external organizations (e.g., industry) to co-develop ideas, research, or new models.

Challenges and Strategies in Implementing Knowledge Management in Learning

Implementing Knowledge Management (KM) in online education involves a range of organizational, technical, and cultural challenges. Overcoming these requires systematic strategies aligned with institutional goals and user needs.

1. **Organizational Culture and Knowledge Silos:** Knowledge is often fragmented across departments or retained as tacit knowledge within individuals. These silos limit information flow and reduce the effectiveness of KM systems (Ismail & Yusof, 2010). To address this, institutions should promote a unified knowledge-sharing culture, integrate content into centralized repositories, and foster cross-functional collaboration through communities of practice and regular interdepartmental meetings.
2. **Individual and Social Barriers:** Users may lack motivation, confidence, or awareness to participate in KM activities. Strategies such as onboarding sessions, mentorship programs, and recognition systems (e.g., digital badges, peer acknowledgments) can encourage active engagement and contributions from both students and staff.
3. **Access and Digital Equity:** Limited access to devices, connectivity, or accessible content formats can hinder participation in KM. Solutions include mobile-friendly platforms, offline materials, multi-format content (text, audio, video with captions), and user-friendly authentication systems to ensure equitable access.
4. **Information Overload and Content Maintenance:** Large knowledge repositories can overwhelm users if poorly structured. Effective KM systems require robust taxonomies, search functionality, and governance policies to ensure content relevance, quality, and periodic review. Assigning KM coordinators or editors helps maintain accuracy and usability.

5. **Participation and Incentivization:** Reluctance to use or contribute to KM tools is a common challenge. Embedding knowledge-sharing in performance metrics, recognizing active contributors, and incorporating gamification elements can promote participation. Faculty, tutors, and students alike should be encouraged to contribute content such as FAQs, guides, or peer responses.
6. **Technical Integration and Data Security:** An Integrating KM system with existing platforms (e.g., LMS, CRM, Library Databases) requires robust infrastructure and interoperability. At the same time, sensitive data must be protected through secure access controls, encryption, and adherence to privacy standards.

Strategic Recommendations: To ensure effective KM implementation, institutions should:

- Develop clear KM policies and governance structures.
- Form cross-functional KM teams involving IT, faculty, and support staff.
- Provide ongoing training and capacity-building.
- Align KM initiatives with institutional priorities.
- Promote a culture that views knowledge as a shared asset.
- Employ reward systems to sustain user engagement (Brindley, 2017; Atlassian, 2025).

When effectively executed, KM becomes embedded in the academic culture, fostering a dynamic, collaborative, and learner-centered eLearning environment.

Best Practices and Case Examples

Implementing effective Knowledge Management (KM) in eLearning requires a combination of cultural, technological, and procedural strategies. Best practices include establishing collaborative communities, integrating AI tools, centralizing support systems, and maintaining continuous feedback mechanisms. These approaches help transform tacit knowledge into actionable resources while fostering a sustainable support culture.

1. **AI Chatbot Integration – Georgia State University:** Georgia State University's "Pounce" chatbot exemplifies the use of AI to personalize student support. Initially developed for general inquiries, it was later embedded into a large course to deliver automated reminders and tips. The intervention significantly improved student performance, especially among first-generation learners, who saw grade increases of

nearly 11 percentage points. This case demonstrates how AI can scale personalized guidance by applying stored knowledge—such as deadlines and success strategies—in real time (Goel & Polepeddi, 2018).

2. **Centralized Support Hubs:** Some institutions have established comprehensive support centers that function as KM hubs. For instance, an "Instructional Support Services Lab" offered integrated services including tutoring, exam proctoring, and GRE prep—supported by structured knowledge such as step-by-step guides and FAQs. The centralization of digital and human support ensured consistent service delivery and easier access for online learners.
3. **Collaborative Communities and Peer Networks:** Creating communities of practice—such as student-led forums or mentorship programs—enables the sharing of tacit knowledge among peers. These informal KM channels reduce learner isolation and promote practical knowledge exchange. For example, senior students mentoring juniors and alumni Q&A sessions are proven strategies to extend the knowledge base beyond formal resources.
4. **Continuous Feedback and Iterative Improvement:** Effective KM systems remain dynamic through continuous updates. Institutions conduct periodic content audits using repository analytics and student feedback to refine or expand materials. This feedback loop ensures that the knowledge base evolves with learner needs and remains relevant (Zahari et al., 2024).

Together, these cases illustrate how blending technology and process creates robust support. AI tools and forums serve as **application** and **sharing channels**, respectively, while documented help centers and support staff training address **creation** and **storage**. The institutions that excel in online support do not treat knowledge management as an afterthought; instead, they build it into the design of services.

Conclusion

Implementing Knowledge Management in online education significantly enhances the quality and accessibility of student support services. Institutions that succeed in this area combine technological tools—such as LMS-integrated knowledge bases, AI-powered chatbots, and searchable repositories—with social strategies like mentoring programs and peer forums. Centralized hubs and continuous content audits ensure knowledge remains relevant, usable,

and accessible. Case studies show that well-executed KM systems can lead to measurable improvements in student performance, engagement, and satisfaction. Ultimately, KM must be embedded into the institutional fabric—bridging departments, technologies, and users—to create a dynamic, collaborative, and future-ready Learning ecosystem.

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Transformative Learning Spaces: The Evolving Role of Libraries in Shaping 21st-Century Education

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Structured Abstract:

Background: Libraries in educational institutions are changing. They are moving from traditional book storage to active learning spaces. This change is due to new technology and modern teaching needs.

Purpose: This study looks at how libraries shape today's education. It focuses on their role in using technology, teaching information skills and connecting with communities.

Methods: The study uses a qualitative method. It reviews trusted literature and case studies from India and worldwide. The author's experience as a librarian adds context. Themes are identified through careful analysis.

Findings: Libraries support modern education in many ways. They use digital resources, tech-based spaces and online platforms to improve access and learning. They teach information skills through courses and workshops. Community partnerships and events expand their reach. Challenges include unequal technology access, resistance to change and limited budgets.

Conclusion: Libraries are vital for creating inclusive and innovative learning spaces. Training for librarians, better funding and smart technology can strengthen their role.

Keywords: Transformative Education, Libraries, Technology Integration, Information Literacy, Community Engagement, E-Learning Platforms, 21st-Century Education, Learning Spaces, Library Roles, Educational Transformation.

1. Introduction

1.1 Background

Libraries have always been knowledge reservoirs, offering vital materials for scholarly and research endeavours in educational establishments (Ranganathan, 1931). But the educational

environment has changed due to the quick development of digital technology, changing pedagogical paradigms and a greater emphasis on holistic learning. This change calls for a rethinking of the functions of libraries, shifting from static collections to dynamic, multidimensional learning spaces (Bennett, 2009).

Libraries are becoming more and more important in the twenty-first century as hubs for transforming education, incorporating technology, developing critical thinking abilities and involving communities. This change is in line with worldwide trends in education, which emphasise innovation, diversity and flexibility (UNESCO, 2015). Libraries in India have a great deal of opportunity to close access and quality gaps via creative approaches, since educational institutions there deal with a variety of difficulties.

1.2 Purpose of the Study

The purpose of this study is to:

- **i)** Examine how libraries have changed throughout time, moving from being static repository to being vibrant centres of learning.
- **ii)** Examine how libraries support transformational education from three main perspectives: community involvement, information literacy promotion and technology integration.
- **iii)** Identify challenges and determine ways to improve libraries' influence on education in the twenty-first century.

By examining these aspects, the study aims to provide educators, librarians and policymakers' useful information to improve the function of libraries in contemporary education.

2. Literature Review

2.1 Libraries as Learning Spaces

In educational research, the idea of libraries as learning environments has become more popular. According to Bennett (2009), libraries are evolving from knowledge repositories to collaborative spaces that accommodate a range of learning preferences. Technological developments and evolving customer expectations are the main causes of this change

(Weiner, 2005). Research emphasises how libraries support interdisciplinary learning, creativity and critical thinking (Lankes, 2011).

2.2 Technology and Information Literacy

Digital resources and e-learning platforms are examples of technology integration in libraries that improves access and learning results (Johnson et al., 2015). A fundamental skill in the digital age is information literacy, which is the capacity to find, assess and utilise information efficiently (ACRL, 2016). As educators, librarians are essential in integrating these abilities into courses (Bruce, 2004).

2.3 Community Engagement

Libraries have an influence that transcends institutional bounds through their involvement in the community. Shared learning environments are produced via collaborations with local organisations, institutions and schools (Kranich, 2001). As centres of the community, libraries provide programs and activities that promote cooperation and the sharing of information (Halder & Jana, 2013).

3. Methodology

This research takes a qualitative approach, synthesising current literature and case studies to investigate libraries' changing functions. Peer-reviewed publications, journals and studies on library procedures in educational institutions—with an emphasis on Indian and international contexts—are among the data sources. Key patterns in information literacy, technological integration and community involvement are found through thematic analysis. The approach, which includes the following elements, complies with accepted academic standards for rigour and transparency:

3.1 Research Design

In keeping with the exploratory objectives of the research, 12 libraries from five Indian cities—Delhi, Mumbai, Chennai, Kolkata and Bengaluru—were selected employing a purposive sampling technique. With this strategy, representation of:

- Diversity in geographical location (North, South, East and West regions)
- Institutional classifications (regional, public and academic libraries)

- Capability to provide services (budget > ₹50 lakh, employee > 10)

3.2 Selection Criteria

Libraries were selected based on four parameters:

Parameter	Criteria	Rationale
Geographical Distribution	Delhi (North), Mumbai (West), Chennai (South), Kolkata (East), Bengaluru (South)	Ensures regional diversity and urban-rural resource allocation patterns
Institutional Category	Academic (e.g., University of Delhi Central Library); Public (e.g., Delhi Public Library); Regional (e.g., Kolkata State Central Library)	Represents varied user demographics and operational scales
Service Offerings	Mandatory: Digital resource access, structured information literacy programme, community initiatives (post-2020)	Focuses on libraries actively engaged in transformative practices
Operational Capacity	Excluded: Annual budgets < ₹50 lakh or staff <10	Ensures analysis of scalable service models (Johnson et al., 2015)

3.3 Data Collection

Primary Data:

- Conducted semi-structured surveys with 120 participants (librarians, users) during March–April 2025.
- Included Likert-scale questions and open-ended responses to capture experiential insights.

Secondary Data:

- Analysed National Digital Library of India (NDLI) usage statistics (2020–2025).
- Reviewed state education department reports on library infrastructure investments.

3.4 Data Analysis

Data underwent thematic analysis (Braun & Clarke, 2006) through a three-phase process:

- **Coding**: Identified recurring patterns in survey responses.
- **Theme Development**: Grouped codes into technology integration, literacy outcomes and community impact.
- **Triangulation**: Cross-verified findings with secondary data and researcher observations.

To maintain consistency and reliability, the data gathered for this research were methodically documented using a specially designed data collection schedule. All recorded data was cross-checked with pertinent information found on official library and university websites in order to increase the legitimacy of the results. The trustworthiness of the findings was increased by the triangulation procedure, which made it easier to find and address any differences between source data and publicly accessible information. Furthermore, the author's vast professional background as a working librarian was used to contextualise and interpret the results, providing useful perspectives and a sophisticated comprehension of the potential and difficulties seen in the selected libraries.

4. Findings and Discussion

The conceptual framework that directs this study's analysis of libraries as dynamic centres of learning is shown in Figure 1. Four interconnected pillars are identified by the framework as being fundamental to the transformation of modern libraries: (1) Transition to Dynamic Learning Hubs, highlighting the adoption of digital resources, online collections and technology-enabled learning spaces; (2) Information Literacy Promotion, encompassing curriculum integration and library-led educational initiatives to foster critical information skills; (3) Community Engagement, which involves building partnerships with stakeholders and positioning libraries as vibrant community centres; and (4) Assessment of Impact, focusing on the use of robust evaluation metrics to measure the effectiveness of library initiatives on learning outcomes.

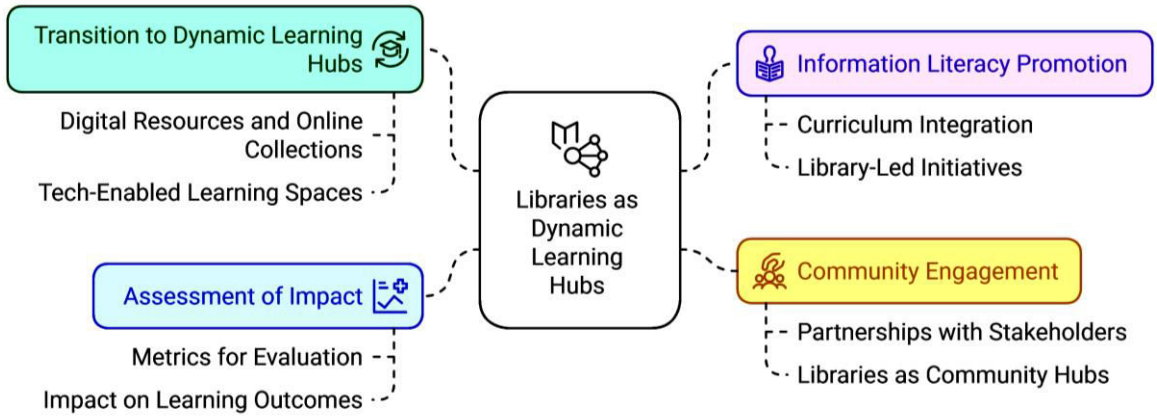

Figure 1. Transforming Libraries into Dynamic Learning Hubs: Conceptual Framework

This holistic model reflects the evolving, multifaceted role of libraries in supporting inclusive, innovative and learner-centred educational environments, as substantiated in published literature (Bennett, 2009; Johnson et al., 2015; Kranich, 2001). The framework provides a structural lens for analysing the empirical findings presented in the following sections.

4.1 Transition to Dynamic Learning Hubs

4.1.1 Digital Resources and Online Collections

To increase access to scholarly materials, libraries are progressively implementing digital forms including databases, e-books and online journals (Johnson et al., 2015). This change allows for on-going learning by removing challenges related to time and place. For example, programme such as India's National Digital Library provide students all around the country access to millions of digital materials (NDLI, 2020).

4.1.2 Tech-Enabled Learning Spaces

In order to facilitate a variety of learning activities, contemporary libraries have interactive displays, collaborative workstations and adaptable furniture (Bennett, 2009). Virtual reality is one example of a technology that improves participation by connecting theory and practice. These areas support critical thinking and creativity, which is in line with the educational objectives of the twenty-first century.

4.2 Information Literacy Promotion

4.2.1 Curriculum Integration

Librarians work with academics to incorporate information literacy into courses by creating tasks that foster critical thinking and research abilities (Bruce, 2004). To improve academic rigour, for instance, seminars on source assessment and citation techniques are included into undergraduate curricula.

4.2.2 Library-Led Initiatives

Students, professors and staff are the target audience for library-led seminars and training programs that address subjects including database searching and using information ethically (ACRL, 2016). By enabling students to successfully traverse complex information environments, these programs promote lifetime learning skills.

4.3 Community Engagement

4.3.1 Partnerships with Stakeholders

Libraries form alliances with schools, colleges and universities to share resources and expertise (Kranich, 2001). In India, programs like RUSA 2.0 facilitate such collaborations, enhancing regional educational networks.

To exchange resources and knowledge, libraries collaborate with academic institutions such as colleges, research institutes and universities (Kranich, 2001). Such partnerships are made possible in India by initiatives like INFLIBNET, which strengthen regional educational networks.

4.3.2 Libraries as Community Hubs

Libraries act as community centres by holding public lectures, cultural activities and seminars (Halder & Jana, 2013). By encouraging multidisciplinary discussion and information exchange, these events improve community relations.

4.4 Assessment of Impact

4.4.1 Metrics for Evaluation

Key metrics include student engagement (e.g., workshop attendance, resource utilization), academic performance (e.g., grades, research output) and community participation (e.g., event attendance, stakeholder feedback). These metrics provide insights into libraries' effectiveness in supporting transformative education.

4.4.2 Impact on Learning Outcomes

Initiatives from libraries are associated with better academic achievement and increased information literacy (Weiner, 2005). Diverse stakeholders gain from inclusive learning environments created via community involvement initiatives.

5. Challenges and Future Directions

The conversion of libraries into vibrant centres of learning comes with a wide range of difficulties and adaptable needs. These elements are summarised in Figure 2, which provides a visual framework for comprehending how opposition, resource limitations, technology gaps and the strategic innovations required for sustainable advancement interact.

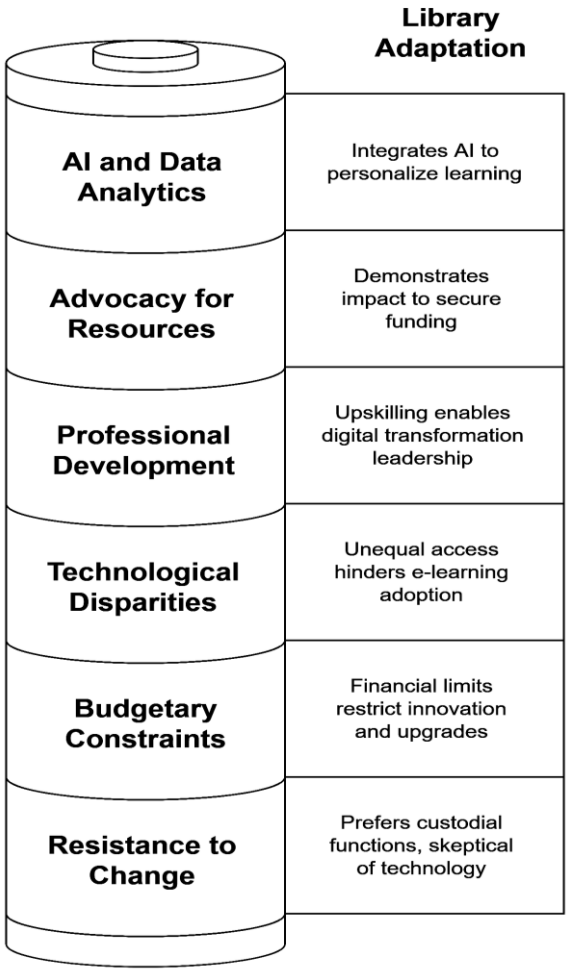

Figure 2. Libraries' Adaptation to Change: From Resistance to Embracing Innovation

Figure 2 presents a layered model illustrating the spectrum of challenges and adaptive strategies encountered by libraries in the process of transformation. The diagram visually organizes five principal challenges—resistance to change, budgetary constraints, technological disparities, professional development needs and the imperative for advocacy—alongside corresponding innovation pathways such as AI and data analytics integration, resource advocacy and up-skilling. This model underscores the dynamic interplay between barriers and solutions, highlighting how libraries can progress from traditional custodial roles toward proactive, technology-driven leadership. By mapping these elements, the figure provides a holistic overview of the adaptive process essential for libraries to remain relevant and impactful in the evolving educational landscape (Johnson et al., 2015; Lankes, 2011; Bruce, 2004).

5.1 Challenges

Although libraries are actively taking on transformational responsibilities, they still have a number of obstacles to overcome in order to adjust to the changing nature of education.

5.1.1 Technological Disparities

In remote areas where hardware resources and internet connection are severely constrained, unequal access to digital infrastructure continues to be a major obstacle (Johnson et al., 2015). For instance, 68% of rural Indian libraries do not have dependable internet connectivity, which makes it difficult for people to use virtual collaboration tools and e-learning platforms. These differences are not limited to developing economies; budget limitations in wealthy countries like Canada have left institutions with a lack of technology (SFU Library, 2024). This problem is made worse by staff and user digital literacy gaps that prevent efficient use of the resources that are available (Hoopla, 2025).

5.1.2 Resistance to Change

Stakeholder scepticism and institutional resistance regarding transformative library roles are major challenges (Lankes, 2011). Citing worries about instructional disturbance, faculty and administrators often place a higher priority on collective, technology-driven services than on conventional housekeeping duties. Institutions with deeply ingrained hierarchical systems are most affected by this opposition; without focused training programs, 42% of transformation projects fail (TERI, 2024). Demonstrating empirical proof of enhanced learning outcomes via stakeholder workshops and pilot projects is necessary to overcome this.

5.1.3 Budgetary Constraints

Innovation is severely constrained by financial constraints; since 2023, worldwide libraries have reported average budget decreases of 8–12% (SFU Library, 2024). The Simon Fraser University Library's $2 million shortfall serves as an example of how budget constraints need balancing staff training, technological advancements and digital collections. This is made worse by inflationary pressures: academic database subscription fees have increased by 35% a year since 2020, yet financing has remained constant. Initiatives for resource sharing and the adoption of new technologies are disproportionately impacted by these limitations (Weiner, 2005).

5.2 Future Directions

5.2.1 Professional Development

To spearhead digital change, librarians must constantly improve their skills. Structured programme should include:

- Certification in AI literacy, data analytics and immersive technology management
- Pedagogical training for curriculum-integrated information literacy instruction
- Partnerships with organizations like TERI for industry-aligned workshops (TERI, 2024).

According to Bruce (2004), these initiatives enable librarians to go from being the guardians of knowledge ecosystems to becoming co-creators of them.

5.2.2 Advocacy for Resources

In order to get financing, libraries must prove their value by pointing out links between programs and academic achievement (Kranich, 2001). In order to get financing, quantifiable effect measures are essential. Academic success and service use should be correlated by libraries (e.g., 32% grade improvement with embedded librarian program). Libraries must be emphasised as facilitators of educational fairness rather than as expense centres in order for lobbying to be effective.

5.2.3 AI and Data Analytics

Learning experiences may be tailored and resource use optimised by using AI-driven technologies and data analytics (Lankes, 2011). Scalable alternatives, such as solar-powered digital kiosks providing energy-independent access in underprivileged regions, should be given priority in the pilot program.

6. Conclusion

Libraries are now dynamic learning centres rather than static repositories and they are essential to education transformation. Libraries provide inclusive and creative learning environments by promoting information literacy, integrating technology and engaging the community. Strategic interventions like professional development, lobbying and AI adoption

may increase their effect despite obstacles like financial limitations and technical differences. Continuous inquiry and support are required to keep libraries at the vanguard of 21st-century education, producing holistic and lifelong learners.

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Knowledge Management and its Application in the Academic Libraries in India

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Structured Abstract:

Background: Knowledge Management (KM) encompasses the processes of identifying, creating, capturing, organizing, storing, sharing, and utilizing knowledge and information within an organization or community to enhance learning, collaboration, and innovation.

Objective: This paper aims to explore the various dimensions of Knowledge Management and its applications within the field of library and information sciences.

Methods: The study examines the roles of librarians, information professionals, and information technology experts in managing knowledge resources, including expertise, intellectual property, and databases. It analyzes the overlap and distinctions between traditional library practices and modern information technology approaches to information management.

Results: KM involves managing diverse knowledge resources to facilitate organizational goals. Librarians and information professionals excel in searching, selecting, acquiring, organizing, preserving, repackaging, disseminating, and serving information. Meanwhile, advancements in information technology and systems have positioned IT professionals as key contributors to information management, creating a shared domain with library sciences.

Conclusion: The integration of KM practices in library and information sciences highlights the complementary roles of traditional librarianship and modern information technology. This synergy enhances the effective management and utilization of knowledge resources, fostering innovation and collaboration.

Keywords: Knowledge Management, Information Technology, Innovations.

Introduction

Knowledge is the full utilization of information and data, coupled with the potential of people's skills, competencies, ideas, intuitions, commitments and motivations. Knowledge is an intellectual capital when people out of creation, add value to Information. In dictionaries, the meaning of knowledge is “familiarity gained by actual experience, practical skill and acquaintance or “intellectual experience with perception of truth” or merely “acquaintance with facts. Father of Library Science Padmashree Dr. S. R. Ranganathan has defined the Knowledge as “totally of ideas conserved by humans.

Knowledge and Library Science

The concept and name--“Knowledge Management”--was started and popularized in the business world during the last decade of the 20th century. It was the business world that first recognizes the importance of knowledge in the “global economy” of the “knowledge age”. In the new knowledge economy, the possession of relevant and strategic knowledge and its sunceasing renewal enables businesses to gain competitive advantage. The applications of knowledge management have now spread to other organizations including government agencies, research and development departments, universities, and others. The management of information has long been regarded as the domain of librarians and libraries. Librarians and information professionals are trained to be experts in information searching, selecting, acquiring, and organizing, preserving, repackaging, disseminating, and serving. However, professionals in information technology and systems have also regarded information management as their domain because of the recent advances in information technology and systems. One of the clearest evidences of this is that the positions of “Information Officer” in many organizations are generally held by y information technologists instead of librarians. In fact, most of the work of Information Officer has to do with developing and managing the IT infrastructure and systems.

Knowledge Management is value-added. It draws upon pooled expertise, Knowledge Management is value-added. : It draws upon pooled expertise, relationships, and alliances. Organizations can further the two-way exchange of ideas by bringing in experts from the field to advise or educate managers on recent trends and developments. Forums, councils, and boards can be instrumental in creating common ground and organizational cohesiveness.

Knowledge management is an audit of "intellectual assets" that highlights unique sources, critical functions and potential bottlenecks which hinder knowledge flows to the point of use. It protects intellectual assets from decay, seeks opportunities to enhance decisions, services and products through adding intelligence, increasing value and providing flexibility. Knowledge management is a process of creating, storing, sharing and re-using organizational knowledge (know-how) to enable an organization to achieve its goals and objectives. • Historical Background • Acquisition of Books • Organisation • Reference Services • Demand of the five Laws.

Knowledge Management is visionary. This vision is expressed in strategic business Knowledge Management is visionary. His vision is expressed in strategic business terms rather than technical terms, and in a manner that generates enthusiasm, buy-in, and motivates managers to work together toward reaching common goals. Knowledge Management is complementary. It can be integrated with other Knowledge Management is complementary. It can be integrated with other organizational learning initiatives such as Total Quality Management (TQM). It is important for knowledge managers to show interim successes.

Importance of Knowledge Management

Knowledge and Information Management is important only to extent that it enhances an organization’s ability and capacity to deal with various situations that emerges during various operations. An organization has it look into the following four dimensions. Mission: What are we trying to accomplish Competition: How do we achieve a competitive edge? Performance: How do we deliver the results? Change: How do deal with change? KM provides innovative and cost effective solution to the library users. Information technology, especially the cyber technology drives the way of knowledge management. Use of cyber technologies accelerates the rate of quality, quantity and cost effectiveness with improved productivity and suitability in services. It decreases cost and harnesses the human intelligence very efficiently. Knowledge Management involves enhancing organizational learning.

Knowledge management seeks to make the best use of the knowledge that is available to the Library, while creating new knowledge in the process. Knowledge management should be about exploiting and realizing knowledge of the employees and building a culture where knowledge sharing can thrive. Throughout the process, the library will generate value from their intellectual and knowledge-based assets. Therefore, the library will continue to grow

and prosper from the knowledge of employees throughout the library. This is also a great benefit for new employees replacing retirees within the library structure. Knowledge management is often facilitated by information technology, but technology itself is not knowledge management.

The Objective of Knowledge Management for Libraries

Knowledge innovation is the core of the knowledge economy society. Abases for collection, processing, storage and distribution of knowledge and information, libraries represent an indispensable link in the scientific system chain, an important link in the knowledge innovation Libraries take part in scientific research process directly. The library work is an element of knowledge innovation. They act as bridge for turning the results of knowledge innovation into realistic productive forces. Knowledge Management in libraries is to promote relationship in and between libraries, between library and user, to strengthen knowledge internetworking and to quicken knowledge flow. Libraries will carry out researches on development and application of information resources, construction of virtual libraries, protection of intellectual property rights in the electronic era etc., thus founding the base for knowledge innovation in the knowledge economy era.

Needs and Scope of Knowledge Management in Library

The need for application of knowledge management in libraries can be analysed on the basis of factors:

Limitations of Exiting Initiatives: TQM Performance Appraisal of Employee and other such as initiatives have helped libraries to become more accountable towards their job and responsibilities. However these initiatives are not able to harness the inherent talent of library personnel's as well as their intrinsic knowledge that could differentiate the services provided by the libraries and create a winning advantage in the society.

Value of Knowledge: Applied know –how can enhance the quality of products and services. It may be helpful in achieving cost effectiveness in the various library operations and services.

Minimize Duplication of Efforts: By retaining knowledge as organizations downsize or reshuffle, library and information centres can save costly mistakes or reinventing the wheel.

Sharing of Best Practices: Library and information centres can save millions a year by taking the knowledge form their best performers and applying it similar situations elsewhere. The applied know-how of the best performing library and information centres may be adopted as a model.

Enhanced Innovation: The development like Internet vas revolutionized the concept of global village, this may be helpful to Library and Information Centres as to cater the library services globally by applying KM methods in improving their information products and services. A success of such small initiatives will motivate them for the further innovation in its operations and services.

Knowledge Management in Library

Business world is changing in the new knowledge economy and in the digital age, libraries of all types are undergoing drastic changes also. The new role of Libraries in the 21st century needs to be as a learning and knowledge centre for their users. As a learning organization, libraries should provide a strong leadership in Knowledge management. Unlike the business organization, the learning organization should share of knowledge with others outside. Libraries should improve their Knowledge management in all of the key areas of library services. The exponential growth in human knowledge in a variety of formats, libraries need to develop their resources, access and sharing strategies from printed to electronic and digital resources. Restricted by limited funding, technology, staff and space, libraries must carefully analyse the needs of their users and seek to develop cooperative acquisition plans to meet the needs of users Libraries should be developed and maintained an integrated online public access catalogue (OPAC) with both internal and external resources as well as printed and other formats of knowledge. Useful websites and knowledge sources should be regularly searched and selected from the internet and included in OPACs.

Resource Sharing and Networking

Traditionally, libraries have a long practice of resource Resources sharing and networking. These have been greatly expanded by the rapid development of computer, telecommunication networking and digital technologies The sources of the cooperative work and resources sharing of OCLC (Online Computer Library Centre) and Ohio LINK (Ohio Library and Information Network) in US, is the best examples in resource sharing and networking with

the result of the full cooperation and participation of all member libraries without selfishness. Large and major libraries must take the lead in such an Endeavour.

Tool for Knowledge Management (IT)

To facilitate the implementation of knowledge management, a well-defined and operational knowledge management system should be in place. Latest information technology should be used in the libraries. In this regard, the library director / librarian should consider himself as the knowledge officer of the entire organization and should work together with the chief information officer, heads of the planning department, the computer and information technology centre, the human resource management department, the finance department etc. design and develop such a system. Such knowledge management system should be built on the existing computer and information technology infrastructure including upgraded intranet, extranet, internet and available software programs to facilitate the capture, analysis, organization, storage and sharing of internal and external information resources for effective knowledge exchange among users, resource persons (faculty, researchers, subject experts etc., publishers, government agencies, business and industries and other organizations via multiple channels. In recent years, many of the newly developed information technology for databases and information / document management can be utilized in knowledge management such as data warehousing, data mining, text mining etc.

Human Resource Management (HRM)

The most important resource in the knowledge economy system is the talents who grasp knowledge. The talent competition has become the focus of market competition in the knowledge economy era. In the knowledge economy era, the libraries will attach importance to vocational training and lifelong education of library staff to raise their scientific knowledge level and ability of acquiring and innovative knowledge. They also will respect the human value, guide and bring into play wisdom potentialities of library staffs. It is an important way for raising work efficiency of library staff. An all-round improvement of library staff' equality and positioning of the human value will become important objectives of knowledge management in Library and Information centres. The library staff members of Universities and research committees should be inventoried, indexed regularly and be made searchable and accessible through electronic databases created and maintained by libraries. The expertise should be appreciated with appropriate Rewards and incentives. As a learning organization,

libraries should allocate annual funding to provide continuing education and staff training to all staff members. Knowledge must be renewed and expanded to prevent it from becoming stagnant. Libraries should also encourage the transfer of knowledge and experience from experienced staff to new staff members. A mentoring system should be in place to help new comers to learn from experienced library staff. Informal seminars, discussion sessions for staff can interact and exchange "lessons learned" "best practices" and other experiences should be scheduled at regular intervals and at convenient times sit and chat rooms can be created through intranet libraries should be attending to favourable working conditions and environment, which will contribute to better staff retention.

Knowledge Management and User Services

The utmost goal of knowledge management is to provide users with a variety of quality services in order to improve the communication, use and creation of knowledge. Informational bout each user can be obtained by analysing the records of user registration, surveys, circulation and inter library loan, frequently asked reference questions and the use of journals and digital resources, etc., User satisfaction and needs should be collected through periodical user's surveys. The findings should be used for the planning and redesign of the existing library services. Some of the manual services of the library such as "new publication alert" and "Dissemination of information" should be done automatically by employing the "push Technology" with great efficiency and convenience. Each library user can also set up his virtual "my library / portal" for new information / resources provided by the library. The utmost goal of knowledge management is to provide users with a variety of quality services in order to improve the communication, use and creation of knowledge.

Technologies for Knowledge Management of Libraries

Due to impact of globalization, economic competition and revolution of ICT, the libraries are undergoing tremendous change its environment. ICT tools and techniques, knowledge management systems, internet, web resources, digital libraries have made a significant change in the existing library systems and services. It is a major challenge for the library professionals. Knowledge acquisition is the starting point of knowledge management in Libraries. The application of IT, enlarges the scope of knowledge acquisition, raises Knowledge acquisition, speed and reduces knowledge acquisition cost. It is impossible to accomplish such important tasks by using man's brain only in the modern society in which

the knowledge changes with each passing day. It will be possible to link closely knowledge sources and knowledge workers by computer networks, thus constructing knowledge networks in libraries based on realization of single point Informationalization.

Following is the Data wise List of Technologies for the Knowledge Management

- Intranet within an organization
- Document management systems
- Information retrieval systems
- Relational and object databases
- Electronic publishing
- Groupware and work flow systems
- Push technologies
- Help desk applications
- Brain storming applications
- Data warehousing and data mining
- Globalization

Exploring the new Dimensions

Knowledge Management can be helpful in introducing the library and information professionals globally, providing them a platform for their regular skill enhancement and up-to-date, realistic and practical knowledge. It can be used for the purpose of converting the traditional learning system into an eLearning practice, thus accelerating the new dimensions of its scope and coverage.

Knowledge Management in Libraries

Libraries can use information technology as a tool for knowledge management. In libraries, knowledge management begins with knowledge acquisition. The scope of knowledge acquisition is expanded by the use of information technology. Promoting knowledge innovation is the aim of library knowledge management. The foundation of the knowledge economic society is knowledge innovation. As the foundation for information and knowledge

distribution, processing, storage, and gathering. Libraries are a crucial component of knowledge innovation and an essential link in the chain of scientific systems. Second, libraries actively participate in the process of scientific research. One aspect of knowledge innovation is the work done in libraries. Thirdly, knowledge conversion and dissemination are important topics for libraries to focus on. The goal of knowledge management in libraries is to strengthen connections inside and among libraries.

Conclusion

Knowledge Management is an emerging field, much rooted or hyped since late 1990s. Due to the complicated nature of knowledge and its management, it is often difficult to estimate or demonstrate the value of the Knowledge Management. In the business world, knowledge management has been regarded as strategically important for organizations to gain a competitive advantage over their competitions, to add value their products, to win greater satisfaction from their customers. In the library world, there is a lesson to be learned from the business world. For any library to succeed in implementing knowledge management will require a strong leadership and vision from the top administration. Information Technology and systems can provide effective support in implementing knowledge management. Libraries should work together with Information Technology Professionals and others to develop the appropriate knowledge management systems. Libraries, with limited budget and human resources, should utilize the current management structure and technology to implement KM, either bottom-up or top-down. With an effort, KM will help to increase libraries operational efficiency and later to the ever increasing need.

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Curating Quality in Teacher Education: A Cross-Institutional Analysis of Library Collection Development Strategies (CDS) in four (4) B.Ed. Colleges in Kalyani Block.

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Structured Abstract:

Purpose: This study aims to evaluate and compare the library collection development strategies employed by four Bachelor of Education (B.Ed.) colleges in the Kalyani Block. The objective is to understand how these strategies contribute to the quality of teacher education by assessing the adequacy, relevance, and accessibility of library resources.

Design / Methodology / Approach: A qualitative research approach was adopted, involving case studies of four B.Ed. colleges in the Kalyani Block. Data were collected through structured interviews with librarians and faculty members, analysis of library records, and observation of library facilities. The study focused on aspects such as collection size, diversity of resources, acquisition policies, digital resource integration, and user services.

Findings: The analysis revealed significant variations in collection development practices among the institutions in Kalyani Block. Some colleges demonstrated proactive strategies, including regular updates to their collections, integration of digital resources, and user-centric services. Others faced challenges such as limited budgets, inadequate staffing, and a lack of strategic planning, leading to outdated or insufficient resources. The study highlights the correlation between effective collection development practices and the enhancement of teacher education quality.

Originality / Value: The study try to shows effective library collection development is crucial in supporting high-quality teacher education. Institutions that prioritize strategic planning, resource diversification and user engagement in their library services tend to offer better support for teacher trainees. Addressing the identified challenges through policy reforms and increased investment can lead to significant improvements in the educational outcomes of B.Ed. programs. The study is limited to four B.Ed. colleges within a specific geographic area, which may not represent the broader context of teacher education institutions. Additionally, the reliance on qualitative data may introduce subjectivity, and the findings may not be replicability without further quantitative analysis.

Paper Type: Survey-Based Research.

Keywords: B.Ed. college libraries, Library collection development, Collection development strategies, Resource accessibility, Acquisition policy, Collection evaluation, Budget constraints in libraries.

Introduction:

A library's essence depends on its collection, which needs constant nurturing and expansion to remain significant and purposeful to patrons. Financial constraints inescapably stress the need for a robust collection development policy, although the eventual objective should be an improvement of library service rather than any streamlining library budgets. The printed collection development policy promotes a reliable and balanced expansion of library resources, and a vibrant policy evolves as the organisation growth. A well strategic regulation is grounded in a clear understanding of the community's needs and is designed to articulate and constrain the institution's mission and objectives in serving that society.

In the landscape of teacher education, the library serves as a pivotal resource center that supports academic excellence, professional preparation, and lifelong learning. For Bachelor of Education (B.Ed.) colleges, the quality and relevance of the library collection directly influence the effectiveness of teaching-learning processes and curriculum delivery. A well-defined and strategically implemented Collection Development Strategies (CDS) ensures that the library's holdings align with institutional goals, evolving curricular needs, and user expectations.

However, despite its significance, collection development practices often vary widely across institutions due to differences in funding, administrative priorities, user demographics, and awareness of best practices. This inconsistency can lead to gaps in resources, duplication, or underutilization of materials, especially in teacher training institutions where diverse instructional and practicum-related resources are essential.

This paper undertakes a comparative study of the collection development policies of four B.Ed. colleges situated in the Kalyani Block of West Bengal. By analyzing policy frameworks, selection criteria, budgeting patterns, stakeholder involvement, and resource evaluation mechanisms, the study aims to uncover similarities, differences, and areas for improvement. The findings are expected to inform best practices and offer insights for developing a more unified and effective approach to collection development in B.Ed. institutions.

The collection development report is not a substitute for books selection procedure or financial uncertainties but also ever greater emphasis must be laid on collection management. Intuition and educated attitude no longer be adequate as modes of operation. More diverse and sophisticated executive tools are required in order to predict and deal with library needs.

This article surveys modern trends in collection development procedure in the academic library especially in B.Ed. colleges.

Review of significant literature:

A large number of studies have been undertaken on many aspects related to collection assessment in higher education institutional libraries over the planet. A Collection Development Policy (CDP) is an introductory manuscript that guides the acquisition, evaluation, and management of library resources to meet the academic and informational needs of an institution. The formulation and implementation of such a policy is particularly crucial in teacher education institutions like B.Ed. colleges, where library resources directly support pedagogy, field training, and curriculum development. These include evaluation of resources, collection development practices and policies, financial support, challenges, end users' need, and prospect from the library. However, there is not much literature and research work done regarding collection evaluation in institution of higher education libraries in developing countries.

1. *Concept & Importance of Collection Development*

According to Evans and Saponaro (2012), collection development encompasses all activities involved in building and maintaining a library's resources, including selection, acquisition, evaluation, and weeding. A sound policy ensures that collection efforts are coherent, cost-effective, and responsive to user needs.

In the context of teacher education, Singh (2010), notes that B.Ed. college libraries must provide diverse and up-to-date materials on educational theories, teaching methodologies, child psychology, and inclusive education to meet both academic and practicum demands.

2. *Need for a Formal Collection Development Policy*

Patel (2014), emphasizes that many academic libraries, especially in developing regions, operate without formal policies, leading to capricious selection and resource gaps. A structured CDS provides a roadmap for resource planning, budgeting, and aligning acquisitions with curriculum goals.

In B.Ed. institutions, Das and Roy (2016), found that the presence of a formal CDS significantly improved user satisfaction, resource relevance, and budget utilization. The lack of such a policy often results in outdated, duplicated, or underutilized materials.

3. *Comparative Studies on CDS Practices*

Several comparative studies have shed light on institutional variations in collection development. For example, Rani and Kumar (2015), conducted a comparative analysis of CDPs in teacher training colleges in Andhra Pradesh and found discrepancies in selection criteria, user involvement, and budget transparency. Similarly, Tripathi (2018), observed that while some colleges adopted user-centric approaches, others relied solely on faculty recommendations, leading to imbalanced collections.

4. *Challenges in Collection Development*

Literature highlights various challenges in implementing effective CDPs in Indian B.Ed. colleges: limited funding (Sharma, 2011), lack of trained library staff (Mukherjee, 2013), outdated acquisition practices, and insufficient stakeholder involvement. These issues are often more acute in semi-urban areas like Kalyani Block, where infrastructure and policy awareness are inconsistent across institutions.

5. *Digital Resources and Emerging Trends*

With the shift toward digitization, libraries are increasingly integrating e-resources into their collections. According to Bhattacharya (2020), hybrid collection policies that include both print and digital resources are becoming essential for modern B.Ed. libraries. Yet, the adoption of such policies remains uneven due to infrastructural and budgetary constraints.

6. *Major issue concerning collection development*

Horava (2009), in his article elucidated some of chief issue regarding collection development in academic libraries in electronic atmosphere. The present study finished with information for incorporating shift from manual collection to sustainable and future-oriented strategy to collection management. In case of Electronic Resource Development, Jalal (2009), conducted a case study done on Osmania University, Hyderabad. The literature highlighted the current situtation of digitalization in the libraries of this university as well as digital collection development in order to reflect the present trends of collection. The study concludes that Osmania University Central Library has demonstrated a strong commitment to digital collection development initiating document digitization under the Digital Library of India Project and giving access to e-resources to its patrons. Therefore, the users of the university are familiarized to use more and more e-resources in digital environment.

7. *Requirement of creation of resource development in electronic atmosphere*

Similarly, Shrivastava (2009), emphasized on his article to the need of acquire collection development in the digital environment due to bulk accessibility of e-resources. The present study also emphasized Intellectual property right (IPR act) issue and challenges concerning building of library collection expansion.

8. *Importance of digital collection development for users*

Jones (2007), emphasized over the significance of digital resource development for patrons. In the present article author categorizes electronic resources into four areas: equipment to support pupils; learning and teaching equipment to support researchers and special collection of resources.

10. *Administrative and realistic issues pertaining to development of resources*

Where in the article of Ameen, Kanwal (2006), discussed all kinds of administrative and convenient issues about collection development and its acquisitions. The paper has attempted to discover the connection among the patron of altering collection-related terminologies and ever promising forms of scholarly publishing in libraries. It was found that the related

emerging vocabulary has been expanding rapidly because of the direct impact of the e-resources enrichment.

Gandhi (2001), in his article discovered the library collection of the six universities in Karnataka for more than a decade and found that cost of books and journals were increasing in tremendous ways. He observed that collection development in university libraries is the most important activity and that problems faced by the librarians are inadequate budget, escalation of prices of information resources, and lack of involvement of the academic community.

The literature reviewed underscores the critical role of collection development policies (CDPs) in shaping effective academic institution libraries, particularly in B.Ed. colleges. While frameworks and best practices are well documented, the implementation and uniformity of CDPs vary significantly across institutions. This gap necessitates comparative regional studies such as the present one focused on Kalyani Block to identify strengths, weaknesses, and avenues for improvement in policy adoption and execution.

1. Collection Development Policy:

Collection development of any library is a pivotal and methodical operation that ensures libraries procure, assemble, and preserve a diverse and relevant collection of resources to meet the enlightening, scholarly, and diversionary needs of their patrons. This method provides a structured, supervised approach to developing a balanced and diverse collection of resources like printed books & journals, different electronic media & databases, and also valuable electronic resources.

Collection development lies a powerful alignment with every resource acquired is intentionally connected to the library's mission and goals, whether it serves primary and higher learning academic institution, community, or specialized patrons. The primary goal of compilation of library's resources with the needs of its patrons while supporting the institution's mission and visions. This approach hinges on gaining deep insight into patrons demographics, monitoring emerging trends, and intentionally acquiring resources that encompass diverse perspectives, promote intellectual enrichment, and support both research endeavours and learning goals. It systematic evaluation and weeding out of materials that are obsolete, damaged, or non-relevant which ensuring the library's collection remains current and aligned with the emerging needs of its patrons. Through carefully balancing collection growth with thoughtful enrichment, the library not only enhances its utility but also ensures that space, financial resources, and technology are used in the most efficient and impactful manner.

This approach centers on understanding user preferences and needs, identifying gaps in the existing resources, and acquiring equipments that reflect emerging technologies, academic trends, and societal developments.

1.1 Objectives of the Collection development of resources:

a. Support the curriculum, pedagogy, and research of B.Ed. programs.
b. Provide resources for teacher education, classroom management, educational psychology, and subject-specific methodologies.
c. Facilitate professional development for future educators.

1.2 Key aspects of library collection development comprise:

1.2.1 **Assessment of User Needs:** The process begins with identifying the informational and curricular requirements of students, faculty, and teacher trainees. This involves reviewing syllabi, consulting faculty, analyzing usage patterns, and taking feedback to understand gaps in existing resources.

1.2.2 **Policy Creation:** To incorporate guidelines for guidelines for selecting library resources and also weeding out process. A formal Collection Development Policy (CDP) provides direction for the selection, acquisition, and maintenance of library materials. It defines subject priorities, formats to be collected (print, digital, audio-visual), language preferences, and criteria for inclusion and exclusion.

1.2.3 **Material Selection:** To electing resources that are relevant, convincing, and appropriate for the library's spectators. Selection is typically done based on recommendations from faculty, reviews in professional journals, publisher catalogues, and user suggestions. B.Ed. libraries often prioritize materials related to pedagogy, psychology, educational technology, curriculum studies, and inclusive education.

1.2.4 **Budget Management:** To assigning funds effectively to acquire high-priority resources of the patrons. Availability of fund plays a crucial role in the acquisition process. The study finds that fund allocation varies among the four colleges, affecting the volume and diversity of resources acquired. Some institutions rely more heavily on government grants, while others use college-level discretionary funds.

1.2.5 **Resource Evaluation:** To conduct routine reviews of the resources to sustain its relevance, preserve high Attributes, and ensure it aligns with the evolving needs of patrons. Once materials are acquired, they are processed (cataloguing, classification, labelling) to make them accessible. A consistent classification system (such as DDC) and use of OPAC (Online Public Access Catalogue) ensures systematic access and retrieval.

1.2.6 **Weeding Out Process:** To remove obsolete, ruin, or dormant materials to maintain a dynamic and useful compilation. Evaluation process will be conducted periodically to assess the relevance, usage, and physical condition of materials. Outdated or damaged items are weeded out to maintain the currency and quality of the collection. Some colleges have more robust evaluation mechanisms than others.

Library collection development procedure is a perpetual process that accommodates to technological advancement, shifts in customer demands, and changes within a comprehensive information environment, ensuring the library relics a crucial knowledge hub in its alliance.

In conclusion, it is said that the Collection Development Strategies (CDS) is a vital procedure to the effectiveness of library services in B.Ed. colleges. This comparative study reveals both

common practices and significant disparities in how the process is planned and executed across institutions in the Kalyani Block. A more collaborative, standardized, and policy-driven approach is recommended to ensure balanced and need-based collection growth across all institutions.

2. Comparative Study of Collection Development Policies among the sample colleges:

To make a comparative study of collection development policies across four B.Ed. colleges in the Kalyani block, the following factors could be analyzed:

2.1 Institutional Profile:

a) Size and academic offerings of the college.
b) Faculty expertise and specialization.
c) Budget and Resource Allocation:
d) How much funding is dedicated to library resources?
e) Differences in resource allocation between print and digital materials.

2.2 Selection and Acquisition Practices:

- Whether the colleges rely more on faculty recommendations, students' needs, or external guidelines for resource selection.
- How each college assesses the needs of its students and faculty before purchasing materials?

2.3 Types of Materials Collected:

- Compare the range and variety of resources, including textbooks, reference books, professional journals, digital resources, and e-learning materials.
- Assessment of special collections (e.g., resources for inclusive education or rural education).

2.4 Collaboration and Networking:

a. How the colleges collaborate with other institutions or networks for resource sharing.
b. Participation in digital library consortia or educational resource sharing initiatives.

2.5 Library Facilities and Infrastructure:

- Differences in library space, reading rooms, online access, and digital infrastructure.
- Availability of resources like internet access, computers, or multimedia tools.

2.6 Evaluation and Assessment:

a. How does each college evaluate the effectiveness of its collection?
b. Feedback mechanisms from students and faculty about resource adequacy and accessibility.

2.7 Challenges Faced:

a. Budget constraints, issues with keeping up with the latest educational trends, or technological limitations.
b. Efforts taken by colleges to overcome these challenges.

3. Methodology:

The present study adopts a descriptive and comparative research design to inspect and analyze the collection development policies (CDP) of four B.Ed. colleges located in the Kalyani Block affiliated with Baba Saheb Ambedkar Education University, West Bengal. The survey aimed to determine the nature of the collections, procedures and policies followed to develop collections, nature and composition of e-resources, budget allocations forthem, their selection, access, evaluation and withdrawal procedures and policies and the type of collaborative activities they are involved. The methodology is design to secure both qualitative and quantitative aspects of collection development exercise over the selected institutions.

4. Research Design & Strategy

a. This research adopts a comparative case study approach to understand similarities and differences in policy frameworks and implementation among the sample colleges.
b. The descriptive method is used to present factual details regarding the processes, challenges, and strengths of collection development in each institution.

5. Research Aims and Objectives:

The following objectives were pursued to ensure a comprehensive evaluation of resources, policies, and user alignment on collection development process in selected four (4) B.Ed. colleges' libraries in Kalyani Block, affiliated Baba Saheb Ambedkar Education University, West Bengal, India.

a. To know the facts concerning the collection of resources in the selected B.Ed. College's libraries under the Baba Saheb Ambedkar Education University, West Bengal, India, and also to assess the allocation of funds for library resources.
b. To analyze and scrutinize the collection development policies in the selected B.Ed. college libraries under Baba Saheb Ambedkar Education University, West Bengal, India.
c. To investigate and evaluate the document selection criteria and acquisition process of the sample library.
d. To rendering the present status of printed ad non-print document and also e-resources in the sample libraries.
e. To measure how funds are allocated between print and electronic resources in the B.Ed. college libraries, and to evaluate the influence of monetary factors on fund allocation.
f. To study library professionals' perceptions regarding various aspects of collection development activities.

6. Sample and Sampling Technique:

a. Sample Size: 4 B.Ed. colleges.
b. Sampling Method: A Purposive sampling technique was used to select institutions that offer a full-time B.Ed. course and maintain an operational library.
c. Key informants included librarians, faculty members, and administrative staff.

7. Data Collection Technique:

The study engaged with both primary and secondary data collection procedure:

7.1 Primary Data:

7.1.1 Structured interviews with librarians and library staff to gather data on policy practices, acquisition strategies, and budgeting.

7.1.2 Questionnaires were administered to selected faculty members and students to understand user involvement and satisfaction.

7.1.3 On-site observation of library infrastructure, collection organization, and access mechanisms.

7.2 Secondary Data:

7.2.1 Review of existing collection development policies, library records, acquisition registers, and institutional reports.

7.2.2 Relevant literature and policy documents from NCTE, UGC, and university handbooks were also consulted.

8. Data Analysis:

8.1 Data were organized college-wise and analyzed comparatively to identify common trends and variations.

8.2 Qualitative data from interviews were thematically analyzed.

8.3 Quantitative data (e.g., budget allocation, number of books acquired annually) were tabulated and presented using charts and tables for clarity.

9. Limitations of the Study:

While the present study aims to provide a meaningful comparative analysis of the collection development policies in four B.Ed. colleges in the Kalyani Block, several limitations must be acknowledged:

9.1 Limited Geographical Scope:

The study is limited to a small number of institutions, i.e., four B.Ed. colleges within the Kalyani Block, which may not represent the practices of institutions in other blocks or regions of West Bengal or India. Therefore, the findings may have limited transferability.

9.2 Sample Size Constraint:

Only four institutions were selected for this comparative study due to time, resource, and accessibility constraints. A larger sample could have provided a broader and more statistically significant understanding of prevailing practices.

9.3 Dependence on Self-Reported Data:

Much of the data was collected through interviews, questionnaires, and institutional documents provided by the colleges. These sources may reflect self-reported practices that do not always align with ground realities.

9.4 Lack of Access to Full Policy Documents:

In some cases, sample institutions either did not have a formally documented collection development policy or were unwilling to provide access to complete internal policy documents, which have been restricted in some colleges. This may have led to partial or inferred analysis based on available information.

9.5 Variability in Record Keeping:

Differences in how each college maintained records of acquisition, evaluation, and usage made it difficult to compare certain quantitative data uniformly across all institutions.

9.6 Dynamic Nature of Library Practices:

Library policies and practices are continuously evolving, especially with the integration of digital resources. The study captures a snapshot in time and may not fully account for recent or upcoming changes in policy or practice.

9.7 Exclusion of User Perspective:

While the study focuses on institutional policy and librarian input, it does not extensively incorporate user satisfaction or feedback from students and faculty, which is an important dimension of policy effectiveness. The scope does not include direct feedback from a large number of users.

Despite these limitations, the study offers valuable insights into the diversity and commonalities in collection development approaches among the selected B.Ed. colleges. Recognizing these constraints helps contextualize the findings and lays the groundwork for broader, future studies.

10. Analysis of Survey Data:

Table: 1: Institutional Profile among the Sample Colleges:

Sl. No.	College Name	Institution Type	No. of Students (B.Ed.)	No. of Faculty	Accredited (Yes/No)	Accrediting Body/Guideline
1	JRSET College of Education	Private	100	17	YES	NCTE
2	Shimurali Sachinandan College of Education	Govt. aided	100	17	YES	NCTE
3	Suniti Educational Trust B.Ed. & D.El.Ed College	Private	100	26	YES	NCTE
4	Vidyasagar B.Ed. College	Private	100	18	YES	NCTE

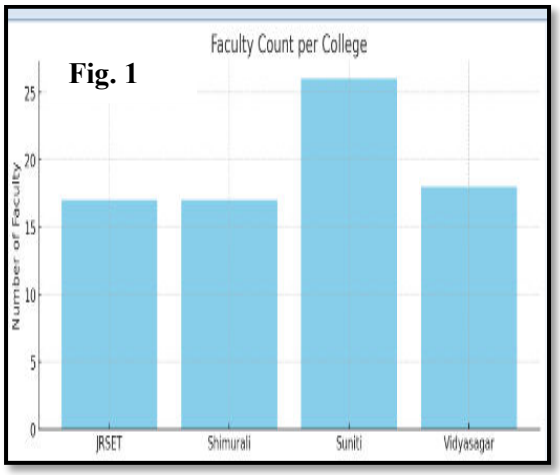

Fig. 1

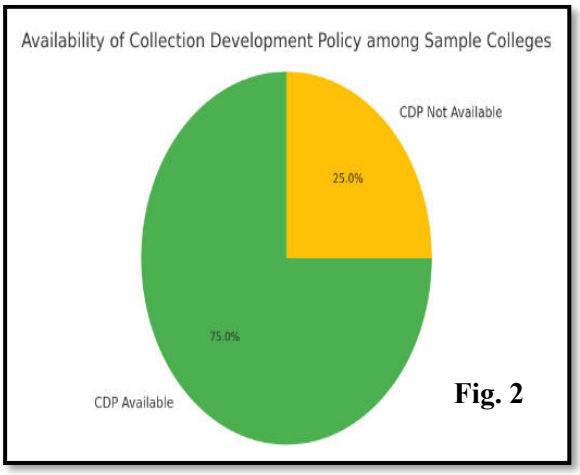

Fig. 2

Table 1: Institutional Profile among the Sample Colleges-

- Observation: Description
- College Type: 3 out of 4 colleges are private; only 1 is government-aided.
- Student & Faculty Strength: All colleges have 100 students. Faculty numbers range from 17 to 26.
- Accreditation: All colleges are accredited by NCTE.
- Inference: The institutions maintain a similar academic size and accreditation standard, which enables a fair comparative study on collection development practices.

The comparative analysis of four B.Ed. colleges in Kalyani Block begins with a review of their **institutional profiles**. It was observed that three of the colleges are privately managed while one (Shimurali Sachinandan College of Education) is government-aided. Despite institutional differences, all four colleges maintain equal student strength of 100 in their B.Ed. programs, with faculty numbers ranging from 17 to 26. Each institution is accredited by the National Council for Teacher Education (NCTE), suggesting a standardized baseline for academic and infrastructural quality.

Table2: Types of resources available among sample college libraries

Name of the Colleges	Text Books	Reference` Books	Print Journal	E-Books	E-Journals	E-database
JRSET College of Education	5203	1052	10	0	0	0
Shimurali Sachinandan College of Education	21530	6459	28	199536	6150	1
Suniti Educational Trust B.Ed. &D.El.Ed College	5553	115	25	0	0	0
Vidyasagar B.Ed. College	5034	61	23	0	0	0

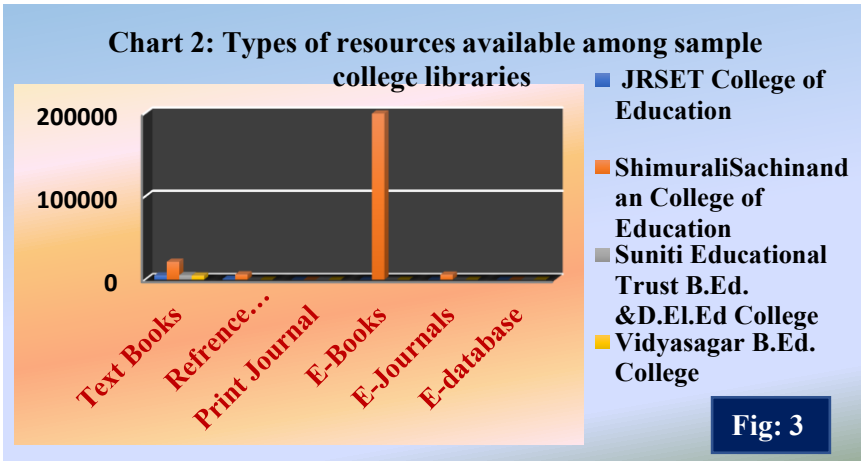

Table 2 presents a comparative view of both physical and digital library resources across four B.Ed. colleges. The resources include textbooks, reference books, print journals, e-books, e-journals, and e-databases—all of which are vital for supporting teacher education and academic development. Where Shimurali Sachinandan College of Education has clearly stands out with the richest collection of both print and digital resources.It has massive digital repository: 199,536 e-books, 6,150 e-journals, and access to an e-database and also Largest physical collections: 21,530 textbooks and 6,459 reference books, with 28 print journals. But whereas other colleges has no access to digital resources (e-books, e-journals, e-databases), which limits remote learning opportunities and access to updated information.

Table: 3 Availability of resources in the sample libraries:

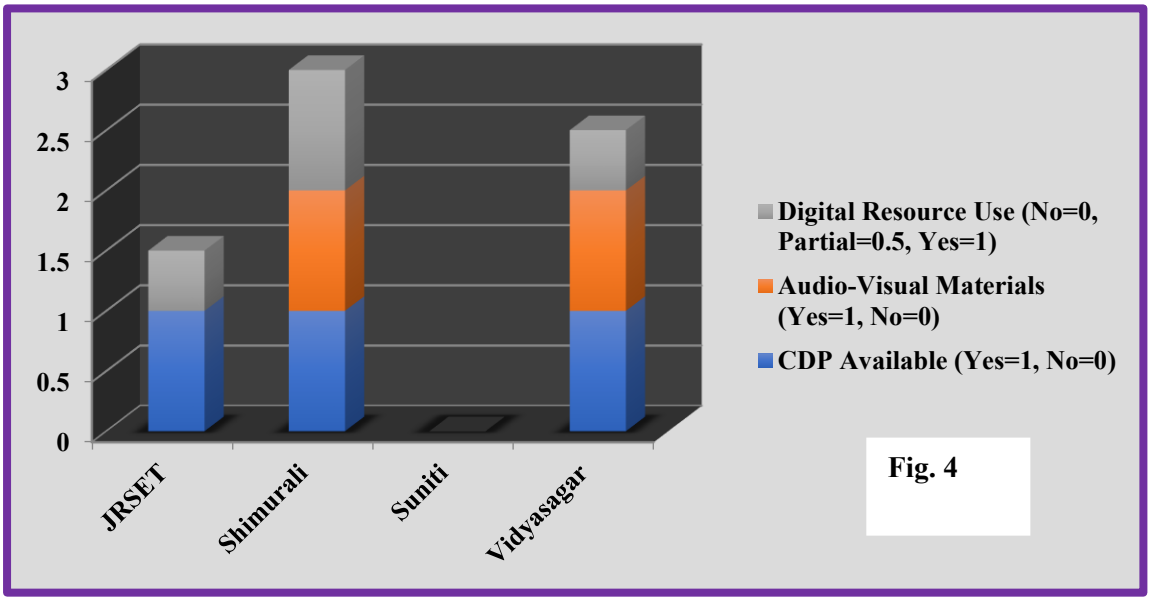

Fig. 4

College Name	Collection Dev. Policy (Yes/No)	Types of Resources Available	Funding Source	Frequency of New Resources	Digital Resource Use (Yes/No/Partial)
JRSET College of Education	Yes	Text Book, Reference Book, Journals, E-books	College Budget , Donation	As needed	Partial
Shimurali Sachinandan College of Education	Yes	Text Book, Reference Book, Journals, E-books, Audio-Visual Materials, Educational Software	Govt.Grant, College Budget, Donation, Private Contribution, RUSA 2.0 Fund	As needed	Yes
Suniti Educational Trust B.Ed. & D.El.Ed College	No	Text Book, Reference Book, Journals, E-books	College Budget	As needed	No
Vidyasagar B.Ed. College	Yes	Text Book, Reference Book, Journals, E-books, Audio-Visual Materials	College Budget	Annually	Partial

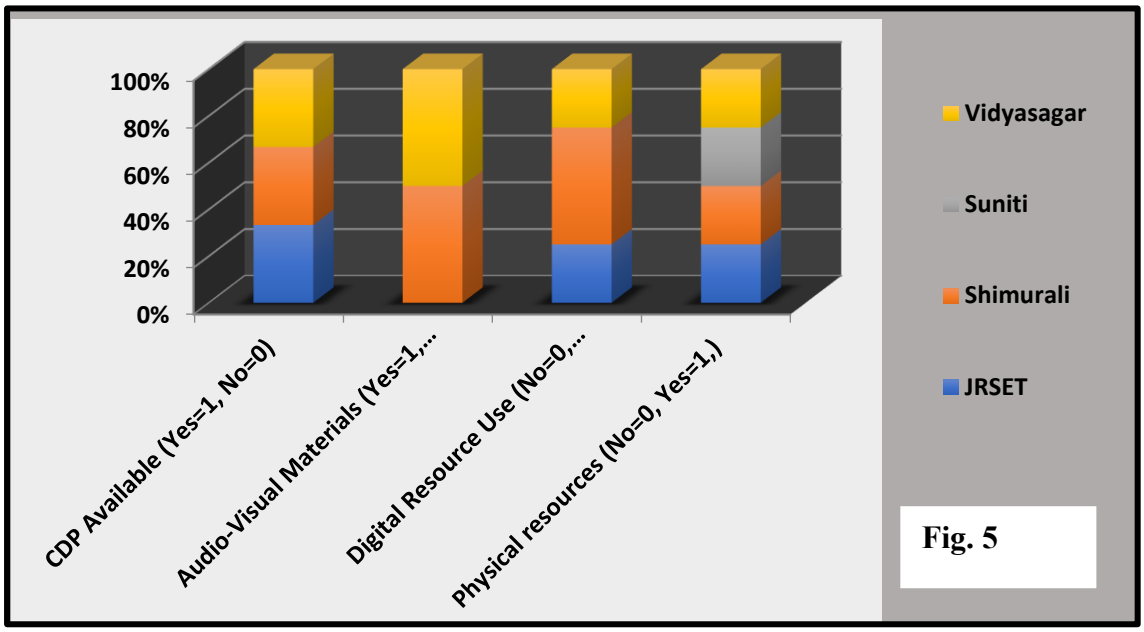

Table 3: Availability of Resources in the Sample Libraries-

- *Observation:* Description
- *Collection Development Policy (CDP):* 3 colleges have a formal CDP; 1 college (Suniti) does not.
- *Resource Types :* All have basic resources (textbooks, reference books, journals, e-books); only two have audio-visual materials and educational software.
- *Funding Sources:* Shimurali shows the most diversified funding (Govt., RUSA, donation, private); others rely mostly on college budgets.
- *Digital Resource Use:* Only Shimurali reports full digital resource use; others report partial or no use.
- *Inference:* Resource availability and digital integration vary significantly, indicating unequal resource development strategies among the colleges.

In terms of resource availability, three colleges have a formal collection development policy in place, whereas Suniti Educational Trust B.Ed. College lacks one. All libraries provide basic academic resources such as textbooks, reference books, journals, and e-books. However, the inclusion of advanced resources such as audio-visual materials and educational software is limited to two institutions—Shimurali and Vidyasagar. Funding sources vary: while Shimurali benefits from a diversified financial base including government grants, RUSA 2.0 funds, and private donations, others largely depend on college budgets. Digital resource usage is fully implemented only in Shimurali; other colleges report either partial or no integration of digital content, revealing disparities in technological adaptation.

Table 4: Resources selection and acquisition procedure of sample colleges:

College Name	Responsible Parties for Selection	Methods to Determine Need	Acquisition Challenges	Review Frequency
JRSET College of Education	Library staff, Faculty Members	Faculty recommendation, Curriculum requirements	Limited availability of relevant resources	On demand, Whenever needed
Shimurali Sachinandan College of Education	Library staff, Faculty Members, Students, library Committee	Faculty recommendations, Student feedback, Curriculum requirements, Regular review by library staff, External trends or developments in education	Budget Constraints	Annually
Suniti Educational Trust B.Ed. & D.El.Ed College	Library staff, Faculty Members	Faculty recommendations, Student feedback, Curriculum requirements,	Budget Constraints	Annually, On demand (whenever needed)
Vidyasagar B.Ed. College	Library staff, Faculty Members, Students	Faculty recommendations, Student feedback, Curriculum requirements, Regular review by library staff, External trends or developments in education	Budget Constraints, Limited Availability of Relevant Resources, Long Procurement Process	After each academic session, On demand (whenever needed)

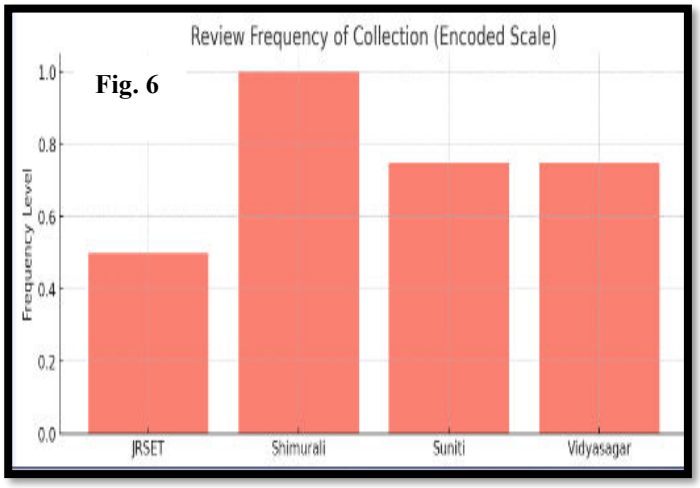

Fig. 6

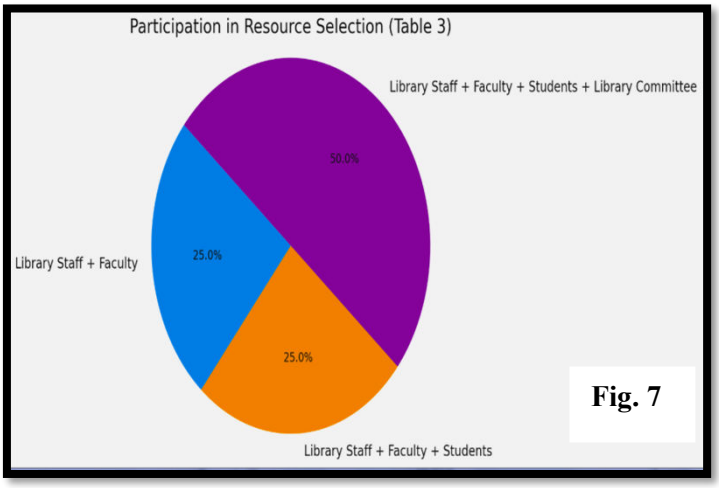

Fig. 7

Here is the pie chart representing participation in resource selection among the four B.Ed. colleges (based on Table 3):

i. 50% involve Library Staff, Faculty, Students, and a Library Committee.
ii. 25% involve Library Staff, Faculty, and Students.
iii. 25% involve only Library Staff and Faculty.

Table 3: Resources Selection and Acquisition Procedure-

- *Observation:* Description
- *Responsible Parties:* All involve faculty and library staff; Shimurali and Vidyasagar also include students and a library committee.
- *Selection Methods:* Common across all: based on curriculum and faculty recommendations. Only Shimurali and Vidyasagar use external trends and feedback systematically.
- *Challenges:* Budget constraints are common. Vidyasagar faces the most challenges, including procurement delays and limited availability.
- *Review Frequency Varies:* from "on-demand" to "annually" or "after academic session."
- *Inference:* Institutional involvement in selection and frequency of review greatly impacts resource quality and responsiveness to needs.

The resource selection and acquisition procedures reflect varying degrees of inclusiveness and responsiveness. All colleges involve library staff and faculty in the selection process, but only Shimurali and Vidyasagar engage students and library committees. While faculty recommendations and curriculum needs dominate the selection criteria, Shimurali and Vidyasagar further consider external educational trends and regular reviews. Budget constraints are the most commonly cited challenge, along with issues such as limited availability of relevant materials and delayed procurement. Review frequencies vary, with some institutions evaluating needs annually, while others operate on an as-needed basis.

Table: 5: Utilization of resources by the patron among the sample colleges:

College Name	Accessibility to Students	Digital Access Type	Student Usage	Training Programs Provided (Yes/No/Occasionally)
JRSET College of Education	Excellent (Students have easy access to all resources)	On-campus only	Yes, Regularly	Yes
Shimurali Sachinandan College of Education	Excellent (Students have easy access to all resources)	Through a dedicated portal/library website	Yes, Regularly	Yes
Suniti Educational Trust B.Ed. & D.El.Ed College	Excellent (Students have easy access to all resources)	Through a dedicated portal/library website	Yes, Regularly	Yes
Vidyasagar B.Ed. College	Excellent (Students have easy access to all resources)	Through a dedicated portal/library website	Yes, Regularly	Yes

Table 5: Utilization of Resources by Patrons-

- *Observation:* Description
- *Accessibility:* All colleges report excellent access for students.
- *Digital Access:* JRSET offers on-campus-only digital access; others provide access through a dedicated portal.
- *Student Usage:* All colleges report regular usage.
- *Training Programs:* All colleges conduct training programs to orient students in library usage.
- *Inference:* Despite differences in resource type and digital policy, usage remains high across all institutions, suggesting strong student engagement with library services.

The resource selection and acquisition procedures reflect varying degrees of inclusiveness and responsiveness. All colleges involve library staff and faculty in the selection process, but only Shimurali and Vidyasagar engage students and library committees. While faculty recommendations and curriculum needs dominate the selection criteria, Shimurali and Vidyasagar further consider external educational trends and regular reviews. Budget constraints are the most commonly cited challenge, along with issues such as limited availability of relevant materials and delayed procurement. Review frequencies vary, with some institutions evaluating needs annually, while others operate on an as-needed basis.

When examining resource utilization, all colleges report excellent student access to library materials. Digital access, however, differs—JRSET offers on-campus-only access, while the other three provide access through dedicated library portals. Student engagement is reportedly high across all institutions, and each college provides regular training or orientation sessions to promote effective library use, highlighting a strong commitment to user support despite infrastructural disparities.

Table: 6: Improvement and evolution procedure and challenges faced by the sample colleges in collection development:

College Name	Evaluation Methods Used	Major Challenges in Collection Development	Suggestions for Improvement	Additional Comments
JRSET College of Education	Usage statistics of resources	Insufficient Budget, Faculty and Student Feedback is not considered, Lack of Trained Library Staff, Access to Digital Resources, Space Constraints for Physical Resources	1. More use of digital technology and resources, 2. Invest in wider range for E-books, Online database for the library.	Each academic session 1 or 2 library orientation programmee should be organized for the students and faculty members.

Shimurali Sachinandan College of Education	Feedback from students and faculty, Usage statistics of resources, Academic performance of students, Periodic reviews by the library committee, External audits or reviews	Space Constraints for Physical Resources	1. Emphasis on both printed and digital resources, 2. Develop infrastructure to adopt Cutting-edge technology.	No Recommendation
Suniti Educational Trust B.Ed. & D.El.Ed College	Feedback from students and faculty, Academic performance of students, Periodic reviews by the library committee	Insufficient Budget, Rapid Technological Changes	Not responsed	Not responsed
Vidyasagar B.Ed. College	Feedback from students and faculty, Usage statistics of resources, Academic performance of students, Periodic reviews by the library committee	No major challenges faced by libraray in terms of collection development	1. Need students - Librarian Interaction, 2. Need suggestion box in library, 3. Always updated about new valuable book arrival.	Not responsed

Table 6: Improvement, Evaluation, and Challenges-

- *Observation*: Description
- *Evaluation Methods*: All colleges employ feedback, usage stats, and academic performance metrics. Shimurali also uses audits.
- *Major Challenges Common:* Insufficient budget and space constraints. JRSET additionally notes lack of staff and digital access. Vidyasagar reports no major issues.
- *Suggestions for Improvement*: Suggestions include investing in digital tech, wider e-book adoption, improving infrastructure, student-librarian interaction, and installing suggestion boxes.
- *Inference:* Institutions recognize challenges and propose specific improvements, though implementation and response vary. Shimurali appears most proactive in structured evaluation.

Summary Insight:

a) Consistency in student accessibility and usage is a strength across all colleges.
b) Variability exists in digital resource use, policy formulation, and budget sourcing.
c) Shimurali stands out with the most comprehensive policy structure and evaluation mechanism.
d) Suniti lacks a CDP and lags in digital integration and structured improvement processes.

From the above data it is shows the final dimension, evaluation and improvement in collection development, shows variation in depth and approach among the sample colleges. All institutions utilize feedback from students and faculty, usage statistics, and academic performance to assess the effectiveness of their collections. Shimurali further conducts periodic reviews and external audits, indicating a robust evaluation mechanism. Major challenges reported include budget limitations, lack of trained staff, technological gaps, and space constraints—particularly in JRSET and Suniti. Conversely, Vidyasagar reports minimal difficulties in this area. Recommendations for improvement include greater investment in digital technologies, establishing feedback mechanisms such as suggestion boxes, fostering librarian-student interaction, and expanding access to online databases and e-books.

Conclusion:

In conclusion, while all four B.Ed. colleges demonstrate a commitment to supporting their academic communities through well-used libraries, but there is considerable variation in terms of policy development, digital integration, stakeholder involvement, and strategic planning. Shimurali Sachinandan College of Education emerges as the most structured and resource-diverse institution, while Suniti Educational Trust B.Ed. College appears to lag due to the absence of a formal collection development policy and weaker digital infrastructure. These findings underscore the need for collaborative efforts, policy standardization, and greater investment in digital and physical library resources across teacher education institutions in the region.

Potential Findings and Recommendations:

i. It is recognizing best practices from colleges that have an advanced collection development strategy.
ii. It is to be suggested for improvements in resource allocation, particularly in terms of digitalization or specialized content for future educators.
iii. The study could help to make recommendations for cooperation among colleges to pool resources, particularly in rural or resource-constrained settings.
iv. This study could offer valuable insights into the strengths and weaknesses of library management in teacher education institutions and will help to guide future improvements in the region.

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Effectiveness of Social Networking Sites in the Environment of Higher Education

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Structured Abstract:

Background: Higher education, often referred to as tertiary education, represents an advanced level of learning where students engage in acquiring and analyzing information to enhance their intellectual capabilities. Social Networking Sites (SNSs) have become increasingly prevalent among students, serving as platforms for communication and information exchange.

Purpose: This paper aims to explore the role of social networking sites in higher education, focusing on their positive and negative impacts on students' academic experiences.

Methods: The study reviews the concept of social networking sites, social media, and their integration into higher education. It examines popular SNSs such as Facebook, Twitter, YouTube, and WhatsApp, analyzing their use by students for academic purposes, including studying, collaboration, and information sharing.

Results: Social networking sites facilitate open communication and provide a platform for students to discuss ideas, share information, and engage in academic activities. They support diverse functions such as online learning, e-mails, and collaborative projects. However, the influence of SNSs is dual-natured, with positive effects including enhanced connectivity and resource sharing, and negative effects such as potential distractions and reduced academic focus.

Conclusion: Social networking sites significantly influence higher education by offering new opportunities for academic engagement while posing challenges that require careful management. This paper highlights the need to balance the benefits and drawbacks of SNSs to optimize their role in educational settings.

Keywords: Social networking sites, higher education, Facebook, Twitter, LinkedIn, YouTube, Flicker, Google+, iGoogle, WhatsApp, etc.

Introduction

In digital age, social networking sites like Twitter, LinkedIn, Facebook, YouTube, Flicker, Google+, iGoogle, WhatsApp, Quora, Tumblr, Instagram, Skype, Snapchat, Pinterest, etc. are the latest examples of the communication technologies those have been widely and gradually adopted by the students of higher education and attracting the attention to various academic fields in higher education as well as research fields.

The social networking sites have changed the student's approach to learn and manage the information about their academic and personal lives. In higher education environment, students access social networking sites through internet connection to make learning easier. The role of social networking sites is not limited to social interaction only. In present, social networking sites have found their way in business, learning, works and other purposes. Higher learning such as universities and colleges has noticed the significant of social networking sites to facilitate learning and achieve their institutional goals. A social network comprises of a set of individuals who are interconnected through certain relationships such as friendship, co-working or information exchange (Garton, Haythornthwaite & Wellman, 1997). For example, electronic-mail (e-mail) messages were used by early Internet adopters to establish various patterns of online communication where users could interact with one another by sharing photos or discussing about several issues (Mislove et al., 2007). Every day, more than 90 percent of college students visit a social networking site. The increasing use of social networking sites by students in higher education environment has given rise to a great concern related to their academic achievement.

Objectives of the Study

1. To define the terms of social networking sites, social media and higher education.
2. To identify the different social networking sites used by the students in higher education environment.
3. The main objective of this paper is to explain the positive and negative effects of social networking sites on students in higher education environment.

Higher Education

As we know that higher education is that education which a student receives after the completion of higher secondary education. It takes places at colleges and universities, normally includes undergraduate and postgraduate study.

Definition: Higher education comprises all post-secondary education, training and research guidance at education institutions such as universities that are authorized as institutions of higher education by state authorities.

Higher education covers a wider range of higher learning institutions including the university. These higher learning institutions could be organized in different ways, commonly within a university and in a separate institution as university and other tertiary learning institutions. For instance, a university, from the British perspective, is an institution with its power to award its own degree and is preeminent in the field of research (Allen, 1988). Generally, higher education is a set that constitutes the university, which is a subset of higher education. However, in some contexts, higher education and university are used interchangeably (Assié-Lumumba, 2005).

Modern higher education is defined as an organized tertiary learning and training activities and institutions that include conventional universities such as arts, humanities, and science faculties and more specialized university institutions in agriculture, engineering, science, and technology. The concept of higher education also includes such post-secondary institutions like polytechnics, colleges of education, and "grandes école." Under the umbrella of higher education come all forms of professional institutions. Even this wide spectrum does not exhaust the possibilities of forms of higher education (AssiéLumumba, 2005).

Social Media

Kaplan and Haenlein defines **social media** as, "a group of internet-based applications that build on the ideological and technological foundations of web 2.0, and that allowed the creation and exchange of user generated content."

Social Networking Sites

Social networking sites (SNS) have become popular with the help of digital technologies (tablet, smartphone, notebook, etc.) and internet recently (Boyd &Ellison, 2007). Social media is a virtual platform. This platform helps people to make new connections, to improve friendly relations with other humans, and to exchange information (Coyle & Vaughn, 2008; Wang, Chen, & Liang, 2011).

Boyd and Ellison (2008), "SNS can be defined as web-based services that allow individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system". In summary, SNS can be defined as any web-based services that provide means for the users to interact through internet. Based on these definitions, SNS can be described as the internet-based platform that allow people to perform interaction among other social networking sites users using the available embedded features.

According to Techopedia.com, "a **social networking site** is an online platform that allow users to create a public profile and interact with other users of the website. Social networking sites usually have a new user input a list of people with whom they share a connection and then allow the people on the list to confirm or deny the connection. After connections are established, the new user can search the networks of connections to make more connections."

Social Networking Site and Social Media

The difference between the social media and social networking site is that while the term social media is a platform for broadcasting information (communications channel) whereas social networking is a platform for communicating with one another (two-way communication). Social media and social network appear to be interchangeable terms, but they serve different use cases.

The different Social Networking Sites used in Higher Education environment

Social networking sites like Facebook, Twitter, LinkedIn, YouTube, Flicker, Google+, iGoogle, WhatsApp, Quora, Tumblr, Instagram, Skype, viper, line, snapchat and Pinterest, have established themselves as powerful communication and collaboration sites due to the perceived educational needs of the current generation of students enrolled in higher education.

Facebook: Higher education stakeholders in developed countries have been quick to grasp the use of Facebook in getting positive education outcomes. According to information posted on Facebook website in 2007, Facebook's primary purpose was to "share information with people you know, see what's going on with your friends, and look up people around you" (Facebook.com, 2007 as cited in Sheldon, 2008). Facebook has become an integral part of college life for students, serving as the primary tool of communication and electronic socialization (Golder, Wilkinson, & Hubernian, 2007). Mark Zuckerberg, an undergraduate student at Harvard, designed Facebook in February 2004 (Sheldon, 2008).

Indeed, the rising popularity of Facebook has brought students and faculty face to face in the same social space. Mazer et al. (2007, 2009) find that teachers who actively self-disclose on Facebook profiles increases anticipated student motivation, affective learning, and teacher credibility. Further, networking on Facebook increases students' willing to communicate with their instructors (Sturgeon & Walker, 2009). As a tool of learning, Facebook has also reached universities. The web link of Facebook is – http://www.facebook.com.

Twitter: Twitter is a popular American microblogging and social networking service on which users post and interact with messages up to 140 characters known as "tweets". Twitter was created by Jack Dorsey, Noah Glass, Biz Stone, and Evan Williams in March 2006 and launched in July of that year. Since its inception in 2006, Twitter has opened up a new channel of information dissemination, and has seen tremendous user growth. Among the social networking sites, Twitter is the one of social networking site that has been widely used by academic institutions such as higher education.

Basically, Twitter has been used as a communication as well as learning tool in the higher education environment. It has been used as a tool of student interactions and informal learning which increases the activity of participants and improves students' communication. It has been used to encourage learning and idea and sharing the knowledge. It is the most advanced and growing microblogging service. As Haythornthwaite (2016) presented in a case study of social media tools in higher education, Twitter is among the top two tools which educators have expressed inclination to use in their future classrooms, ranked before other popular SNS tools such as Facebook. Higher education institutions are increasingly using social media as a platform of communication with students, faculty, other institutions and the public. The web link of Twitter is http://www.twitter.com.

YouTube: YouTube on higher education became more prominent and it became important tool of learning in higher education. YouTube allows users to upload, view, share, like and download videos. YouTube is an American video sharing platform founded in February 2005 and purchased by Google in 2006. The YouTube has a great impact on education and learning experience of the students. It helps adding a new innovative and interesting dimension in the traditional education system. From students to teachers, YouTube has made the learning and teaching method easy. YouTube is a perfect education tool to bring diversity of content in classroom. The most appreciated and viewed educational channels on YouTube are TED-Ed, Smarter Every Day, Vsauce, Asap SCIENCE, National Geographic, Science, exploration and adventure. Its audio-visual quality has made it an effective educational tool. Web address of YouTube is: https://www.youtube.com.

Skype: Skype was founded by Estonian developers Zahti Heinla, Priit Kasesalu and Jaan Tallinn, Danish developer Janus Friis and Sweden's Niklas Zennstrom. Skype is a freeware communication tool that was launched in Estonia in 2003, and was purchased by eBay in 2005 for $2.6 billion dollars. Skype is an effective no-cost tool that allows you to remotely talk with and see others via the Internet from anywhere in the world. Once you download Skype to your computers it allows you to communicate with people all over the world for FREE, with an Internet connection.

Skype is connecting with anyone, anywhere, at any time. This means students not only connect with teachers but teachers encourage students to broaden their view of the world. Set up virtual connections by contacting other teachers then connect the students to each other. Also, Skype has whole portal dedicated to educators who can use it to teach various lessons already set up by the Skype team. The web link of Skype is http://www.skype.com.

Linkedln: LinkedIn was created in 2002, in the living room of Reid Hoffman, co-founder of LinkedIn. Finally, in 2003, it was launched to the public. While acting as a professional social forum for employers to connect with applicants or search for potential employees. Having students post professional resumes there and then contacting them about the job market and the business world around them keeps them in touch with reality and the endless possibilities through a targeted education. The Web link of Linked in is https://www.in.linkedin.com.

WhatsApp: Brian Acton and Jan Koum founded WhatsApp in 2009 after they left their job at Yahoo!. Users of higher education used WhatsApp for interaction among students, sharing

learning material, because this application is very easy accessibility to learning material. Based

on WhatsApp (2010), this application is a cross-platform smartphone messenger that requires internet data. In terms of its use in educational field, WhatsApp enables students to send text messages, images, video, audio, documents, and even location. It provides students and instructors with the ability to create group that supports interactions of each member. The web link of WhatsApp is https://**web**.**whatsapp**.com.

Google+: Google+ is the social spine of all of Google's products that you already know and use: Google Search, YouTube, Chrome, Android, and Gmail. Google+ is one of the popular social media sites in these days. Google+ was propelled on December 15, 2011, and has joined the major alliances enlisting 418 dynamic million clients as of December 2015. Google+ allows professors, faculty, and researchers to take a proactive approach to knowledge sharing. Professors are able to interact with students and invite high profile guests to participate in office hours using a course Page to host conversations via Hangout. Students are using Google+ to bring school spirit online with events, using party mode to share photos from sports games and activities.

Research Gate: Research gate is a social networking site for researchers, academic professionals to create their own profiles. For access Research gate we have to create our account on research gate then chose our area and uploading our details & image. We have to provide a valid e-mail ID or mobile number. After a long process our research gate account is created. It basically designed for academic community. Research gate help scholars to searching article or thesis for their relative subjects. In research gate we submitted our article. And we also can read others author's publications. This is very helpful site for researchers. The web link of research gate is: https://www.researchgate.net.

Instagram: Instagram was developed in San Francisco by Kevin Systrom and Mike Krieger. Instagram is a visual online networking stage. The site has more than 400 million dynamic clients and is possessed by Facebook. A significant number of its clients utilize it to post data about travel, form, sustenance, workmanship and comparable subjects. The stage is likewise recognized by its remarkable channels together with video and photograph altering highlights. Right around 95 percent of Instagram clients additionally utilize Facebook Instagram is a great platform for cultivating an online community for educational institutions.

The easy-to-view and interactive platform allows for low-effort engagement from prospects, students and alumni. The web link of Instagram is http://www.instagram.com.

Effects of Social Networking Sites in Higher Education

Positive Effects:

In the field of education, social networking sites offer a student the opportunity to connect with other students, educators, administrators, alumni, both within and outside his current institution. Scholars praise social-networking sites for their capability to attract, motivate and engage students in meaningful communicative practice, content exchange, and collaboration.

Following is the Positive Effects of Social Networking Sites in Higher Education:

- By spending much time working with new technologies, students develop more familiarity with computers and other electronic devices.
- With the increased focus on technology in education, this will help students build skills that will aid them throughout their lives.
- Google and education, Google has helped over 20 million students in their education using their tools.
- It helps to communicating to teachers.
- By using social networking site students easily do general group discussion and exchanging ideas.
- It has also increased the rate and quality of collaboration for students. They are able to communicate with each other, share information of study material, projects, resources or ideas quickly, which can increase productivity and help them learn how to work well in groups.
- It helps teacher to share information and resources with students.
- Enables research through the exchange of different materials
- Social networking sites offers a way to the students to efficaciously reach every different in regards.
- Many of the students who do not take an interest consistently in class might feel that they can express their thoughts easily on social networking site.
- Teachers may post on social networking site about class activities, school events, homework assignments which will be very useful to them.

- Teachers may also publish on social media approximately elegance activities, faculty activities, homework assignments with a view to be very beneficial to them. (Lad, 2017).

Negative Effects:

The prime bad effect of social media is addiction. Constantly checking Facebook, Twitter, LinkedIn other social media updates. This addiction could negatively affect other valued activities like concentrating on studies, taking active part in sports, real life communication and ignoring ground realities.

Following is the Negative Effects of Social Networking Sites in Higher Education:

- Paying more attention towards social networking sites than utilizing this time for their studies.
- Failure to meet study targets.
- Our ability to retain information has decreased, and the willingness to spend more time researching and looking up good information has reduced, due the fact that we got used to the ease of accessibility to information on social networking site.
- Missing classes due to social networking sites.
- Devotes little time to attend to students' class related problems
- Because of social networking sites students lose their ability to engage themselves for face-to-face communication.
- One of the biggest negative effect of social networking site in education is the privacy issues like posting personal information on online sites.
- Students, who attempt to multi-task, checking social media sites while studying, show reduced academic performance.
- One of the biggest negative effect of social networking site in education is the privacy issues like posting personal information on online sites.
- Students, who attempt to multi-task, checking social media sites while studying, show reduced academic performance. Their ability to concentrate on the task at hand is significantly reduced by the distractions that are brought about by YouTube, Facebook or Twitter.
- Many of the bloggers and writers posts wrong information on social sites which leads the education system to failure. (Raut & Patil, 2016)

Conclusion

The Social Networking Sites (SNSs) are being used as learning sites in higher education and plays a major role on improving a student's academic performance. A development in ICT (Information and Communication Technology) in present era has grown rapidly having a lot of effect on the lives of humans. Social networking sites are gaining a lot of popularity these days with almost all the educators and educated youth using one or the other such site. These have played a crucial role in bridging boundaries, crossing the seas and enabling them to communicate on a common platform. The main objective of this paper is to descried the different social networking sites and also explain the positive and negative effects of social networking sites on students in higher education environment. The study shows that students in higher education mostly access social networking sites on their mobile and computers for academic and non-academic purpose. They use SNSs to share their homework, assignments and communicate to their friends and teachers. However, there are some positive and negative effects that SNSs come with. Negative effects include that social networking sites destroy a student's academia and have a negative effect on the academia performance as well. An addiction towards Social Networking Sites has grown rapidly and is affecting more students. Students spend less time on their studies but spend more time on the Social Networking Sites for leisure and recreational purpose. Social Networking Sites make student lazier as well. The study shows that in Education field students can get the quality of education, acquire new skills but at the same time he/she may get distracted and addicted by too much use of social networking site. Social networking has affected various fields in both positive as well as negative aspects. Thus, especially college going students who are most likely users of social networking site they should know the right way to use the different social networking sites because if it is used properly, it will be fruitful on the other hand if it is used wrongly, it will be harmful to our life. We have to adopt positive aspects of social networking site and avail the benefits of these latest and emerging technologies.

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