

Strategic and Collaborative Approaches for Fostering Information Literacy via an Information Portal

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ABSTRACT

Proliferation of information in varying formats and amounts has made the contemporary era 'information intensive' with manifold choices to information access and retrieval. Sheer abundance of information and technology would not in itself create more informed learners without a complementary understanding of and capacity to use information effectively. Unless the learners are information literate, they will be deficient in skills to locate, retrieve, organise, and evaluate critically the retrieved information and use it effectively for personal as well as professional accomplishments. Information literacy (IL) empowers one with task-accomplishing skills, in part by fluency with information technology, in part by sound investigative methods, but most important, through critical discernment and reasoning. IL certainly lays a robust foundation not only for lifelong learning but also for coping with the incessant socio-cultural and technological changes. Nurturing IL aims at developing learners' critical thinking and discernment about the whole gamut of e-information and its varying formats, prior to its consumption. This article focuses on the strategic and collaborative approaches desirable for fostering information literacy in academic setting via an information portal.

Keywords: Information literacy, library instruction, information infrastructure, e-pedagogy, IL modules, information-seeking behaviour, information portal, user interface

1. INTRODUCTION

Proliferation of information in varying formats and amounts has made the contemporary era information intensive with manifold choices to information access and retrieval. Paradoxically, this even put forth a bewildered information environment for individuals, who are to meet with diverse information choices in their studies, in the workplace, and in their lives. Information is available through various channels such

as community resources, special interest organisations, manufacturers and service providers, media, libraries, and the Internet. Additionally, it is available in multiple media including graphical, aural, and textual¹.

All these intricacies pose challenges to individuals in accessing and retrieving information efficiently, sifting and evaluating its authenticity, validity, and reliability for its effective use in knowledge building and sharing. Here arises

the need for Information Literacy (IL), which aims at developing learners' critical thinking and ability to discriminate the whole gamut of information resources and formats prior to consumption of information for sustained learning skills.

Sheer abundance of information and technology would not in itself create more informed learners without a complementary understanding of and capacity to use information effectively.² Unless the learners are information literate, they will be deficient in skills to locate, retrieve efficiently, organise and evaluate critically the retrieved information and use it effectively. IL as an intellectual framework and a social process for understanding, finding, evaluating, communicating and using information, eases the challenges brought forth by the 'data fog'. It empowers one with task accomplishing skills, in part by fluency with information technology, in part by sound investigative methods, and through critical discernment and reasoning. IL initiates, sustains, and extends lifelong learning through abilities, which may use technologies but are ultimately independent of these³.

In a broader context, information literate have been described as those who know when they need information, and are then able to identify, locate, evaluate, organise, and effectively use the information to address and help resolve personal, job-related, or broader social issues and problems⁴.

IL emanating from its precursors such as library and/or bibliographic instruction, has been the term most frequently used since the late 19th century owing to the pervasiveness of technology and related services and products (electronic resources). Bruce a well known Australian information literacy researcher, remarks this transition as: "The idea of information literacy, emerging with the advent of information technologies in the early 1970s, has grown, taken shape and strengthened to become recognised as the critical literacy for the 21st century. Sometimes interpreted as one of a number of literacies, IL is also described as the overarching literacy essential for 21st century living. Today, IL is inextricably associated with information practices and critical thinking in the information

and communication technology (ICT) environment".⁵

IL as a set of skills, enables the individuals in understanding the nature of information; realising information need in terms of quantity, quality, type and format; articulating appropriate search expression to locate it; organising and evaluating the retrieved information for further use in study and research in an ethical manner. Eventually, IL focuses on making individuals competent enough for seeking authentic information and its effective and ethical use.

2. INFORMATION LITERACY DEFINED

Information literacy is the ability to locate, evaluate, and use information to become independent life-long learners. Through general literacy one can gain knowledge in a specific subject domain, whilst IL empowers an individual in gaining skills that can serve his eternal and varying information needs and interests for personal and professional accomplishments.

According to Chartered Institute of Library and Information Professionals (CILIP): "IL is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner"⁶.

The American Library Association states "IL is a mean of personal empowerment. It allows people to verify or refute expert opinion and to become independent seekers of truth"⁷.

IL is considered as a survival skill for the new century, the key competency for independent study, self-directed learner, lifelong learning, and the foundation of a literate society. It is important for students' achievements and considered a desirable outcome of higher education⁸. Boekhorst from the Netherlands, summarises all the definitions and descriptions of information literacy presented over the years in three concepts⁹:

✕ *The ICT concept:* IL refers to the competence to use ICT to retrieve and disseminate information;

- ✧ *The information (re)sources concept:* IL refers to the competence to find and use information independently or with the aid of intermediaries; and
- ✧ *The information process concept:* IL refers to the process of recognising information need, retrieving, evaluating, using and disseminating information to acquire or knowledge. This concept includes both the ICT and information (re)sources concept, and persons are considered as information systems that retrieve, evaluate, process, and disseminate information to make decisions to survive, for self-actualisation and development.

In succinct, " IL is the adoption of appropriate information behaviour to acquire information tailored to individual information needs through available channels and/or media; critical thinking to evaluate its authenticity; and info-ethics for its fair use.

3. SIGNIFICANCE OF INFORMATION LITERACY

The precursors of IL were involved in familiarising the users with library, its ambience and tools and services for hassle-free retrieval of information. However, in the light of growing recognition to life long and self-directed learning, the bibliographic instruction is transformed into IL, which emphasises the use of ICT for information search and retrieval; critically analyse it and duly acknowledge the 'source of information' (human or physical or virtual) prior to sharing or using it. It equips the learners with the 21st century skills, viz., critical thinking, evaluation of information and its use, communication, and collaboration for appropriate decision-making and for problem solving.

Abid states: "In the next century, an educated graduate will no longer be defined as one who has absorbed a certain body of factual information but as one who knows how to find, evaluate, and apply needed information".

A student who is 'information illiterate' will have fewer opportunities to cope with

the current information age, when compared to 'information literate' students. Henceforth, acknowledging the significance of IL as a thriving and driving force in the information society, the educational institutions need to develop strategies to ensure the inclusion of IL in the curricula through print modules and/or through the integrated online services spearheaded by an academic library.

Within the framework of the United Nations Literacy Decade (2003-2012), in the new Information Literacy Programme of UNESCO, the objectives¹⁰ outlined for IL are:

- ✧ To foster the development of an information literate citizenry with the technical and critical-thinking skills and abilities needed to identify, acquire, manage and use information to enrich all aspects of their work and personal lives;
- ✧ To identify and encourage effective practices in IL around the world;
- ✧ To promote IL through regional approaches and to facilitate exchanges;
- ✧ To propose innovative curricula about IL; and
- ✧ To improve cooperation between government officials, researchers, educators, librarians and media practitioners.

The focus of these objectives is to make citizens information literate through effective strategies and practices and integrated curricula, which in turn makes collaboration between academicians, researchers, administrators, and information communication practitioners (LIS and mass-media professionals) obligatory.

UNESCO's Information for All Programme (IFAP) emphasises the need to equip the people with skills for accessing and using information as: "IL enhances the pursuit of knowledge by equipping individuals with the skills and abilities for critical reception, assessment, and use of information in their professional and personal lives"¹¹.

It accentuates "Everybody should have the opportunity to acquire the IL skills to understand, participate actively in, and benefit

fully from the emerging knowledge societies"¹².

As ICT made information environment increasingly complex, educators are realising the need for making learners engage with the information environment as part of their formal learning processes. IL is generally seen as pivotal to the pursuit of lifelong learning, and central to achieving both personal empowerment and professional development. IT lays a robust foundation, not only for lifelong learning but also for coping with the incessant socio-cultural and technological changes. IL will play a catalytic role to transform the 'information society' of today into the 'learning society' of tomorrow. Owing to its significance in all facets of learning society, library and information practitioners need to re-conceptualise their instructional strategies and adopt e-pedagogy to break down the barriers to learning that are being created unintentionally by c-mode (classroom mode) instructions.

4. STRATEGIES AND COLLABORATIVE APPROACHES

Strategies for imparting IL instruction depend on and vary with the availability of resources, both physical and human, with the library and within the academic institution. The forms of instruction may range from stand-alone courses to online tutorials through formal class settings, small group sessions, one-on-one encounters, written guides and brochures, audio-visual presentations, computer-assisted instructions, and course-related or course-integrated instructions.

Among all these available options, online tutorials are gaining momentum, since ICT is flexible enough to reach out the target groups wherever they are and whenever they want to access the IL modules. Moreover, ICT offers multiple tools and formats to users to access, retrieve, manipulate, analyse, and repackage information in a customised form to meet their needs for effective use and scholarly communication. Empirical studies proved that students who use technology as a tool may become better at managing information, and communicating and presenting

ideas¹³. However, ensuring the requisite information infrastructure for equitable access; strategic alliance between library staff and faculty; apposite instructional modules; appropriate pedagogical processes are the prerequisites for designing and developing 'learner-centric and usable information portal for imparting IL instructions. Formulating learner-centric IL instructional strategy is the factor critical for its successful implementation.

4.1 Information Infrastructure

Information infrastructure refers to the processing and communication networks and associated tools (hardware and software) that support information accessibility and interaction and collaboration among people and organisations. Institutions should have an appropriate information policy (IP) to ensure needed information infrastructure for incessant and equitable access to information and IL modules. IP should be flexible, dynamic, and responsive to changing circumstances for the realisation of institutional objectives concerning free flow of information. Lack of infrastructure policies and implementation strategies would make it virtually impossible to deliver the technology-enabled services in an efficient manner. So, institution's IP should not only serve as a proactive (shape the events desired) policy but also a reactive (respond to the events) policy.

4.2 Collaboration Between Library Staff and Faculty

Working in collaboration with the faculty is a prerequisite in an academic system to plan and design IL programmes, as the faculty can better understand and assess students' learning styles and suggest appropriate instructing and/or teaching strategies for motivating the students.

Even though library and information practitioners are competent enough to access and retrieve, evaluate and consolidate, and repackage information to meet the varying and customised information needs of users (students and faculty), there is rarely due

interaction between the faculty and the library staff owing to several organisational factors.

Library and information professionals' competencies need due recognition and they also need to be engaged in the institution's curriculum development process and instructional strategy so as to build an appropriate information repository based on the curriculum. This will improve learners' access to quality information resources and enrich their learning process.

As librarians' influence over students is limited when compared to that of faculty, students may marginalise IL itself. Therefore, efforts of making learners 'information literate' should not be endorsed to library and information personnel only, efforts by the faculty at various levels are equally important. Integrating IL into the curricula through partnership and collaboration with educators is vital, not only for adapting suitable pedagogy, but even for teaching IL at anticipated and deeper levels.

4.3 Pedagogical Skills

Pedagogy is the art of instructing and teaching, through various activities to impart knowledge and/or skills based on learners' comprehension levels. Many commonly used teaching styles do not serve learners well, because they are often too rigid and rely heavily on one-way teaching practices, placing students in a passive role. Many educational researchers advocate 'structured teaching'—a combination of direct instructions, guided practices, and independent learning, i.e., in a learners-friendly environment.

Teacher-dominated pedagogy, placing students in a passive role, is undesirable. UNESCO EFA Global Monitoring Report, 2005 accentuates pedagogy in teaching and learning process as: "Pedagogical processes lie at the heart of day-to-day learning. Indicators, such as time spent on learning; use of interactive teaching methods, and how progress is assessed are among those applied to these processes".¹⁴

LIS professionals need to develop pedagogical skills to lay an education path for the LIS profession, and understand the

nature of student learning about the media; and the relationship between theory and practice. To gain these prerequisite skills, librarians should draw their attention towards actual teaching, learning, and assessment. They need to acquire knowledge about 'teaching strategies' for imparting IL instructions in an effective manner. e-pedagogy is the prime alternative for them to make effective use of potential technologies for overcoming the space and time barriers associated with customary forms of classroom-based instructions.

e-pedagogy might be broadly defined as learning design that incorporates educational quality, values and effectiveness of various learning activities supported by technologies¹⁵. Importantly, e-pedagogies provide frameworks that make explicit the educational philosophies and principles underpinning the use of online methods to achieve learning goals. e-pedagogy enhances learners' motivation and adds value to their learning experience, as it compensates for any loss that their absence created in c-mode of interaction.

4.4 Instructional Modules

A module is basically a distinct unit embedding information. One should design and develop independent and interrelated modules and combine these into a course or programme. Each module with a distinct title embeds information pertinent to that title. All these interrelated information units are integrated into an (whole) information system such as IL instructional programme.

The various IL modules should be designed based on user studies involving assessment of users information-seeking behaviour and after analysing their needs and skill gaps.

Invariably, the information portal should focus on nourishing learners with information (re)search, evaluation and managing skills that facilitate independent learning, knowledge building and sharing (information modules requisite for nurturing these IL skills have been discussed in detail under section Designing an Information Portal).

5. INFORMATION LITERACY THROUGH INFORMATION PORTAL

Technology-infusion for delivering IL is the utmost priority, not only to acclimatise the students to the e-ambience, but also for facilitating convenient and flexible access to IL modules that enhance competencies for selecting reliable and relevant and discarding irrelevant information, eventually progressing toward gaining expertise.

The capacity of computing and communication technologies connects the learners with learning resources, both physical and human, i.e., content and educators, despite the geographical and temporal barriers. These technological advances made imperative even for libraries to re-evaluate and redesign their information access and delivery methods to meet the increasing demand for rapid, anytime-anyplace delivery of resources and services. As imparting IL instructions through online modules is preferred to other alternative forms in the networked era there is a need to design and develop an integrated information portal to render web-enabled services, in conjunction with e-information literacy programmes is imperative.

5.1 Information Portal

A portal is an integrated and personalised web-based interface to information, applications and collaborative services. According to Noer: "With the expanding Internet and particularly, the increasing availability of high bandwidth connections, the age of portals is upon us. Portals are merely aggregations of services on the website so the user does not have to hunt in many different sites for the things s/he wants, whether these things are information or games or shopping"¹⁶.

Noer insists, "Libraries need to establish their information portals with a broad spectrum of information providing services so they can retain their position as the one-stop shop for information in their community"¹⁷. His statements imply that information portal should respond to the users' changing needs and demands.

Libraries should build a robust portal that presents a wide spectrum of educational and learning opportunities and a best alternative for many other instructional media to present information effectively, not only through text, but also through audio and video, images and graphics.

An information portal allows aggregation of both content and application (at the user interface level) into a single interface with minimal coding and greater flexibility. A user interface (UI) is the subsystem of an information system, which facilitates data transfer between the user and the computer and vice versa. It improves user and computer communication, allowing users to effectively perceive and consume information.

A UI encompasses both the visual effects (what information channels are on users' screen; how these appear) and functional effects (how to manipulate it for searching, retrieving, sorting, and interacting). A well-designed UI should allow users to find and use the information that the information system provides more efficiently, so as to enhance the quality of interaction with information systems. The UI of an information portal embeds command-line interfaces, menu-driven interfaces, and graphical user interfaces.

An integrated information portal of a library serves as a single access point combining the library catalogue (OPAC), subscription databases (bibliographic and reference), subject gateways, electronic journals, etc. It meets the individual needs of users, and either the system itself can tailor the delivery and presentation of information content or the users themselves can customise the type and format of information displayed¹⁸. Libraries need to build such portals that offer a collaborative and communication space, which can be a virtual addition to the existing physical structure, reaching out the patrons and streamlining the access modes, making e-communication and web interfaces much more effective for the users. To reiterate the significance of e-communication, the electronic mode makes it possible to deliver information wherever the reader may be (for instance, to his or

her computer in the home or workplace, or by wireless technology to any place), to present information that cannot be captured in print (such as video attachments, tables that can be manipulated, and so on), and to facilitate use of information through quality interfaces and search capabilities”¹⁹.

Realising the significance of e-mode instruction, LIS practitioners need to design online tutorials and modules for fostering IL and encourage active and reflective learning. e-information literacy can be considered as a supplementary aid to conventional library instruction sessions and printed instructional materials.

5.2 e-Information Literacy

Even though penetration of and access to ICTs is fairly low in developing countries like India, e-information literacy is preferred to print-based instruction as it drives away the barriers associated with face-to-face instruction and offers convenient and flexible access to multiple audience. Owing to its flexible structure, e-mode enables one to devise and develop IL modules in varying forms, formats, and levels depending on the comprehending level of the learners. Moreover, deploying IL modules over the portal acclimatises learners with electronic ambience, as they need to be on the e-arena to gain access to the e-modules. Librarians by integrating their inherent instructional competencies with the available e-com technologies should develop e-modules for IL programmes. It is imperative on the part of library and information practitioners to design and develop an information portal merging IL modules with other online services.

5.3 Designing an Integrated Information Portal

Designing an integrated information portal with a usable and interactive interface, inevitably demands identifying the target audience and/or users and analyses of their needs and information seeking behaviours. A commitment to understand the users is indispensable for conceiving and developing a user-centric information portal. One needs to involve the

target groups right from the conceptualisation of idea to development phase. User studies perceive the information seeking attitudes and skill gaps of the learners and facilitate design and development of IL instructional modules in such a manner that aid learners in effective and eternal learning process. Along with user studies, due attention is to be paid to the various IL Standards (ACRL–Association of College and Research Libraries, US; SCONUL–Society of College, National and University Libraries, UK; ANZIL–Australian New Zealand Institute for Information Literacy, etc.); information seeking models (Kuhlthau model, Big6 model, etc.); and learning styles relevant to IL (active learning, reflective learning, problem-based learning) prior to the designing of an information portal.

Instructional modules requisite for equipping the learners with IL skills under INFOSEEK model that aid learners in efficient retrieval, effective consumption, and ethical use and scholarly communication of information. It can be depicted as:

INFO Information

S Search and retrieval

Knowledge about nature of information and information (re)sources

Distinguishing among primary, secondary, and tertiary sources

Fluency with various access tools

Catalogues (OPAC), indices and abstracts, bibliographies, databases, subject gateways, etc.

Acquaintance with search engines and search strategies

Formulating and refining search expressions

Broadening and narrowing search;

E Evaluate critically

Credibility, authenticity of source of information, and quality and currency of information;

E Effective and ethical use

Consuming information for the accomplishment of tasks and generation of new knowledge in a form and format essential;

Copyright, plagiarism, citation styles (APA, MLA, Chicago style, etc.); and

- K** Knowledge sharing and communicating research results and innovative ideas among peer groups via virtual communities.

Modules for assessing the IL skills that students imbibe should also be devised and deployed over the portal in the form of online assignments, exercises, and quizzes.

Since libraries have been intrinsically instructing users in various ways, it is customary on their part to build an information portal for imparting IL instructions to support learners' information seeking activities; browsing, searching and retrieving relevant resources held in the institution's databases and/or external databases. Library portal should provide the learners with such mechanisms that aid in communication and collaboration. It needs to provide a path to all possible access points, and embed broad array of exploratory links to navigate, search and browse and scan the resources. To enrich learning and research by providing timely and convenient access to appropriate resources and productive use of collections in the web environment, an integrated information portal should be a portfolio of resources, embedded with IL instructional modules as depicted under INFOSEEK.

e-instructions can be imparted using multiple media such as text, pictures, audio, video, animations and graphics. However, prior to deciding on type and form of instructional resources, one should check the available infrastructure facilities such as learning platform; bandwidth with which learners access the instructional modules; any special plug-in required for viewing over the Web, etc. with the parent institution. If the access is via a narrow bandwidth, text should be opted, conversely if the institution harnesses wide bandwidth for data transfer, then IL instructions using audio-visual or animated files should be used.

6. SUGGESTIONS AND CONCLUSION

IL initiatives in India are not promising, even though librarians have expertise in imparting instructions. They need to expedite 'IL movement' with a mission to empower the citizens with the 21st century skills that aid in understanding the information infrastructure to find and evaluate the information content and employ it effectively.

Primarily, one may opt for print modules for designing and imparting IL programmes, since in India inadequacies for providing uninterrupted access to technology and its tools for learners are prevailing. However, shifting to electronic portals is advantageous to learners as it offers flexible access to innumerable audience regardless of time and space barriers. Correspondingly, deploying e-modules are preferable to print, as using this technology gives learners hands-on experience.

Delivering and successful implementation of e-information literacy programmes is dependent to a greater extent on institution's information policy, infrastructure, and resources available (physical, human, fiscal, time), teaching and learning approaches, and user studies. Above all, it is the use of apposite pedagogical skills of librarians that offer active and reflective learning ambience to students. e-pedagogy aids them in taking full advantage of the potential of online technology to overcome the constraints of time and space associated with customary forms of classroom-based instructions²⁰.

Collaboration of library staff and faculty is a prerequisite to planning and designing IL programmes, which enable librarians not only to assess students learning styles for developing IL modules but also to ascertain resources needed to maintain a cohesive collection for the library. Further, this collaboration allows the faculty to connect their courses to the learning resources of the library, encouraging independent learning and library researching habits.

Emphatically, information practitioners need to deliver IL instructions via web-enabled

and curriculum-integrated models in both formal and non-formal education settings to foster IL. Embedding IL modules within the curricula will necessitate the collaborative and concerted efforts of information specialists, educators, and last but not the least, the user groups, as devising and developing an integrated information portal which is primarily learner-focused.

Information portal should be designed and developed with a user-friendly interface, embedding appropriate navigation tools to access the various IL modules deployed. LIS professionals should play a pivotal role in teaching and/or instructing information users 'how to become lifelong learners'. Since information professionals are adept at instructing learners on 'how to gain access to required information using various bibliographic tools', and how to evaluate it; it will not be an intimidating task for them to design and develop a portal intended for deploying online IL modules.

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