

INFORMATION LITERACY INITIATIVES IN INDIA WITH SPECIAL REFERENCE TO EMERGING KNOWLEDGE ECONOMY

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Abstract : *Knowledge economy in India has emerged since 1990s with the advent of liberalization and globalization of Indian economy. Since then many Indian corporate organizations established their presence outside the country, forming an informal India Inc. in competing globally. The information infrastructure situation in India has also improved a lot since 1990s, not only in the corporate organizations that exploit knowledge resources for the profit making, but also in the public institutions that generate knowledge for the development of all aspects of society and humanity. Judicious use of information resources, available now mainly in the public institutions, especially in the higher educational and research institutions, should be measured in terms of information literacy of the stakeholders. Information literacy is required for effective use, consumption and assessment of information resources available in the institutions. Information literacy can also bridge the gap between digital divide that we observe in many grass-root level initiatives in India in the forms of ‘village knowledge centres’, ‘community information centres’, ‘e-choupals’, ‘gyandoot’, etc. ushered in with the participation of NGOs, developmental agencies and corporate organizations. Present study explores various initiatives in India that address information literacy in maximizing utilization of knowledge resources. This study also focuses on the various initiatives undertaken by different institutions, starting from the elementary level to the higher educational level, professional societies and other organizations.*

Introduction

In *The Third Wave* book, Alvin Toffler [11] divided history of the evolution of human society into three major eras, or waves. The first wave, from 8000 BC to 1750 AD was termed the agricultural revolution, and was based on farming as the world’s primary occupation. In the second wave, from 1750 to 1955, the rise of industrial civilization and the industrial revolution marked the main occupation. The developed world was engaged in or moving toward mass production of industrial goods. The third wave, which began in the mid-1950s, is sometimes referred to as the information age and is based on the delivery of services. Important point to note from Toffler’s viewpoint is that all the societies were profoundly transformed with each wave, and that the transition from one to the next was never easy.

What Toffler envisaged, we can see it today in the proliferation of knowledge-based industries as well as service industries not only in developed countries but also in developing countries like India, China and Malaysia. Countries like USA, UK, Japan and Germany were ahead in third wave, which started after the

World War II. Many knowledge-based industries emerged in these developed countries due to concerted efforts of advanced research, development and entrepreneurs. These nations nurtured talents and attracted creative and visionary people to establish knowledge-based economy. That is, the enterprises, which have superior knowledge resources, have tremendous growth opportunities in global markets and certainly have edge over others. They became the trend setters and are followed by many others. In the transition to the information/knowledge based society, two aspects are important—development of ICT infrastructure for information accessibility and information literate citizen. If the large number of citizens become information literate, they will be able to utilize a considerable amount of information resources for the generation of wealth for the welfare of the society. They can be a driving force in demanding adequate information infrastructure. The information literacy can also play a major role in e-readiness of a country.

Indian Society in Transition

The knowledge-based economy is already established in some developed countries which is not far away from India. The impact of third wave would be of much greater than the other two.

In India large-scale industrial growth started few decades ago mostly after independence. India's first Prime Minister Jawaharlal Nehru had futuristic vision to build-up a self-sufficient nation. He also initiated many science and technology institutions and research centres for making the nation superior in scientific and technological knowledge. In 1980s we have also observed the green revolution, which made India self-reliant in food grains. In early 1990s India had reformed her economy to the tune of globalisation and liberalization to attract foreign investments in India and to explore world markets of Indian products and services. Though first two waves came in India very lately, the third wave has already knocked the doors. But it is very limited to a few privileged states in India, particularly centered on metropolitan cities, which have basic infrastructure to host the knowledge-based industries. Now, the transitional Indian society is the success stories of knowledge-based industries in every corner of the country. According to a statement by the India's Minister of Communications and Information Technology in December, 2004, "It is expected that IT software and service exports will account for 30% of all foreign exchange inflows in 2008 from the figure of 8% currently"[3]. It is also expected that the share of GDP from service industries will exceed the manufacturing industries within the next few decades. The Government of India provides supports to each state governments to establish knowledge-based industries by promoting software technology parks, biotechnology parks, export-processing zones, and so on, beyond the metro cities.

Table 1 shows e-Readiness ranking of the countries in Asia and Pacific region, where India stands 10 out of 16 countries in this region and 53 out of 68 countries of the world. This ranking is based on the annual study of the *Economist Intelligence Unit* on the parameters like, *connectivity, business environment, consumer and business adoption, legal and policy environment, social and cultural environment* and *supporting e-services* [4]. India's scores in these parameters are: connectivity (1.55 out of 10), business environment (6.18 out of 10), consumer and business adoption (4.25 out of 10), legal and policy environment (5.09 out of 10), social and cultural environment (4.60 out of 10), supporting e-services (6.50 out of 10) and overall score 4.25 (out of 10), whereas the region's toper Australia's scores in these parameters are: connectivity (7.80), business environment (8.27), consumer and business adoption (8.65), legal and policy environment (9.05), social and cultural environment (9.00), supporting e-services (9.25) and overall score 8.50. In *Human Development Report 2005*, India stands 127 out of 177 countries, based on different sets of indicators, whereas India's neighboring countries China stands 85, Sri Lanka stands 93 and Pakistan stands 135 [12]. Thus, it can be observed that in e-Readiness ranking India stands better than her neighboring countries, China (rank 12), Sri Lanka (rank 13) and Pakistan (rank 16).

Table 1: e-Readiness Ranking in Asia and Pacific Region

2006 Rank in Region	2005 Rank in Region	Country	Overall Ranking (out of 68 countries)	e-Readiness score (of 10)	Human Development Index Ranking (out of 177 countries) ^{##}
1	2	Australia	8	8.5	3
2	1	Hong Kong	10	8.36	22
3	3	Singapore	13	8.24	25
4	4	New Zealand	14	8.19	19
5	5	South Korea	18	7.9	28
6	6	Japan	21	7.77	11
7	7	Taiwan	23	7.51	85
8	8	Malaysia	37	5.6	61
9	9	Thailand	47	4.63	73
10	10	India	53	4.25	127
11	11	Philippines	56	4.04	84
12	12	China	57	4.02	85
13	13	Sri Lanka	59	3.75	93
14	14	Indonesia	62	3.39	110
15	15	Vietnam	66	3.12	108
16	16	Pakistan	67	3.03	135

Sources: *The 2006 e-readiness rankings, Economist Intelligence Unit (EIU)*; ^{##}*Human Development Report 2005, United Nations Development Programme (UNDP)*.

In a knowledge society, knowledge itself becomes the factor of productions, and plays a central role in driving economic and social development. In a knowledge economy, the knowledge-driven industries have much higher economic growth, both in terms of volume and revenue, than manufacturing industries and agriculture. This segment also requires intellectually motivated, creative, competitive decision makers who will enable the knowledge organizations to endeavor their goals. This workforce would use information resources, information services and information systems judiciously, rationally and adequately to pursue their professional goals, organizational goals and social goals. The utilization of information resources can be habituated and sensitized through the information literacy competency development programmes. The information literacy is required at every stage and sphere of a person's life, starting from the school education to higher education, from social life to professional life.

With the emergence of knowledge-based industries, digital divide in India seems to be a bottleneck in providing information infrastructure and adequate manpower supply, necessary for this sector and supporting sector, though the country has made substantive progress in this area. Thus, the policy makers and social scientists are adopting various frameworks to address the digital divide in India for achieving overall economic growth. Information and Communication Technologies (ICT) is being used worldwide as a tool for social welfare, better governance, illiteracy eradication and poverty removal. The ICT is also being used as a tool for empowering certain social groups, like, farmers, women, artisans, and common citizens. In India, ICT is also adopted at the grass root level through various initiatives and pilot projects on experimental basis. The private public partnerships have been established across India, where many corporate organizations are collaborating with non-governmental organizations (NGOs), local self-help groups and local governments for various social development and social welfare programmes out of their 'social outreach' and 'corporate social responsibility' mandate. Many national and international developmental and funding agencies are also collaborating with grass root level NGOs, volunteering societies to address digital divide in India. Government of India and state governments are also taking appropriate steps in sustaining economic growth, employment generation and strengthening information infrastructure. National Knowledge Commission(NKC), a recent initiative of the Government of India, is a

concerted approach in making India as a major economic power in the global scenario. The NKC will also provide adequate inputs for action to achieve the goal of knowledge society.

National Knowledge Commission of India

To establish a knowledge-oriented paradigm of development and to address the digital divide in India, the Government of India has established National Knowledge Commission in June 2005 with the following Terms of Reference [8]:

- Build excellence in the educational system to meet the knowledge challenges of the 21st century and increase India's competitive advantage in fields of knowledge.
- Promote creation of knowledge in S&T laboratories.
- Improve the management of institutions engaged in intellectual property rights.
- Promote knowledge applications in agriculture and industry.
- Promote the use of knowledge capabilities in making government an effective, transparent and accountable service provider to the citizen and promote widespread sharing of knowledge to maximize public benefit.

The National Knowledge Commission (NKC) has five distinct focus areas:

(i) **Access to Knowledge:** Providing access to knowledge resources through strengthening library and information infrastructure and networks, promoting and adopting open access literature, open courseware and open source software.

(ii) **Knowledge Concepts:** Nurturing intellectual capabilities and enhancing professional skills, including information handling skills of youths

(iii) **Knowledge Creation:** Making self-sufficiency in knowledge creation; strengthening indigenous research capabilities in science, technology and medicine (STM) areas; generating knowledge for social development.

(iv) **Knowledge Application:** Deriving maximum benefits from intellectual assets, applying knowledge in fields like agriculture, industry, health, education, etc. where productivity can be enhanced.

(v) **Knowledge Services:** Making governance and government functionaries more accountable, transparent, efficient and sensitive to the causes of common men.

These focus areas of NKC can be represented as a pentagon, as shown in Figure 1. This Figure also indicates that how information literacy of stakeholders can enhance the capabilities of a nation for optimum utilization of knowledge resources. Information literacy can also make creation and generation of new knowledge a reality. To derive maximum benefits from intellectual assets, to enhance the productivity in different social sectors, and to make public functionaries more accountable and transparent, coherent knowledge dissemination to the society are the needs of the hours. Information literacy of stakeholders is needed to achieve these societal goals.

Role of Information Literacy in Knowledge Life Cycle

The NKC has identified different phases of life cycle based on a person's entire life span, from the birth to post work age. He/She needs different kinds of information in different phases of life. The young persons are acquiring knowledge through secondary and higher education. Here, the teachers and library professionals impart the information literacy competency to the learners through information literacy programmes. Information literacy is a lifelong process that starts at the youth age and may go until post work age. Information literacy also has a component of lifelong learning. The formal and informal ways of learning are circled around a person's life, where the person acquires new sets of knowledge of his/her interests, updates his/her existing knowledge on his/her profession or vocation. Information literate persons acquire knowledge; then use knowledge resources to generate wealth and welfare. In post work life, persons share wisdom and experiences with the younger generations. Here also information literacy plays its role to absorb the knowledge from experienced persons to and use the same knowledge in generating

wealth and welfare of the society. This is also another cycle of knowledge creation, dissemination and utilization. The knowledge life cycle, based on a person's entire life period, is depicted in Figure 2.

Figure 1: Knowledge Pentagon and Information Literacy

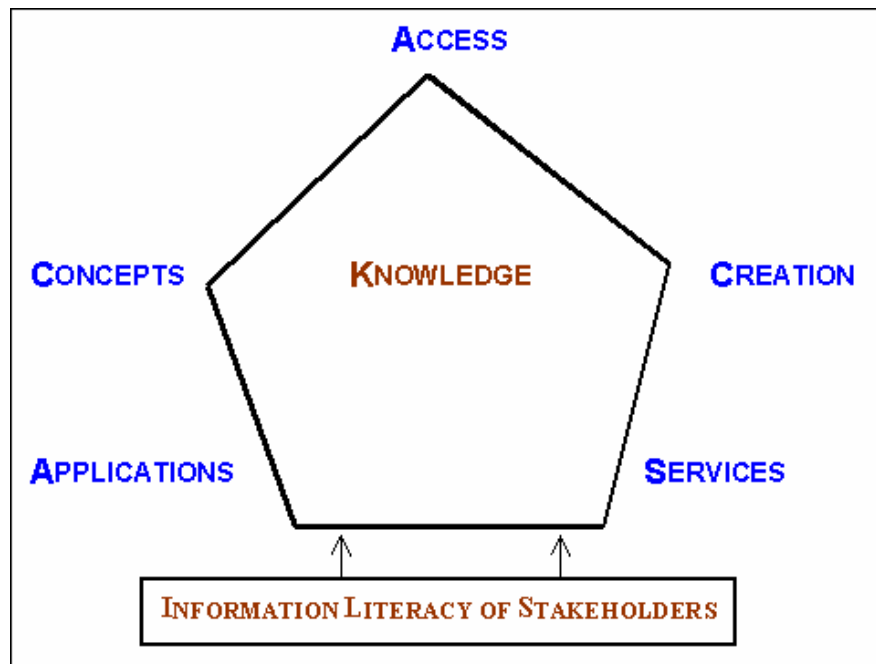
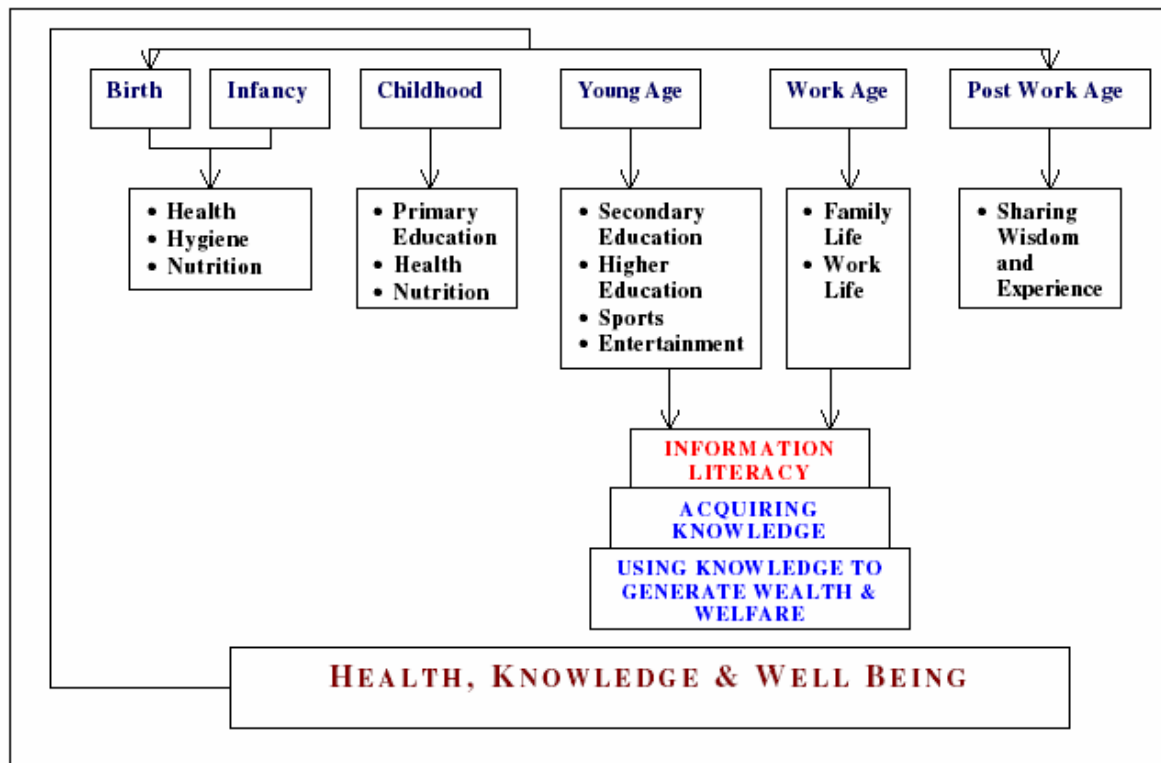


Figure 2: Knowledge Life Cycle: Integration of Information Literacy



Community Information Initiatives in India

President of India A.P.J. Abdul Kalam has coined a new term, PURA (Providing Urban amenities in Rural Areas) that describes coherent knowledge and resources distribution across the country [1]. The PURA will deliver three types of connectivity: physical connectivity by providing roads in rural areas, electronic connectivity by providing reliable communication network and knowledge connectivity by establishing more professional institutions and vocational training centres. Schools with best infrastructure and teachers who love teaching, primary health centres, silos for storage of products and markets for promoting cottage industries and business, employment opportunities for artisans are some of the elements of PURA. PURA will also help in poverty removal. He has also envisaged establishing Village Knowledge Centres across India. To implement visions of President of India and other contemporary social reformists, Government of India and other agencies have taken up a number of programmes and initiatives across the country. Some initiatives are based on successful partnership between private bodies (like, corporate and NGOs) and public bodies (like, village Panchayats), this may known as private public (PP) partnership, e.g., eChoupal, TARAHaat. Some initiatives provide Government to Citizens (G2C) interface to ensure better transparency in governance, e.g., Bhoomi, Gyandoot, Community Information Centres, etc. These community information centres provide various kinds of community information required by common citizens, e.g. education, health, nutrition, sanitation, agriculture, wholesale prices of agricultural products,

Table 2: Community Information Initiatives in India

Name of the Project (with Web Address)	Coverage	Institutions Involved	Type of Participation
Akhaya (www.akshaya.net)	1 State (Kerala)	Kerala State Information Technology Mission	G2C
Bhoomi (www.revdept-01.kar.nic.in)	1 State (Karnataka)	Revenue Department; National Informatics Centres	G2C
Community Information Centres (CIC) (www.cic.nic.in)	10 States (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Jammu & Kashmir)	Ministry of Development of North Eastern Region (DONER); National Informatics Centres	G2C
Digital Gangetic Plane (www.iitk.ac.in/mladgp)	1 State (Uttar Pradesh)	Media Lab Asia, IIT Kanpur	G2C
Drishtee (www.drishtee.com)	5 States (Haryana, Punjab, Madhya Pradesh, Rajasthan and Bihar)	Drishtee Ltd.	PP
eChoupal (www.echoupal.com)	6 States (Madhya Pradesh, Karnataka, Andhra Pradesh, Uttar Pradesh, Maharashtra and Rajasthan); 31,000 villages.	International Business Division of ITC Limited	PP
Gyandoot (www.gyandoot.nic.in)	1 District (Dhar district of Madhya Pradesh state)	Gyandoot Samiti & National Informatics Centres	G2C
Rural e-Seva (www.westgodavari.org)	1 District (West Godavari district of Andhra Pradesh state)	West Godavari District Administration	G2C
TARAHaat (www.tarahaat.com)	4 States (Punjab, Haryana, Madhya Pradesh, Uttar Pradesh)	Development Alternatives	PP
Village Knowledge Centres (VKC) (www.mission2007.org)	600,000 villages across India by the year 2007	National Alliance for Mission 2007, NGOs, Department of Information Technology, Ministry of Panchayati Raj, Ministry of Agriculture, National Bank for Agriculture and Rural Development, etc.	G2C, PP

village industries, weather, land records, utilities (such as, ration cards, driving licenses, birth certificates, death certificates, caste certificates, income certificates, etc.), and so on. Some projects have coverage in

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particular areas, e.g. Bhoomi (covering land records), whereas some other initiatives have coverage in an array of areas, e.g. Community Information Centres (covering education, health, utilities, etc.). Most of these initiatives are establishing information kiosks or cyber cafes at the village and the semi-urban areas, with the hardware, software, network, telephone and power supports from the respective institutions involved, and with the participations of the self-help groups or volunteers who will run the information kiosks at the doorsteps of the villagers and common citizens. VSAT terminals are also provided in few initiatives, like, Community Information Centres and eChoupal, where telephone connectivity is not adequately available. These community information initiatives deliver e-literacy programmes to the common citizens where basic skills of using computers and Internet are imparted. These initiatives also deliver information literacy training to the users of information kiosks, where learners know how to use information resources available within the respective initiative's portal, intranet and Internet, and how these information can be used in solving the problems of individuals in their vocational (e.g. agricultural know-how), personal (e.g. getting a certificate) and social (e.g. sanitation) life.

According to a study by [5], in India only 29,820 rural libraries exist (supported by any government agency, like, Raja Rammohan Roy Library Foundation, central government, state library authorities, or local authorities), in contrast to proposed 600,000 village knowledge centres [5]. If these village knowledge centres are established, the villagers would get exposure to the information resources for decision making in their respective areas of interest, like, health, land records, agriculture, village industries, etc. The community information centres in 10 states are also disseminating various kind of information, related to community development and utilities. In wake of emerging knowledge society, a range of decisive information, which is still a distant dream to the common citizens, would be accessible if the proposed initiatives are properly implemented. But another aspect needs to be discussed, that is, other than documents on ones vocational and social interests, rural libraries also enhance reading habits of villagers, particularly, the literates and neo-literates. The reading habit helps in personality development, creativity and imagination. The reading habit can also broaden the person's liberal viewpoints. But village knowledge centres or community information centres may or may not provide similar kinds of traits with the citizens. That is why, village knowledge centres can be integrated with the existing rural libraries and where rural libraries do not exist, village knowledge centres can be set up along with rural libraries.

Information Literacy-Its Ramifications

Let's start our discussion with the concept of information literacy. ACRL defines information literacy as 'a set of abilities requiring individuals to recognise when information is needed and have the ability to locate, evaluate and use effectively the needed information'[2]. The definition emphasizes on the skills on a wide range of areas starting from appreciation of importance of information in all activities, to accessibility and use of information. The wide spectrum of information literacy is concerned with users of information, either formally or informally, and information professionals, the facilitators of information. Further the information literacy programmes will vary depending upon the types, levels and needs of the target people.

In the context of a developing country like India, the ICT literacy is equally important to acquire skills of locating, evaluating and effective use of needed information. Thus, varieties of programmes are offered to this end, particularly for library and information professionals..

Information literacy aims at [7]:

- the ability to apply the principles of scholarly communication to problems of information handling;
- the ability to locate, select and use appropriate information retrieval tools in order to obtain useful information in connection with studies or work of the end users, and when required; and
- confidence in using, and satisfaction in carrying out information searching.

Some of the objectives of information literacy programmes for the learners are [7]:

- Learners would be able to develop a systematic method of searching for information related to areas of studies of the users;

- They would be aware of wide range of sources (including open access sources) available for finding information and select the sources which will best meet users needs;
- They would be aware of appropriate indexing and abstracting services and databases and understand the principles of their use;
- They would develop database searching techniques for accessing both web-based and CD-ROM databases;
- They would be able to use current awareness methods to keep up-to-date with the published literature;
- They would be able to use national and international academic networks for getting information;
- They would be able to use discussion forums, list servers, online chat services and blocks for obtaining and disseminating information;
- They would be able to use local library network for obtaining documents through inter-library loan and document delivery services;
- They would be able to compare and critically evaluate information obtained from various sources;
- They would be able to cite bibliographic references in their academic projects, papers, articles, reports or theses; and
- They would be able to construct a personal bibliographic system;

Information Literacy Programmes in India

Information literacy programmes are already in existence in narrower forms in various libraries and information centres in India, in the forms of user education, bibliographic instruction, library instruction, library research, and so on.

Many advocates of information literacy in India proposed to integrate information literacy programme with the academic curricula of educational systems of India, starting from the school level to the higher education, vocational education, professional education and research degree level.

Information Literacy Programme at School Level

A study of information literacy programme in India reveals that a major initiatives have been taken at the School level. The Navodaya Vidyalayas, a network of residential schools scheme of the Government of India for the childrens of rural India covering 6th class to 12th class are an unique experiment wherein each of the students is to prepare project report using the information resources of the respective libraries. The syllabus is designed to provide opportunities to use information and IT to facilitate learning process. At present, there are 509 such schools spread over 34 States and Union Territories with a strength of 0.158 million of students [9].

In other cases, most of the Schools at middle and higher level have library facilities with IT components. In many classes, how to use library resources, like, atlases, encyclopaedias, dictionaries, periodicals, etc. are usually taught and demonstrated. These resources are now available both in print format as well as electronic format. Erstwhile Indian National Scientific Documentation Centre (INSDOC) (Now National Institute of Science Communication and Information Resources) developed an audio-visual programme for junior school children about how to find information from such sources. Many Schools have library hour as a part of the curricula, mostly to educate pupil for use of library for the class work and projects. Similarly, many public schools, convent schools and government schools have good library facilities and information infrastructure. In these schools, library classes are allotted for the every class of primary, secondary and senior secondary level, where information literacy competency is provided.

Information Literacy in Higher Learning Institutions

In the institutions of higher learning in India, user education, library instruction and bibliographic instruction programmes are provided. In universities for research degree programmes, a course on research methodology is included where library research techniques are also included. Some universities and research institutions subscribe to the electronic resources, on consortium basis or individual basis. The producers or vendors of these electronic resources conduct user training programmes for use of those resources. The Indian Medlars Centre of National Informatics Centre conducts a user-training programme in every four month on their information products and services, like, IndMed databases, medIND open access journal literature, OpenMED open access archive, UNCat union catalogue databases, etc., which are designed mainly for health professionals and health librarians. Some orientation programmes and refresher courses also impart information literacy competency to the learners. The Universities also conduct from time to time the orientation programme to their academics for use of electronic resources.

In the corporate organizations and corporate R&D centres, information literacy competency is an essential trait of the researchers and knowledge workers. The researchers and knowledge workers are being taught the about latest discipline oriented information resources available within the organizations and outside the organizations.

Information Literacy Programmes for LIS Professionals

The academic staff colleges established in the universities organize regular orientation/refresher courses for teachers and librarians to imbibe the skills for locating and accessing information in the changing environment.

Many of the Government Departments' Library and Information Centres organize orientation programme for their staff to develop information access skills.

The national documentation centres like National Institution of Science Communication and Information Resources (NISCAIR) (erstwhile INSDOC) and National Social Science Documentation Centre (NASSDOC) play a significant role in orienting library and information science professionals of the country to acquire the skills of access to information.

At the school level the organizations like National Council of Education Research and Training (NCERT) and State Council of Education Research Council (SCERT) conduct regular orientation programme/refresher courses for the school librarians.

Role of Library Associations in India

Library associations exist in most of the states and union territories of India apart from those at the national level. State level library associations are very active in public libraries development in their respective states. Some library associations, e.g. Bengal Library Association conduct refresher courses for the in-service public librarians, mostly in the areas of managing and accessing information in ICT environment

Some library associations at national level are now proactive in spreading the information literacy competency for the librarians and library users. In December 2005, Indian Library Association (ILA) organized 51st All India Conference with the focus on "libraries, information literacy and lifelong learning", where many librarians felt the importance of information literacy in lifelong learning and optimizing the usage of information in the libraries. In this conference, ILA also recommended to form a National Information Literacy Mission and the National Information Literacy Task Force to implement information literacy competency development programmes throughout the country without further delay [6].

In October 2005, an international information literacy workshop was held at the Punjabi University, Patiala, India to promote information literacy in South and South East Asia, with the support of UNESCO and other partners. In September 2003 at Prague, the International Alliance for Information Literacy was

formed where India's Networking Alliance for Voluntary Actions (www.navaindia.org), a network of NGOs, became a member [10].

Conclusion

In the wake of knowledge-driven development of societies in India, a number of initiatives have been planned and implemented to bridge the digital divide between information rich and information poor citizens. The urban and rural societies are integrated through another range of initiatives that empower the common citizens with the decision making knowledge resources for their professional, vocational, social and personal life. The knowledge resources, available in the academic, special and public libraries, can be optimally and rationally used with the information literacy competency development programmes of the stakeholders. But in India, training of the trainers, who will deliver information literacy programmes need to be strengthened, as a chunk of library and information professionals are not in a position to handle modern ICT tools and techniques in information handling due lack of personal interests or other reasons. There were few national level capacity building programmes on the information literacy in the recent past, although the international communities, like, UNESCO, IFLA, American Library Association, have already prepared information literacy standards for the various levels of information users. These information literacy standards can be adapted in a developing country like India that aims at becoming a knowledge society, where knowledge utilization and knowledge creation capabilities are the driving force in economic and social development.

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