Information Skills: How to Find the Information You Need

Instructor Guide
Attaining Information Literacy: Understanding and Responding to the Needs of Students
http://attaininfolit.org

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I. Introduction

Purpose and Rationale

Purpose of the Instructional Session

In today’s world, finding the right information can mean the difference between making the best purchase, landing the right job, or getting the best grade. In other words, information literacy has become important not only for academic reasons but also for making personal decisions.

Beginning college students, in particular, have an extraordinary need to develop effective and efficient information skills. Not only are they often living more independently and hence making more of their own personal decisions, they are also faced with course assignments that require more extensive information search and evaluation.

With the plethora of information available through the internet, people now have the ability to search for what they want. But they don’t necessarily have the skills to easily find information that is on target, accurate, and trustworthy. This is where the ASE Information Skills Process Model comes in. This process prepares people to analyze their information needs, search for information using the most appropriate and effective methods and techniques, and evaluate the information to make sure it meets their needs.

The goal of this instructional session is to help students learn to use the ASE Process Model to improve their information skills for personal and academic purposes. In addition, the session also strives to help students better assess their levels of competence in using information skills.

Learning Objectives for this Instructional Session are:

- List the three steps of the information skills process.
- Use keywords to search for information.
- Evaluate internet search results.

Instructional Approach

This instructional session was developed as an educational intervention as part of the Attaining Information Literacy (AIL) Project funded by the Institute of Museum and Library Services, National Leadership Grant LG-06-08-0049. The instructional approach of the session is guided by three theoretical frameworks: the Dunning-Kruger Effect (Kruger & Dunning, 1999), the imposed query model
(Gross, 1995), and the relational model of information literacy (Bruce, 1997). These frameworks informed research undertaken with first-year college students who have below proficient information literacy skills and focused on understanding the instructional needs of this target audience. The resulting instructional design is also informed by the instructional context that many academic librarians work within. Therefore, the type of intervention chosen is the one-shot information literacy session, which is often unconnected to a specific assignment or classroom-based instructional goal.

Theory-driven

The three theoretical frameworks used in the research that informs this instructional design focuses on three different aspects of understanding students. The Dunning-Kruger Effect comes from research in psychology that describes the inability of individuals who lack skills in a specific domain, to recognize their own skill deficit. They do not know that they are incompetent, because their lack of skill makes it difficult for them to assess their own ability or the ability of others accurately. Because they do not have the skill to make an accurate assessment, they tend to believe that they perform at an above average level and tend not to learn from failure to perform or from their mistakes (Kruger & Dunning, 1999; Ehrlinger, Johnson, Banner, Dunning, & Kruger, 2008). This effect – low skill level coupled with an above average self-view of ability – has been demonstrated in students asked to assess their information literacy skills (Gross & Latham, 2007).

The imposed query is a model that differentiates between information seeking that is self-generated (the result of someone’s personal context, interest, and/or curiosity) and imposed queries, the situation where someone is asked to search for information by someone else (school or work assignment). The imposed query model demonstrates how these two types of information seeking differ and the problems inherent in addressing a question that someone else has developed and which may not be completely understood.

The relational model of information literacy developed by Bruce is based on an investigation of university level educators’ experiences with and perceptions of information literacy. The AIL project used the relational approach employed by Bruce in her research to understand how students experience and perceive information.

Research-based

The development of the AIL approach to instructional intervention, while guided by the theories described above, is also supported by data collected over several years with hundreds of students. Unlike other research interested in information literacy, all students who participated in these studies completed the Information Literacy Test (ILT), which is an objective test, based on the ACRL standards and developed by James Madison University. Therefore, data analysis was informed by the skill level of the individual participant allowing for an in-depth understanding of the instructional needs of students who are not proficient in the area of information literacy as well as comparison of learning needs, learning history, and the information seeking process of students with a range of information literacy skills.
Learner-centered

This session was developed using the Informed Learning approach developed by Christine Bruce (http://www.infolit.org/star_10.html), which emphasizes student experience and ways of seeing the world about which students are learning. Results from focus groups with non-proficient students indicate the need for a Personal Relevance frame. Such instruction will 1) allow students to develop their own contexts for learning, and 2) encourage students to build personal relevance by focusing on what is meaningful and useful for them. Therefore, the topics and contexts used in the session are developed by the students and reflect their personal interests. Practice activities and debriefings require them to reflect on their own experiences and assess their own processes and results.

Reality-Based

This session was also developed with academic librarians in mind and with the input of instructional librarians at multiple colleges and universities. While there are shortcomings to the one session approach, it is also a format that many instructional librarians use for a variety of reasons. The AIL intervention described here was developed to optimize its effectiveness with non-proficient students, but this does not mean that students at a higher skill level will not also benefit from it. The scope of the session is intended to affect the student perception that there is no skill involved in finding and evaluating information. It does this by introducing the ASE Process Model (Analyze, Search, Evaluate), focusing on a limited information skill set, and using personal information needs to maximize the relevance of the course content. The skills taught will improve students’ abilities to find information sought in their daily lives, and have the further consequence of improving academic work as well.

Librarians are encouraged to think of this session as a starting point for information literacy instruction with students. This session can be used as a stand-alone module in the library, within student orientation or first year experience contexts, or in the classroom. The ASE Process Model presented here can be built on in future sessions with students and incorporated into instruction centered on class assignments.
II. Delivery of Instruction

Set Up and Teaching Approach

Set-up

The instructional session is designed to take place in a computer lab or an environment where computer access is provided.

Equipment and facilities required for the instructional session include:

- One computer for every two students.
- An instructional computer.
- A video projector.
- A screen or projection surface.
- Writing surfaces next to each computer and available for student use.

Note: Be sure to update the PowerPoint slide examples to reflect your context - places, events, dates, and times.

Teaching Approach

The session is intended to be led by a librarian and completed within a one-hour session. The instructor will introduce topics, elicit examples, and supervise activities as students practice using information skills. We recommend that the instructor use an interactive, questioning presentation style to maximize student interactions during the session.

Students will work alone for the first activity but will work in pairs to complete subsequent activities. The instructor and instructional aides (if available) will circulate to help students during the practice period. At the end of each activity, the instructor will lead short debriefing sessions.

Additional instructional support will be provided in the form of handouts, links to website information, and follow-up consultation sessions with a librarian.
Note: Administer and collect pre-workshop questionnaire before beginning instruction.

Instructional Session (1 hour)

1. Welcome and introduction (Slide #1)
   - Say: “We’re going to be talking about finding information today. So let’s start off thinking about how you find out about something. Let’s say you want to plan a trip for spring break, purchase something for your car, or find out when a rock group is going to be in town. What do you do first? Second?”
     (Responses should include using the internet.)
   - Summarize the variety of responses made by the students.
   - Say: “The purpose of this session is to help you refresh your skills or even learn some new ones for finding information. Since the internet is usually the first stop for most people nowadays, in this session we’re going to focus on skills that can help you make better use of the internet when you’re searching for information.”

2. Present the objectives (Slide #2)
   - By the end of this session you should be able to:
     - List the three steps of the information skills process.
     - Use keywords, synonyms, truncation, and exact phrases to search for information.
     - Evaluate internet search results.
3. Activity: What’s on Your Mind?  
(Slide #3)

- Say: “Think of something you want to find out about. This can be something you are just curious about or something more important like planning a trip or purchase, finding out about health issues, educational opportunities, entertainment possibilities, etc.”

- Say: “Use the ‘What’s on Your Mind?’ Worksheet. Take a minute to complete this worksheet now.”

- Ask for volunteers to share their responses. Comment positively on similarities and differences in the responses. Comment on which topics are at an appropriate level to be used in the session today (broad enough to think of several questions but not so general you can’t figure out what you want to know; specific enough to have focused questions but not so specific that you can only think of one or two questions to ask.)

(Slide #4)

- Say: “The ASE Information Skills Process is composed of three general steps that help you easily and effectively find the information you need. Each step has specific strategies for you to use when you are Analyzing, Searching, and Evaluating.”

- Ask for comments on whether this process is familiar or not and ask if they have followed a similar process in looking for information in the past. Two or three comments are enough.

- Say: “As we mentioned earlier, there are many different places you might look for information. But with the popularity of the internet firmly established, we’re going to focus our session today on using the internet to find information.”
5. **Step 1: A is for Analyze**  
(Slide #5)
- Present the class example.
- **Goal:** I want to find something to do with my friends to this weekend.
- **Need:** Kinds of events, locations, times, and costs so we can decide what to do.

6. **Team Info Search: Analyze**  
(Slide #6)
- Say: “Now you will work with a partner to start the ASE process. First, determine with your partner what topic you will use. Then together answer the analysis questions for your topic.
  - What is the goal of your search
  - What questions do you want to answer?”
- Emphasize that analysis is a very important part of the ASE process and they will have three minutes to complete this analysis and to record their team responses on their own worksheets. Circulate to help students and try to make sure the topics and questions are at an appropriate level. If necessary broaden or narrow a team’s topic and refine the questions.
- Ask several teams to read their topic and their analysis responses. As far as possible, make sure all teams have topics and analysis questions that are searchable.
7. **Step 2: S is for Search**  
(Slide #7)

- Present Class Example: What is happening in (city, state) this weekend?
- Say: “Using the internet, how will you search for the information you need?”
- Elicit responses which may include sources as well as strategies. At the end of the brainstorming, summarize by emphasizing any of the terms that were mentioned.
- Say: “We’re going to focus today on using keyword strategies to help you find the information you need.
  - Keywords
  - Synonyms
  - Truncation
  - Exact words or phrase searching”

8. **Keywords**  
(Slide #8)

- Say: “Think about the main ideas in your topic and questions.”
- Present the class example showing how you determine keywords and synonyms.
  - Class Example: What is happening in (city, state) this weekend?
  - What are the main ideas in your topic?
  - Use the main ideas as key words.
  - Keywords: happening, (city), (state), weekend
  - Consider using synonyms for key words.
9. **Team Info Search: Keywords**  
(Slide #9)

- Direct students to the Team Info Search worksheet.
- Say: “Keyword Searching. Begin by thinking of the main ideas of your topic. Then use these concepts as keywords to search online. If the keywords don’t return many results that look appropriate, try using synonyms. Record your keywords and synonyms in Step 2 under the section titled Keywords and Synonyms.”

- Tell students they will have two minutes to complete this activity.
- Ask several teams to share their use of words and results.

10. **Truncation**  
(Slide #10)

- Say: “Sometimes we may fail to retrieve useful results if the form of our keyword is different from the information on the website. For example, we have the word ‘music’ but website information may use the word ‘musical’ instead.”
- Say: “But note that not all words are appropriate for truncation, for example the word sheep.”
- Say: “Get more results by using all forms of the word. This is called truncation. Place an asterisk at the end of the word. We can also use this strategy for picking up multiple dates in a month. In our example we will truncate music, event, and (month).”
- Say: “The results should provide additional information relevant to your search.”
11. Team Info Search: Truncation (Slide #11)

- Direct students to the Team Info Search Worksheet.
- Say: “Review your key concepts and synonyms to see if websites could be using other forms of the word. Then select one or two to truncate and record your truncated words under Step 2 in the section titled Truncation. Then try out the search.”
- Tell students they will have two minutes to complete this part of their search.
- Ask several teams to volunteer what they used and found.

12. Exact Words or Phrase (Slide #12)

- Say: “Get more specific results by using quotation marks around the words or phrase. Or you can go to advanced search on your search engine to a dialogue box called ‘this exact wording or phrase.’”
- Say: “Note that exact words or phrases are not a useful strategy for single words.”
- Emphasize that exact word or phrase searching can target the search and narrows the number of results received. Using just the keywords without quotes results in some good hits but also pulls up a lot of extraneous material. Using the quotes focuses the results on the exact query.
13. Team Info Search: Exact Words or Phrase (Slide #13)

- Direct students to the Team Info Search Worksheet.
- Say: “Review your keywords and synonyms to see if you can think of exact wording or phrase that might result in more targeted results. Record your phrase or exact words under Step 2 in the section titled Phrases and Exact Words. Then try out the search.”
- Tell students they will have two minutes to complete this part of their search.
- Ask several teams to share their exact words and the results.

14. Team Info Search Results (Slide #14)

- Ask students to record a website address on the Website Citation line of the Evaluating Search Results Checklist.
- Explain that the Website address is the title of the site plus URL through domain name.
- Present the example.
15. Step 3: E is for Evaluate (Slide #15)

- Say: “Evaluating search results involves considering three criteria. Is the information:
  - Relevant for your topic and question?
  - Credible? Can you trust it?
  - Current enough to be useful for you?”


- Go over the criteria on the checklist and how to use them.

16. Team Info Search Evaluation (Slide #16)

- Tell students they will have three minutes to evaluate their website and to record their evaluation results.

- Circulate in order to help teams if necessary.

- After teams are finished, ask several teams to share their results.
17. Additional Search Tips  
(Slide #17)

- Present and demonstrate how the advanced search function on Google can help you retrieve specific information within specific sites or from specific domains. (Use the class example provided or an example you’ve chosen.)

- Point out Advanced Search Tips on the advance search Google page.

![Slide 17]

18. Summary  
(Slide #18)

- Ask students for the definition and then reveal:

  - **Analyze** – Determine what information you need.
  - **Search** – Use keyword search strategies.
  - **Evaluate** – Determine if the information is
    1. relevant
    2. credible
    3. current

- Ask if there are any questions.

![Slide 18]
19. Reflection and Wrap-up (Slide #19)

- Ask students to complete the post-instruction survey.
- Ask a few students to share their thoughts about what they learned today and how the session might be helpful in the future.

20. More Information and Help (Slide #20)

- Present information for additional help and distribute “Buddy List” along with website URL’s.
be considered as a lock-step, one-size-fits-all method, but rather as a flexible model that can be adapted to the needs of students at particular institutions. It also should not be considered as the only information literacy instruction that students will receive; instead, it should be thought of as a first step in a series of instructional opportunities, both formal and informal.

**Follow-up Support**

The ASE Process Model gives students an easy-to-remember way of approaching any information-seeking task. Once students have been introduced to the model, it is important to have a support framework in place so that they can review what they have learned, continue to refine their skills, and apply the model to different kinds of information searches.

The information buddy system is one part of this framework. During the initial instructional session, the students who have worked together in pairs can exchange email addresses and perhaps phone numbers and can add each other on Facebook. This will make it easy for them to contact each other in the future when they need advice or help with a particular information-seeking task. In addition, we recommend making students aware of online access to the handouts through the project website at http://attaininfolit.org and making print copies available in the library and perhaps elsewhere on campus, such as the writing center, the learning commons, and computer labs.

Librarians should always be on the alert for the “teachable moment,” i.e., the opportunity when working with a student one-on-one to teach a new information literacy skill (a new search skill, for example, related to a specific database). That means that all librarians, even those who are not instruction librarians per se, need to be trained in the ASE Process Model so that they can be effective instructors when such opportunities arise.

Training should also be made available to staff who provide tutoring services in the writing lab and/or the learning commons. And it should be provided to students who serve as peer tutors—both within and outside of the library.

**Beyond the “One-Shot” Workshop**

Librarians can use the ASE Process Model as a framework around which to develop additional information literacy workshops—either as stand-alone workshops or embedded within classes. Additional workshops could focus on individual parts of the ASE Process Model; an entire workshop, for instance, could be devoted to Evaluation. Some workshops could focus on sources and search tools other than web search engines, such as databases, web portals, and various kinds of print materials (primary sources in special collections, for example).
In terms of instruction embedded within courses, librarians who provide such workshops will be at a distinct advantage if they know that students have already been introduced to the ASE Process Model in a previous workshop (for instance, as part of orientation). After a quick review of the ASE Process Model, librarians can then focus on particular search tools relevant to the assignment at hand.

**A Culture of Information Literacy**

Librarians, of course, cannot do it all—but they can be leaders in educating not only students, but also faculty and administrators about the importance of information literacy for academic, career, and personal success. One way to do this is to make these stakeholders aware of the information literacy standards reflected in accreditation standards. Another is to raise awareness about such national initiatives as the Partnership for 21st Century Skills, which specifies information literacy as a key component of 21st century learning (http://www.p21.org/). Still another is to introduce stakeholders to the ASE Process Model as a simple yet powerful way of approaching information searches.

To meet the needs of 21st century learners, educational institutions should strive to implement information literacy across the curriculum. Librarians and instructors need to work together to help students recognize that these skills are not just for the library anymore; they are needed in all facets of life. All courses should contain specific goals, objectives, and assignments related to information literacy. Institutions may also want to consider developing required information literacy courses, just as many currently require students to take computer literacy courses. And they may wish to implement entrance and exit tests of information literacy skills so that they can determine what their students enter with and what they leave with.

**Conclusion**

Librarians can use the ASE Process Model in many different ways to enhance the information literacy efforts in their institutions. The beauty of the model lies in its simplicity, flexibility, and adaptability. We encourage librarians to be creative in exploring the various ways the model can be used to help students develop the information literacy skills they need for success in school, work, and life.
V. Appendices

A. Related Resources
   o Websites
   o Related Readings

B. Form Masters
   o Activity Sheets (What's On Your Mind; Team Info Search; ASE Process Model; Evaluating Search Results Checklist)
   o Handouts: ASE Process Model/Evaluating Search Results Checklist (Double-sided page) and ASE Process Model (single page)
   o Questionnaires (Pre and Post Surveys)

Appendix A: Related Resources

Project Website

Attaining Information Literacy: Understanding and Responding to the needs of Students, http://attaininfolit.org

Other Websites


Institute of Museum and Library Services, http://www.imls.gov/


Related Readings


**Appendix B: Form Masters**

**Activity Sheets**

- What’s On Your Mind
- Team Info Search

**Handout: ASE Process Model/Evaluating Search Results Checklist**

**Questionnaires**

- Pre Survey questionnaire
- Post Survey questionnaire