

# Information Literacy and Higher Education Competency Standards

A. Amudhavalli

*Department of Information Science  
University of Madras, Chennai-600 005  
E-mail: amudha75@yahoo.com*

## ABSTRACT

IL is common to all disciplines, to environments, and to all levels of education. Developing lifelong learners is central to the mission of higher education institutions ensuring that individuals have the intellectual abilities of reasoning and critical thinking and by helping them construct a framework for learning how to learn. Incorporating IL across curricula, in all programme and services, and throughout the administrative life of the university, requires the collaborative efforts of faculty, librarians, and administrators.

**Keywords:** Information literacy, information literacy standards, higher education.

## 1. CONCEPT

IL refers to 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". It forms the basis for lifelong learning. It is common to all disciplines, to environments, and to all levels of education. It enables learners to master content and investigations, become more self-directed, and assures greater control over their own learning process. Since IL augments students' competency with evaluating, managing, and using information, it is now considered by several regional and national accredited associations as a key outcome for college students. IL is a survival skill in the Information Age. Hence, this calls for a restructuring of the learning process itself, rather than the curriculum. In response to the challenges of incorporating technology into teaching and learning and the creation of community at a higher-level education, the primary goal of Library and Information Professional (LIP) is to create an electronic community in which communication, collaboration, and information technologies are integral

to teaching and learning; ultimately, the aim is for IL, which address faculty development, active student learning, and facilities redesign. In this modern information environment, IL and Libraries are interlinked with each other. It is the prime role and responsibility of the LIP to create adequate awareness, availability and accessibility to local data for scientific progress of the country and the world.

To quote American Library Association, "Information literacy is 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. SCOPE

IL also is increasingly important in the contemporary environment of rapid technological change and proliferating information resources. Because of the escalating complexity of this environment, individuals are faced with diverse, abundant information choices—in their academic studies, in the workplace, and in their

personal lives. Information is available through libraries, community resources, special interest organisations, media, and the Internet—and increasingly, information comes to individuals in unfiltered formats, raising questions about its authenticity, validity, and reliability. In addition, information is available through multiple media, including graphical, aural, and textual, and these pose new challenges for individuals in evaluating and understanding it. The uncertain quality and expanding quantity of information pose large challenges for society. The sheer abundance of information will not in itself create a more informed citizenry without a complementary cluster of abilities necessary to use information effectively. An information literate individual is able to:

- ✘ Determine the extent of information needed
- ✘ Access the needed information effectively and efficiently
- ✘ Evaluate information and its sources critically
- ✘ Incorporate selected information into one's knowledge base
- ✘ Use information effectively to accomplish a specific purpose
- ✘ Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally.

### **3. INFORMATION LITERACY AND HIGHER EDUCATION**

Developing lifelong learners is central to the mission of higher education institutions. By ensuring that individuals have the intellectual abilities of reasoning and critical thinking, and by helping them construct a framework for learning, colleges and universities should provide the foundation for continued growth throughout their careers, as well as in their roles as informed citizens and members of communities.

IL is a key component of, and contributor to, lifelong learning. IL competency extends learning beyond formal classroom settings and provides practice with self-directed investigations as individuals move into internships, first professional positions, and increasing responsibilities in all arenas of life. Because information literacy augments students' competency with evaluating, managing and using information, it is now considered by several regional and discipline-based accreditation associations as a key outcome for college students.

For students not on traditional campuses, information resources are often available through networks and other channels. Distributed learning technologies permit teaching and learning to occur when the teacher and the student are not in the same place at the same time. The challenge for those promoting IL in distance education courses is to develop a comparable range of experiences in learning about information resources as offered in traditional campuses. IL competencies for distance learning students should be comparable to those for "on campus" students. Incorporating IL across curricula, in all programmes and services, and throughout the administrative life of the university, requires the collaborative efforts of faculty, librarians, and administrators. Through lectures and by leading discussions, faculty establishes the context for learning. Faculty also inspire students to explore the unknown, offer guidance on how best to fulfill information needs, and monitor students' progress. Academic librarians coordinate the evaluation and selection of intellectual resources for programmes and services; organise, and maintain collections and many points of access to information; and provide instruction to students and faculty who seek information. Administrators create opportunities for collaboration and staff development among faculty, librarians, and other professionals who initiate IL programmes, lead in planning and budgeting for those programmes, and provide ongoing resources to sustain them. IL Competency Standards for Higher Education provides a framework for assessing the information literate individual. The competencies presented here outline the process by which faculty, librarians and others pinpoint specific indicators that identify a student as information literate.

### **4. COMPETENCY STANDARDS FOR HIGHER EDUCATION**

There are five standards and twenty-two performance indicators for assessing the information literate. The standards focus upon the needs of students in higher education at all levels. The standards also list a range of outcomes for assessing student progress toward IL.

#### **4.1 Standard One**

The information literate student determines the nature and extent of the information needed.

##### **Performance Indicators**

Part 1: The information literate student defines and articulates the need for information. The outcome includes:

- ✘ Confers with instructors and participates in class discussions, peer workgroups, and electronic discussions to identify a research topic or other information need
- ✘ Develops a thesis statement and formulates questions based on the information need
- ✘ Explores general information sources to increase familiarity with the topic
- ✘ Defines or modifies the information need to achieve a manageable focus
- ✘ Identifies key concepts and terms that describe the information need
- ✘ Recognises that existing information can be combined with original thought, experimentation, and/or analysis to produce new information.

Part 2: The information literate student identifies a variety of types and formats of potential sources for information. The outcome includes:

- ✘ Knows how information is formally and informally produced, organised, and disseminated
- ✘ Recognises that knowledge can be organised into disciplines that influence the way information is accessed
- ✘ Identifies the value and differences of potential resources in a variety of formats (e.g., multimedia, database, website, data set, audio/visual, book)
- ✘ Identifies the purpose and audience of potential resources (e.g., popular vs. scholarly, current vs. historical)
- ✘ Differentiates between primary and secondary sources, recognising how their use and importance vary with each discipline
- ✘ Realises that information may need to be constructed with raw data from primary sources.

Part 3: The information literate student considers the costs and benefits of acquiring the needed information. The outcome includes:

- ✘ Determines the availability of needed information and makes decisions on broadening the information seeking process beyond local resources (e.g., interlibrary loan; using resources at their locations; obtaining images, videos, text, or sound)
- ✘ Considers the feasibility of acquiring a new language or skill (e.g., foreign or discipline-

based) in order to gather needed information and to understand its context

- ✘ Defines a realistic overall plan and timeline to acquire the needed information.

Part 4: The information literate student reevaluates the nature and extent of the information need. The outcome includes:

- ✘ Reviews the initial information need to clarify, revise or refine the question
- ✘ Describes criteria used to make information decisions and choices.

## 4.2 Standard Two

The information literate student accesses needed information effectively and efficiently.

### Performance Indicators

Part 1: The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information. The outcome includes:

- ✘ Identifies appropriate investigative methods (e.g., laboratory experiment, simulation, fieldwork)
- ✘ Investigates benefits and applicability of various investigative methods
- ✘ Investigates the scope, content, and organisation of information retrieval systems
- ✘ Selects efficient and effective approaches for accessing the information needed from the investigative method or information retrieval system.

Part 2: The information literate student constructs and implements effectively-designed search strategies. The outcome includes:

- ✘ Develops a research plan appropriate to the investigative method
- ✘ Identifies keywords, synonyms and related terms for the information needed
- ✘ Selects controlled vocabulary specific to the discipline or information retrieval source
- ✘ Constructs a search strategy using appropriate commands for the information retrieval system selected (e.g., Boolean operators, truncation,

and proximity for search engines; internal organisers such as indexes for books)

- ✘ Implements the search strategy in various information retrieval systems using different user interfaces and search engines, with different command languages, protocols, and search parameters
- ✘ Implements the search using investigative protocols appropriate to the discipline.

Part 3: The information literate student retrieves information online or in person using a variety of methods. The outcome includes:

- ✘ Uses various search systems to retrieve information in a variety of formats
- ✘ Uses various classification schemes and other systems (e.g., call number systems or indexes) to locate information resources within the library or to identify specific sites for physical exploration
- ✘ Uses specialised online or in person services available at the institution to retrieve information needed (e.g., interlibrary loan/document delivery, professional associations, institutional research offices, community resources, experts and practitioners)
- ✘ Uses surveys, letters, interviews, and other forms of inquiry to retrieve primary information.

Part 4: The information literate student refines the search strategy if necessary. The outcome includes:

- ✘ Assesses the quantity, quality, and relevance of the search results to determine whether alternative information retrieval systems or investigative methods should be utilised
- ✘ Identifies gaps in the information retrieved and determines if the search strategy should be revised
- ✘ Repeats the search using the revised strategy as necessary.

Part 5: The information literate student extracts, records, and manages the information and its sources. The outcomes include:

- ✘ Selects among various technologies the most appropriate one for the task of extracting the needed information (e.g., copy/paste software functions, photocopier, scanner, audio/visual equipment, or exploratory instruments)

- ✘ Creates a system for organising the information
- ✘ Differentiates between the types of sources cited and understands the elements and correct syntax of a citation for a wide range of resources
- ✘ Records all pertinent citation information for future reference
- ✘ Uses various technologies to manage the information selected and organised.

### 4.3 Standard Three

The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

#### Performance Indicators

Part 1: The information literate student summarises the main ideas to be extracted from the information gathered. The outcome includes:

- ✘ Reads the text and selects main ideas
- ✘ Restates textual concepts in his/her own words and selects data accurately
- ✘ Identifies verbatim material that can be then appropriately quoted.

Part 2: The information literate student articulates and applies initial criteria for evaluating both the information and its sources. The outcome includes:

- ✘ Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias
- ✘ Analyses the structure and logic of supporting arguments or methods
- ✘ Recognises prejudice, deception, or manipulation
- ✘ Recognises the cultural, physical, or other context within which the information was created and understands the impact of context on interpreting the information.

Part 3: The information literate student synthesises main ideas to construct new concepts. The outcome includes:

- ✘ Recognises interrelationships among concepts and combines them into potentially useful primary statements with supporting evidence

- ✘ Extends initial synthesis, when possible, at a higher level of abstraction to construct new hypotheses that may require additional information
- ✘ Utilises computer and other technologies (e.g. spreadsheets, databases, multimedia, and audio or visual equipment) for studying the interaction of ideas and other phenomena.

Part 4: The information literate student compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information. The outcome includes:

- ✘ Determines whether information satisfies the research or other information need
- ✘ Uses consciously selected criteria to determine whether the information contradicts or verifies information used from other sources
- ✘ Draws conclusions based upon information gathered
- ✘ Tests theories with discipline-appropriate techniques (e.g., simulators, experiments)
- ✘ Determines probable accuracy by questioning the source of the data, the limitations of the information gathering tools or strategies, and the reasonableness of the conclusions
- ✘ Integrates new information with previous information or knowledge
- ✘ Selects information that provides evidence for the topic.

Part 5: The information literate student determines whether the new knowledge has an impact on the individual's value system and takes steps to reconcile differences. The outcome includes:

- ✘ Investigates differing viewpoints encountered in the literature
- ✘ Determines whether to incorporate or reject viewpoints encountered.

Part 6: The information literate student validates understanding and interpretation of the information through discourse with other individuals, subject-area experts, and/or practitioners. The outcome includes:

- ✘ Participates in classroom and other discussions
- ✘ Participates in class-sponsored electronic communication forums designed to encourage discourse on the topic (e.g., email, bulletin boards, chat rooms)

- ✘ Seeks expert opinion through a variety of mechanisms (e.g., interviews, email, listservs).

Part 7: The information literate student determines whether the initial query should be revised. The outcome includes:

- ✘ Determines if original information need has been satisfied or if additional information is needed
- ✘ Reviews search strategy and incorporates additional concepts as necessary
- ✘ Reviews information retrieval sources used and expands to include others as needed.

#### 4.4 Standard Four

The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.

##### Performance Indicators

Part 1: The information literate student applies new and prior information to the planning and creation of a particular product or performance. The outcome includes:

- ✘ Organises the content in a manner that supports the purposes and format of the product or performance (e.g. outlines, drafts, storyboards)
- ✘ Articulates knowledge and skills transferred from prior experiences to planning and creating the product or performance
- ✘ Integrates the new and prior information, including quotations and paraphrasing, in a manner that supports the purposes of the product or performance
- ✘ Manipulates digital text, images, and data, as needed, transferring them from their original locations and formats to a new context.

Part 2: The information literate student revises the development process for the product or performance. The outcome includes:

- ✘ Maintains a journal or log of activities related to the information seeking, evaluating, and communicating process
- ✘ Reflects on past successes, failures, and alternative strategies.

Part 3: The information literate student communicates the product or performance effectively to others. The outcome includes:

- ✘ Chooses a communication medium and format

that best supports the purposes of the product or performance and the intended audience

- ✘ Uses a range of information technology applications in creating the product or performance
- ✘ Incorporates principles of design and communication
- ✘ Communicates clearly and with a style that supports the purposes of the intended audience.

#### 4.5 Standard Five

The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

##### Performance Indicators

Part 1: The information literate student understands many of the ethical, legal and socio-economic issues surrounding information and information technology. The outcome includes:

- ✘ Identifies and discusses issues related to privacy and security in both the print and electronic environments
- ✘ Identifies and discusses issues related to free vs. fee-based access to information
- ✘ Identifies and discusses issues related to censorship and freedom of speech
- ✘ Demonstrates an understanding of intellectual property, copyright, and fair use of copyrighted material.

Part 2: The information literate student follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources. The outcome includes:

- ✘ Participates in electronic discussions following accepted practices (e.g. "Netiquette")
- ✘ Uses approved passwords and other forms of ID for access to information resources
- ✘ Complies with institutional policies on access to information resources
- ✘ Preserves the integrity of information resources, equipment, systems and facilities
- ✘ Legally obtains, stores, and disseminates text, data, images, or sound
- ✘ Demonstrates an understanding of what constitutes

plagiarism and does not represent work attributable to others as his/her own

- ✘ Demonstrates an understanding of institutional policies related to human subjects research.

Part 3: The information literate student acknowledges the use of information sources in communicating the product or performance. The outcome includes:

- ✘ Selects an appropriate documentation style and uses it consistently to cite sources
- ✘ Posts permission granted notices, as needed, for copyrighted material.

These outcomes serve as guidelines for faculty, librarians, and others in developing local methods for measuring student learning in the context of an institution's unique mission. In addition to assessing all students' basic information literacy skills, faculty and librarians should also work together to develop assessment instruments and strategies in the context of particular disciplines, as information literacy manifests itself in the specific understanding of the knowledge creation, scholarly activity, and publication processes found in those disciplines. In implementing these standards, institutions need to recognise that different levels of thinking skills are associated with various learning outcomes—and therefore different instruments or methods are essential to assess those outcomes. It is strongly suggested that assessment methods appropriate to the thinking skills associated with each outcome be identified as an integral part of the institution's implementation plan.

## 5. ROLE OF INFORMATION PROFESSIONALS IN IL

The role and responsibilities of the LIP in IL campaign can be summed as follows:

### 5.1 Understand the Flow of Information

- ✘ Have working knowledge of a variety of information sources
- ✘ Understand how information is gathered, organised, packaged, and stored
- ✘ Understand the publication cycle and system of scholarly communication
- ✘ Learn how to articulate information needs
- ✘ Learn ways to keep current and deal with information overload
- ✘ Understand concepts of intellectual property.

## 5.2 Assess and Select Appropriate Resources for Information

- ✘ Assess available sources of information, including print and electronic
- ✘ Match source of information to information need
- ✘ Understand the difference between primary and secondary sources.

## 5.3 Search and Locate Information

- ✘ Understand structure and content of the resource being used
- ✘ Know how to build successful search strategies using Boolean logic, field searching and limiters
- ✘ Know how to alter the search if the first attempt does not find information or finds too much information
- ✘ Understand how to interpret citations and use call numbers to locate print items
- ✘ Know how to obtain materials not available locally.

## 5.4 Evaluate and Interpret Information

- ✘ Distinguish relevant from irrelevant information
- ✘ Determine the factual accuracy of a statement
- ✘ Critique for currency, authority, bias, opinions and assumptions.

## 5.5 Extract and Organise Information

- ✘ Understand the process of copying, saving, downloading, e-mailing, or printing search results
- ✘ Know how to extract relevant information and document its source
- ✘ Know how to organise extracted information for practical applications.

## 5.6 Integrate and Document Information

- ✘ Know how to cite sources accurately and completely
- ✘ Understand how to integrate new information into an existing body of knowledge.

## 6. CONCLUSION

However, there is much work to be done before integrated IL across the curriculum is a standard

practice. There is a clear need for discussion of IL instruction outside the library field. A more multi-disciplinary approach to IL research and instruction will create opportunities for more substantial, curriculum-integrated and long-lasting instructional experiences that will benefit students throughout and beyond their academic careers.

## BIBLIOGRAPHY

1. Information literacy competency standards for higher education. American Library Association, 2000. <http://www.ala.org/acrl/ilcomstan.html>
2. ACRL best practices initiative: Characteristics of programs of information literacy that illustrate best practices, working edition. American Library Association. <http://www.ala.org/acrl/nili/criteria.html>
3. Bawden, D. Information and digital literacies: A review of concepts. *Journal of Documentation*, 2001, **57**(2), 218-59. (EJ 632 998).
4. Dewald, N. Transporting good library instruction practices into the Web environment: An analysis of online tutorials. *Journal of Academic Librarianship*, 1999, **25**(1), 26-31. (EJ 586 379).
5. Elkins, E.; Ellis, J. A.; Verostek, J. & Williamson, J. ESF 200, Information literacy: Syllabus and workforms. 2001. SUNY ESF Moon Library. <http://www.esf.edu/moonlib/ESF200.pdf>
6. Frantz, P. A scenario-based approach to credit course instruction. *Reference Services Review*, **30**(1), 37-42.
7. Kaip, S. It's not just for term papers: Solving real-life problems in an information literacy course. *College & Research Libraries News*, 2001, **62**(5), 496-98.
8. Marcum, J. W. Rethinking information literacy. *Library Quarterly*, 2002, **72**(1), 1-26. (IR 545 423).
9. Orr, D.; Appleton, M. & Wallin, M. Information literacy and flexible delivery: Creating a conceptual framework and model. *Journal of Academic Librarianship*, 2001, **27**(6), 457-63. (IR 545 104).
10. Snavely, L. & Cooper, N. Competing agendas in higher education: Finding a place for information literacy. *Reference & User Services Quarterly* 1997, **37**(1), 53-62. (EJ 593 504).

11. Stoffle, C.J. Literacy 101 for the digital age. *American Libraries*, 1998, **29**(11), 46-48. (EJ 582 146).
12. University of Washington information literacy learning. University of Washington, 2001. <http://www.lib.washington.edu/uwill/index.html>
13. Veldof, J. & Beavers, K. Tackling mental models for the online library tutorial. *Research Strategies*, 2001, **18**(1), 3-20.
14. Wilson, L. A. Information literacy: Fluency across and beyond the university. *In Library user education: Powerful learning, powerful partnerships*, edited by B.I. Dewey, Scarecrow Press, Lanham, MA, 2001.

## About the Author

**Dr A. Amudhavalli** is presently a Professor in the Department of LIS, University of Madras, Chapauk, Chennai. He was a Visiting Fellow of the Salzburg Fellow-2005 and International Visitors Programme (IVP) Fellow-USA 1995. Dr Amudhavalli has contributed five publications in the field of LIS. He has been honoured with Commonwealth Fellowship for the year 1992-3. He was also the member for various Committees, viz., TN State Library 2007; Editorial Advisory Committee, SAIS, 2006 and Standing Committee, Greenstone Digital Library Software–Asian Region. His field of specialisations are scientometrics, communication science, research methodology & information systems & services. He is also the life member of Indian Library Association (ILA), Indian Association of Special Libraries and Information Centres (IASLIC), Indian Association of Teachers of Library and Information Science (IATLIS), and Madras Library Association (MALA).