References


THE SUCCESSFUL RESEARCH PROCESS

KEYS TO YOUR SUCCESS

- Research is always a multistep process.
- Research is often interdisciplinary.
- Think broadly about your topic; then narrow and refine the focus.
- Keep a record of everything you find and where and how you find it.

STEPS TO YOUR SUCCESS

Identify Your Topic

- The topic is the idea that you are researching. Example: Pollution in the ocean.
- Brainstorm and create a concept map of the topic.
- Think about and visualize your topic from many different angles.
- Note related and interrelated topics.
- Note terminology and synonyms that can broaden your searching power.
- State your topic as a question. Example: How does pollution affect the ocean?
- Refine the question. Example: How does oil pollution affect marine life in the ocean?
- Identify key concepts and list synonyms for them. Example: ocean, seawater; pollution, oil spills; marine life, organisms, biology, plants, animals, fish, mammals.
- List disciplines or subject areas that relate to part of your research. Example: oceanography, environment and life sciences, fisheries, natural resources, marine affairs, biology, aquaculture, business.

Gather Background Information

- Get a broad overview of the subject or topic.
- Use both general and subject-specific encyclopedias and dictionaries.
- Get more focused, in-depth, or historical background on the topic.
- Use books written in the time period and follow up with more recent information.

Focus Your Research

- Gather up-to-date, current information on the topic.
- Use appropriate periodical information from popular, trade, and scholarly sources.
- Use high-quality, appropriate web sites.
- Gather in-depth, focused information on the topic.
- Search for research studies, surveys, and experiments about your topic.

Evaluate Your Sources

- Does the author have authority on the topic?
- What are the author’s credentials?
- Is the information accurate for when it was written?
- Is there a consensus of opinion on this topic? What are the important ideas?
- What is the purpose of the source? How will it impact your research?
Is the purpose to inform, to entertain, to teach, or to influence?
Who is the author writing for? Is it biased in any way?
Has the author looked at the material objectively?
Does the author offer several points of view?
How does the source help answer your research question?
Does the source provide valuable, relevant information?
Does the source answer a part of the total research question?

make notes and judgments, and twenty minutes are allotted for groups to share information and to wrap up for discussion.
This exercise addresses ACRL Standard 1, Performance Indicators 1 and 4.

**TOOLS FOR BACKGROUND INFORMATION**

At the initial stages of research, general information is necessary, especially for the beginning researcher, who may have little or no knowledge of the topic. A typical example of a general-information tool is an encyclopedia. An encyclopedia article about abortion, for example, should provide enough description to suggest narrower categories of inquiry. It might also suggest the size and scope of the general topic. A subject-specific encyclopedia would give more precise information relevant to the discipline in which the topic falls. For example, a medical encyclopedia would emphasize the medical aspects of abortion, while a social-sciences encyclopedia would examine social aspects, and a psychological encyclopedia would deal with psychological aspects of the topic. Simply learning that discipline-specific encyclopedias and dictionaries exist is usually a revelation to students new to research.

**USING ENCYCLOPEDIAS FOR BACKGROUND INFORMATION**

The encyclopedia’s main use is to provide an overview of a subject or topic. In addition, encyclopedias can introduce language specific to the research subject area. Knowing the language and terminology of their research area can aid students in designing their research question.

**Goal:** Exercise 10 will allow students to begin learning basic search skill strategies and to provide themselves with both background knowledge and terminology in the subject area.

**Description:** This exercise is an introduction to several basic skills such as keyword searching, using call numbers, and evaluating information. These skills are then used to find encyclopedias that will (1) provide background knowledge on the subject and (2) provide some relevant language and terminology that will help in further defining students’ topic ideas.

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**Exercise 9**

**Developing Essential Questions for Information Seeking**

In your group, have one person be the “recorder”—the person who will write down all your observations and conclusions. Have one person be the “reporter.” This person will report your findings and conclusions to the class.

1. You have been given a jar containing a liquid. Without opening the jar, observe its contents and discuss what substance might be in it. Write down your ideas.
2. When you receive your “point-of-view” card, discuss what your thoughts are about the contents of the jar from this point of view. Record all ideas and suggestions.
3. When time is called, be prepared to report the findings from your group to the class.

Adapted from an exercise by Libby Miles, chair of the Writing and Rhetoric Program, University of Rhode Island, Kingston, Rhode Island.
Table 2-1  The Handy 5 Steps Applied Areas of Curriculum

<table>
<thead>
<tr>
<th>Handy 5 Steps</th>
<th>Reading</th>
<th>Writing</th>
<th>Mathematics</th>
<th>Social Studies</th>
<th>Science</th>
<th>The Arts</th>
<th>Information Literacy Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment</td>
<td>Read selection, read question</td>
<td>Develop ideas and content for audience</td>
<td>Understand the problem</td>
<td>Identify issue for investigation</td>
<td>Recognize and define the problem</td>
<td>Understand the problem</td>
<td>Define task</td>
</tr>
<tr>
<td>Plan of action</td>
<td>Outline key terms and concepts</td>
<td>Further develop ideas and content for audience</td>
<td>Choose problem-solving strategy</td>
<td>Develop a plan for the investigation</td>
<td>Design a problem-solving strategy</td>
<td>Design a plan to solve the problem</td>
<td>Develop information-seeking strategies</td>
</tr>
<tr>
<td>Doing the job</td>
<td>Choose appropriate information source</td>
<td>Refine the voice, including strategy flow; proofread</td>
<td>Implement a problem-solving strategy</td>
<td>Acquire information from sources; organize information</td>
<td>Implement a problem-solving strategy</td>
<td>Try out the plan</td>
<td>Locate, access, and use information</td>
</tr>
<tr>
<td>Product evaluation</td>
<td>Apply appropriate information sources</td>
<td>Submit to editor; revise</td>
<td>Find and report conclusion</td>
<td>Choose and justify the issue; present results</td>
<td>Interpret and communicate findings and conclusions</td>
<td>Present the solution or product for evaluation</td>
<td>Synthesis and present the information</td>
</tr>
<tr>
<td>Process evaluation</td>
<td>Check response for understanding, accuracy, and completeness</td>
<td>Publish; evaluate for audience . reception and logic</td>
<td>Evaluate conclusion for reasonableness of results</td>
<td>Evaluate process and product of the investigation</td>
<td>Evaluate findings for clarity, accuracy, and real-life applications</td>
<td>Evaluate the effectiveness of the process as it relates to the solution or product</td>
<td>Evaluate product (effectiveness) and process (efficiency)</td>
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conclusions dawn from the information, with final creation of the project or paper occurring at step 10. One of the strongest features of Stripling and Pitts's model is the reflective aspect, which is provided in the form of questions students can ask themselves at each step of the process. It is this sort of metacognitive device that educators have found so valuable in extending learning experiences and helping students deepen their understanding of research and information processes.


<table>
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<tr>
<th>Steps in the Process</th>
<th>Research Task</th>
<th>Questions for Student Reflection</th>
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<tbody>
<tr>
<td>Step 1</td>
<td>Select a broad topic</td>
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<td>Step 2</td>
<td>Obtain an overview of the topic</td>
<td></td>
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<td>Step 3</td>
<td>Narrow the topic</td>
<td>&quot;Is my topic a good one?&quot;</td>
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<td>Step 4</td>
<td>Create a thesis statement</td>
<td>&quot;Does my thesis or statement of purpose represent an effective, overall concept for my research?&quot;</td>
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<tr>
<td>Step 5</td>
<td>Formulate research questions</td>
<td>&quot;Do the questions provide a foundation for my research?&quot;</td>
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<td>Step 6</td>
<td>Develop a research plan</td>
<td>&quot;Is the research/production plan workable?&quot;</td>
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<td>Step 7</td>
<td>Locate and evaluate information sources</td>
<td>&quot;Are my sources usable and adequate?&quot;</td>
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<td>Step 8</td>
<td>Evaluate sources, take notes, and create a bibliography</td>
<td>&quot;Is my research complete?&quot;</td>
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<tr>
<td>Step 9</td>
<td>Draw conclusions, create an outline</td>
<td>&quot;Are my conclusions based on research evidence? Does my outline logically organize conclusions and evidence?&quot;</td>
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<tr>
<td>Step 10</td>
<td>Create the project or product or write the paper</td>
<td>&quot;Is my paper/project satisfactory?&quot;</td>
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