

21.

USING RESEARCH

Learning Objectives

- Evaluate information gathered from sources
- Synthesize information from sources
- Explain information from sources

Think Before You Write

After conducting research and gathering a collection of ideas and information from various sources, it will be time to put that research to use. But this is not as straightforward as novice writers often think.

Such beginning writers sometimes attempt to transform a pile of notes into a formal research essay without any intermediary step. This approach presents problems. The writer's original question and thesis can get buried in a flood of disconnected details taken from research sources. The draft can present redundant or contradictory information. Worst of all, the writer's own thoughts can be diminished, marginalized, or lost altogether.

An effective research essay focuses on the writer's ideas—from the question that sparked the research process, to how the writer answers that question based on the research findings. Before beginning a draft, or even an outline, good writers pause and reflect. They ask themselves questions such as the following:

- How has my thinking changed based on my research? What have I learned?
- Was my working thesis on target? Do I need to revise my thesis based on what I have learned?
- How do the ideas or information in my sources mesh with my research questions and help me answer those questions? Have any additional important questions or additional subjects come up that I will need to address in my essay?
- How do my sources complement each other? Which ideas or facts recur in multiple sources?

- Where do my sources disagree with each other, and why?

Select Useful Information

When you conduct research, you keep an open mind and seek out many promising sources. You take notes on any information that looks like it might help you answer your research questions. Often, new ideas and terms come up in your reading, and these, too, find their way into your notes. You may record facts or quotations that catch your attention even if they did not seem immediately relevant to your research question. The result, typically, is a large and detailed collection of notes.

But you will not use all of your notes in your paper. That is because research writing involves two different mindsets: that of *the researcher*, and that of *the writer*.

Researchers should be thorough. While in the researcher mindset, you should look at multiple perspectives, facts, and ideas related to the subject, and you should gather a great deal of information.

But writers should be selective. While in the writer mindset, you should determine which information is most relevant and appropriate for your purpose. You should include details that develop or explain your ideas—and you must leave out details that do not. A good writer never lets the abundance of research take over what is discussed or how it is discussed in the essay. Instead a good writer controls the discussion, selects the ideas, arranges the information, and shapes every part of the essay with intention.

So after the process of conducting research, you should engage in the process of using research, which is essentially the process of selecting from the gathered research and connecting it to your ideas to further illuminate and explore the discussion your essay engages in.

Identify Information That Supports Your Thesis

At this stage, you should identify the ideas and information in your research that clearly support your thesis. Mark or group these, whether digitally in various word processing or spreadsheet programs, or even physically as notecards or printed pages. As you identify the crucial details that support your thesis, make sure you analyze them critically. Ask the following questions to focus your thinking:

- **Is this detail from a reliable, high-quality source? Is it appropriate for me to cite this source in an academic paper?** The bulk of the support for your thesis should come from legitimate and reliable sources. If most of the details that support your thesis are from less-reliable sources or sources weak in legitimacy or authority, you may need to do additional research or modify your thesis.
- **Is the link between this information and my thesis direct—or will I need further research to make the connection?** Some of the important or useful information you find will connect to your thesis only through assumed or unstated facts, which will need to be shown through additional research.

In other words, critically thinking through the research you've collected can show you what other research you need to find in order to fill in the logical gaps. For example, you could have found information supporting the claim that popular literature is typically shunned in college study, but you might also need to provide additional source information showing that your examples of popular literature, such as the book *Dune*, are indeed still popular to begin with.

- **What personal biases or experiences might affect the way I interpret this information?** No researcher is 100 percent objective. We all have personal opinions and experiences that influence our reactions to what we read and learn. Good researchers are aware of this human tendency. They keep an open mind when they read opinions or facts that contradict their beliefs. It can be tempting to ignore information that does not support your thesis or that contradicts it outright. However, such information is important. At the very least, it gives you a sense of what has been written about the issue. More importantly, it can help you question and refine your own thinking so that writing your research paper is a true learning process.
- **Which sources are primary and which are secondary, and does the type of source affect how readers will view my support?** For more information on this, see the two gray boxes that follow:

Use Primary Sources Effectively

Some types of research essays must use primary sources extensively to achieve their purpose. Any essay that analyzes a primary text or presents the writer's own experimental research falls in this category. Here are a few examples:

- An essay for a literature course analyzing several poems by Emily Dickinson
- An essay for a political science course comparing televised speeches delivered by two presidential candidates
- An essay for a communications course discussing gender biases in television commercials
- An essay for a business administration course that discusses the results of a survey the writer conducted with local businesses to gather information about their work-from-home and flextime policies
- An essay for an elementary education course that discusses the results of an experiment the writer conducted to compare the effectiveness of two different methods of mathematics instruction

For these types of essays, primary research is the main focus. If you are writing about a work (including non-print works, such as a movie or a painting), it is crucial to gather information and

ideas from the original work, rather than relying solely on others' interpretations. And, of course, if you take the time to design and conduct your own field research, such as a survey, a series of interviews, or an experiment, you will want to discuss it in detail. For example, the interviews may provide interesting responses that you want to share with your reader.

Use Secondary Sources Effectively

For some assignments, it makes sense to rely more on secondary rather than primary sources. A secondary source summarizes, analyzes, synthesizes, or evaluates primary sources.

As much as possible, use secondary sources that are closely linked to primary research, such as a journal article presenting the results of the authors' scientific study or a book that cites interviews and case studies. These sources are more reliable and add more value to your paper than sources that are further removed from primary research. For instance, a popular magazine article on junk-food addiction might be several steps removed from the original scientific study on which it is loosely based. As a result, the article may distort, sensationalize, or misinterpret the scientists' findings.

Even if your essay is largely based on primary sources, you may use secondary sources to develop your ideas. For instance, an analysis of Alfred Hitchcock's films would focus on the films themselves as a primary source, but might also cite commentary from critics. An essay that presents an original experiment would include some discussion of similar prior research in the field.

Revise Your Working Thesis

A careful analysis of your notes will help you reevaluate your working thesis and determine whether you need to revise it. Remember that your working thesis was the starting point—not necessarily the end point—of your research. You should revise your working thesis if your ideas changed based on what you read. Even if your sources generally confirmed your preliminary thinking on the topic, it is still a good idea to tweak the wording of your thesis to incorporate the specific details you learned from research.

For example, consider a working thesis that “the media exaggerates the benefits of low-carb diets,” but then through research finding that low-carb diets have some benefits that have not really been exaggerated in the media. Such a thesis could then be revised as follows: “Although following a low-carbohydrate diet can benefit some people, these diets are not necessarily the best option for everyone who wants to lose weight or improve their health.”

After revising your thesis, you should return to the process of identifying information that supports your thesis. Often, you will find that the ideas and information you have gathered in your research work or stack up differently when parts of the thesis change. For instance, in the example above, the revised thesis removed the “media” aspect from the original working thesis, so such a writer would need to look again at the information identified as support and remove the sources focused on the media.

Find Connections Among Your Sources

As you find connections between your ideas and information in your sources, also look for information that connects your sources. Do most sources seem to agree on a particular idea? Are some facts mentioned repeatedly in many different sources? What key terms or major concepts come up in most of your sources regardless of whether the sources agree on the finer points? Identifying these connections will help you identify important ideas to discuss in your paper.

Look for subtler ways your sources complement one another, too. Does one author refer to another’s book or article? How do sources that are more recent build upon the ideas developed in earlier sources?

Be aware of any redundancies in your sources. If you have amassed solid support from a reputable source, such as a scholarly journal, you don’t need to cite the same facts from an online encyclopedia article. If a given source adds nothing new to your discussion and you can cite a stronger source for the same information, use the stronger source.

Determine how you will address any contradictions found among different sources. For instance, if one source cites a startling fact that you cannot confirm anywhere else, it is safe to dismiss the information as unreliable. However, if you find significant disagreements among reliable sources, you will need to review them and evaluate each source. Which source presents a sounder argument or more solid evidence? It is up to you to determine which source is the most credible and why.

Finally, do not ignore any information simply because it does not support your thesis. Carefully consider how that information fits into the big picture of your research. You may decide that the source is unreliable or the information is not relevant, or you may decide that it is an important point you need to bring up. What matters is that you give it careful consideration.

Synthesize and Organize Information

After identifying information that supports your thesis, reevaluating your thesis, and finding connections between sources, you will begin (or will have already begun) synthesizing information, which means putting the pieces together into a coherent whole. It is normal to find this part of the process a little difficult. Some questions or concepts may still be unclear to you. You may not yet know how you will tie all of your research together. Synthesizing information is a complex, demanding mental task, and even experienced researchers struggle with it at times. But a little uncertainty is often a good sign. It means you are challenging yourself to work thoughtfully with your subject instead of simply restating the same information.

The process of synthesizing your research involves analyzing how your notes relate to your major research question and the sub-questions you identified. Organize your notes with headings that correspond to those questions. As you proceed, you might identify some important subtopics that were not part of your original plan, or you might decide that some questions are not relevant to your paper.

Categorize information carefully and continue to think critically about the material. Ask yourself whether the sources are reliable and whether the connections between ideas are clear.

Remember, your ideas and conclusions will shape the paper. They are the glue that holds the rest of the content together. As you work, begin jotting down the big ideas you will use to connect the dots for your reader. (If you are not sure where to begin, try answering your major research question and sub-questions. Add and answer new questions as appropriate.) You might record these big ideas on sticky notes or type and highlight them within an electronic document.

See the following example as a short, rough outline for a research essay.

Topic: *Low-carbohydrate diets*

Main question: *Are low-carbohydrate diets as effective as they have been portrayed to be by media sources?*

Thesis: *Although following a low-carbohydrate diet can benefit some people, these diets are not necessarily the best option for everyone who wants to lose weight or improve their health.*

Main points:

How do low-carb diets work?

Low-carb diets cause weight loss by lowering insulin levels, causing the body to burn stored fat.

When did low-carb diets become a "hot" topic in the media?

The Atkins diet was created in 1972 by Richard Atkins, but it didn't gain wide-scale attention until 2003. The South Beach diet and other low-carb diets became popular around the same time, and led to a low-carb craze in America from 2003 to 2004.

What are the supposed advantages to following a low-carbohydrate diet?

They are said to help you lose weight faster than other diets and allow people to continue to eat protein and fats while dieting.

What are some of the negative effects of a low-carb diet?

Eating foods high in saturated fats can increase your cholesterol levels and lead to heart disease. Incomplete fat breakdown can lead to a condition called ketosis, which puts a strain on the liver and can be fatal.

You may be wondering how your ideas are supposed to shape the essay, especially since you are writing an essay based on your research. Integrating your ideas and your information from research is a complex process, and sometimes it can be difficult to separate the two.

Some paragraphs in your paper will consist mostly of details from your research. That's fine, as long as you explain what those details mean or how they are linked. You should also include sentences and transitions that show the relationship between different facts from your research by grouping related ideas or pointing out connections or contrasts. The result is that you are not simply presenting information; you are synthesizing, analyzing, and interpreting it.

Turn Research into Evidence

The above stages should help you arrange the ideas and information in such a way that you are ready to write the essay and/or incorporate that research into your essay (through drafting, revising, and/or editing).

In theory, drafting this research essay consists of writing out your claims, supporting them through your own explanations, examples, or related rhetorical strategies, and then showing the research that supports the claims by summarizing, paraphrasing, or quoting your sources.

But it is not enough to simply show the research, even if you place it immediately after your claim. That is because research rarely supports a thesis or claim until you provide the explanation showing how the information or ideas are connected. Remember that you have likely spent more time thinking and reading about your particular subject than your audience, so many of the connections that might seem obvious to you will not appear obvious in your essay. This difficulty is made worse by the common tendency among student writers to avoid critical analysis of their own assumptions, and instead label their assumptions as obvious. Faulty notions and irrelevant information can emerge in the essay as a result.

A useful idea here is to consider the difference between *research* and *evidence*. *Research* is merely the ideas and information you have found. *Evidence*, on the other hand, is research that directly supports your claims. It's not enough that you know your research supports your claims and works as evidence. You must show it.

The way this is done—the solution to this difficulty—is additional writing focused on completeness and clarity: fully explain the connections between ideas; state the assumptions that make the ideas or information work; provide the analysis of information to show the meaning of it. See the following examples:

Consider the following claim: “Tattoos are becoming more accepted in the workplace.”

Now consider this research as a follow-up: “Approximately 1.65 billion dollars was spent on tattoos in 2014” (Strude).

Unfortunately, the research does not support the claim. It does not provide evidence because there is no clear connection between the amount of money spent on tattoos and the acceptance of tattoos in the workplace.

Consider this additional research for the same claim: “According to Strude, spending on tattoos increased from \$1.12 billion in 2013 to \$1.65 billion in 2014, and analysts expect this growth to continue.”

Unfortunately, this research still does not support the claim. It shows that spending on tattoos has increased, but that does not show that such spending has been accepted in the workplace.

Again, the solution is writing out the explanations, assumptions, and analyses that led you to present the evidence from the source. In some cases, this move can be handled in only a sentence or two, but in other cases, such as this example, it can be more difficult. That is because numerous assumptions are involved in connecting the information to the claim: the above example relies on the belief that an increase in popularity creates an

increase in acceptance (which would need to be explained), but the information shows only an increase in spending, not in popularity. It could very well be that the costs of tattoos increased between 2013 and 2014, perhaps even resulting in fewer tattoos at higher prices.

So, in addition to explaining what the research has to do with the claim, another skill of vital importance is to understand the reality behind the abstractions. Every time you see a number or statistic, you are looking at abstract data that does not reveal the real story behind the information being reported. Critically thinking through the reality can help guide your explanations and analyses, and help you sort through your assumptions.

In the example above, understanding the reality of tattoo spending and acceptance would reveal that you would need to do more research than merely finding dollars spent. You would need to look at population percentages regarding tattoos, changes in workplace guidelines among major employers, perhaps even the numbers of images involving tattoos in marketing and advertising—all to help you get a fuller understanding of the real story so that you can more effectively show and explain it.

This critical thinking through the reality behind the abstractions also applies to specific data points themselves. A legitimate and reliable fact in plain black-and-white doesn't always mean what it appears to. You will need to think through the larger context, and the real story that the information is taken out of.

Consider, for example, the facts that (according to demographic data from research at Berkley) the average age at death for male country music singers is 65, and the average age at death for male rappers is 27. This seems to be proof leading to this conclusion: a rap lifestyle is more likely to cause early death than a country-music lifestyle. But those numbers are merely abstractions that do not reveal the reality they're reporting on. To think through the problems with this conclusion, consider the following aspects of the context behind the numbers:

- Age at death cannot be counted or reported until the point that the deaths actually occur.
- Currently living rappers cannot be factored into the counts that lead to an average age of death at 27.
- The genre of country music has been around for many decades and several generations, but the genre of rap is relatively recent.

Using those three points as critical thinking guides, try to determine exactly why the facts above do not necessarily prove the conclusion that the rap game is deadlier than the country music game.

That kind of critical thinking through the reality behind the abstractions can provide important guidance in determining what you need to explain and clarify in order to connect your research to your claims and finally turn your hard work into complete, cohesive, and coherent evidence.

Key Takeaways

- Writing a good research paper means thinking carefully about your sources—how reliable they are, how they are connected, how they support your thesis.
- Information from sources needs to be explained
- A good research paper always reflects the student's original thinking.