



Planning a Research Strategy

Learning Outcomes

By the end of this unit the learner will be able to:

- ✓ Plan a research strategy
- ✓ Identify and use various types of research sources
- ✓ Create preliminary and final outlines
- ✓ Know how to use style guides and be able to identify common styles

Unit 2

Planning a Research Strategy

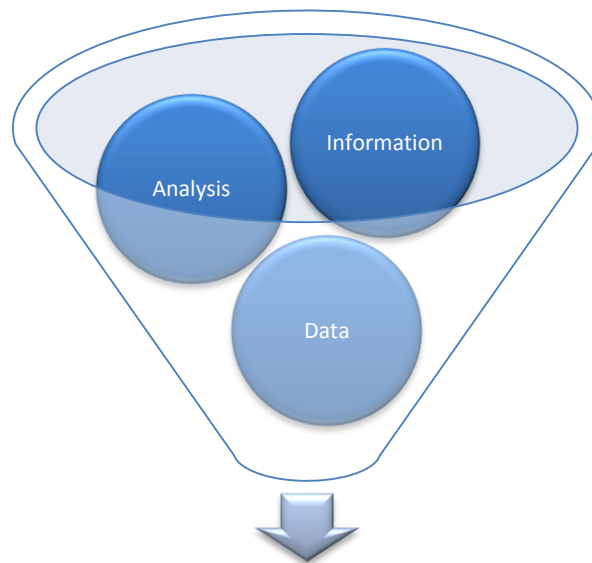
Laying the Groundwork

A Research Model

Now that you have some basic skills, it's time to start putting it into action. First, understand what your research project should not be:

- A string of quotes mashed together
- A regurgitation of everything you have read about a particular topic
- A paraphrase of one person's opinion on the topic

Here is what research really is about.



Your Report and Conclusions

You create a main focal point, find and analyze information, and create your report, with your conclusions or recommendations.

Identifying a Focal Point

So how do you create a focal point? And why is it necessary?

Think about our example handout from earlier, on the solar system. If you were to do research on this topic, how would you know what you are looking for? Will you read everything out there on the solar system? How will you know what is relevant?

You need to narrow down your research focus. Typically, it is best phrased as an open-ended question, such as:

- How could the collapse of the housing market in Florida in the late 2000's have been minimized or avoided?
- Are assimilitis and abysnomosis related diseases?
- Is there proof that aliens landed in Roswell in the 1950's?

Your One-Minute Pitch

Now that you have a focal point, you're almost ready to get started! Before you dive into that pile of reference materials, though, there is one more thing that you should do. You should get a general knowledge of your topic – think of a short, one-minute elevator pitch to your boss, or a supper table update to your spouse.

Your pitch should focus on the five W's and the H:

- Who
- What
- When
- Where
- Why
- How

Find an authoritative, all-encompassing reference source (like an authentic encyclopedia, either in print or online), and prepare a few brief sentences on your focal point. (Remember to use the reading and note-taking techniques that we discussed earlier!)

Getting Focused

Focal Points

Five-Minute Pitch

Writing a Draft Outline

So now you have your topic and you generally understand what you will be writing about. Before you start writing, create a draft outline that shows the main points that you plan to make during your research presentation. Typically, you will want about five main points, although you can have more if your project will be a complex one.

As an example, let's use our focal point, "Are assimilitis and abysnomosis related diseases?" Our outline might look like this:

- I. Introduction
- II. Understanding Assimilitis
- III. Understanding Abysnomosis
- IV. Outline of Similarities
- V. Outline of Differences
- VI. Conclusion

Where to Look and What to Look For

Primary vs. Secondary Sources

There are two main types of sources: primary and secondary.

A **primary source** refers to information right from the source. Some examples:

- Text from a book
- A research study
- Eyewitness accounts
- An original recording

A **secondary source** is an interpretation of, or a reference to, a primary source. Some examples:

- Quoting statistics from a research study
- Quoting a passage from a book
- Analysis of eyewitness accounts
- Translation of an original recording

Whenever possible, go to the **original source**. If the book you are reading refers to a particular study, go to that study and check out the sources yourself. You can then refer directly to it in your research presentation. Your presentation will be that much stronger and you will have more confidence in your work.

If you cannot find the original source, or referring to it isn't possible (for example, because it's in a different language and you need to use the translation), make sure that you state this in your research presentation. For example: "From Smith & Smith's 2006 study *Solar Phenomena Over the Past Decade*, as quoted in *Solar Phenomena Basics* by Sue Jones, 2007, Acme Publishers." (We will cover more on documentation later on in this workshop.)

Analyzing Sources

You should evaluate all sources with a critical eye. Questions to ask yourself include:

- Who is the author?
- What kind of credentials do they have?
- What alternative motives do they have? (For example, if I promote a certain type of word processing program in this course, you might want to check to see if I am somehow involved with the company. Note that having a secondary agenda doesn't mean that a source is completely unreliable – just be sure to read the information with this in mind.)
- What organization(s) are they associated with?
- What other materials have they published?
- What is your overall impression of the material? Is it well organized? Does it include proper citations, and have good spelling and grammar? Or is it unprofessionally written?
- How objective is the material? Does it focus on facts and build to a conclusion, or does the author rely on opinions?
- Overall, does it make sense? Does it feel right? If something is bothering you, dig further.

The amount of digging that you do will depend on the type of source. You can have faith in most published books (unless they're written on scraps of loose-leaf and covered with coffee stains – then you might want to reconsider). Internet sites are typically subject to the most scrutiny.

Using Others' Bibliographies

If you do find a good resource, check their bibliography and see what sources they used. This can be a good starting point in your search. Make sure, however, to check these sources as critically as you would any other. As well, make sure to find other sources to ensure that you're getting a balanced perspective.

Finding Information the Old-Fashioned Way

Useful Resources

You might think that everything that you need for your research presentation is online – and in fact, it may be. But don't discount your local library. Although nothing is 100% reliable, books go through many checks and balances, making them much more credible than an Internet article, which anyone can publish. (We'll talk about the Internet more in a minute.)

Reference Sources

Traditional reference sources (as long as they are published by a reputable company) can be a great starting point, particularly for your one-minute pitch. They can also be a good way of verifying information, such as the spelling of a place or the exact date of an event.

These sources include:

- Dictionaries and lexicons
- Thesauri

- Almanacs and yearbooks
- Encyclopedias
- Atlases and gazetteers
- Directories and who's who guides
- Manuals and handbooks

Journals and Trade Publications

Academic journals and trade publications are another excellent resource, provided that they have been edited and vetted properly and are from a reputable source. Use the questions that we discussed in the last session to help you analyze the source's credibility.

Journals can also be a good way to find other resources, gather primary information, and gather background on a particular author.

So where do you find journals and other trade publications? Try:

- Industry organizations
- Universities and colleges
- Journal databases (online or at your local library)

Your Network

People can be a good resource, too! And they can give you a much-needed break from traditional research. Try talking to:

- Friends, to bounce ideas off of them and test your one-minute pitch
- Professors, to get expert opinions
- Librarians, to get help finding information

Other Ideas

Understanding the Dewey Decimal System

In the event that you do find yourself in a library, it is good to understand how everything is organized. Many libraries use the Dewey Decimal System to organize materials.

The Dewey Decimal System uses a numerical hierarchy where each work is identified by at least four numbers, with a decimal after the third number. The more numbers after the decimal, the more specific the subject is. For example, 746.92 is the call sign for fashion design.

The first number of the Dewey call sign (called the **first summary**) indicates the class or topic:

- 0: General information
- 1: Philosophy and psychology
- 2: Religion
- 3: Social sciences
- 4: Language
- 5: Science and mathematics
- 6: Technology and applied sciences
- 7: Arts and recreation
- 8: Literature
- 9: History, geography, and biography

The next two numbers (called the **second summary** or the **hundred divisions**) indicate the area of study. Some examples:

- **020**: Library and information services (the first number, 0, indicates this belongs to the General Information class)
- **710**: Landscaping (the first number, 7, indicates this belongs to the Arts and Recreation class)
- **410**: Linguistics (the first number, 4, indicates this belongs to the Language class)

After the class number, there is a decimal followed by another number (or set of numbers) that further classifies the subject. The Dewey website

(<http://www.oclc.org/dewey/resources/summaries/deweysummaries.pdf>) provides this example:

600 - Technology

630 - Agriculture

636 - Animal Husbandry

636.7 - Dogs

636.8 - Cats

Researching with the Internet

Finding the Good Stuff

At first glance, the Internet seems like a wonderful research tool. All sorts of information, all at your fingertips! However, remember that anyone with a few basic skills (or a few bucks to spare) can publish information on the Internet. Our source analysis questions now become even more important to ensure that the information that you have gathered is credible. (Refer back to Session Five for a list of these questions.)

Our Favorite Sites

Here are some sites that we have found reliable and useful over the years.

IMPORTANT NOTE: Websites can and do change. BOLC takes no responsibility for the content or accuracy of third party websites.

Online Computer Library Center

Located at <http://www.oclc.org>, this website offers many resources and research tips. It is also the official home of information on the Dewey Decimal System.

Wolfram

The Wolfram Research group offers several sites to help you with your most technical questions. MathWorld (<http://mathworld.wolfram.com/>) focuses on math theories, while Alpha (<http://www.wolframalpha.com/>) is a knowledge engine that can help you calculate almost anything.

Bartleby.com

Here, you can browse thousands of reference books, search for quotations, and more. Check it out at <http://bartleby.com/>. If you can't find what you're looking for here, try Project Gutenberg (<http://www.gutenberg.org/>).

Canadian and U.S. Encyclopedias

Check out the Canadian Encyclopedia at <http://thecanadianencyclopedia.com>. An excellent American encyclopedia is provided by the Smithsonian Institution and is located at <http://si.edu/encyclopedia>.

Encyclopedia Britannica

For a more global view, try Encyclopedia Britannica at <http://www.britannica.com/>.

ERIC

Properly known as the Education Resources Information Center, ERIC allows you to search all kinds of educational literature, including journals. ERIC is at <http://www.eric.ed.gov/>.

Google

Google offers two excellent search engines customized for scholarly articles (<http://scholar.google.com>) and books (<http://books.google.com>). You can also check out the Google News Archive at <http://news.google.com/archivesearch> – an excellent source for news articles and timelines.

Internet Archive

You can find snapshots of almost any website with the Internet Archive at <http://www.archive.org/>.

Dun & Bradstreet

<http://www.dnb.com/> is the place to go to confirm business information. Although most information requires a paid membership, you can see the name and address of any business for free. The securities and stock exchange of the country in which the company operates is another good resource for business information.

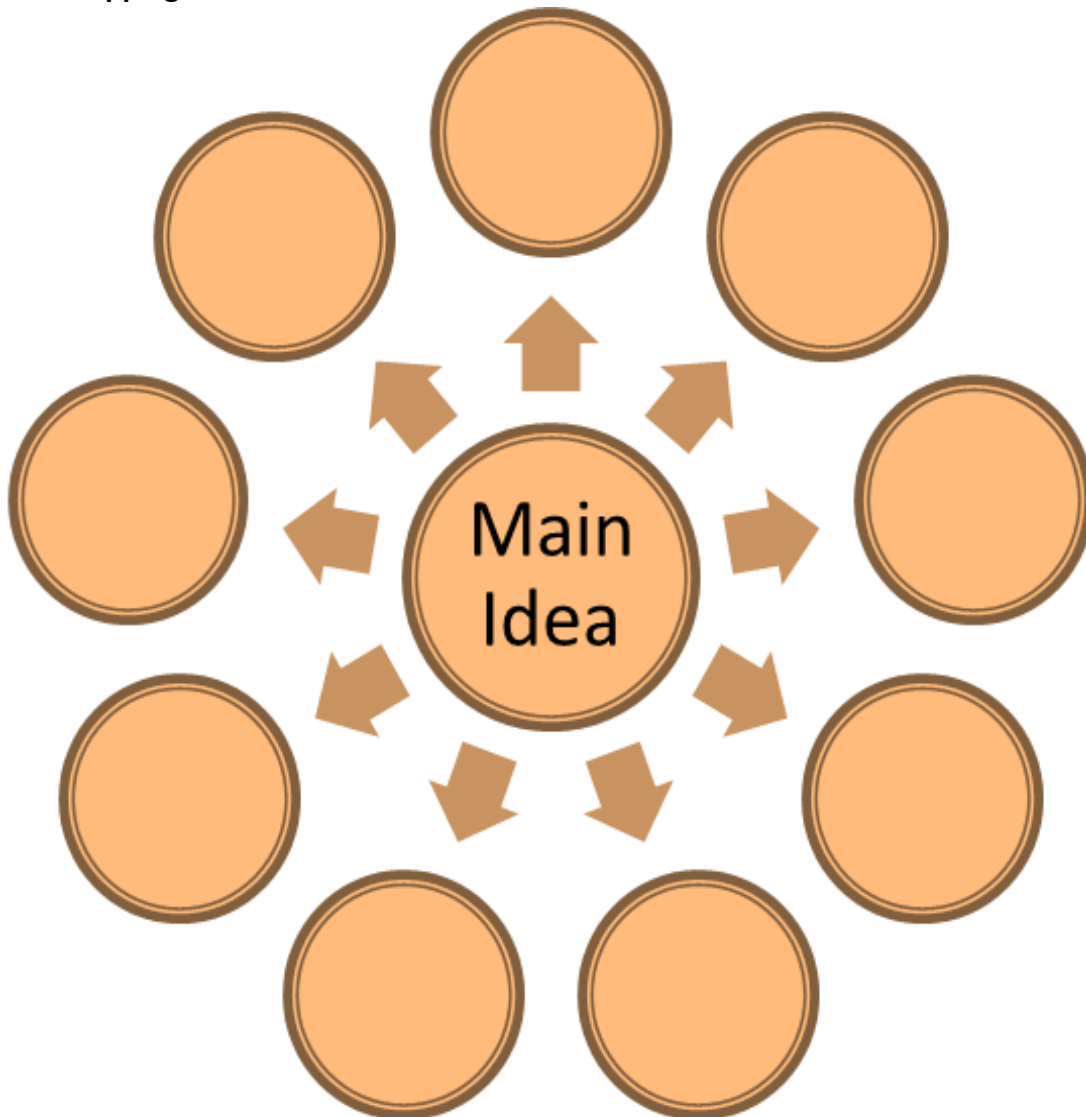
About Wikipedia

Wikipedia (<http://www.wikipedia.org>) is one of the Internet's great controversies. On the plus side, it is available in many languages, it's free, and it has information on almost every topic that you can imagine. On the negative side, anyone can post to Wikipedia, so the information is not always accurate.

If you are researching for an academic purpose, professors and universities often ban the use of Wikipedia. So, first and foremost, find out what the rules surrounding your purpose are and abide by them.

Always treat Wikipedia with the utmost skepticism and only as a starting point. First, be sure to carefully analyze the source of the article. (Sources should be listed at the bottom of the article; if there aren't any, dismiss the article completely.) Then, go back to the primary source to verify the information, and cite the original source, rather than Wikipedia.

Mind Mapping



Getting Ready to Write

Once you have done your research, it's time to organize that mass of information into something that you can use as a master reference when writing your research presentation. Here is our recommended method.

First, write your draft outline out on paper. Make any necessary tweaks, add sub-headings, and place your headings in sequence to create your final outline.

- I. Introduction (why this topic is important)
- II. Understanding Assimilitis
 - A. Causes
 - B. Symptoms and Presentation
 - C. Diagnostic Tools
 - D. Prognosis and Treatment
- III. Understanding Abysnomosis
 - A. Causes
 - B. Symptoms and Presentation
 - C. Diagnostic Tools
 - D. Prognosis and Treatment
- IV. Outline of Similarities
 - A. Epidermal Symptoms
 - B. Environmental Causes
 - C. Diagnostic Tools
 - D. Life Expectancy
- V. Outline of Differences
 - A. Progression of Illnesses
 - B. Usage of Mofiderin in Treatment
- VI. Conclusion (they are from the same virus)

Now, take a number of colored markers and assign each heading or sub-heading a color, depending on the amount of information that you have. (You can also use symbols if desired, but we find that colors are easier to read.)

- I. Introduction (why this topic is important)
- II. Understanding Assimilitis
 - A. Causes
 - B. Symptoms and Presentation
 - C. Diagnostic Tools
 - D. Prognosis and Treatment
- III. Understanding Abysnomosis
 - A. Causes
 - B. Symptoms and Presentation
 - C. Diagnostic Tools
 - D. Prognosis and Treatment
- IV. Outline of Similarities
 - A. Epidermal Symptoms
 - B. Environmental Causes
 - C. Diagnostic Tools
 - D. Life Expectancy
- V. Outline of Differences
 - A. Progression of Illnesses
 - B. Usage of Mofiderin in Treatment
- VI. Conclusion (they are from the same virus)

Now, go through your notes and mark them up using this outline as a legend. You may even want to expand your outline further, adding key points to cover. This will help you ensure that you have covered all the necessary points in your presentation.

Putting Pen to Paper

Writing Basics

Once you have your research completed, it's time to put pen to paper. Show your readers where you will go in your introduction. Then, using your outline as a guide, take your readers through your arguments and evidence. Finally, bring it all together in your conclusion.

Although writing is far too broad of a topic to be covered in-depth here, let's look at some key points of good writing.

The Four C's

When writing and reviewing, keep the four C's in mind:

- **Clear:** Your work can be fully understood at first reading.
- **Concise:** All information is down to an intelligent and intelligible minimum.
- **Complete:** Every piece of essential information has been included.
- **Correct:** All information is both accurate and verifiable.

Checklist for Revising

Review your presentation with the following points in mind.

Check the Facts

It's embarrassing (and possibly fatal to your reputation) to build a whole case on incorrect facts or figures. Be careful not to treat an assumption as a fact, nor to treat assumptions from other people as facts.

Check the Length

Should you cut or add? A report is too long if it tells the readers more than they want to know. It is too short if it misses important evidence or fails to draw obvious conclusions. Make sure you've given your readers the details and examples they need to see your point and accept it. Remember that we are inundated with too much to read, so don't make the frequent mistake of assuming that readers are interested in a blow-by-blow account; you can smother the important points in too much detail. Not every bit of information uncovered in your research needs to be included.

Check the Organizational Structure

Your report ought to have a beginning, middle, and an end, and each part should do its job effectively. The beginning should make it clear what the communication is about. The middle should develop and support the main idea with specifics: details, figures, examples, quotations. The ending should summarize, reinforce the point, and perhaps make recommendations.

Check each paragraph for unity and coherence. *Unity* means that only one idea is developed in each paragraph. *Coherence* means that each sentence in the paragraph logically hooks onto the preceding sentence and leads into the following one. Look at your paragraphs: can you identify a topic sentence in each (a sentence that states the main idea which the rest of the paragraph develops)? If not, the paragraph may be a candidate for deletion or rewriting.

Your goal is to make clear that each paragraph relates to the main idea (your thesis), that each grows out of the preceding paragraph, and that each leads into the following one. A paragraph should begin with something that links it to the one before it. The linking word may be a key word repeated, a pronoun whose antecedent is in the previous paragraph, or a transitional word bridging a gap in thought.

Check the Style

In general, be on the lookout for lengthy, obscure sentences; wordiness; pretentiousness; overuse of the passive voice; and imprecise language. Read your work aloud, noting the parts where you stumble or misread and the parts that sound dull and boring, even to you. Pump more energy into those parts by substituting action verbs and concrete nouns.

Then, use this three step process to tighten up the style:

- **Cut.** Eliminate words or phrases that don't pull their weight.
- **Rearrange.** Put the ideas you want to emphasize at the beginning or the end of sentences, the places of natural emphasis.
- **Rewrite.** If cutting and rearranging don't work, take more drastic action: scrap the sentence and try it again. Imagine your reader confronting you with, "What are you trying to tell me here?" and then write your answer to that question as directly as you can.

Apply these remedies to every swollen section or infected sentence. All you need is a red pen. Cross out words and phrases that don't say anything. Draw arrows to rearrange words or sentences. Cut out sections that contain irrelevant information. If you need to get it off your computer screen to really see it, print it off. Then you can literally use scissors to cut out whole paragraphs and use tape to put them in a different order. Rewrite only when editing or rearranging are not effective.

Check the Spelling, Grammar, and Punctuation

Look up the spelling of words you habitually misspell and check if you are doubtful. Be alert to possible problems in agreement or the placement of modifiers; be sure every pronoun has a clear reference. Ensure that your punctuation is both correct and appropriate.

Remember that you can spoil an otherwise good piece of writing with a blatant, distracting error. Since it is very difficult to see your own errors, don't be afraid to have someone else read the piece over, looking specifically for errors in spelling, punctuation, and grammar.

Don't Plagiarize!

Using someone else's ideas without giving credit is **plagiarism** and is unethical.

Even if you paraphrase and put the information in your own words, the ideas must be documented. When citing sources, you should **use direct quotations sparingly**. Good writers use the exact words of another writer to emphasize opinions because of the author's status as an expert; duplicate the exact wording before criticizing; or repeat identical phrasing because of its precision, clarity, or aptness.

Citing sources strengthens your argument as a writer and shields you from charges of plagiarism.

Documenting Your Sources

Documentation Styles

These are **four popular styles of documentation**.

- **MLA** (Modern Language Association) is used in literature and most of the humanities.
- **APA** (American Psychological Association), which is generally used in the social sciences
- **CBE** (Council of Biology Editors) is used in biology and many other sciences.

- The **Chicago** Manual of Style which has two styles it favors.

If your organization or school does not recommend a particular style, choose one and stick to it.

Most styles ask that references be listed on a page by themselves, alphabetically by author, and includes all the references you used to produce your report. This list is called References, Works Cited, or Cited References, depending on the style you have used. (The Chicago Manual of Style uses the titles Bibliography, Selected Bibliography, and Works Cited.)

The list for any given paper or report may include a variety of sources. A source is anything you draw information from. In your report, you should list every source you use.

Citing Sources

Every bibliography entry is created from a number of standard components. The most basic three are author, title, and publication information. As with all writing, it is important to be consistent within your document and demonstrate your attention to those details.

As you can see from the examples here, the differences between formats are pretty significant to look at, although the details are the same within each record.

One author, in Chicago Manual style:

Lynne Truss. *Eats, Shoots & Leaves: The Zero Tolerance Approach to Punctuation* , New York, Gotham Books, 1993

One author, in American Psychological Association (APA) style:

Truss, Lynne (1993). *Eats, shoots & leaves: The zero tolerance approach to punctuation*. New York, Gotham Books, 1993

One author, in British Broadcasting Corporation News Style Guidelines:

Eats, Shoots & Leaves: The Zero Tolerance Approach to Punctuation, Lynne Truss, Gotham Books, New York, 1993

Entry Components

Here is a list of each element you might find in a bibliography entry for a book or part of a book.

- The author's or authors' names (or the editor or editors' names if you are referring to a collection). This part of the entry comes first, since a bibliography is in most cases an alphabetical listing by author of material used in writing a book or report.
- The title of the work.
- The name of the collection you found the work in.
- The editor's or editors' names (if the work appears in a collection), or translator or compiler, if one is used.

