Appendix I

ACRL's Information Literacy Standards for Teacher Education

Information Literacy Standards for Teacher Education

EBSS Instruction for Educators Committee 2006-2007 – 2010-2011

Approved by the ACRL Board of Directors at the Spring Executive Committee Meeting

May 11, 2011

Introduction

The quickly changing information and technology landscape requires increasingly sophisticated information literacy skills for the navigation, evaluation, and use of information (Jenkins, 2006). Teachers play a key role in providing students with diverse opportunities to learn how to use information wisely. Those preparing to become pre-kindergarten to twelfth grade (PK-12) teachers require a comprehensive understanding of information literacy to guide their own knowledge creation activities that will ultimately affect their future students. Yet, researchers have shown that future teachers often enter teaching without the necessary information literacy skills and knowledge (Laverty & Reed, 2006). Experiences in pre-service, graduate, and continuing education programs shape how teachers model and facilitate student learning in their own classrooms. The development of information literacy tools and knowledge is fundamental to teacher education students’ abilities to evaluate and use diverse and continually changing information sources in their academic work and pre-service teaching. Once in their own classrooms, PK-12 teachers model for their students how to critically navigate the current maze of information and how to use information to construct credible arguments.
literacy competence enables pre-service teachers to develop a robust understanding of the role of information in their lives, and to model information literacy to PK-12 students.

**Intended Audience**

The Information Literacy Standards for Teacher Education provides a bridge between the ACRL information Literacy Competency Standards for Higher Education (2000) and the application of the information literacy standards in teacher education contexts (Cook & Cooper, 2006). The intended audiences are teacher education librarians and faculty members, and secondarily teacher education students. As the majority of education students enrolled in higher education institutions, PK-12 pre-service teachers are the intended teacher education students, regardless of their content-area specialization.

**Purpose**

The main purposes of the Information Literacy Standards for Teacher Education are to:

- Guide teacher education faculty and instruction librarians in developing information literacy instructions for teacher education students.
- Enable the evaluation and assessment of such instruction and curricula through benchmarking outcomes.

Secondarily, the Standards aim to communicate to teacher education students' expectations for information literacy knowledge and skills they need to develop and apply in their academic work and pre-service teaching. The Standards also aim to lead teacher education students to consider how they might integrate information literacy into their future curriculum, instruction, and assessment activities once a member of the teaching profession.

**Sources Consulted**

The Information Literacy Standards for Teacher Education were built upon the framework and foundation of the Association of College and Research Libraries Information
Literacy Competency Standards for Higher Education (2000). In addition, the EBSS Instruction for Educators Committee utilized the resources gathered by previous Committee members on the “EBSS Connecting the Standards” website. The site was designed to provide examples of collaborative practices that help bridge the ACRL Information Literacy Competency Standards for Higher Education to existing education standards, such as those from the American Association of School Librarians (AASL) and the Association for Educational Communications and Technology (AECT). The web site facilitated a point-by-point analysis of standards documents from relevant education-specific associations and organizations. In addition, the Committee reviewed literature in both library science and education focusing on information literacy standards for teacher education students.

Development Process

This project was initiated in 2007 at the American Library Association Midwinter Meeting in Seattle. Initially under the auspices of the Education & Behavioral Sciences Section (EBSS) Ad Hoc information Literacy Steering Committee, the project was then assigned to the Instruction for Educators Committee given the Committee’s goals: to identify the issues and problems encountered by librarians serving schools, colleges, and departments of education in colleges and universities and to make distinctive contributions as education library specialists to the field of bibliographic instruction. The Committee began its work with a literature review and then considered the ACRL Information Literacy Competency Standards for Higher Education (2000) within the domain of teacher education. Professional standards for PK-12 education and educators, as cited above, as well as professional association members were consulted. Drafts of the standards were circulated to the EBSS Executive Committee, EBSS members, and faculty instructing pre-service teachers, and revised based on the feedback received. The “Checklist for Developing Subject-Specific Information Literacy Standards” developed by ACRL’s
Information Literacy Advisory Committee served as a guiding document throughout the development process.

**Standard One. The information literate teacher education student defines and articulates the need for information and selects strategies and tools to find that information.**

**Performance Indicators:**

**A. Defines the need for information.**

Outcomes Include:

1. Identifying the purpose for which information is needed. Examples: for a research paper, lesson plan, oral presentation, class exercises or project, or for action research on classroom practices.
2. Determining the factors that influence the information need. Examples: The nature, extent, type, and format of information needed; the intended audience such as school children, college classmates, or professional educators; or the scope, length, purpose, and role of the specific information-seeking task.
3. Exploring general information sources to increase familiarity with the scope of the information need. Examples: specialized education almanacs, encyclopedias, handbooks, bibliographies, dictionaries, curriculum or textbook collections, or trusted and evaluated online journals, blogs, wikis, newsfeeds, and news articles.
4. Defining or modifying the information need to achieve a manageable focus.
5. Reviewing the initial information need to clarify, revise, or refine initial impressions and ideas.

**B. Articulates the need for information.**

Outcomes Include:

1. Formulating key questions to develop and clarify the information need.
2. Breaking down the information need into component concepts and terms.

3. Brainstorming and selecting synonyms and alternative words that represent the component concepts.

C. Selects strategies to fulfill the information need.

Outcomes Include:

1. Recognizing that disciplines produce, organize, disseminate, describe, and preserve knowledge in different ways that influence the way it is searched or accessed. Example: Researchers looking for materials about elementary and secondary-level students will find that psychology often uses terms such as “childhood” and “adolescence” to describe school children and that these terms should be used when accessing information from psychological sources.

2. Understanding how information in the discipline of education and related behavioral and social sciences is formally and informally produced, organized, disseminated, described, accessed, and preserved.

3. Considering the relevancy of literature of other disciplines (e.g., psychology, social science, English, law) to address the information need.

4. Recognizing that fulfilling the information need may require combining existing information with original thought, experimentation, and/or analysis to produce new information.

5. Recognizing the key associations, institutions, organizations, government agencies, and platforms for information discovery, retrieval, and analysis.

6. Considering the value and potential of various information sources to fulfill the information need. Examples: finding a historical photograph for a lesson plan, incorporating popular literature in a scholarly research paper, or utilizing an audio oral
history for a class presentation. Identifying the value and potential of information sources specific to the field of education to fulfill the information need. Examples: accreditation standards, certification requirements.

7. curricula, handbooks, manuals, reference materials, statistics, textbooks, professional reviews, children's books, and professional association resources.

8. Creating a realistic plan and timeline to acquire the needed information based upon task, product, performance, or practice expectations and outcomes.

D. Selects tools to find information.

Outcomes Include:

1. Knowing where the needed information of the desired types and formats is available and how it can be accessed. Examples: knowing that bibliographic data about scholarly articles can be found in databases such as ERIC (Education Resources Information Center) and PsycINFO, or that education statistics can be accessed from the National Center for Education Statistics (NCES) web site.

2. Determining the availability, accessibility, and usability of information sources.

3. Making decisions on whether or not to broaden the information seeking process by including

4. sources available though interlibrary loan, local school or public libraries, or other institutions or organizations.

Standard Two. The information literate teacher education student locates and selects information based on its appropriateness to the specific information need and the developmental needs of the student.
Performance Indicators:

A. Locates information.

Outcomes Include:

1. Selecting tools that will provide access to the desired types and formats of information.
2. Utilizing the selected tools to access information.
3. Choosing and utilizing efficient and effective approaches for locating information in the selected tools.
   b. Employing advanced search strategies in various electronic information retrieval systems though the use of command languages, protocols, or search parameters. Examples: Boolean and proximity operators, truncation, or other limiters (e.g., peer-reviewed, empirical study, etc.), or using the advanced search (Reading level, Interest level, Lexile Range) on a website to identify materials to use in a lesson plan.
   c. Employing proper terminology by translating concepts into accurate keywords and synonyms by utilizing provided tools such as controlled vocabularies, thesauruses, or indexes. Example: Student keeps a record of their search terms, including keywords, descriptors from the Thesaurus of ERIC Descriptors, Library of Congress Authorities, or other subject headings.
   d. Revising searches based on results.
   e. Employing linkages among documents to identify additional pertinent information. Example: following cited references or hyperlinks.
   f. Employing specialized online or in-person services. Examples: interlibrary loan, virtual reference services. Curriculum Materials Center, the Children/Teen librarian at the local
public library, school librarians, professional associations, community resources, or other experts and practitioners.

**B. Selects information.**

Outcomes Include:

1. Assessing the quantity, quality, and relevance of the information found.

2. Determining the intellectual and professional aspects of choosing information sources that meet the information need appropriate for the intended audience. Examples: selecting topical information for a lesson plan that aligns to specific state or national standards for a specific age group; selecting professional literature to use when giving a presentation on teaching methodologies.

3. Choosing the relevant content from a source to meet the information need.

4. Utilizing the features of an information source to select the appropriate main ideas, data, and practices.

**Standard Three. The information literate teacher education student organizes and analyzes the information in the context of specific information needs and the developmental appropriateness for the audience.**

**Performance Indicators:**

**A. Organizes information.**

Outcomes Include:

1. Using various processes to maintain, organize, and manage located resources. Examples: saving and organizing information into files, folders, an accessible filing system, bibliographic management software (RefWorks, Zotero, EndNote, Procite, etc.), or Google Docs; or using a photocopier, scanner, or other piece of audio/visual equipment.
2. Tracking materials, practices, phrases, documents, or reproducible visual or statistical data for a given information need.

**B. Analyzes information.**

Outcomes Include:

1. Analyzing the structure, logic, and presentation of information and any supporting arguments or methods.
2. Selecting criteria to determine whether the preferred information contradicts or verifies other pieces of information and investigating differing viewpoints encountered.
3. Determining how an individual’s educational philosophy or theoretical perspective affects their use, selection, and presentation of information. Examples: keeping current by reading professional publications; or actively modeling information seeking, evaluation, and use for students; searching for data on an author’s philosophy or perspective.
4. Recognizing the commercial, cultural, historical, physical, or other context within which the information was created and understanding the impact of context on interpreting the information. Examples: evaluating and considering the purpose of a website: to inform or educate, to sell a product, or to promote an idea or stance; evaluating and considering authorship and currency of information when preparing a unit of study; considering multiple review sources when selecting classroom materials.
5. Recognizing the usefulness of and differences between information sources. Examples: research reports, case studies, surveys, and statistics; or primary, secondary, and tertiary sources.
Standard Four. The information literate teacher education student synthesizes, processes, and presents the information in a way that is appropriate for the purpose for which information is needed.

Performance Indicators:

A. Processes information.

Outcomes Include:

1. Determining whether to incorporate or reject viewpoints of information encountered.

2. Recognizing interrelationships, consistencies, and inconsistencies among information, concepts, curricula, data, or practices and combining them with supporting evidence. Example: reading and using peer-reviewed articles to make and support pedagogical changes in the classroom.

3. Extending ideas, information, and concepts, when possible, to a higher level of abstraction to construct new information, theories, or hypotheses. Example: realizing that concepts used in teaching one subject, for example probability in a mathematics class, can be transferred to other subject areas and tested there.

4. Drawing conclusions based upon the information gathered.

5. Testing theories, hypothesis, or information with appropriate accepted methodologies such as observation, surveys, or tests.

B. Synthesizes information.

Outcomes Include:

1. Utilizing analysis tools such as spreadsheets, databases, statistical software, as well as social networks, and multimedia equipment to investigate the interaction between pieces of information, materials, practices, ideas, documents, or other data.
2. Integrating new information with previous information or knowledge to form new perspectives and theories or to enhance professional practice. Example: using the findings of a scholarly journal article as a basis for trying a new instructional method in the classroom.

C. Presents information.

Outcomes Include:

1. Articulating conclusions based upon the information gathered.

2. Applying new and prior information to the planning, creation, and execution of a specific and applicable task, product, performance, or practice.

3. Choosing a communication medium and format that best supports the learning outcomes of the task, product, performance, or practice as well as learning styles of the intended audience.

4. Determining if the information representation is appropriate, sensitive, and responsible for the diversity (e.g., class, cultural, disability/ability, ethnicity, race, religion, sexual orientation, etc.) represented in the intended audience.

5. Using a range of technology applications in accomplishing the task or creating the product, performance, or practice. Examples: creating a wiki for a group-writing project or developing an eportfolio for a job interview.

6. Organizing and presenting the information in a manner that supports the purposes and format of the task, product, or performance. Examples: in an outline, storyboard, lesson plan, or research paper.

7. Ethically and legally manipulating text, images, and data, as needed, by transferring and or transforming them from their original locations and formats to a new context or format.
8. Participating in class or profession-sponsored communication forums designed to encourage discourse.

9. Interacting, collaborating, and publishing with peers, professors, or other experts.

Examples: publication – presenting at the state education association conference.

Standard Five. The information literate teacher education student evaluates discrete pieces of information as well as the entire information seeking process.

Performance Indicators:

A. Evaluates individual pieces of information.

Outcomes Include:

1. Examining, comparing, and critically analyzing information from various sources in order to evaluate and ascertain reliability, validity, accuracy, authority, timeliness, and point of view or bias.

2. Recognizing and using the differences between information sources as an evaluation tool.

3. Determining probable accuracy of the information by questioning the source of the information, the limitations of the information, and the evidence for any conclusions made. Examples: analyzing the publisher and author of information, identifying the intended audience, determining flaws in the scientific method used, or understanding how statistical information leads to a result.

4. Recognizing prejudice, deception, or manipulation of information and avoiding the use of stereotypical or offensive information. Example: critically examining information to find subtle prejudice or stereotypes and deciding whether or not to use the information in light of such problems.
B. Evaluates the information seeking process.

Outcomes Include:

1. Determining if the information found adequately addresses the information need and identifying any remaining gaps.
2. Determining whether alternative strategies, tools, or investigative methods should be used to fill gaps.
3. Revising strategies as necessary, and continuing to search using the new strategy, tool, or investigative methods until all the needed information is obtained. Example: searching an alternative database with a different focus, such as PsycINFO in place of ERIC.

Standard Six. The information literate teacher education student knows how to ethically use and disseminate information.

Performance Indicators:

Ethically uses and disseminates information.

Outcomes Include:

1. Understanding the ethical, legal, and socio-economic issues surrounding information and
2. Information technology. Examples: Family Educational Rights and Privacy Act (FERPA), the Individuals with Disabilities Education Act (IDEA), the Ethical Standards of the American Educational Research Association (AERA), or problems arising from the creation, collection, recording, distribution, and processing of information.
3. Demonstrating an understanding of intellectual property, copyright, and fair use of copyrighted material. Examples: the ethics of downloading and using electronic files such as digital images, video, or MP3s; fair use implications of transforming or combining works to create something new with a different purpose, or of using copies of texts and multimedia clips in the classroom.
4. Demonstrating and understanding the sociopolitical issues that surround information use, selection, and dissemination. Example: analyzing a book challenge.

5. Demonstrating an understanding of what constitutes plagiarism; Giving proper credit to others’ ideas.


7. Utilizing materials, practices, phrases, documents, or reproducible visual or statistical data without copyright restrictions. Examples: seeking out government publications free of copyright or Creative Commons licensed materials.

8. Taking appropriate steps to obtain permission to use copyrighted material. Examples: contacting authors, publishers, and producers for permission, or purchasing content through appropriate vendors.

9. Complying with institutional policies on access to information including those related to printing, downloading, using, or disseminating copies of articles, and policies related to human subjects research. Example: talking with Internal Review Boards within universities and reviewing set policies of each institution.
Appendix II

Information literacy test for teacher education

Name: 

Name of the College: 

Sex: 

Qualification: 

Area: Rural/Urban 

1. You have been assigned a guest lecture on the occasion of Shivjayanti for students of 9th standard, which of the following topics will you choose to speak on?

   a. Childhood of Shivaji Maharaj
   b. Adventurous events in the life of Shivaji Maharaj
   c. Defence Strategy of Shivaji Maharaj

2. Before searching an information on a topic, such as adolescence problems in rural school you would first......

   a. Decide which sources are appropriate
   b. Divide the topic into important terms and concepts important concepts or terms
   c. Know which aspect of the topic is most important

3. While searching on the internet you always use which of the following term?

   a. Familiar Term
   b. Popular Term
   c. Standard Term

4. You have been assigned a lecture on Pranayama before 6th class. Which of the following string will be the most appropriate to search information from any source?

   a. Meaning AND Benefits AND types of Pranayama
   b. Mental Stress AND Pranayama
   c. Prevention of deceases OR Mental Stress OR Pranayama

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5. While searching particular information on a specific topic what will be your course of action? (Please give preferences as 1, 2, 3...).

<table>
<thead>
<tr>
<th>Actions</th>
<th>Preferences</th>
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</thead>
<tbody>
<tr>
<td>Analyzing the concept</td>
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</tr>
<tr>
<td>Identifying Keywords</td>
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</tr>
<tr>
<td>Identifying Standard Terms for selected Keywords (if required)</td>
<td></td>
</tr>
<tr>
<td>Deciding search strategy</td>
<td></td>
</tr>
<tr>
<td>Making of string</td>
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<tr>
<td>Accessing the information</td>
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<tr>
<td>Evaluating the accessed information</td>
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<tr>
<td>Selecting appropriate resources</td>
<td></td>
</tr>
</tbody>
</table>

6. Select the reference sources with which you are aware of and/or used it.

<table>
<thead>
<tr>
<th>Reference Sources</th>
<th>Aware</th>
<th>Not Aware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dictionary</td>
<td></td>
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<tr>
<td>Encyclopedia</td>
<td></td>
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<tr>
<td>Year Book</td>
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<tr>
<td>Almanac</td>
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<tr>
<td>Directory</td>
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<tr>
<td>Gazetteers</td>
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<tr>
<td>Atlas</td>
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<tr>
<td>Hand Book</td>
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</tbody>
</table>

7. Select the non book sources with which you are aware of and/or used it.

<table>
<thead>
<tr>
<th>Non Book Sources</th>
<th>Aware</th>
<th>Not Aware</th>
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<tbody>
<tr>
<td>Pamphlet</td>
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<tr>
<td>Standards</td>
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<td>Patents</td>
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<tr>
<td>Reports</td>
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<tr>
<td>Monographs</td>
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<tr>
<td>Thesis and</td>
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<tr>
<td>Letters</td>
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<tr>
<td>Diaries</td>
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</tbody>
</table>
8. Select the web resources with which you are aware of and/or used it.

<table>
<thead>
<tr>
<th>Web Resources</th>
<th>Aware</th>
<th>Not Aware</th>
</tr>
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<tbody>
<tr>
<td>Subject gateways</td>
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<tr>
<td>Portal</td>
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<tr>
<td>Subject</td>
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<td>ETDs</td>
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<td>Databases</td>
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<td>Blogs</td>
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<td>Wikis</td>
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<tr>
<td>E_tutorials</td>
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<tr>
<td>Mailing Lists</td>
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</tbody>
</table>

9. Select the journals with which you are aware of and/or used it.

<table>
<thead>
<tr>
<th>Types of Journals</th>
<th>Aware</th>
<th>Not Aware</th>
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<tbody>
<tr>
<td>Printed Journals</td>
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<tr>
<td>Entertainment Journals</td>
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<td>Scholarly Journals</td>
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<tr>
<td>Peer-Reviewed Journals</td>
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<tr>
<td>Back volumes (prints)</td>
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<tr>
<td>Online Journals (Subscribed)</td>
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<td></td>
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<tr>
<td>Online Journals (Free Access)</td>
<td></td>
<td></td>
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<tr>
<td>Back volumes (online)</td>
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</tbody>
</table>

10. According to you the search engines provides which of the following?

   a. A Ready to use information
   b. Links to web pages that contain our required information
   c. List of websites only

11. Please write names of five search engines with which you are aware of.
12. Select the type/s of search engine with which you are aware of.
   a. Meta Search Engine
   b. Federated Search Engine
   c. Invisible Web Search Engine
   d. Specific Search Engine

13. Select the search technique/s with which you are aware of.

<table>
<thead>
<tr>
<th>Searching Techniques</th>
<th>Aware</th>
<th>Not Aware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Keyword search</td>
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<tr>
<td>Multiple Keyword Search</td>
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<tr>
<td>Phrase Search</td>
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<tr>
<td>Boolean search</td>
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<tr>
<td>Truncation search</td>
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<tr>
<td>Proximity search</td>
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<tr>
<td>Find similar search</td>
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<tr>
<td>Search within context</td>
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<td></td>
</tr>
<tr>
<td>Field Searching</td>
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<td></td>
</tr>
</tbody>
</table>

14. Match the publications in Column A with its Publishers in Column B.

<table>
<thead>
<tr>
<th>Column “A”</th>
<th>Column “B”</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Secondary School Code</td>
<td>b. NCERT</td>
</tr>
<tr>
<td>c. Syllabus for Secondary School</td>
<td>c. NCTE</td>
</tr>
<tr>
<td>d. Curriculum framework for Teacher Education</td>
<td>d. Ministry of HRD</td>
</tr>
<tr>
<td>e. Right to Education Act</td>
<td>e. SSC Board</td>
</tr>
</tbody>
</table>

15. According to you, books in a library are organized according to ...
   a. Author wise
   b. Subject wise
   c. Title wise
   d. Don't know

16. According to you, the library catalogue is used to find...
   a. To find articles from Journals, Magazines and Newspapers
   b. To find books available in a library
   c. Don't know
17. What is OPAC (Computerized Catalogue)?
   a. Online Public Access Catalogue
   b. Open Public Access Catalogue
   c. Open Private Access Catalogue
   d. Don't know

18. According to you, to find materials on the shelf in library, you need....
   a. Accession Number
   b. Call Number
   c. ISBN Number
   d. ISSN Number

19. If your required source is not available in your library, then you...
   a. Will request the library to make it available through interlibrary loan
   b. Will search in other library
   c. Will ask teachers or friends where this information will get

20. You are reading a research article on specific topic. Which part of that article will lead you to other articles on that topic?
   a. An Index
   b. Citation
   c. Appendices
   d. Don't know

21. According to you, an index in a book is ...
   a. An alphabetical list of important terms that appear in the book with respective page numbers
   b. List of all contents in a book
   c. Don't know

22. According to you a bibliography given at the end of document is...
   a. A list of source material that are used or consulted in the preparation of a work or that are referred to in the text
   b. List of all contents in a book
   c. Don't know

23. During searching an electronic database, you found 77 references. How do you choose the best five articles from these 77 citations?
   a. Select the most recent articles
   b. Read the abstracts and or review the subject/s
c. Select articles with full text only

d. All the above

24. You have found relevant information on a specific topic in various sources like book, journal, encyclopaedia and website. How will you organize the information retrieved from these sources?
   a. According to source
   b. According to the concept despite of source
   c. chronologically

25. You have retrieved pictorial, textual and audio-visual information about a specific topic. How will you save it on your computer?
   a. In a folder “Science Experiment”
   b. In different folders named “Images”, “Texts”, “A/V” etc
   c. Will create a main folder “Science Experiment” and save information in relevant subfolders.

26. A complete reference is provided below. Please match the numbered items in the reference with correct elements.


   Match the numbered items in the above citation with the correct elements below.

   a. Author of the article
   b. Date
   c. Journal title
   d. Title of article
   e. Volume of Journal
   f. Page Numbers

27. You found your required information from various sources, what will be your next action?
   a. Will analyze the retrieved information according to requirement only
   b. Will analyze the retrieved information thoroughly according to structure, logic and presentation
   c. Will copy/download it as prima facie it looks appropriate
28. Match the following web domains in Column ‘A’ with its concerned type of web sites in Column ‘B’.

<table>
<thead>
<tr>
<th>Column “A”</th>
<th>Column “B”</th>
</tr>
</thead>
<tbody>
<tr>
<td>.org</td>
<td>Commercial</td>
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<tr>
<td>.com</td>
<td>Government</td>
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<td>.gov</td>
<td>Indian</td>
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<td>.edu</td>
<td>Education and Research</td>
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<td>Academic</td>
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<td>.ac</td>
<td>Organization</td>
</tr>
<tr>
<td>.erner</td>
<td>Educational</td>
</tr>
</tbody>
</table>

29. You need urgent information on working of human brain during learning. According to you, which of the following sources in the library is the most appropriate?
   a. Encyclopaedia Britannica
   b. Encyclopaedia of Psychology
   c. Encyclopaedia of Education
   d. Encyclopaedia of Zoology

30. You are impressed with the research article of the U.S. Author on “New methods of teaching Mathematics” will you apply the methods suggested by this author in your classroom?
   a. Yes. Definitely
   b. No. as it is evolved in other country
   c. Yes, but only after comparing both the methods i.e. new and old

31. According to you, paraphrasing is the process of …
   a. Changing a phrase to mean something else
   b. Selecting paragraphs to use in your topic
   c. Summarizing the author’s ideas in your own words
   d. Don’t know

32. According to you repackaging of information is …
   a. Presenting the information in different than its original form
   b. Presenting the information in a different context
   c. Don’t know
33. You want to send the information on specific topic to the student for self study. Which of the following mode you will use to present the information?
   a. Will present the information in the form of notes
   b. Will present the information in the form of CAI Module
   c. Will present the information in its original form

34. How often do you evaluate the retrieved information.
   a. Always
   b. Never
   c. Often
   d. Sometimes

35. Which of the following criterions do you apply to evaluate the information?
   a. Authenticity
   b. Consistency
   c. Coverage
   d. Currency
   e. Frequency
   f. Accuracy
   g. Effectiveness
   h. Usefulness
   i. Response time

36. According to you, which of the following forms of an intellectual property are covered by copyright?
   a. Literature
   b. Architectural Designs
   c. Songs
   d. Computer Programs
   e. Movies
   f. Images
   g. Trade Marks
   h. Dramas
   i. Logos

37. When it is ethical to use the ideas of another person in a research paper?
   a. It is never ethical to use someone else’s idea
   b. If you do not use their exact words
   c. When you acknowledge other’s thought through citation
Appendix III
Lesson Plans

Information Literacy Lesson Plan 1

Unit: Introduction to Information Literacy

Previous Knowledge: Student Teachers are aware of qualities of an effective teacher, information sources and concept of literacy

Statement of Aim: Today we are going to learn concept and need of Information Literacy for teachers.  

<table>
<thead>
<tr>
<th>Teaching Points</th>
<th>Objectives and their specifications</th>
<th>Teaching aids and references</th>
<th>Teachers activity</th>
<th>Students activity</th>
</tr>
</thead>
</table>
| 1.1 concept of Information Literacy  
- how it is evolved  
- what it includes  
1.3 definition of Information Literacy  
- ACRL’s definition of information literacy  
1.2 need of Information Literacy for teachers  
- for updating their knowledge  
- to facilitate students with vast variety of information  
- to teach effectively | Knowledge and Comprehension:  
- student teacher states the need of appropriate, current and timely information in teaching.  
- student teacher tells the skills included in definition of Information Literacy  
- student teachers recognizes the need of Information Literacy for a teacher  
- student teacher understands information literacy practices in teacher education followed globally | Use of various forms of information i.e. images, videos newspaper clippings, letters etc to explain how a lesson can be more effective by using these sources. | Engage:- IL instructor asks student teachers:-  
What do we need to survive?  
What do we need to be an effective teacher? | Student teacher discusses with peer and with instructor  
Student teacher lists the sources of information |
| 1.3 global practices of applying Information Literacy in the field of teacher education | Explain: IL Instructor explains the importance of information in teaching. He explains the concept of Information Literacy with ACRL's Information Literacy definition and its need for teachers | Student teacher observes and listens |
| | Elaborate: IL Instructor asks student teachers to list the skills required to be an information literate teacher | Student teacher lists the skills |
| | Evaluate: IL Instructor takes evaluation to revise the topics by asking questions to the students on topic discussed. | Student teacher answers |
# Information Literacy Lesson Plan 2

**Unit:** Information Basics

**Previous Knowledge:** Student teachers know the concept of information literacy and sources of information.

**Statement of Aim:** Today we are going to learn basics of information.

## Time: 60 Minutes

<table>
<thead>
<tr>
<th>Teaching Points</th>
<th>Objectives and their specifications</th>
<th>Teaching aids and references</th>
<th>Teachers activity</th>
<th>Student’s activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Data-information-knowledge-wisdom:-</td>
<td>Knowledge and Comprehension:-</td>
<td>-Various primary i.e. letters, diaries, journals etc. and secondary information sources i.e. books, reference books etc.</td>
<td>Engage:</td>
<td></td>
</tr>
<tr>
<td>-Student teacher should know how the information is created and in which format it is transformed. -student teachers should not keep themselves restricted up to information, but should be able to convert it into knowledge and wisdom</td>
<td>-student teacher states types and forms of information -student teacher understands the criterions to select a quality information</td>
<td>From where you get the information? How the information is created?</td>
<td>IL Instructor asks student teachers:-</td>
<td></td>
</tr>
<tr>
<td>2.2 Types of Information</td>
<td></td>
<td></td>
<td>Explore - IL Instructor shows some images and asks student teacher to decide whether it is information or not?</td>
<td>Student discusses with peers and with instructor</td>
</tr>
<tr>
<td>-Primary and secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3 various forms of information</td>
<td>Manuscripts, printed, digital, symbol, signals, images and others.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

237
<table>
<thead>
<tr>
<th>2.4 Qualities to select quality information</th>
<th>Explain</th>
<th>Elaborate</th>
<th>Evaluate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IL instructor demonstrates various primary and secondary sources. IL instructor also demonstrates information in various forms.</td>
<td>IL instructor asks student teacher to list the various forms of information and primary and secondary sources in his respective subject.</td>
<td>IL instructor takes evaluation to revise the topics by asking questions to the students on topic discussed.</td>
</tr>
<tr>
<td></td>
<td>- IL Instructor explains the data-information-knowledge and wisdom chain with proper diagram. - Instructor explains the place of &quot;information&quot; in this chain and how the information can be converted into knowledge and wisdom.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Student teacher observes, discusses with peers and answers.

Student teacher lists the primary and secondary sources.

Student teacher discusses & answers.
Information Literacy Lesson Plan 3

Unit: Library Basics

Previous Knowledge: Student teacher is aware of library.

Statement of Aim: Today we are going to learn library system.

<table>
<thead>
<tr>
<th>Teaching Points</th>
<th>Objectives and their specifications</th>
<th>Teaching aids and references</th>
<th>Teachers activity</th>
<th>Student’s activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Organization of Library</td>
<td>Knowledge and Comprehension:-</td>
<td>- sample book and periodical index,</td>
<td>Engage:- IL instructor asks student teachers :-</td>
<td>discusses with peers and with instructor</td>
</tr>
<tr>
<td>- various sections of library</td>
<td>- student teacher states different sections in the library.</td>
<td>- sample bibliography in education</td>
<td>- how books in the library are organized?</td>
<td>discusses with peers and with instructor</td>
</tr>
<tr>
<td>- organization of books in library</td>
<td>- student teacher understands the practice of organization of books in the library</td>
<td>- demonstration of OPAC in the classroom</td>
<td>- What services have you availed from the library?</td>
<td>observes and listens</td>
</tr>
<tr>
<td>3.2. Common services offered by the library</td>
<td></td>
<td></td>
<td>how will you search the books available in the library?</td>
<td></td>
</tr>
<tr>
<td>3.3. Basic tools to search sources in the library</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Index</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Bibliography</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Catalogue and OPAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Time: 60 Minutes
<table>
<thead>
<tr>
<th>concept and use of index, bibliography, catalogue or OPAC in searching the sources.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skills:</strong> student teacher can search his/her book.</td>
</tr>
<tr>
<td>student teacher can make use of index, bibliography and OPAC to search the sources in the library.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>organization of knowledge, use of library tools to search the books, common serviced offered by the library</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elaborate:</strong> IL instructor asks student teacher to list the subtopics (subclass) of his subject (Class).</td>
</tr>
<tr>
<td><strong>Evaluate:</strong> IL Instructor takes formative evaluation by asking questions to the students on topic discussed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student teacher lists the subtopics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student discusses with peers and with instructor</td>
</tr>
</tbody>
</table>
### Information Literacy Lesson Plan 4

**Unit:** Information sources

**Previous Knowledge:** Student teacher is aware of at least some sources.

**Statement of Aim:** Today we are going to learn information sources.

<table>
<thead>
<tr>
<th>Teaching Points</th>
<th>Objectives and their specifications</th>
<th>Teaching aids and references</th>
<th>Teachers activity</th>
<th>Student's activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.1 Reference Sources</strong>&lt;br&gt;- Introduction, organization and classroom applications</td>
<td>Knowledge and Comprehension:- student teacher understands the different information sources, its organization and application of the same in teaching learning process.&lt;br&gt;Skills: - student teacher can make use of these information sources to access the appropriate information.</td>
<td>-available reference sources&lt;br&gt;- available non book sources&lt;br&gt;- available electronic sources&lt;br&gt;- available periodicals&lt;br&gt;- available educational information sources&lt;br&gt;- demonstration of digital sources with the help of MS PowerPoint.</td>
<td>Engage:- IL instructor makes two groups of student teachers in the classroom and asks them to tell a name of sources one by one and he lists the sources told by student teachers on blackboard</td>
<td>Student teacher tells the sources and writes in their note book</td>
</tr>
<tr>
<td><strong>4.2 Non-Book Sources</strong>&lt;br&gt;- Introduction, organization and classroom applications</td>
<td></td>
<td></td>
<td>Explore:- IL instructor writes the different types of information sources i.e. reference, non book, electronic etc on the blackboard and asks student teachers to map the listed source with related type and draws the mind map</td>
<td></td>
</tr>
<tr>
<td><strong>4.3 Electronic Sources</strong>&lt;br&gt;- Introduction, organization and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Time: 60 Minutes
<table>
<thead>
<tr>
<th>4.4 Digital Sources</th>
<th>Explain: IL instructor explains the concept, organization and application of all these sources in classroom teaching learning process.</th>
<th>Student teacher lists the sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Introduction, types and classroom applications</td>
<td>Elaborate: IL instructor asks student teacher to list the reference, non book, electronic and digital sources in his subject</td>
<td>Student discusses with peers and with instructor</td>
</tr>
<tr>
<td>4.5 Periodicals</td>
<td>Evaluate: IL Instructor takes formative evaluation by asking questions to the students on topic discussed.</td>
<td></td>
</tr>
<tr>
<td>- Introduction, types and classroom applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.6 Educational Information Sources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Introduction, types, organization and classroom applications</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Concept Map of Information Sources

Books
- Encyclopedia
- Dictionary
- Directory
- Atlas
- Biography
- Year Books
- Almanac

Text Books

Reference Books
- Charts
- Letters
- Diaries
- Drawing
- Globe
- Images
- Logos
- Maps
- Monographs
- Pamphlets
- Patent
- Reports
- Standards
- Thesis and Dissertations

Journals

Newspapers

Magazines

World Wide Web
- Blogs
- Databases
- Portals
- Search Engines
- Subject Gateways
- Social Networks
Information Literacy Lesson Plan 5

Unit: Internet search tools

Previous Knowledge: Student teacher is aware internet and World Wide Web.

Statement of Aim: Today we are going to learn internet search tools.

<table>
<thead>
<tr>
<th>Teaching Points</th>
<th>Objectives and their specifications</th>
<th>Teaching aids and references</th>
<th>Teachers activity</th>
<th>Student’s activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 WWW Basics</td>
<td>Knowledge and Comprehension:-student teacher understands the basic of world wide web, basics of web browser, URL and various web domains.</td>
<td>-use of MS Power Point presentation -real time demonstration of various search engines, subject gateways, portals and databases</td>
<td>Engage:- IL Instructor asks student teachers : -what is www? What is web browser? What is URL? What are domains? State the names of search engines.</td>
<td>Student teacher discusses with peer and answers</td>
</tr>
<tr>
<td>5.2 Web Browsers</td>
<td></td>
<td></td>
<td>Explore:- IL instructor demonstrates the web browser, shows and explains the concept of URL and web domains. -IL instructor demonstrates different types of search engine, subject gateways, portals and databases.</td>
<td>Discusses with peers, instructor and maps the sources with related type and complete the concept map</td>
</tr>
<tr>
<td>5.3 URL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4 Domains</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5 Concept and Definition of Search Engine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6 Categories of Search Engine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.7 Types of Search Engines</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.8 Subject Gateways</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.9 Portals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.10 Databases</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Time: 60 Minutes
| Explain: | - IL instructor explains the concept and relevance of each type of search engines in accessing the appropriate information from the internet.  
- IL instructor explains the concept and relevance of subject gateways, portals and databases in accessing the appropriate and specific information from the internet.  
Student teacher lists the categories and types of search engines. |
|---|---|
| Elaborate: | - IL instructor asks student teacher to list domains and categories and types of search engines.  
Student discusses with peers and with instructor |
| Evaluate: | - IL Instructor takes formative evaluation by asking questions to the students on topic discussed. |
Information Literacy Lesson Plan 6

**Unit:** Searching the information 1

**Previous Knowledge:** Student teacher is aware of searching skills

**Statement of Aim:** Today we are going to learn the activities to be carried out before searching.

**Time:** 60 Minutes

<table>
<thead>
<tr>
<th>Teaching Points</th>
<th>Objectives and their specifications</th>
<th>Teaching aids and references</th>
<th>Teachers activity</th>
<th>Student's activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Selecting appropriate topic</td>
<td>Knowledge and Comprehension: -Student teacher understands the importance of pre searching skills. -student teacher understands the usefulness of keywords -student teacher understands to importance of standard terms in searching</td>
<td>-Charts for explaining Boolean Operators -Blackboard writing</td>
<td><strong>Engage:</strong> IL Instructor asks student teachers: -How do you start to search the information -do you get appropriate information then?</td>
<td>Student teacher discusses with peer and answers</td>
</tr>
<tr>
<td>6.2 Analyzing the topic</td>
<td></td>
<td></td>
<td><strong>Explore:</strong> IL asks student to write 5 sentences on Human being. -IL instructor writes one statement on a blackboard and asks student teachers to identify important words from the statement</td>
<td>Student teacher writes 5 sentence on given topic</td>
</tr>
<tr>
<td>6.3 Identification of key words and standard terms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.4 Making of strings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

246
<table>
<thead>
<tr>
<th>Understands the process of string construction by using Boolean operators</th>
<th><strong>Explain:</strong> - IL instructor explains - a vast concept as it contains body, culture, history etc. you need to choose particular dimension to write on and then explains the need of analysis of the topic by giving various examples. - IL instructor explains how to identify keywords and which words are to be treated as keywords - IL instructor explains how to make a string by using Boolean operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills: Student teachers constructs appropriate string by using Boolean operators</td>
<td><strong>Listen and takes notes</strong></td>
</tr>
<tr>
<td><strong>Elaborate:</strong> - IL instructor asks student teacher to identify keywords from given topic and asks to make multiple strings from those keywords</td>
<td><strong>Student discusses with peers and with instructor</strong></td>
</tr>
<tr>
<td><strong>Evaluate:</strong> - IL Instructor takes formative evaluation by asking questions to the students on topic discussed.</td>
<td></td>
</tr>
</tbody>
</table>
## Information Literacy Lesson Plan 7

**Unit:** Searching the information 2

**Previous Knowledge:** Student teacher is aware of Pre searching skills

**Statement of Aim:** Today we are going to learn the searching techniques

<table>
<thead>
<tr>
<th>Teaching Points</th>
<th>Objectives and their specifications</th>
<th>Teaching aids and references</th>
<th>Teachers activity</th>
<th>Student's activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 Keyword Search</td>
<td>Knowledge and Comprehension:-</td>
<td>-use of MS Power Point presentation</td>
<td>Engage:- IL instructor asks student teachers :-</td>
<td>Student teacher discusses with peer and answers</td>
</tr>
<tr>
<td>7.2 Phrase search</td>
<td>-Student teacher understands various techniques of searching the information from internet.</td>
<td>-real time demonstration of various search techniques</td>
<td>-Are you satisfied with searching results from internet?</td>
<td></td>
</tr>
<tr>
<td>7.3 Truncation search</td>
<td>Skills: student teacher searches appropriate information by using appropriate searching techniques/s.</td>
<td></td>
<td>-How will you search specific information on internet? Do you know any of the searching techniques?</td>
<td></td>
</tr>
<tr>
<td>7.4 Boolean search</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5 Range search</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.6 Limiting the search</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Time:** 60 Minutes

248
<table>
<thead>
<tr>
<th>Explain:</th>
<th>IL instructor explains in what ways search techniques make our search more effective</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IL instructor explains the syntaxes of various search techniques</td>
</tr>
<tr>
<td>Elaborate:</td>
<td>IL instructor asks student teacher to list the techniques and their respective syntaxes.</td>
</tr>
<tr>
<td>Evaluate:</td>
<td>IL instructor takes formative evaluation by asking questions to the students on topic discussed.</td>
</tr>
<tr>
<td></td>
<td>Student teacher lists the techniques and syntaxes</td>
</tr>
<tr>
<td></td>
<td>Student discusses with peers and with instructor</td>
</tr>
</tbody>
</table>
Information Literacy Lesson Plan 8

Unit: Evaluation of information.

Previous Knowledge: Not expected.

Statement of Aim: Today we are going to learn importance of information evaluation and its criterions. Time: 60 Minutes

<table>
<thead>
<tr>
<th>Teaching Points</th>
<th>Objectives and their specifications</th>
<th>Teaching aids and references</th>
<th>Teachers activity</th>
<th>Student’s activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1 Importance of evaluation of information sources</td>
<td>Knowledge and Comprehension:- - Student teacher understands the importance of critical evaluation of accessed information and its source. - student teacher states the criterions of evaluating various sources like books, journals and websites</td>
<td>-use of MS Power Point presentation</td>
<td>Engage:- IL Instructor asks student teachers : - Do you evaluate the accessed information and its sources? - if yes, which criterions do you use to evaluate the information and its sources?</td>
<td>Student teacher discusses with peer and answers</td>
</tr>
<tr>
<td>8.2 Criteria for evaluation of Books and Journals</td>
<td>Skills: student teacher evaluates the information and its</td>
<td></td>
<td>Explore:- IL instructor narrates a short story of a village boy seeking admission for B.ed and could not get it due to misguided information from various sources</td>
<td>Student teacher listens the story and tells the problems faced by the boy regarding the wrong information</td>
</tr>
<tr>
<td>8.3 Criteria for evaluation of websites</td>
<td></td>
<td></td>
<td></td>
<td>Student teacher observes and listens</td>
</tr>
</tbody>
</table>

250
<table>
<thead>
<tr>
<th>Explain:</th>
<th>- IL instructor explains importance of evaluation of information and its sources by giving real world examples.</th>
<th>Student teacher lists the criterions</th>
<th>Student discusses with peers and with instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elaborate:</td>
<td>- asks students to list all the criterions to evaluate information and its sources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluate:</td>
<td>- IL instructor takes formative evaluation by asking questions to the students on topic discussed.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Information Literacy Lesson Plan 9

Unit: Information Processing.

Previous Knowledge: Not necessary.

Statement of Aim: Today we are going to learn concepts and phases of information processing.

<table>
<thead>
<tr>
<th>Teaching Points</th>
<th>Objectives and their specifications</th>
<th>Teaching aids and references</th>
<th>Teachers activity</th>
<th>Student’s activity</th>
</tr>
</thead>
</table>
| 9.1 Content Analysis | Knowledge and Comprehension:  
- Student teacher understands the importance of information processing before applying it.  
- Student teacher states the need and process of content analysis, repackaging, presenting and communicating the accessed information. | Use of MS Power Point presentation  
Demonstrating repackaged information, structurally modified information for effective presentation and communication. | **Engage:** IL instructor asks student teachers:  
- what do you follow after accessing appropriate information?  
- do take some efforts on accessed information before applying it?  
**Explore:** IL instructor demonstrates and discusses some information which is not processed and tells the problems behind its non-effectiveness. | Student teacher discusses with peer and answers  
Student teacher observes and listens and discusses with IL instructor |
| **Skills:** student teacher analyzes the accessed information, repackages it, presents it according to need and communicates it effectively. | **Explain:** - IL instructor explains importance and process of content analysis  
- IL instructor explains the importance and process of information repackaging  
- IL instructor explains the importance and process of structural modification of accessed information for effective presentation and communication  

**Elaborate:** IL instructor himself elaborates the stages in all processes  

**Evaluate:** IL Instructor takes formative evaluation by asking questions to the students on topic discussed. | **Student teacher observes and listens**  
**Listens and takes notes**  
**Student discusses with peers and with instructor** |
# Information Literacy Lesson Plan 10

**Unit:** Ethical use of information.

**Previous Knowledge:** Student teacher is aware of concept of plagiarism.

**Statement of Aim:** Today we are going to learn how to use information ethically. **Time: 60 Minutes**

<table>
<thead>
<tr>
<th>Teaching Points</th>
<th>Objectives and their specifications</th>
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<th>Teachers activity</th>
<th>Student's activity</th>
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<tr>
<td>10.1 Concept of Plagiarism</td>
<td>Knowledge and Comprehension:- -student teacher understands the concept and types of plagiarism. -student teacher states the various forms of information covered under Indian Copyright Law. -student teacher understands the concept of fair use. -student teacher</td>
<td>-use of MS Power Point presentation</td>
<td>Engage: IL Instructor asks student teachers: -what is your practice of using accessed information? -do you ever consider the ethical and legal issues before using the accessed information? -do you aware of concept of copy right? If, yes, according to you which forms of information is covered under copyright? Explore -IL instructor demonstrates the forms of information covered under copyright</td>
<td>Student teacher discusses with peer and answers</td>
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<tr>
<td>10.2 Basic information about Indian Copyright Law</td>
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<td>10.3 Citing the information: APA Style</td>
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<tr>
<th>Understands the patterns of citing different forms of information.</th>
<th>-IL instructor demonstrates the types of plagiarism</th>
<th>Student teacher observes and listens</th>
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<tr>
<td><strong>Skills:</strong> Student teacher cites the accessed information by using APA referencing style.</td>
<td><strong>Explain:</strong> IL instructor explains the concept of copyright and provisions in it.</td>
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<tr>
<td><strong>Elaborate:</strong> IL Instructor asks student teacher to list intellectual works covered under copyright and asks to list the ways to avoid plagiarism</td>
<td><strong>Evaluate:</strong> IL Instructor takes formative evaluation by asking questions to the students on topic discussed.</td>
<td><strong>Student teacher lists both.</strong></td>
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<td></td>
<td><strong>Student discusses with peers and with instructor.</strong></td>
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**Information Literacy Lesson Plan 11**

**Unit:** Introduction to Cyber Security.

**Previous Knowledge:** Student teacher is aware of virus and antivirus.

**Statement of Aim:** Today we are going to learn basics of cyber security.

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<th>Teaching aids and references</th>
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<td>11.1 Definition</td>
<td>Knowledge and Comprehension:-</td>
<td>-use of MS Power Point presentation</td>
<td>Engage:- IL Instructor asks student teachers :-</td>
<td>Student teacher discusses with peer and answers</td>
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<td>11.2 Principles of Cyber Security</td>
<td>-Student teacher understands the risks in accessing, storing and communication information through internet</td>
<td></td>
<td>-what is your practice in accessing, storing and communication information securely?</td>
<td></td>
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<td>11.3 Threats in Cyber Security</td>
<td>-student teacher states various threats occurred while accessing information on internet</td>
<td></td>
<td>-According to you which are the threats occurred while accessing information from internet?</td>
<td></td>
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<tr>
<td>11.4 'Cyber Security Tips'</td>
<td>-student teacher states the basic tips to access, store and</td>
<td></td>
<td><strong>Explore</strong> -IL instructor demonstrates and discusses the various types of threats occurred.</td>
<td></td>
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*Time: 60 Minutes*
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<tr>
<th>Communi cate information securely.</th>
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<tr>
<td><strong>Skills</strong>: Student teacher securely accesses, stores and communicates the information on internet.</td>
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<tr>
<th>Explain:</th>
<th>- IL instructor explains various threats occurred on internet.</th>
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<tr>
<td></td>
<td>- IL instructor explains the precautions to avoid cyber threats</td>
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<tr>
<td>Elaborate:</td>
<td>IL Instructor asks student teacher to list types of threats and ways to avoid it.</td>
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<tr>
<td>Evaluate:</td>
<td>IL Instructor takes formative evaluation by asking questions to the students on topic discussed.</td>
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<tr>
<th>Student teacher lists both.</th>
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<tr>
<td>Student discusses with peers and with instructor</td>
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APPENDIX IV

Information Literacy Handbook For Teachers

Charudatta Achyut Gandhe
Research Scholar
Department of Library and Information science
Savitribai Phule Pune University, Pune
Preface

Information literacy is one of the essentials in today’s life which is termed by many as a knowledge age or the age of information. We all are exposed to the world of internet and social networking. Our students are in fact far ahead of us and are also practically in the age group when they can easily grasp or learn new information and skills. This handbook for teachers is going to be a very apt support material when all teachers will be required to keep updated and well informed before the students.

The handbook deals with the concept of information literacy, the meaning of information, the various sources of information, the tools for gathering the information, information evaluation and processing and with the ethical considerations involved. Thus it contains all the aspects related from knowledge level, application level, skill level and morals and values too.

The handbook consists of 10 modules covering these various aspects. The contents contain pictures, diagrams, charts, graphs and tables. A unique feature of the handbook is that it is available in both Marathi and English language.

I am sure the handbook will be very useful for in-service teachers and pre-service teachers. I hope that it is appreciated and welcomed by all concerned especially all those who are working in the field of education.

Wishing all the readers a very happy reading and learning!

Charudatta Achyut Gandhe
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In this module we will learn:

- Meaning of Information Literacy
- Need of Information Literacy for teachers
- Global view of Information Literacy and Teacher Education

INTRODUCTION

In the present information society, the world is changing into a global village, classrooms are changing into virtual classrooms, libraries are changing to information centers, students are more technology oriented and the whole teaching-learning process is changing. The students are expected to learn beyond the syllabus and teachers should play a role of facilitator. This is due to the advent of information communication technology. Every aspect of education is changed. E-learning, E-resources are the common words. Everyone in the education system is dependent upon the information. As a result of it, we have to face new challenges like information overload, information poverty, etc. Abundant information is in existence. This information is incorporated into various types of sources ranging from manuscripts to digital. In this situation some questions are need to be asked. Do we know all the sources of information? Do we have familiar with all the sources of information? Do we have skills to access the required information from selected sources? Do we evaluate the information and the sources? The answers to all these questions are definitely “NO”. Therefore we have certain information challenges in this information society and we have to face these challenges positively so as to survive in this information society or information age. To face this challenges the librarians and educationist must think collaboratively to impart Information Literacy among the students so as to survive in this information age. The teachers should be information literate so that they can implement the Information Literacy Programme in their schools. But there is a need to impart the Information Literacy Skills among the teachers during their pre service teacher education.

This handbook tries to show a pathway to overcome this problem. This handbook provides the concept of information literacy. It introduces various sources of information and
techniques to access, analyze, evaluate and apply the required information ethically from these sources.

This handbook will definitely useful as a guide to your information search!

WHAT IS INFORMATION LITERACY?

The term Information Literacy is first used by Paul Zurkowski, the President of Information Industry Association, in his proposal to National Commission on Library and Information Science in 1974. In his proposal Zurkowski described information literate individuals as those "who are trained in the application of information resources to their work" and campaigned for a national programme to teach the necessary skills, which would eventually yield an information literate population a decade later.

Association of College and Research Library(2000) defines information literacy as “Information Literacy is a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information”.

In short, information literacy is a set of abilities to

1. Identify the exact need of information
2. Identify the correct source of required information
3. Access the required information from selected source
4. Evaluate the accessed information
5. Apply the evaluated information

NEED OF INFORMATION LITERACY FOR TEACHERS:

Present age is an information age and present society is an information society. Information is power as well as wealth in the society. We must have information to survive in this information society. Therefore Information Literacy is needed because of following reasons:

1. Rapid increase in the stream of information due to information revolution
2. Advent of information and communication technology
3. Vast variety of information sources
4. Wide dispersal of information
5. Increase in number of users
6. Research on complex and interdisciplinary topics.
as a facilitator. Teachers must be aware of all the resources available in the library and outside.
The teachers must be able to access the information from various sources of information and
should teach the student by using this information. In knowledge transfer, teacher is the key
person on whom all students trust. Therefore teachers should be knowledge oriented. They
should keep them always busy in acquiring new knowledge, information, innovations in their
respective subjects. Therefore teachers should be information literate. This can only possible if
an Information Literacy Programme is implemented during their Pre service Teacher Education
Course.

Information Literacy and Teacher Education : A Global View

Many associations and professions organizations have taken initiatives in Information
Literacy and Teacher Education related activities.

National Forum on Information Literacy (NFIL) submitted A Progress Report on
Information Literacy in 1998. One of its recommendation (Recommendation No.5) was :
“Teacher Education and Performance expectation should be modify to include Information
Literacy concerns.”

National Educational Technology Standards Project (NETS) has begun an effort to
effectively support use of technology for teaching learning and administration (Thomas, 1998,
P.11). their first step of standards focuses on a technology foundation for students and includes
the use of technology research tools to “to locate, evaluate and collect information from variety
of sources” (Thomas, 1998, P.22).

American Association of School Librarians (AASL) and the Association for
Educational Communications and Technology released “Information Literacy Standards for
student learning” which address issues in Information Literacy independent learning and social
responsibility as a guide for “school library media specialists and other K-12 educators as they
cultivate and refine their students’ information literacy skills in print, non print and electronic
format”. (Information Literacy Standards, 1998)

The Education and Behavioral Sciences Section (EBSS) of the ACRL have
emphasized on conceptually based skills for searching, retrieving and evaluation information
for learners for different groups viz. graduates, undergraduates, practitioners and researchers.
EBSS identified a sequence of skills that begins with understanding that the generation and
communication of knowledge in education includes recorded and unrecorded sources and formats that differ in publication cycles and authority.

In India, initiatives are now taken in the field of Information Literacy. Many conferences, seminars, workshops are organized. Delhi University, Madras University etc have started Information Literacy programmes. But these initiatives are not sufficient to cope with the need. All the programmes are limited up to their institutions and standards and models of these programmes are not equally applicable.

The field of Teacher Education in India far away from these activities. None of the National Association, universities and regulatory bodies like NCTE (National Council for Teacher Education) in the field of Education and Library and Information Science has taken initiatives in this regard. No model and standards and available for Information Literacy in teacher education point of view. Whatever the guidelines and standards are available on global level are not fit for our education system. Therefore there is a need to develop a need based model and programme of Information Literacy for Teacher Education in India.

**Summary**

*In this module we learned the concept of Information Literacy and its need for teacher education. As a teacher an Information Literacy is a key to success in teaching learning process.*
In this module we will learn:

- Information Chain: Data, Information, Knowledge and Wisdom
- Types of Information
- Various forms of information
- Qualities of information

What is information?

According to "The Free Dictionary" an information is knowledge derived from study, experience or instruction." Though we use the word "information generally", it is always derived from data. Data means raw information or facts. The Data itself has no meaning or relevance, after processing the data; it is converted into information. And after processing the information, it is converted into knowledge. Lastly when knowledge derived from the information is processed; it is converted into wisdom which is long lasting. The following diagram gives the clear idea about data-information-knowledge.

In short, an information is a processed data. But the question is, do we always use this information so as to convert it into knowledge and further in wisdom. We can take a simple example of data...information..knowledge and wisdom. A marklist of students is a data. When we convert it into a Report card it becomes an information. When we see a report cards of all students, then we can derived a knowledge that many students are weak in Mathematics. From this derivation, we get a wisdom that we should give more time for teaching mathematics.
**Various Forms of Information:** Information is not always in the form of text or print. Information varies from oral to digital, text to signals. Following are the some forms of an information.

Information can be in any form as shown in above figure. In fact, an information is anything from which we can learn new thing or can find some facts. It includes, bus tickers, rings, footprints, images, pictures, drawings, stone, calendars, traffic signals, models, statues, cards, etc. The sources in which an information is included also vary from printed to digital. A tremendous information is producing every second and disseminated through a wide range of sources. As a teacher, we must be familiar with all these forms information and its sources.

**Qualities of good information:**

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<th>Accurate</th>
<th>The information should be based on facts. It should not be biased. It should lead to clear solutions of a problem.</th>
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<tr>
<td>Accessible</td>
<td>Anybody who needs in formation, should have easy access to the information.</td>
</tr>
<tr>
<td>Complete</td>
<td>An information should be completes so as to satisfy all the needs. It should be precise and comprehensive.</td>
</tr>
<tr>
<td>Current</td>
<td>An information should be up to date.</td>
</tr>
<tr>
<td>Timely</td>
<td>An information should be accessible when it is needed urgently.</td>
</tr>
<tr>
<td>Understandable</td>
<td>An information should be in an appropriate format so as to understand easily.</td>
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<tr>
<td>Verifiable</td>
<td>The users should be able to trace back the information to its source and verify the accuracy of the same.</td>
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<tr>
<td>Rare</td>
<td>The information should be available to only a limited number of users otherwise the value of the information will diminish.</td>
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**Summary**

*In this module we learned basics of information. We learned the information chain, types of information, various forms of information and qualities of good information.*
In this module we will learn:

- Organization of Library
- Common services offered by library
- Tools to search sources in library
- OPAC, Index, Bibliography

LIBRARY ORGANIZATION:

We all are much familiar with library. Library is the place of self study, getting references and information. Library means a place with a lot of books. But very few of us know the structure and organization of library. In a library, there is a collection of books, non books, reference books, periodicals, charts, maps, films, recorded musical CDs, DVDs and we can borrow any of these material for certain days. All the reading material in a library is organized subject wise so as to facilitate the users to find all the books together on same subject. For subject wise arrangement of books, specific classification schemes are applied in all library, most of the libraries use Dewey Decimal Classification Scheme (DDC). A library is divided into various sections such as Books Section, Reference Section, Periodical Section, Information Section. We can find our required reading material in relevant section in the library.

SERVICES OF THE LIBRARY:

Library provided various services to users. It includes circulation service that facilitates us to borrow reading material from library. Reference service provides us the references of our required information. Besides of these services, library provides Current Awareness Service, Selective Dissemination of Information, Photocopy Service, Information Service, Alert service.

BASIC INFORMATION SEARCH TOOLS:

To find the required reading material in the library we need the help of library personnel. But if we are aware about common library tool, it will be very easy for us to find relevant reading material. There are two common library tools that we can use.
**Book Catalogue**: Book catalogue is a mirror of any library. We can search whether our required reading material is available in library or not. Traditionally catalogue is in card form and is stored in wooden cabinets. We can see these catalogue cabinets in many large libraries. But with the advent of ICT, this traditional catalogue is changed into Online Public Access Catalogue. By using OPAC, we can search any reading material available in the library by author, title, publication, subject or even important word i.e. key words or by combining any two or more fields. OPAC saves our valuable time.

**General Display of OPAC:**

![Diagram of OPAC interface]

**Bibliography:**

Bibliography is always given at the end of a book or an article. A bibliography is a comprehensive list of all reading material which has been referred while writing a book or an article. All the information sources in a bibliography is arranged systematically by alphabetical order. The specific referencing style such as APA (American Psychological Association) Style is used in writing of bibliography. Bibliography helps us to find more information sources on the same topic. It is also called as information search tool for specific subject.
A library also compiles a bibliography of books of particular author or particular subject. These bibliographies are available in both forms printed and online. The famous online bibliography is Oxford Bibliography. It can be accessed from http://www.oxfordbibliographies.com/

**Your can do this!**

You can assign a project to your students to compile a bibliography. Ask them to compile a bibliography of all books written by particular author or written on particular subject.

**Index:**

Index in a book is always given at the end of book. According to Oxford dictionary an index is “(in a book or set of books) an alphabetical list of names, subjects, etc. with reference to the pages on which they are mentioned: clear cross references supplemented by a thorough index”. We often get confused between table of content and index. The main difference between these two is the location, table of contents is always located at the beginning of a book and index is always located at the end of a books. The table of contents provides only the list of chapters in the book. Index helps us to search whether a particular term or concept is mentioned in a particular book or not and also gives the page number/s where this term or concepts is mentioned.

Despite of index in a book, a library may contain a periodical index. A periodical index is a type of reference source that lists periodical articles by subject or author. If you have a topic in mind, a periodical index can help you find articles about that topic. An index will point you to the right periodical, the specific date or issue copy, and even the pages for a specific article. Periodical index are available in both the forms, printed as well as online. Searching in an online periodical index is as similar as searching in OPAC. You can search periodical index by
author, subject, title or keyword. EBESCO Host or Pro Quest are the examples of online periodical index. But most of the periodical indexes are need to be subscribed and also payable.

Your can do this!

You can conduct a class activity by providing students or group of students with books having index and ask them to search the concept/term mentioned in that books with the help of index. This activity can also be performed in the form of competition between two groups.

Summary

In this module we learned basics of library. The knowledge organization in the library. We learned the catalogue, OPAC and its significance in searching the information sources in library. We learned various parts of a book or article and tools to find the information.
In this module we will learn:

- Basic types of information sources
- General types of information sources

There are two basic types of information sources.

- Primary Information Sources
- Secondary Information Sources

A primary source is a document through which a newly created information is communicated firstly. Examples of primary sources include: Diaries, Letters, Speeches, and Journals, News Papers etc.

A secondary source is a document which interprets and analyzes the information in primary sources. Secondary sources may have pictures, quotes or graphics of primary sources in them. Some types of secondary sources include: Text Books, Criticisms, History and encyclopaedia etc.

Your can do this!

You can ask students to collect the primary sources and secondary sources on particular subject.

Despite of these basic types of information sources, following are various types of information sources.

- Reference Sources
- Non Book Sources
- Electronic Sources
- Periodicals

REFERENCE SOURCES:

ALMANAC

An almanac is an annual publication that includes information regarding weather forecasts, farmers' planting dates, tide tables, and tabular information often arranged according to the calendar. It also contains astronomical data and various statistics such as the daily times of the rising and setting of
the sun and moon, eclipses, hours of full tide, stated festivals and so on. A “Date Panchang” is famous almanac published in Marathi Language. Other examples of Almanac is Farmers’ Almanac, Schott’s Almanac. Almanacs are available in both the forms i.e. printed as well as online. The famous example of Indian online almanac is Kalnirnaya.

Your can do this!

You can ask students to collect the timings of rise and set of sun and moon for the next week. You can also ask the students to collect the geographical information of upcoming eclipses.

YEAR BOOK

A Year Book is also called as an Annual. A Year Books is a documentary, memorial, or historical book published every year, containing information about the previous year. It is also defined as a usually bound publication compiled by the graduating class of a school or college, recording the year’s events and typically containing photographs of students and faculty. Yearbooks are available in both the forms i.e. print and online. A school’s annual magazine is an example of yearbook which is familiar to us. Pica boo Year book can help you to discover the ideas of creating school year book.

Your can do this!

You can ask students to create a Class Year book by including photographs of the students in a class, all the class activities and compile it in a form of Year Book of specific class for a specific year.

HANDBOOK

A Handbook is a concise manual or reference book providing specific information or instruction about a subject or place. It is handy reference for carrying out certain task. A Teachers’ Handbook is a good example which is available for all school subjects for all standards. Handbook contains the sequence of instructions for performing specific task e.g. handbook of psychology test or teachers’ handbook for teaching geography. You can refer the handbooks of teaching school subjects for certain standards.

ENCYCLOPAEDIA

A reference work (often in several volumes) containing articles on various topics (often arranged in alphabetical order), dealing with the entire range of human knowledge or with some
particular specialty. An encyclopaedia is an authentic source of information in any subject for back round information. The encyclopedias are mainly of two types. A General Encyclopaedia which covers the general topics in the universe e.g. Encyclopaedia of Britannica or Marathi Vishwakosh. A second types is subject related encyclopaedia which especially covers the nearly all the topics or information from specific subject e.g. Encyclopaedia of Education, Encyclopaedia of Psychology. Due to advent of information technology, the online or digital encyclopaedia in the form of CD are also available. The Encyclopaedia Britannica is also available in CD Rom Format which is more convenient for searching. The Wikipedia is the example of online encyclopaedia which is also interactive.

DIRECTORY:

Contains an organized list of specific persons or institutions Private Institutions, Government institutions, social institutions Gives all necessary information about specific persons or institutions Arranged alphabetically. We are all familiar with Telephone directories. Two types of directories are available. General Directory which directs towards regions, cities, telephone numbers etc. and special directories which directs towards specific organizations, business, education, professionals and professions. As like other reference sources, directories are also available in online form. The Directory of online journals, Web directory, Subject directory are some examples of online directories.

Dictionary: It is a book that lists the words of a language in alphabetical order and gives their meaning, or that gives the equivalent words in a different language. More dictionary provides the pronunciations, various forms of a word. The famous examples of these dictionaries are Oxford Dictionary, Webster’s Dictionary for English to English, and Veerker’s Dictionary, Navneet Dictionary are multi language dictionary. Other than these dictionary, each language has its own dictionary. As a teacher, especially those who are language teachers, we must know these basic types of dictionaries. The following are the major types of dictionary.

General Dictionary
Glossary
Lexicon
Thesaurus
Concordance
Dictionary of Short forms
Dictionary of Usage
Dictionary of Technical Terms
Dictionary of Quotations
Dictionary of Etymology
Dictionary of Proverbs
Dictionary of Slangs
NON BOOK SOURCES:

Non Book Sources are the sources of information which are not in the form of books. A wide range of non book sources is available like charts, maps, globes, images, drawings, pamphlets, patents, reports, thesis, and dissertations, standards. Many of these sources are used in classrooms. But still, some sources are ignored though useful.

LETTERS: We are much familiar with the letters. But we can use the letters for educational purposes. Letters are the primary sources of information. You can give reference of letters written by famous people and also show the copies of these letters in a classroom. For example, Jawaharlal Nehru’s Letters to Indira etc. History teachers can make effective use of these letters by showing the historical letters in a classroom.

DIARIES: Diaries are the original sources of information. The diaries written by famous people are published. History teachers can make effective use of historical diaries by showing them (in the published format) in a classroom.

PAMPHLETS: We are all familiar with pamphlets. Many of the pamphlets are produced for marketing purposes. But educational pamphlets are also available which provide information about various courses, educational schemes.

ELECTRONIC SOURCES:

The sources which provided the information in an electronic form are called as electronic sources. To access the information from these sources, we require electronic support. The common examples of these electronic sources are CDs, DVDs, E-journals, E-Books, Televisions, Tape recorders, Cassette etc. Instead of monotonous teaching from books only, you can use these electronic sources in a classroom which will be definitely useful for
expanding the vision of students. For example, if you are teaching a lesson “Eclipses”, instead of showing charts or models, if you show them a CD of eclipses, it will be more effective. Same thing is for science teachers, digestive system can be explained more effectively by showing CD, than charts. E-books and E-journals are now emerging very fast. Though it is bit difficult to access it, as a teacher, for knowledge gaining you should refer to these e-journals and e-books as they are available for 24*7 with you.

Periodicals:

It is a publication which is published at regular interval such magazine, journal or newspaper. They are also often referred to as serials. Periodicals usually consist of a collection of articles, which may range from a single page story in a magazine to a 40 page study in a scholarly journal.

Advantages of Using Periodicals

- Periodicals are the only best option for current information.
- Before published in a books, the current information, especially research based information, is always first published in a journal.
- Periodicals are the best source for volatile information.
- Periodicals are meant for every field and for every interest.
- Many different topics are covered in one periodical.

The most common types of periodicals are Scholarly, Popular, and Trade Journals.

Scholarly Journals

- It contains original research work in a specific field.
- The intended audience is researchers, faculty and students in a specific field.
- The experts and well known personalities in the field write the articles.
- Content is often supported by charts, figures and statistics.
- Do not contains advertisements.
- Articles in a scholarly have to undergone through rigorous peer review process before publications.
- Articles usually include footnotes or bibliographies to other sources, using a standardized citation format.
- Published at State, National or International levels-

Examples of Scholarly Journals:

- Edutracks
- Journal of Special Education
- Edujourn : International Journal of Education
Popular Magazines

- It mainly covers news, general topics, events or hobbies.
- The intended audience is general public
- Articles are usually written by a member of the editorial staff or a free lance writer.
- The language of the articles is geared for any educated audience, and does not assume familiarity with the subject matter.
- Include many illustrations, often with large, glossy photographs and graphics for an aesthetically pleasing appearance.
- Include advertisements.
- Publication does not involve a peer review process.
- Sources are sometimes cited, but articles do not usually include footnotes or a bibliography.
- Are typically published weekly or monthly.

Examples of Popular Magazines

- India Today
- Forbes

Common Information Publications in Education:

In an education faculty, the state and national level institutions regularly publish policies, regulations, codes, curriculum and journals. These institutions are NCERT, NCTE, UGC, SCERT, SSC Board, CBSE Board Etc. The publications published by these institutions are authentic and standard.

Summary

In this module we learned basics types of information sources i.e. primary and secondary. We learned various types of information sources like reference, non book electronic, digital, periodicals and educational sources.
In this module we will learn:

- Basics of World Wide Web
- Web Domains
- Concepts of search engine
- Categories of search engines
- Types of search engines
- Subject Gateways
- Portals
- Databases

Due to advent of information technology, our information dealing practices are also changed. If we want any new information, obviously our figures start working on Google. We are much familiar with world wide web and search engines. But we are not completely aware about search engines and other places to find the information like blogs, wikis, subject gateways. Portals, ETds, etc. Though we use social networking sites regularly, we do not know how to make use of these sites in teaching learning.

WWW: The term WWW refers to the World Wide Web or simply the Web. The World Wide Web consists of all the public Web sites connected to the Internet worldwide, including the client devices (such as computers and cell phones) that access Web content. The WWW is just one of many applications of the Internet and computer networks.

The World Web is based on these technologies:

- HTML - Hypertext Markup Language
- HTTP - Hypertext Transfer Protocol
- Web servers and Web browsers

Researcher Tim Berners-Lee led the development of the original World Wide Web in the late 1980s and early 1990s. He helped build prototypes of the above Web technologies and coined the term "WWW." Web sites and Web browsing exploded in popularity during the mid-1990s. It is also known as World Wide Web, The Web.
WEB BROWSER:

Browser, short for *web browser*, is a software application used to enable computers users to locate and access web pages. Browsers translates the basic HTML (Hypertext Mark Up Language) code that allows us to see images, text videos and listen to audios on websites, along with hyperlinks that let us travel to different web pages. The browser gets in contact with the web server and requests for information. The web server receives the information and displays it on the computer. The examples of web browsers are Internet Explorer, Mozilla Firefox, Google Chrome, Aurora etc.

WEB DOMAIN:

The domain names gives a website its own unique web address where it could be found at and associated with. For example. accerlib.ac.in. In this example, “acerlib” is name of website by which it can be identified over internet and “.ac.in” is the domain extension which interpret the type of website or information incorporated in this website. There are various domain names like .com, .net etc. following table provides you the domain extensions and the type of information incorporated in it.

<table>
<thead>
<tr>
<th>Extensions</th>
<th>Type of Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>.com</td>
<td>Commercial</td>
</tr>
<tr>
<td>.org</td>
<td>Organization</td>
</tr>
<tr>
<td>.net</td>
<td>Network</td>
</tr>
<tr>
<td>.ac</td>
<td>Academic</td>
</tr>
<tr>
<td>.edu</td>
<td>Educational</td>
</tr>
<tr>
<td>.gov</td>
<td>Government</td>
</tr>
<tr>
<td>.coop</td>
<td>Cooperative</td>
</tr>
<tr>
<td>.info</td>
<td>Information</td>
</tr>
<tr>
<td>.int</td>
<td>International Organizations</td>
</tr>
<tr>
<td>.jobs</td>
<td>Companies</td>
</tr>
</tbody>
</table>

SEARCH ENGINES:

Search Engine is a program that searches for and identifies items in a database that correspond to keywords or characters specified by the user, used especially for finding particular sites on the Internet. We have the misconception that search engine provides the information as per our requirement. It actually provides the list of web sites that contains the information that matches your requirement. It is a program that receives your search request, compares it to the entries in the index, and returns results to you. Internet search engines are special sites on the Web that
are designed to help people find information stored on other sites. There are differences in the ways various search engines work, but they all perform three basic tasks:

- They search the Internet or select pieces of the information based on important words.
- They keep an index of the words they find
- They allow users to look for words or combinations of words found in that index.

**WORKING OF SEARCH ENGINE:**

Search Engine performs two major functions:

1. Crawling and Building an index
2. Providing answers by calculating relevancy & results.

1. Crawling and building an index

Search engines crawl on the network of the World Wide Web like a spider and indexes the web pages as well as files in Portable Document Format, JPG, news, videos, and media files on the World Wide Web. Once search engines find these pages, it deciphers the code from them and stores selected pieces in massive hard drives in data centers of respective search engines. For collecting and storing this abundant information, search engines have constructed data centers all over the world.

The above illustration is described in the following flow figure.

2. Providing answers by calculating relevancy & results.

When a user submits a search query to search engines, they search the pages containing the words in user's search query in its database and return the relevant results.
Search engines are expected to perform two things

1. To return only those results which are relevant to users’ requirement
2. Rank those results in order of perceived usefulness.

In short, search engines simply find a page with right words as typed in your search query and returns in appropriate order.

TYPES OF SEARCH ENGINES:

There are five main types of search engines.
1. Web Search Engines
2. Human Powered Directories or Subject Directories
3. Meta Search Engines
4. Federated Search Engines
5. Invisible Web Search Engines
6. Specific Search Engines
   i. Subject specific search engines
   ii. Format specific search engines

HUMAN POWERED DIRECTORIES:

Human Powered directories depend on human editors to create their listings. Typically, webmasters submit a short description to the directory for their websites, or editors write one for the sites they review, and these manually edited descriptions will form the search base. Therefore, changes made to individual web pages will have no effect on how these pages get listed in the search results. Human-powered directories are good when you are interested in a general topic of search. The examples of these human powered directories are Yahoo Directory, BUBL etc.
META SEARCH ENGINE:

Search engines have certain limitations. No search engine can search all the information. The results found through Google may not find through Yahoo or MSN. For comprehensive search you need to search multiple search engines and it consumes time and energy. Meta Search Engine is the solution. In simple words, Meta search engines search the users' information through other search engine. It can be called as "Single Window System". It transmits user's keywords simultaneously to various individual search engines to actually carry out the search. These search engines carry out the search in their databases and return the relevant results to Meta search engines. Then meta search engine collects the results received from various search engines associated with it, integrates all the results, eliminates the duplicate results, adds additional features like clustering and returns the relevant results. The Example of Meta Search Engine is Dogpile, Metacrawler, Mamma. Dogpile is associated with Google, Yahoo and Yandex, It saves time as users need not use various search engines for information searching. While this strategy gives your search a broader scope than searching a single search engine, the results may not always better. This is because the meta search engine must use its own algorithm to choose the best results from multiple search engines. Often, the results returned by a meta search engine are not as relevant as those returned by a standard search engine.
FEDERATED SEARCH ENGINE:

Federated search engine performs the federated search. Federated Search means “Deploying a search over distributed and possibly heterogeneous data sets, and receiving in return a unified search results list.” However, federated search techniques are not limited to the web and can be useful for many enterprise search systems. Any organization with multiple searchable collections can apply federated search. The users can search for case law, court documents, related newspapers and magazines, public records, and in return, receive merged results from heterogeneous sources techniques. In simple words, in federated search systems, the task is to search a group of independent collections, and to effectively merge the results they return for queries.

Federated search has two distinct approaches.

1. Query Time Merging.
2. Index Time Merging

1. Query Time Merging: It is faster and easier solution.

A query federator intercepts the query, and passes it to multiple search engines. The federator then waits to hear replies from the search engines, and when received, merges or concatenates the results into a results list. This model relies on data repositories to provide a search function.

2. Index Time Merging: This approach requires content to be acquired into a central index, and it is typical of traditional enterprise search systems.

Most search engines default to ranking by relevancy, which is what most users expect. Through acquiring all data into a central index, sophisticated query enhancement and relevancy algorithms can be applied, providing the user with excellent search results.

The Pro Quest and Google Scholar are the best examples of federated search engines.
The term "invisible Web" or "Deep Web" mainly refers to the vast repository of information that general search engines and directories don't have direct access to, like databases. Information in these databases is generally inaccessible to the software spiders and crawlers that create search engine indexes. This invisible web content is estimated to be about 500 times more than what today's search engines can see. Hidden within the pages of these databases lie terabytes of information that is crucial to your day-to-day decision-making. To get at this information, or even to determine if it is pertinent to your subject, you might spend endless hours in manual searching. This is both time-consuming and prone to human error. These invisible or deep webs can be searched through special search engines called as invisible web search engine. Invisible Web search engines are built to construct queries, which connect with dynamic content in real-time in order to obtain current information. Since the types of queries vary widely depending on the type of database being queried, invisible web search applications are focused on searching pre-selected data sources where the search intent and underlying content are known. This has led to the use of invisible web search technology in building "Vertical Searches" or "specialized searches" that focus on specific businesses. The good examples of invisible search engines are www.Scirus.com , Thevirtuallibrary.com, www.invisibleweb.com, www.completeplanet.com and www.vlib.org.
SPECIFIC SEARCH ENGINES:

These are domain specific search engines. For searching information in different subject these specific search engines can be used. There are two types of these specific search engines.

1. Subject specific search engines
2. Format specific search engine.

Subject specific search engines intends to search the information in specific subject. For example. Scirus for science, History Engine for History, Mathguide for Mathematics, Geosearchengine for Geogaphy. As these search engines index the pages only in their specialized field, the chances of getting relevant results than general search engines is always high.

example for pictures picsearch, tubesurf for videos, findsounds for sounds etc.

SUBJECT GATEWAYS:

Subject gateways are specialized catalogues in which the information has been selected and organized by a person or an organization. Subject gateways are built up hierarchically; you can choose from a number of sub-categories within each subject in order to limit your search results.
Aim of a subject gateway is to help users in locating relevant and high quality resources on the Internet. A subject gateway is an online librarian which locates online resources what librarians do for books. Unlike search engines, subjects gateways are built by humans and it contains selected information about a specific subject. There are various subject gateways for various disciplines.

- **Medicine**
- **Engineering**
- **Art**
- **Social Science**
- **Business**
- **History**
- **General**

**WEB PORTALS:**

Portals are the websites that serves as a gateway or a main entry point ('cyber door') on the internet to a specific field-of-interest or an industry. A portal provides at least four essential services:

1. search engine(s),
2. email,
3. links to other related sites, and
4. personalized content.

It may also provide facilities such as chat, members list, free downloads, etc. Portals such as AOL, MSN, Net center, and Yahoo, earn their revenue from membership fees and/or by selling advertising space on their web pages also called portal site or web portal. While there...
Jaykar Library of University of Pune has its own portal i.e. Jaykar Library Portal from where you can access the journal database/s those subscribed by Jaykar Library.

Databases:

A database is a searchable collection of information. In library research, a database is where you find articles. Each database contains thousands of articles from different journals, which you search simultaneously. You can cover a lot of ground quickly using databases, finding more articles with higher relevancy than searching in individual journals. Go to Databases A-Z, or Databases by subject.

Databases...

- Can include journals, newspapers, magazines, reports, newsletters and more.
- Sometimes include books, but if you want books specifically, use the library catalogue.
- Can focus on one subject or be multidisciplinary.
- Often give you full text; others show only the abstract and citation.
- You can print, save, or email citations and, if available, the full-text article.
- Might look different but have similar functions, like limiting to only peer-reviewed journals or searching by date. Check a database's help page for tips.
- May only contain a certain date range (you might miss some content).
- Sometimes leave out article images; if you need to see an important photo or diagram, you will need to find the article in print.
- Can be used off campus if you log in.
- Are also called subscription databases, online databases, article databases, and electronic resources.

For example, EMERALD, EBESCO, SCIENCE DIRECT are the journal databases which contains thousands of journals and provides links to research articles in those journals. ERIC database is specially designed for education and research purpose where you will find thousands of research articles in education.

Social Networking Sites:

Social Networking sites like Face Book, Twitter are primarily meant for entertainment. But besides entertainment, we can accesses the valuable information, videos, images, messages which have been shared on these social networking sites. You, as a teacher of specific subject, can create a account on one of these social networking sites and can share the vast range of information, debate on your subject. Using social networks for education purpose is nothing but knowledge sharing. For example, Library of Adarsha Comprehensive College of Education and
research has created a Face Book Account by name accerlibrary. It periodically shares the educational articles, newspaper clippings, videos, messages, job openings for the student teachers.

Summary

In this module we learned basics World Wide Web i.e. web browser, URL and Domains. We learned concept and working of search engines, categories and types of search engines. We learned subject gateways, Portals and Databases.
In this module we will learn:

- Developing search strategies.
- Searching techniques.

Now it is a usual practice to search any information on internet. We are now more used to with internet than books and other printed material. When we think to search something new, out fingers start working and we log on to Google or any other search engine. We insert our query, which is in the form of statement or general terms in natural language. But what we find? Do we get satisfied with the results obtained from internet? NOT ALWAYS!!!!! WHY? This is because we are lacking of search strategy and search techniques. We can find information on any subject, discipline in any form or type, but need is to apply systematic strategy and universal techniques. From this module you will learn both of these i.e. strategies and techniques to search the information.

SEARCH STRATEGY:

When you start to search a new information in library catalogue, journal database, internet, it is a good practice to do some intellectual paper work. Before logging into search engines, you first need to get clear idea about your topics, i.e. what the topic interpret, which are the main concept/s and/or term/s? , which are the standard terms? What is the relationship between selected concepts or terms. We go through an example for more understanding.

Suppose you want to search an information on mind mapping. We should follow the following steps.

- Identifying the Dimensions of a topic
- Identifying the keywords,
- looks for synonyms and standard terms
- Construction of a String
1. Identifying the Dimensions of the topic.
- Learning techniques
- Definition of Mind Mapping
- Mind Maps
- Construction/ Drawing of Mind Maps
- Benefits of Mind Mapping Technique
- Mind Map Construction Packages

In above list, you can see one dimension “Learning Techniques” which seems to be irrelevant to the topic. But Mind Mapping is one of the learning techniques, somebody may think necessary to get information of all learning techniques and then proceed towards the technique of Mind Mapping. “Learning Techniques” is the broader term under which the narrower term “Mind Mapping” comes. The dimensions can be written in natural language.

2. Identifying the key words.

The second step after identifying the dimensions, we need to convert these dimension in keywords as follows.

<table>
<thead>
<tr>
<th>Key word 1</th>
<th>Key word 1</th>
<th>Key word 1</th>
<th>Key word 1</th>
<th>Key word 1</th>
<th>Key word 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Techniques</td>
<td>Mind Mapping</td>
<td>Mind Maps</td>
<td>Construction/ Drawing</td>
<td>Benefits/ use/ pros and cons</td>
<td>Concept /Definition</td>
</tr>
</tbody>
</table>

3. Identifying the synonyms

Once we listed the keywords, we need to identify the synonyms for them. In above example in above example mind maps can be constructed or can be drawn or we can search benefits or use or pros and cons of mind mapping which have similar meanings. So we should think more on keywords and their synonyms. For this purpose we can use Thesaurus or its online version thesaurus.com. In some cases, the information is indexed under standard terms for example, in an education disciples we use the word Adolescents instead of Teen agers, or use Elementary Education instead of Primary Education. So we also think about the standard terms which are practiced in specific discipline.

4. Construction of a String

After listing the keyword, next step is to construct a string by establishing relationship between two or more keyword by using operators.
Take an example of Mind Mapping. We have listed the keywords. From these keywords, following string can be constructed.

- Learning Techniques AND Mind Maps
- Definition AND Mind Mapping
- Benefits AND Mind Mapping
- (Construction OR Drawing) AND Mind Maps

You may think about AND & OR which is used in above string. These are Boolean Operators which help us a lot in searching an information. AND Operator interprets that both the words of either side of AND must be appear in the search results. For example, from first string, you will find only those article which contains both the words learning techniques and mind mapping. In short, by using AND operator, we can narrow down our search. By using OR operator can have broad search. For example in the last string you will get the results which contains construction of mind maps or drawing of mind maps or you can get both of these. More details about these Boolean operators will be studied in the topic “Boolean Search”.

SEARCHING INFORMATION AS A TEACHER

During teaching process, we need to search some extra information so as to add values in our lesson. While searching this information following points need to be considered.

1. **Teaching Methodology:** The selection of information is strongly depend upon the teaching methodology. If you are teaching by Demonstration Method, you need pictorial or visual information. If you are teaching by lecture or discussion method, you need textual information. If you are teaching by blended approach, you need digital information. So select appropriate information which is suitable for particular teaching methodology for effective teaching.

2. **Level of student:** You should consider the level of students to whom we are giving the information. A same topic can be taught for different levels of students. For example, if you want to teach Pollution for standard 6 & standard 9. According to level of these two standards, you need to teach different dimensions of a subject.

3. **Previous knowledge:** you should consider the previous knowledge of students. If you are giving a lecture on Shivaji Maharaj before 9 standard, you need to select appropriate information as the student in this standard are well aware of childhood and adventurous events in the life of Shivaji Maharaj. So you need to give lecture on new dimension of Shivaji Maharaj which is not known by students.

4. **Awareness about literature:** As a teacher of any discipline, you must aware about literature and its types. Because literature adds more values in our teaching process. If
5. you are a Science Teacher, if need to be aware of biographies or autobiographies of about literature on tourism. As a History Teacher you need to be aware of historical literature, biographies of Historical persons etc. The use of literature is applicable in all subjects. For Value education, you need to be aware about use of child literature like Esapniti, Panchantra and other children story books.

SEARCH TECHNIQUES:

When conducting Internet searches, there are several very useful search techniques for finding the most reliable information available. If you inculcate these techniques, you can search near about 90% appropriate the information. In this module, some basic and usual search techniques are discussed. They are as follows.

• Phrase Search
• Boolean Search
• Truncation Search
• Range Search
• Proximity Search
• Limiting the Search
• Fussy Search

Phrase Searching:

A type of search that allows users to search for documents containing an exact sentence or phrase, rather than single keywords. For example, Mind Mapping, it contains two words with different meanings i.e. mind and mapping. If you search by the word Mind Mapping, you will get the documents containing the word mind only or containing the word mapping only or you will also get the documents containing both of these words i.e. Mind Mapping in any sequence. This means you may get more irrelevant results. Instead of typing Mind Mapping only, if you type it in between inverted comma like “Mind Mapping”, you will get the documents containing the exact word as Mind Mapping. This will give you more relevant results as compared to previous.

If you are searching a sentence or phrase of more than two words, always put these words in between inverted commas!!!!!
Boolean Searches allows you to combine words or phrases using the operators “AND”, “OR”, “NOT” and “NEAR”. Use of these operators helps us to limit, widen or define your search. Most of the search engines support the use of Boolean Search.

**AND Operator**

AND Operator narrows a search by combining two or more terms; It will retrieve only those documents that contains all the specified terms.

“Elementary Education” AND “Secondary Education”.

This search string will retrieve only those documents that contains both the terms i.e. elementary education and secondary education. You can use + sign instead of writing AND.

**OR Operator**

OR Operator broadens a search by retrieving the documents contains either of two or more words or all the specified words.

“Elementary Education” OR “Secondary Education”.

This search string will retrieve the documents containing either of these two words or the documents containing both the words.

**NOT Operator**

NOT Operator narrows a search by excluding specified search terms.

“Elementary Education in India” NOT Maharashtra.

This search string will retrieve the documents containing the information about elementary education in India excluding the elementary education in Maharashtra.

If you are searching an information containing combination of two or more key words, always use appropriate Boolean Operators.

**TRUNCATION SEARCH:**

Truncation searching allows you to retrieve documents containing variations on a search term. During this search, type the first few letters of the keyword followed by an asterisk (*).

Creat* this string will retrieve the documents containing the words create, creation, creation, creating etc.

Similarly Color* : coloring, color, colored etc.
PROXIMITY SEARCH:

Proximity searching enables you to search based on where, and how close, two or more search terms appear in the search result. Search engines and databases utilize a variety of different proximity operators.

WRT Operator:

Suppose as an education student you need to find the information about working of brain. If you insert a string like “working of Brain”, you will retrieve the documents containing the information about working of brain, but it may be related to Zoology or Medicine or Psychology. You want to search in information of brain from education point of view, then you need to use WRT Operator.

“Working of Brain” WRT Education. Here WRT means With Respect To.

“Problems of Adolescents” WRT “Health Education”.

NEAR Operator:

It searches for terms near each other. For example you want to search the documents containing the two terms “problems” and “education” with certain distance. You can specify it as

“Problem” NEAR “Education”. Search engine will yield the results only when these two are within certain distance.

SENTENCE/PHRASE Operator:

It searches for terms in same section of result in sentence, paragraph, etc. You can specify it as

“Napoleon” SENTENCE “France” : search engine or database will yield results where “Napoleon” and “France” are in the same sentence or you can specify

“Napoleon” PARAGRAPH “France” : search engine or database will yield results where “Napoleon” and “France” are in the same paragraph.

FUSSY SEARCH: HTTP://WHATIS.TECHTARGET.COM/DEFINITION/FUZZY-SEARCH

A fuzzy search is a process that locates Web pages that are likely to be relevant to a search argument even when the argument does not exactly correspond to the desired information. A fuzzy search is done by means of a fuzzy matching program, which returns a list of results based on likely relevance even though search argument words and spellings may not exactly match. Exact and highly relevant
matches appear near the top of the list. Subjective relevance ratings, usually as percentages, may be
given. If you retrieving an information about “Portuguese” and if you entered this word with wrong
spelling i.e. portuagse, then search engine will ask you “Did you mean Portuguese”. Alternative
spellings, and words that sound the same but are spelled differently, are given. More, if you enter the
word “information”, search engine.

RANGE SEARCH:

While searching an information about specific product you can specify the numeric range. For
example, if you want to purchase digital camera and you budget is Rs. 5000-7000. You can
specify it by using range searching.

“Digital Camera”..Rs. 5000..Rs. 7000.

By using this range search, you can get results containing the information of digital cameras
ranging in between Rs. 5000 to Rs. 7000 only.

More Examples:
Dumbbells ..10KG..20KG
"Places around Pune" ..10km..20km

LIMITING THE SEARCH:
You can limit your search by using this search techniques. You will understand it from
following table.

<table>
<thead>
<tr>
<th>PDF: “Mind Mapping”</th>
<th>You will get only PDF documents containing information about Mind Mapping. You can also specify DOC, PPT for documents and presentation type files.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFINE: “Mind Mapping”</td>
<td>You will get only those documents containing the definitions of Mind Mapping, You can also use BENEFITS, CAUSES, DIMENSIONS etc.</td>
</tr>
<tr>
<td>IND: Cricket</td>
<td>You will get only those documents containing information of cricket in India</td>
</tr>
<tr>
<td>VIDEO: “Mind Mapping”</td>
<td>You will get only videos on Mind Mapping</td>
</tr>
<tr>
<td>IMAGE: “Mind Mapping”</td>
<td>You will get only images on Mind Mapping</td>
</tr>
</tbody>
</table>

Summary

In this module we learned basics searching an information. We learned various search techniques that will provide the ease to search the information from internet.
In this module we will learn:

- Importance of evaluations
- Evaluation of Books and Journals
- Evaluation of Web sites

We access information from various sources ranging from manuscripts to digital. But we retrieve the information blindly from these sources. Most of us have misconception that the information in a book or found on internet is always right. But it is not always true. The trueness and other quality dimensions of information are strongly depend upon the sources in which it is incorporated. So we need to evaluate the information sources before retrieving the information.

Books and journals are the common and basic sources of information. But they need not to be evaluated because, books are published only after publishers' or editors' review. Before purchasing the books libraries also apply critical evaluation by respective persons in the field. So as a user of the books, we need not evaluate the books. The same case is about journals. Before publishing an article in journal, it has to undergo through the process of peer review or blind review. If it provides some new facts, then only a particular journal publishes that article. As a user, we need not evaluate the journals also. Then, question comes in mind: what to review and why? The answer is WWW.

As we know, information exists on a huge network of World Wide Web. There is no screening or evaluating or reviewing authority on internet. Anyone can create a website or webpage and can put any information on it. When we search the information through search engine, it returns only list of websites/pages those contain relevant information as per our requirement. Search engine do not evaluate the information. So there is a strong need to evaluate the website from where we access the information. There are some basic criterions to evaluate the websites. These are as follows:
<table>
<thead>
<tr>
<th>Evaluation Criterions</th>
<th>Questions to be asked for specific criterions</th>
</tr>
</thead>
</table>
| **Accuracy**         | • Who wrote the page and can you contact him or her?  
                        • What is the purpose of the document and why was it produced?  
                        • Is this person qualified to write this document?  
                        • Make sure author provides e-mail or a contact address/phone number.  
                        • Know the distinction between author and Webmaster. |
| **Authority**        | • Who published the document and is it separate from the "Webmaster?"  
                        • Check the domain of the document, what institution publishes this document?  
                        • Does the publisher list his or her qualifications?  
                        • What credentials are listed for the authors?  
                        • Where is the document published? Check URL domain. |
| **Objectivity**      | • What goals/objectives does this page meet?  
                        • How detailed is the information?  
                        • What opinions (if any) are expressed by the author?  
                        • Determine if page is a mask for advertising; if so information might be biased.  
                        • Ask yourself: why was this written and for whom? |
| **Currency**         | • When was it produced?  
                        • When was it updated?  
                        • How up-to-date are the links (if any)?  
                        • How many dead links are on the page?  
                        • Are the links current or updated regularly?  
                        • Is the information on the page outdated? |
In short we should ask following eight questions before retrieving the information.

- What can the URL tell you?
- Who wrote the page? Is he, she, or the authoring institution a qualified authority?
- Is it dated? Current, timely?
- Is information cited authentic?
- Does the page have overall integrity and reliability as a source?
- What's the bias?
- Could the page or site be ironic, like a satire or a spoof?
- If you have questions or reservations, how can you satisfy them?

Web site evaluation is an important task. As our decision making and further actions are strongly depend upon the retrieved information, we need to evaluate the sources from where we retrieved the information.

Summary

In this module we learned basics evaluation of information and its sources. We learned, evaluation criterions of evaluating books, journals and web sites.
In this module we will learn:

- Content Analysis
- Repackaging of Information
- Presenting information
- Communicating information

Information processing refers to the manipulation of digitized information by computer and other digital electronic equipment, known collectively as information technology (IT). Generally information processing contains, content analysis of an information i.e. whether the retrieved information is able to satisfy out need of information or not; repackaging of retrieved information (if necessary), presenting information effectively and communicating it.

**CONTENT ANALYSIS:**

Following table describes the criterions of content analysis.

<table>
<thead>
<tr>
<th>Content Analysis Criterions</th>
<th>Questions to be asked for specific criterions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intended Audience</td>
<td>• What type of audience is the author addressing?</td>
</tr>
<tr>
<td></td>
<td>• Is the publication aimed at a specialized or a general audience?</td>
</tr>
<tr>
<td></td>
<td>• Is this source too elementary, too technical, too advanced, or just right for your needs?</td>
</tr>
<tr>
<td>Objective Reasoning</td>
<td>• Is the information covered fact, opinion, or propaganda?</td>
</tr>
<tr>
<td></td>
<td>• Does the information appear to be valid and well-researched, or is it questionable and unsupported by evidence?</td>
</tr>
<tr>
<td></td>
<td>• Assumptions should be reasonable. Note errors or omissions.</td>
</tr>
<tr>
<td></td>
<td>• Is the author's point of view objective and impartial? Is the language free of emotion-arousing words and bias?</td>
</tr>
</tbody>
</table>
REPACKAGING OF INFORMATION

Packaging of information is a physical recording, arrangement and presentation of information on a given medium and in a given form, for example information in the books or journal.

Repackaging of information is rearrangement of physical media in which information has been presented, which is tailored to the requirements of a specific clientele. In other words, repackaging of information refers to the presentation of information in more understandable, readable, acceptable and usable forms.

You have retrieved specific information in text form from various sources. You are planning to use this information for the 5th Class. If you convey the information as it is, it will be not suitable for intended audience, i.e. 5th class. If you rearrange the presentation of content (without changing the original meaning) in a suitable format, for example, slide show or story, it is called as repackaging of information.

EFFECTIVE PRESENTATION OF INFORMATION

Presentation is the most important stage in the information processing. Though, you have retrieved a quality information from quality source, it is important to present this information in an effective manner. So Depend upon the intended audience, form of information and requirement of a topic, you need to choose the effective presentation format. Following are the major presentation formats.

1. **Face to Face**: it contains the story telling, lecture or other traditional methods of teaching like discussion or question answers. According to level and interest of audience, you should choose correct method.
2. **Computer Assisted Instructions**: You can convert the information in the form of computer assisted instructions so that, in your absence, audience can learn from the information provided by you. It mainly contains blended approach or CAI module.

**COMMUNICATION INFORMATION:**

Many times, we need to circulate the retrieved information to friends, colleagues or students. If a retrieved information is in printed form, then it is easier to make photocopies and circulate it for educational purpose. If it is in digitized form, then it can be communicated through e mail or you can share it on blog or other social networking sites like face book etc.

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**Summary**

_in this module we learned basics information processing. We learned content analysis, repackaging of information, Presentation of information and communication of information._
In this module we will learn:

- Copyright
- Plagiarism
- Citing information: APA Style

Ethical use of information means not to use any form of information created/written by somebody else without giving proper credits to him/her. In simple words, not to copy others' intellectual work without citing or without permission. The intellectual works not only means the text in the form books or journals but also images, videos, drawings, software programs, trademarks, logos, films, dramas etc. While studying the ethical use of information we need to see two major issues i.e. copyright and Plagiarism

COPYRIGHT

Copyright is a bunch of rights in certain creative works such as text, artistic works, music, computer programs, sound recordings and films. The rights are granted exclusively to the copyright owner to reproduce the material, and for some material, the right to perform or show the work to the public. Copyright owners can prevent others from reproducing or communicating their work without their permission or may sell these rights to someone else. In short we can not make the photocopy of a book or an online article or can not download image, videos, audios, software programme for profit making. But a provision of Fair use has been made in copyright law. It interprets that you can make a photocopy of a part of book for education and research purpose.

PLAGIARISM

Plagiarism is the act of stealing someone else's work and attempting to "pass it off" as your own.

This can apply to anything, from term papers to photographs to songs, even ideas!
WAYS TO AVOID PLAGIARISM

1. The best method for avoiding it is to simply be honest; when you've used a source in your work, give credit where it's due.
2. Acknowledge the author of the original work you've used.
3. Another way to avoid plagiarism is to use your own work as often as possible.
4. Another way to do it is to quote and/or cite your sources properly.
5. Consult style manual for citing the sources appropriately.

APA STYLE MANUAL

American Psychological Association style is an academic format specified in The Publication Manual of the American Psychological Association, a style guide that offers academic authors guidance on various subjects for the submission of papers to the publications of APA. APA style manual provides the styles of citing various sources.

Following table provides the APA style of Citation for commonly used sources.

<table>
<thead>
<tr>
<th>Source Type</th>
<th>APA Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Book with a single Author</td>
<td>Author, A. A. (Year of publication). Title of work: Subtitle. Place of publication: Publisher.</td>
</tr>
<tr>
<td>A Book with two authors</td>
<td>Author, A. A. and Author, B.B. (Year of publication). Title of work: Subtitle. Place of publication: Publisher.</td>
</tr>
<tr>
<td>A Book with more than two authors</td>
<td>Author, A. A. etc(5) (Year of publication). Title of work: Subtitle. Place of publication: Publisher.</td>
</tr>
<tr>
<td>Edited Book</td>
<td>Editor, A. A. (Ed.). (Year of publication). Title of work: Subtitle. Place of publication: Publisher.</td>
</tr>
</tbody>
</table>

**Summary**

In this module we learned basics of Indian Copyright law. We learned what is plagiarism and ways to avoid plagiarism.
In this module we will learn:

- What is cyber security.
- Threats in cyber security
- Cyber security tips

CYBER SECURITY:

Cyber security referred to as information technology security, focuses on protecting computers, networks, programs and data from unintended or unauthorized access, change or destruction. In short, Cyber security means protecting your information and system.

PRINCIPLES OF CYBER SECURITY

Confidentiality means sensitive information should not be accessible to unauthorized person.

Integrity means information should remain as in original form and should not be altered.

Availability means information should be easily available to those who need it.

THREATS TO CYBER SECURITY

Malware: Malware allows digital hackers to track your every move and to view the passwords you are entering. Malwares are unknowingly get downloaded in our computer system when you try to download free software like screen saver etc. Malware can be spread through social networking sites also. When we click on suspicious link, malware get downloaded into the system. **SO DO NOT DOWNLOAD FREE SOFTWARES.**

Spam: These are like emails and usually carry the attachment prompting you to download a computer virus. **SO DO NOT OPEN OR ACCESS SPAM MAILS.**

Hacking: Hacking is a common of identity theft. It means to gain control of consumers' personal information is through digital crimes known as “phishing.” Through this process, hackers create a duplicate email of a reputed company and ask for your personal information like Bank Account No. etc. and will operate your account. **SO KEEP YOU A/C AND PERSONAL INFORMATION CONFIDENTIAL AND DO NOT SAVE OR SHARE IT THROUGH COMPUTER.**

Virus: we are well aware about viruses. It is nothing but a software programme which can be downloaded from internet or transferred through auxiliary devises like pen drive. Oftenly the
viruses are attached to executable or image files. **SO INSTALL ANTIVIRUS AND UPDATE IT REGULARLY. GET EVERY OUTER FILE SCANNED BEFORE DOWNLOADING OR COPYING ON YOUR COMPUTER.**

**BASIC TIPS FOR CYBER SECURITY.**

**Think for twice or thrice Before You Click**

Always think before you click on links or images in an email, instant message, or on web sites. Be cautious when you receive an attachment from unknown sources. Even then if you want to download it, get it scanned through antivirus.

**Use Hard Password to guess**

Password must be hard to guess by other person. Use combination of upper and lower case, use symbols and special characters and numbers. Change the password frequently.

**Do not share personal information**

Do not share personal information through internet. Do not give your credit/debit card numbers or any other personal information under the inquiry “Verify your number”.

**Shop Safely Online**

When shopping online always know with whom you're dealing. When submitting your purchase information, look for the "lock" icon on the browser's status bar to be sure your information is secure during transmission. Always remember to pay by credit card and keep a paper trail.

**Protect Your Identity**

When visiting web sites, it's important to know what information is being collected, by whom and how it will be used. Web sites track visitors as they navigate through cyberspace, therefore, data may be collected about you as a result of many of your online activities.

**Protect Your Portable Devices**

It is important to make sure you secure your portable devices to protect both the device and the information contained on the device. Always establish a password on all devices. If your device has Bluetooth functionality and it's not used, check to be sure this setting is disabled. Some devices have Bluetooth-enabled by default. If the Bluetooth functionality is used, be sure to change the default password for connecting to a Bluetooth enabled device.

**Back-Up Important Files**

Back-up your important files minimally on a weekly basis. Don't risk losing your important documents, images or files!
Install antivirus

Install a good quality antivirus and get your whole computer scanned regularly. Also update the antivirus regularly. Do not use pirated or duplicate software.

Summary

In this module we learned basics of cyber security. We learned what is meant by cyber security, threats to cyber security and tips for cyber security.
### List of Selected Search Engines and Educational Websites

#### Science Search Engines
- [www.Scirus.com](http://www.Scirus.com)
- [www.Scienceresearch.com](http://www.Scienceresearch.com)
- [www.scitation.aip.org](http://www.scitation.aip.org)
- [www.Worldwidescience.org](http://www.Worldwidescience.org)
- [www.scienceaccelerator.gov](http://www.scienceaccelerator.gov)
- [www.search.optics.org](http://www.search.optics.org)
- [www.techxtra.ac.uk](http://www.techxtra.ac.uk)

#### Geographical Search Engines
- [www.geointeractive.co.uk](http://www.geointeractive.co.uk)
- [www.beaucoup.com](http://www.beaucoup.com)
- [www.informationweek.com](http://www.informationweek.com)

#### Image Search Engines
- [www.flickr.com/](http://www.flickr.com/)
- [www.picssearch.com/](http://www.picssearch.com/)
- [yotophoto.com/](http://yotophoto.com/)
- [www.timelifepictures.com](http://www.timelifepictures.com)

#### Meta Search Engines
- [www.dogpile.com/](http://www.dogpile.com/)
- [www.excite.com/](http://www.excite.com/)
- [www.weblib.in.ua/](http://www.weblib.in.ua/)
- [www.info.com/](http://www.info.com/)

#### Popular Educational Websites
- [www.egurucool.com](http://www.egurucool.com)
- [www.schoolcircle.com](http://www.schoolcircle.com)
- [www.netvarsity.com](http://www.netvarsity.com)
- [www.onlinevarsity.com](http://www.onlinevarsity.com)
- [www.shiksha.com](http://www.shiksha.com)
- [www.buckleyourshoe.com](http://www.buckleyourshoe.com)
- [www.freeskills.com](http://www.freeskills.com)
- [www.smartforce.com/smb](http://www.smartforce.com/smb)
- [www.examsonline.com](http://www.examsonline.com)
- [www.competitionmaster.com](http://www.competitionmaster.com)

#### Websites for Lesson Planning
- [www.askeric.org](http://www.askeric.org)
- [www.col-ed.org](http://www.col-ed.org)
- [www.edhelper.com](http://www.edhelper.com)
- [www.education-world.com](http://www.education-world.com)

#### List of Educational Search Engines
- [www.db.education-world.com/](http://www.db.education-world.com/)
- [www.sunsite.berkeley.edu/KidsClick/](http://www.sunsite.berkeley.edu/KidsClick/)
- [www.infomine.ucr.edu/search/k12search.phtml](http://www.infomine.ucr.edu/search/k12search.phtml)
- [www.educationplanet.com/](http://www.educationplanet.com/)
- [www.studyweb.com/](http://www.studyweb.com/)
- [www.library.thinkquest.org/](http://www.library.thinkquest.org/)
- [www.vlib.org/](http://www.vlib.org/)

#### Mathematics Search Engines
- [www.math.niu.edu](http://www.math.niu.edu)
- [www.mathforum.org](http://www.mathforum.org)
- [www.mathguide.com](http://www.mathguide.com)
- [www.math.about.com](http://www.math/about.com)

#### Videos Search Engines
- [www.mamma.com/](http://www.mamma.com/)
- [www.hulu.com/](http://www.hulu.com/)
- [www.dailymotion.com/in](http://www.dailymotion.com/in)
- [www.clipblast.com/](http://www.clipblast.com/)

#### Federated Search Engines
- [www.intellogist.com](http://www.intellogist.com)
- [www.Scitopia.org](http://www.Scitopia.org)

#### Educational Videos Websites
- [www.ted.com/](http://www.ted.com/)
- [www.cosmolearning.com/](http://www.cosmolearning.com/)
- [www.classroomclips.org/](http://www.classroomclips.org/)
- [www.edutopia.org/](http://www.edutopia.org/)
- [www.teachtube.com/](http://www.teachtube.com/)
- [www.ed.ted.com/](http://www.ed.ted.com/)
- [www.zaneeducation.com/](http://www.zaneeducation.com/)
- [www.videolectures.net/](http://www.videolectures.net/)
REFERENCES

Books

1. Beile, Penny, 2009, Measuring Information Literacy Skills in Education, Saarbrucken: VDM Verlag Dr. Muller Aktiengesellschaft & Co.KG.

Web Sites:


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12. Internet Know How, Internet Search Techniques. Available at

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http://www.usg.edu/galileo/skills/unit04/primer04_10.phtml, retrieved on 14 October 2013


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### APPENDIX V

**Information Literacy Module recommended to Savitribai Phule Pune University for including in the syllabus of Pre-service Teacher Education**

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Name of the Module</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Module 1</strong></td>
<td><strong>Introduction to Information literacy</strong></td>
</tr>
<tr>
<td></td>
<td>• Introduction</td>
</tr>
<tr>
<td></td>
<td>• Definition and concept</td>
</tr>
<tr>
<td></td>
<td>• Information literacy and teacher education</td>
</tr>
<tr>
<td></td>
<td>• Need of information literacy for teachers: A global view</td>
</tr>
<tr>
<td><strong>Module 2</strong></td>
<td><strong>Information Basics</strong></td>
</tr>
<tr>
<td></td>
<td>• Data, Information, Knowledge, Wisdom</td>
</tr>
<tr>
<td></td>
<td>• Types of information</td>
</tr>
<tr>
<td></td>
<td>• Various forms of information</td>
</tr>
<tr>
<td></td>
<td>• Qualities of good information</td>
</tr>
<tr>
<td><strong>Module 3</strong></td>
<td><strong>Library Basics</strong></td>
</tr>
<tr>
<td></td>
<td>• Organization of library</td>
</tr>
<tr>
<td></td>
<td>• Common services offered by library</td>
</tr>
<tr>
<td></td>
<td>• Tool to search sources in library</td>
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<tr>
<td><strong>Module 4</strong></td>
<td><strong>Information Sources</strong></td>
</tr>
<tr>
<td></td>
<td>• Types of Information Sources: Primary and Secondary</td>
</tr>
<tr>
<td></td>
<td>• Introduction to Reference Sources</td>
</tr>
<tr>
<td></td>
<td>• Introduction to Non Book Sources</td>
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<tr>
<td></td>
<td>• Introduction to Electronic Sources</td>
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<td></td>
<td>• Introduction to Digital Sources</td>
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<tr>
<td></td>
<td>• Introduction to Periodicals</td>
</tr>
<tr>
<td></td>
<td>• Introduction to Information Sources in education.</td>
</tr>
<tr>
<td><strong>Module 5</strong></td>
<td><strong>Internet Search Tools</strong></td>
</tr>
<tr>
<td></td>
<td>• WWW Basics</td>
</tr>
<tr>
<td></td>
<td>• Web Browsers</td>
</tr>
<tr>
<td></td>
<td>• URL</td>
</tr>
<tr>
<td></td>
<td>• Domains</td>
</tr>
<tr>
<td></td>
<td>• Concept and Definition of Search Engine</td>
</tr>
<tr>
<td></td>
<td>• Categories of Search Engine</td>
</tr>
<tr>
<td></td>
<td>• Types of Search Engines</td>
</tr>
<tr>
<td></td>
<td>• Subject Gateways</td>
</tr>
<tr>
<td></td>
<td>• Portals</td>
</tr>
<tr>
<td></td>
<td>• Databases</td>
</tr>
<tr>
<td><strong>Module 6</strong></td>
<td><strong>Searching the Information</strong></td>
</tr>
<tr>
<td></td>
<td>• Developing Search Strategy</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
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</tr>
<tr>
<td>Module 7</td>
<td>Evaluation of Information</td>
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<tr>
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<td>---------------------------</td>
</tr>
<tr>
<td></td>
<td>• Evaluation of books and journals</td>
</tr>
<tr>
<td></td>
<td>• Evaluation of websites</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module 8</th>
<th>Information Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Content Analysis</td>
</tr>
<tr>
<td></td>
<td>• Repackaging of information</td>
</tr>
<tr>
<td></td>
<td>• Presenting information</td>
</tr>
<tr>
<td></td>
<td>• Communicating information</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module 9</th>
<th>Ethical use of information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Copyright</td>
</tr>
<tr>
<td></td>
<td>• Plagiarism</td>
</tr>
<tr>
<td></td>
<td>• Citing the information : APA Style</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module 10</th>
<th>Introduction to Cyber Security</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Definition</td>
</tr>
<tr>
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<td>• Principles of cyber security</td>
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