FUNDAMENTALS OF INFORMATION LITERACY FOR INQUIRY

BILL HORD
PUBLIC SERVICES LIBRARIAN
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HCC SOUTHWEST COLLEGE
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**Key Message**

This workshop is about how you, as a responsible educator, can create an environment in which your students can more readily become responsible, self-directed learners. By the end of this session, you’ll have some ideas and tools from information literacy to help you do it.

**Today’s Objectives**

By the end of this session you should be able to:

- Explain what information literacy is.
- Align information literacy with your aims and objectives.
- Describe some conditions that make successful student inquiry possible.
- Analyze some conditions that prevent student success in inquiry.
- Plan some learning activities and assignments that help students become more information literate and meet your course needs.
- Design assessments for information literacy learning.
ARE YOU PREPARING STUDENTS TO LEARN ON THEIR OWN IN YOUR FIELD OR DISCIPLINE?

1. Is information literacy relevant to students in your courses? Why or why not?

2. What are five (5) possible exercises or assignments for a class you teach that help students become more information literate?
   a. 
   b. 
   c. 
   d. 
   e. 

3. For a major information-based assignment in your course (such as a research paper or another assignment of comparable complexity), what are the things students will need to succeed? (List as many general ‘things’ as you can think of.)

4. Information literacy is mainly about learning to use the library effectively. (Agree/Disagree)

5. Information Literacy is a component of higher education accreditation in many parts of the United States. (Agree/Disagree)

6. Plagiarism is using the ideas of another person in your work instead of using only your own ideas. (Agree/Disagree)

7. The information sources found in online subscription databases (such as ProQuest Direct or Academic Search Complete) are best described as internet sources. (Agree/Disagree)

8. Information literacy includes the ability to “text.” (Agree/Disagree)

9. Use Boolean ‘and’ to narrow a search. (Agree/Disagree)

10. With an HCC library barcode you will be able to request books from any HCC library any time of day, access restricted databases from off-campus, check out books, and get a TexShare card. (Agree/Disagree)

11. In order to access HCC subscription databases from home, you must log in with an Active Directory (HCC email) login and pay a subscription fee. (Agree/Disagree)
Information Literacy

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

Information Literacy is also:
- Focused on inquiry and self-directed learning
- Linked to accreditation
- Supportive of lifelong learning
- Process-oriented
- Associated with information overload

Information Literacy may encompass:
- Visual Literacy
- Media Literacy
- Network Literacy
- Computer Literacy
- Traditional Alphabetic Literacy
- Cultural Literacy
- Library Instruction
INFORMATION LITERACY CAPABILITIES IN THE ACRL STANDARDS

The Association of College and Research Libraries, a division of the American Library Association, published in 2000 a set of Information Literacy Competency Standards for Higher Education. The ACRL Standards were developed from research based on national education reform (Doyle, 1989). The “ACRL Standards,” as they are commonly known, are regarded by many around the world as a model of their kind.

The Standards identify **five general information literacy capabilities:**

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

2) The information literate student accesses needed information effectively and efficiently.

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

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

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

The published Standards associate a number of “Outcomes” and “Performance Indicators” with each standard. (For the full Standards, go to http://www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompetency.cfm.)
A LIBRARY LITERACY REFRESHER FOR HCC FACULTY

The HCC Libraries provide faculty, staff, and students with a wide range of services and materials to support learning.

The HCC Libraries
- 10 Libraries throughout 6 colleges
- 5 Electronic Resource Centers
- Hours & some policies vary

The HCC Libraries Homepage
- http://library.hccs.edu
- Linked from HCC Homepage

2 Forms of the Library Card
- Student ID card, issued at each campus, with barcode on the back
- Faculty library card, issued in the library, with barcode on the front

The Library Catalog
- http://librus.hccs.edu
- Books, videos, e-books, more!
- Simple or advanced searching
- Inter-campus online request & physical delivery
- Online video booking
- Links to other resources

Subscription Databases
- 24/7 access from anywhere with internet access and a library barcode number, through the library webpages
- Full-text access
  - Millions of magazine, newspaper & journal articles
  - Thousands of reference & e-books
  - Radio & television transcripts
  - Images, audio, & movie clips
  - Music, art, & auto repair!

Access to Other Libraries
- TexShare gives access to UH, TSU, HBU, UST
- Interlibrary Loan services available

Library & Information Literacy Instruction
- Custom sessions to meet your students’ needs – Ask us!
- In your classroom or ours
- Graded online tutorial

Services for Faculty
- Help designing research assignments
- Adding needed materials to our collections
- Citation style and plagiarism tools

Course Reserves
- Print
  - Any library location
- E-Reserves
  - Limited availability
  - 24/7 access
  - Stats available

Ask a Librarian
- Multiple options
- Phone & in-person
- Email
- Live chat
  - Instant Messaging: hccslibrarian at AIM, Yahoo!, Hotmail

For DE Students
- LibLine
- Ask a Librarian
- Database access (on and off campus)

LibLine
- http://library.hccs.edu/Libline/
- Instructional posts
- Subscribe via email
- Instructional demos
- Tools for Faculty
3 Views of Student Development:
Are your students ready for information literacy learning?

Perry’s Scheme of Intellectual and Ethical Development

Women’s Ways of Knowing

The Experience of Learning

“Filling my head with facts”
“Drumming it into the brain and reeling it off”
“Take in information, see how it can be used”
“To have a process of thought that ‘sets in motion’”
“Opening your mind to see things in different ways”
“Expanding yourself...”
PERRY’S SCHEME OF INTELLECTUAL AND ETHICAL DEVELOPMENT
(from Nelms, 2003, and Rapaport, 2006)

In 1970, Harvard Educator William Perry published his *Forms of Intellectual and Ethical Development in the College Years: A Scheme*, charting the cognitive development of college students.

Dualism/Received Knowledge: There are right/wrong answers, known by authorities.
1. Basic Duality: My task is to learn the RIGHT solutions.
2. Full Dualism: Some authorities disagree; but the RIGHT answers are out there. (Rapaport: Therefore, "learn the Right Solutions and ignore the others.")

Multiplicity/Subjective Knowledge: Because only conflicting answers exist, I must trust my “inner voice,” not an external authority.
3. Early Multiplicity: Despite the conflict, my task is to learn how to find the RIGHT solutions.
4. Late Multiplicity: Everyone has a right to their own opinion. Some problems are just unsolvable. It doesn’t matter which solution I choose. My task is to sound like I know the RIGHT solution. (William J. Rapaport: "At this point, some students become alienated, and either retreat to an earlier ('safer') position ('I think I'll study math, not literature, because there are clear answers and not as much uncertainty') or else escape (drop out) ('I can't stand college; all they want is right answers' or else 'I can't stand college; no one gives you the right answers').")

Relativism/Procedural Knowledge: There are 2 kinds of knowledge: Connected (What does this poem say to me?) and Separated (What techniques can I use to analyze this poem?)
5. Contextual Relativism: Some solutions are better than others. My task is to learn to evaluate alternative solutions.
6. “Pre-Commitment”: I see the necessity of making choices and committing to one answer.

Committed Relativism/Constructed Knowledge: The aim of education is to be able to integrate knowledge learned from others with personal experience and reflection—all within the context of relativism.
7. Commitment: My task is to make a commitment.
8. Challenges to Commitment: I must experience the implications of my commitment and understand my responsibility.
9. Constructed Knowledge: I realize that my commitment is an ongoing, unfolding, and evolving activity.
**Women’s Ways of Knowing**

Mary Belenky, Blythe Clinchy, Nancy Goldberger, Jill Tarule

(Summary from Ferris State University, Center for Teaching, Learning & Faculty Development, http://www.ferris.edu/HTMLS/academics/center/Teaching_and_Learning_Tips/Gender/SummaryofWomensWaysofKnowing.htm)

1. Silence: total dependence on whims of external authority
   - Words viewed as weapons—worried about being punished for using words
   - Ways of knowing available limited to the present, the actual, the concrete, the specific and to actual behaviors—life seen in polarities
   - Blind obedience to authorities of utmost importance for keeping out of trouble
   - Speaking of self was almost impossible
   - Women often talked about voice and silence in describing their lives
   - The development of a sense of voice, mind, and self were connected

2. Received Knowledge: receive and reproduce knowledge
   - Feel confused and incapable when required to do original work
   - Paradox is inconceivable—intolerant of ambiguity
   - The longer you work, the higher the grade
   - Worry that developing their own powers would be at the expense of others
   - Look to others for self-knowledge—unable to see themselves as growing.
   - Think of words as central to the knowing process—learn by listening
   - Concrete and dualistic thinking
   - Little confidence in their own voice—trust that their friends share exactly the same thoughts and experiences—apt to think of authorities, not friends, as sources of truth because of their statues
   - Equate receiving, retaining, and returning the words of authorities with learning

3. Subjective Knowledge: truth and knowledge are conceived of as personal, private, and intuited
   - Distrust logic, analysis, abstraction, and even language itself—some see these methods belonging to men
   - Lack of grounding in a secure, integrated, and enduring self-concept
   - Fear that using combative measures in support of her opinion may jeopardize connections with others
   - "...Not at all the masculine assertion that ‘I have a right to my opinion’; rather, it is the modest, inoffensive statement, ‘It’s just my opinion.’"
   - A sense of voice arises.
   - Truth is an intuitive reaction, experienced not thought out.
   - Still the conviction that there are right answers; the source of truth shifted locale—truth comes from within the person and can negate external answers—women become their own authorities.
   - First hand experience is a valuable source of knowledge—The predominant learning mode is inward listening and watching.
4. Procedural Knowledge: rely on objective procedures for obtaining and communicating knowledge

- The orientation toward impersonal rules is separate knowing--"impersonal procedures for establishing truth"
- Relationship orientation has to do with connected knowing--truth emerges through care
- Thinking is encapsulated within systems--"can criticize a system, but only in the system's terms, only according to the system's standards. Women at this position may be liberal or conservatives, but they cannot be 'radicals.'"
- Knowing requires careful observation and analysis--simple becomes problematic
- At first this does not feel like progress--confidence wanes--the inner voice becomes critical
- "The notion of 'ways of looking' is central to the procedural knowledge position"--knowledge is a process.
- Procedural Knowledge has elements of separate knowing and connected knowing

4. a. Connected Knowing (procedural):

- Based in capacity for empathy
- Hope to understand another person's ideas by trying to share the experience that has led to the forming of the idea--begin with an attitude of trust
- Dialogue is more like a clinical interview--"If one can discover the experiential logic behind these ideas, the ideas become less strange and the owners of the ideas cease to be strangers."

4. b. Separate Knowing (procedural):

- Opposite of subjectivism: "While subjectivists assume that everyone is right, separate knowers know that everyone--including themselves--may be wrong."
- Realize that relationships are not on the line--enables defense against authorities--experts only as good as their arguments.
- Separation from feelings and emotions of self in the cause of objectivity

5. Constructed Knowledge: view all knowledge as contextual; value subjective and objective strategies

- Integration
- Develop a narrative sense of self
- High tolerance for internal contradiction and ambiguity
- Do not want to compartmentalize reality
- Constructed Knowledge

"Once knower assumes the general relativity of knowledge, that their frame of reference matters and that they can construct and reconstruct frames of reference, they feel responsible for examining, questioning, and developing the systems that they will use for constructing knowledge."
THE EXPERIENCE OF LEARNING
FERENCE MARTON & SHIRLEY BOOTH

In a number of studies, Ference Marton and his colleagues explored the ways university students experience their own learning (summarized in Marton & Booth). The research supported three important findings:

a) Students’ ways of experiencing their learning vary.

b) Students’ conceptions of their own learning change over their college careers.

c) Prompting students to reflect on their conceptions of learning enhances student learning.

The researchers schematized the conceptions of learning they uncovered as a hierarchically organized “outcome space” for learning about “learning.” According to the research summarized in Marton & Booth, students experienced “learning” in a progressive pattern as …

- “Filling my head with facts”
- “Drumming it into the brain and reeling it off”
- “Take in information, see how it can be used”
- “To have a process of thought that sort of ‘sets in motion’ when you look at something”
- “Opening your mind a little bit more so you can see things in different ways”
- “Expanding yourself …”

Christine Bruce and her colleagues have applied similar concepts in researching how students experience information literacy (Bruce, 1997; Bruce, Edwards, & Lupton, 2006; Edwards & Bruce, 2004). Students have different conceptions of both learning in general and of their relations with information – which has implications for how they can learn to become information literate.
## What Do Students Need to Succeed in Inquiry?

<table>
<thead>
<tr>
<th>Essentials</th>
<th>Associated Needs</th>
</tr>
</thead>
</table>
| a. Understand research | Understand the motivation and goals of doing research  
| | Understand norms and values of research  
| | Understand the collaborative nature of research |
| b. Recognize problems and related information needs |  |
| c. Form good questions | Understand the goals and limitations of research activities |
| d. Search and find relevant information | Understand the nature of information and information production and distribution  
| | Recognize kinds of media  
| | Understand and use reference and finding tools  
| | Understand and use search techniques  
| | Access media and sources |
| e. Evaluate sources and information | Understand and apply criteria |
|   | f. Integrate information into their knowledge base | Understand the scope and significance of issues  
Want to see connections |
|---|-----------------------------------------------|--------------------------------------------------------------------------------------------------|
|   | g. Use and present information effectively   | Understand media options for communication  
Understand production formats and techniques  
Understand ways to use information |
|   | h. Use information ethically and legally     | Understand laws and principles that apply to information use  
Understand the value of laws and ethical principles that apply to information |
|   | i. Get support in the process                | Know who can help them  
Differentiate their own contribution in a group process  
Recognize that inquiry learning is collaborative |
|   | j. Develop a desire for research and independent learning | Understand the nature of research and independent learning |
|   | k. Spend time                                 |                                                                                                 |
|   | l. Reflect on the process                     |                                                                                                 |
PREPARING THE WAY FOR STUDENT RESEARCH SUCCESS

1. Provide Context.

2. Break the research process into component parts.

3. Situate each part of the process, as well as the whole exercise, in the continuum of inquiry. Why is each stage important to the overall success of the inquiry?

4. Scaffold activities.

5. Consider the conditions of the possibility of success. What would students have to know and do to accomplish the assignment?

6. Know your students.

7. Test the assignment.
WORKSHEET FOR DEVELOPING AN INQUIRY LEARNING ASSIGNMENT

Learning Context
1. How is the learning in your course related to students’ lives? What is an information literacy aspect of this relation?
2. Is inquiry learning consistent with your philosophy of education and the way you teach?
3. What objectives are you addressing?
   a. Does your course have an SLO that inquiry learning could accomplish?
   b. Write a course objective that matches that SLO.
   c. What do students have to know and be able to do to accomplish the objective?
4. Are you trying to address any core intellectual competencies?
5. How does the assignment reflect the kind of inquiry that is essential to your discipline or field?

Your Students
6. How much time and effort can you and your students devote to this objective and this assignment?
   a. Could students accomplish the objective by completing a smaller assignment?
7. How little or how much collaboration will you build into the assignment?
8. How can you integrate the assignment into your course?
   a. How can you divide the assignment into manageable chunks?
   b. How can you distribute parts of the assignment throughout your course?
9. Are your students ready for research?
   a. What do students have to do to complete the assignment?
   b. What is essential to your objectives?
   c. What will give students the most trouble?
   d. What can you do to help students prepare for research?
10. How can you scaffold the learning?
    a. How much content information will you provide?
    b. How much structure will you provide? How?

Information Literacy Elements
11. Which information literacy elements will the assignment address?
    a. Will the assignment require students to recognize and formulate information needs? How?
    b. Will the assignment require students to search and find information? How?
    c. Will the assignment require students to evaluate information and information sources? How will they acquire or recognize appropriate criteria?
d. Will the assignment require students to interpret information and integrate it into their knowledge-base? How will they develop the capacity to do so? How will students develop or recognize the appropriate knowledge-base?

e. Will the assignment require students to use information effectively to formulate or communicate an argument?

f. Will the assignment require students to understand or respond to social, legal, and/or ethical issues related to information production or distribution?

12. What kinds of information resources will your students need to do well on the assignment?
   a. How will your students access those information resources?
   b. How will your students become familiar with those resources?
   c. What kind of support will you provide for effective search, evaluation, selection, and use of those resources?

Assignments and Assessment

13. What will your students produce?
   a. How will you provide support for effective production?

14. How will you assess the assignment?
   a. How will you provide constructive feedback at milestones along the way?
   b. How will you encourage student reflection on the inquiry process and their learning?
   c. How will you elicit student reflection on these questions:
      i. What did I learn?
      ii. How did I learn it?
      iii. Why does this learning matter?
      iv. In what ways will I use this learning?
Some Alternative Inquiry Models: William Badke’s Model for Research

Some Alternative Inquiry Models:  
Mary George’s Library Research Process

### Some Alternative Inquiry Models:
**Carol Kuhlthau’s Stages of the Information Process**

#### Stage 1 -- Task Initiation

<table>
<thead>
<tr>
<th>Task</th>
<th>Thoughts</th>
<th>Feelings</th>
<th>Actions</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>To prepare for the decision of selecting a topic</td>
<td>Contemplating assignment</td>
<td>Apprehension at work ahead</td>
<td>Talking with others</td>
<td>Brainstorming</td>
</tr>
<tr>
<td></td>
<td>Comprehending Task Relating prior experience and learning</td>
<td>Uncertainty</td>
<td>Browsing the Library</td>
<td>Discussing</td>
</tr>
<tr>
<td></td>
<td>Considering possible topics</td>
<td></td>
<td></td>
<td>Contemplating possible topics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tolerating uncertainty</td>
</tr>
</tbody>
</table>

#### Stage 2 -- Topic Selection

<table>
<thead>
<tr>
<th>Task</th>
<th>Thoughts</th>
<th>Feelings</th>
<th>Actions</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>To decide on topic for research</td>
<td>Weighing topics against criteria of personal interest, project requirements, information available, and time allotted</td>
<td>Confusion</td>
<td>Consulting with informal mediators</td>
<td>Discussing possible topics</td>
</tr>
<tr>
<td></td>
<td>Predicting outcome of possible choices</td>
<td>Sometimes Anxiety</td>
<td>Making preliminary search of library</td>
<td>Predicting outcome of choices</td>
</tr>
<tr>
<td></td>
<td>Choosing topic with potential for success</td>
<td>Brief elation after selection</td>
<td>Using reference collection</td>
<td>Using general sources for overview of possible topics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Anticipation of prospective task</td>
<td></td>
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</tbody>
</table>

#### Stage 3 -- Prefocus Exploration

<table>
<thead>
<tr>
<th>Task</th>
<th>Thoughts</th>
<th>Feelings</th>
<th>Actions</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>To investigate information with the intent of finding a focus</td>
<td>Becoming informed about general topic</td>
<td>Confusion</td>
<td>Locating relevant information</td>
<td>Reading to learn about topic</td>
</tr>
<tr>
<td></td>
<td>Seeking focus in information on general topic</td>
<td>Doubt</td>
<td>Reading to become informed</td>
<td>Tolerating inconsistency and incompatibility of information encountered</td>
</tr>
<tr>
<td></td>
<td>Identifying several possible focuses</td>
<td>Sometimes threat</td>
<td>Taking notes on facts and ideas</td>
<td>Intentionally seeking possible focuses</td>
</tr>
<tr>
<td></td>
<td>Inability to express precise information needed</td>
<td>Uncertainty</td>
<td>Making bibliographic citations</td>
<td>Listing descriptors</td>
</tr>
</tbody>
</table>
### Stage 4 -- Focus Formulation

<table>
<thead>
<tr>
<th>Task</th>
<th>Thoughts</th>
<th>Feelings</th>
<th>Actions</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>To formulate a focus from the information encountered</td>
<td>Predicting outcome of possible foci</td>
<td>Optimism</td>
<td>Reading notes for themes</td>
<td>Making a survey of notes</td>
</tr>
<tr>
<td></td>
<td>Using criteria of personal interest, requirements of assignment, availability of materials, and time allotted</td>
<td>Confidence in ability to complete task</td>
<td></td>
<td>Listing possible foci</td>
</tr>
<tr>
<td></td>
<td>Identifying ideas in information from which to formulate focus</td>
<td></td>
<td></td>
<td>Choosing a particular focus while discarding others, or</td>
</tr>
<tr>
<td></td>
<td>Sometimes characterized by a sudden moment of insight</td>
<td></td>
<td></td>
<td>Combining several themes to form one focus</td>
</tr>
</tbody>
</table>

### Stage 5 -- Information Collection

<table>
<thead>
<tr>
<th>Task</th>
<th>Thoughts</th>
<th>Feelings</th>
<th>Actions</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>To gather information that defines, extends and supports the focus</td>
<td>Seeking information to support focus</td>
<td>Realization of extensive work to be done</td>
<td>Using library to collect pertinent information</td>
<td>Using descriptors to search out pertinent information</td>
</tr>
<tr>
<td></td>
<td>Defining and extending focus through information</td>
<td>Confidence in ability to complete task</td>
<td>Requesting specific sources from librarian</td>
<td>Making comprehensive search of various types of materials, i.e., reference, periodicals, nonfiction, and biography</td>
</tr>
<tr>
<td></td>
<td>Gathering pertinent information</td>
<td>Increased interest</td>
<td>Taking detailed notes with bibliographic citations</td>
<td>Using indexes</td>
</tr>
<tr>
<td></td>
<td>Organizing information in notes</td>
<td></td>
<td></td>
<td>Requesting assistance of librarian</td>
</tr>
</tbody>
</table>

### Stage 6 -- Search Closure

<table>
<thead>
<tr>
<th>Task</th>
<th>Thoughts</th>
<th>Feelings</th>
<th>Actions</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>To conclude search for information</td>
<td>Identifying need for any additional information</td>
<td>Sense of relief</td>
<td>Rechecking sources for information initially overlooked</td>
<td>Returning to library to make summary search</td>
</tr>
<tr>
<td></td>
<td>Considering time limit</td>
<td>Sometimes satisfaction</td>
<td>Confirming information and bibliographic citations</td>
<td>Keeping books until completion of writing to recheck information</td>
</tr>
<tr>
<td></td>
<td>Diminishing relevance</td>
<td>Sometimes disappointment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increasing redundancy</td>
<td></td>
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<td>Exhau...</td>
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**Some Alternative Inquiry Models: The Inquiry Is Power Model (B. Hord)**


<table>
<thead>
<tr>
<th>3 Stages of Inquiry</th>
<th>8 Process Steps</th>
<th>Options</th>
<th>Resources (Sources &amp; Tools)</th>
<th>Help/Scaffolds</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Recognize the questionable situation (Unformed)</td>
<td>1. Explore</td>
<td>Observe</td>
<td>Experts</td>
<td>Recommended readings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discuss with peers and experts</td>
<td>Reference materials</td>
<td>Affective modeling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Journal</td>
<td>Exploratory searches</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Read for perspective</td>
<td>Internet</td>
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<td></td>
<td></td>
<td>Narrow topic</td>
<td>Professor</td>
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<tr>
<td></td>
<td>2. Formulate research questions</td>
<td>Focus on a topic, theme, issue, or problem</td>
<td>Your experience</td>
<td>Questioning techniques</td>
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<tr>
<td></td>
<td></td>
<td>Connect to prior knowledge</td>
<td>Preliminary results</td>
<td>Kinds of questions</td>
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<td></td>
<td></td>
<td>Brainstorm</td>
<td>Professor</td>
<td>(definition, cause and effect, reasons, narrative)</td>
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<td></td>
<td></td>
<td>Narrowing a topic</td>
<td></td>
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<tr>
<td>B. Transform the situation (Inform)</td>
<td>3. Find relevant information</td>
<td>Create an information search strategy</td>
<td>Reference resources</td>
<td>Research guides</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Analyze questions</td>
<td>Live resources: interviews, polls &amp; surveys</td>
<td>Bibliographies</td>
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<td></td>
<td></td>
<td>Address individual differences</td>
<td>Print-based</td>
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<tr>
<td></td>
<td></td>
<td>Identify types of information</td>
<td>Digital-based</td>
<td></td>
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<td></td>
<td></td>
<td>Select resource formats</td>
<td>Multiple formats</td>
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<td>Librarians</td>
<td></td>
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<td></td>
<td>Professor</td>
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<td></td>
<td>4. Evaluate information and progress in understanding</td>
<td>Use and evaluate information sources</td>
<td>Your understanding</td>
<td>Reception scaffolds</td>
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<td></td>
<td></td>
<td></td>
<td>Peers</td>
<td>Reading techniques</td>
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<td></td>
<td></td>
<td>Professor</td>
<td>Evaluation guidelines</td>
</tr>
<tr>
<td></td>
<td>5. Synthesize knowledge and findings</td>
<td>Processing information</td>
<td>Professor</td>
<td>Transformation scaffolds</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Critical thinking: compare, select, organize, analyze, synthesize</td>
<td>Peers</td>
<td>Graphical organizers</td>
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<td></td>
<td>Librarians</td>
<td>Citation guidelines</td>
</tr>
<tr>
<td>C. Assess the modified situation (Formed?)</td>
<td>6. Discover your informed conclusion</td>
<td>Have an A-Ha! Moment Formulate your thesis Revise outline Integrate source information Cite sources</td>
<td>Professor Community of inquiry Peers</td>
<td></td>
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<td>------------------------------------------</td>
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<tr>
<td>7. Create a product that communicates findings</td>
<td>Select &amp; develop a product Identifying an audience Publish to the web</td>
<td>Production tools Professor Writing tutors</td>
<td>Production scaffolds Technology tutorials</td>
<td></td>
</tr>
<tr>
<td>8. Assess project</td>
<td>Assess project Reflect on the process</td>
<td>Your judgment Peers Professor</td>
<td>Assessment rubrics Revision guidelines</td>
<td></td>
</tr>
</tbody>
</table>

SOME EXAMPLES OF INFORMATION LITERACY ASSIGNMENTS
(Adapted from SJLibrary.org)

**Discerning between Scholarly and Popular Literature**
- The scholarly versus popular assignments requires students to include some measure of articles written by experts to other scholars, researchers and students in a given field. This assignment encourages students to think critically about information and to choose peer-reviewed articles that are accurate and lend credibility to their research.
- Incorporates ACRL Standards: 1, 3

**Identify Primary Research**
- The primary research assignment requires students to identify and select research articles that document an original project carried out by a researcher or scientist. This assignment exposes students to how research studies are presented and gives them the scientific framework on which to base their own original research.
- Incorporates ACRL Standards: 1, 3

**Annotated Bibliography**
- The annotated bibliography requires students to develop a topic, search for, evaluate, and summarize relevant literature, and cite information in the proper format for the current field of study.
- Incorporates ACRL Standards: 1, 2, 3, 4, 5

**Literature Review**
- One step further than the annotated bibliography, the literature review assignment requires students to critically interpret resources and see the relationship between concepts, fitting together various ideas to build a comprehensive view of the topic under study.
- Incorporates ACRL Standards: 1, 2, 3, 4, 5

**Journal or Log**
- Requiring students to keep an evaluative and reflective journal or log on course readings and research can help them better understand the research process and evaluate their success.
- Incorporates ACRL Standards: 3, 4

**Research Paper**
- Depending on the guidelines, a research paper can conceivably incorporate each of the assignments highlighted so far. Research papers require students to develop questions, find information, and critically interpret resources to create a convincing and developed final product.
- Incorporates ACRL Standards: 1, 2, 3, 4, 5

**Scavenger Hunts**
- Asking students to locate random facts does not teach them how to effectively conduct scholarly research. Rather than sending your frustrated students to scavenge around the Reference Desk in hopes that a librarian will locate the answers, consider working with a librarian to create meaningful questions that incorporate identifying the correct sources with the search process and research methodology. If you are really enthusiastic about scavenger hunts, consider assigning the Library’s online tutorial in conjunction with the hunt. This will introduce students to our services and collections in print and online.
- Incorporates ACRL Standard: 1
SOME SOURCES FOR DEVELOPING INFORMATION LITERACY ASSIGNMENTS

Creating Info Lit Assignments. 2010. Passaic County Community College.  
<http://pccc.libguides.com/content.php?pid=25195&sid=405208>

Designing Assignments to Develop Information Literacy Skills. N.d. Association of American Colleges and Universities.  

Information Literacy in the Disciplines. 2010. Instruction Section, Association of College and Research Libraries.  
<http://wikis.ala.org/acrl/index.php/Information_literacy_in_the_disciplines>

Integrating Information Literacy into Course Assignments. 2004. Gettysburg College.  
<http://www.gettysburg.edu/library/information/departments/reference/instruction/assignments.dot>

Integrating Information Literacy into the Liberal Arts Curriculum: Discipline Specific Resources. The Five Colleges of Ohio.  
<http://collaborations.denison.edu/ohio5/grant/>


Integration of Learning Outcomes. The California State University. 2007.  
BIBLIOGRAPHY & WORKS CITED


