Research Process: Accessing and Recording Information

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FIGURE 13.1 In the research process, you may have to conduct fieldwork to collect primary data. In this photograph, a military sergeant is interviewing an Iraqi police officer and entering the subject's answers into her computer. (credit: "Petty Officer 1st Class" by Jeremy L. Wood/Wikimedia Commons, Public Domain)

CHAPTER OUTLINE

13.1 The Research Process: Where to Look for Existing Sources
13.2 The Research Process: How to Create Sources
13.3 Glance at the Research Process: Key Skills
13.4 Annotated Student Sample: Research Log
13.5 Research Process: Making Notes, Synthesizing Information, and Keeping a Research Log
13.6 Spotlight on ... Ethical Research

INTRODUCTION In every field, any claim you make about a debatable subject must be supported by evidence. To identify an unknown rock, for example, you scrape it with a known rock in the geology laboratory. The scratch marks of the harder rock on the softer rock will be part of your evidence to support your claims about the unknown rock. If you conduct a survey of students to examine college study habits, counting and collating your findings will provide evidence to support your conclusions. Although the nature of evidence varies from one discipline to another, the need for evidence is constant. Collecting accurate and current evidence to support your claim is a key part of research; without it, readers likely will judge you as uninformed and your work as unconvincing. Equally constant is the need to have complete and accurate documentation for these sources. While not all research is done for academic purposes—you may conduct research when choosing a new piece of technology, deciding on a movie to watch, renting an apartment, or even choosing a career path—the research discussed in this chapter is academic related. You will learn about generating research support materials by doing library research, conducting fieldwork, taking notes, organizing sources, and

keeping a detailed and accurate research log.

13.1 The Research Process: Where to Look for Existing Sources

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Locate and evaluate primary and secondary research materials, including journal articles and essays, books, scholarly and professionally established and maintained databases or archives, and informal electronic networks and Internet sources.
- Apply methods and technologies commonly used for research in various fields.

Once you have chosen your argumentative research topic, developed a workable research question, and devised a plan for your research as described in Argumentative Research: Enhancing the Art of Rhetoric with Evidence, you are ready to begin the task usually associated with the term *research*—namely, the collection of sources. One key point to remember at this stage is intentionality; that is, begin with a **research plan** rather than a collection of everything you find related to your topic. Without a plan, you easily may end up overwhelmed by too many unusable sources. A carefully considered research plan will save you time and energy and help make your search for sources more productive. Access to information is generally not a problem; the problem is knowing where to find the information you need and how to distinguish among types and qualities of sources. In short, finding sources is all about sorting, selecting, and evaluating.

Your specific methods for collecting sources will depend on the details of your research project. However, a good strategy to begin with is to think in terms of needs: *What do you need, as the researcher and writer? What do your readers need?* This kind of needs assessment is similar to the considerations you make about the rhetorical situation when writing an analysis or argument.

Review Table 13.1 as you conduct a source "needs assessment."

Your Needs	Basic Facts/ Data/ Information	These materials help inform you about your topic. They also may help shape the scope of your knowledge of your topic.
	Critical/ Conceptual/ Contextual Sources	These materials provide explanations and context for your research project. They may range from basic historical or contextual information to explanations of special theories or ideologies. These materials will help you with your analysis and will help you address the *So what?* questions that your research topic may pose.
Readers' Needs	Reason to Invest	This material engages readers both intellectually and emotionally.
	Proof That It Matters	These are convincing arguments or illustrative examples that answer the *So what?* question, showing why anyone should care about the topic or your approach to it.
	Examples and Explanation	These are illustrative examples and explanations of complex, esoteric, or idiosyncratic concepts, theories, technical processes, etc.

TABLE 13.1 Research needs assessment

Generating Key Words

Before you begin locating sources, consider the research terms you will use to find these sources. Most research is categorized according to key terms that are important for understanding the topic and/or

methodologies. When beginning the research process, you may find that the ideas or words associated with your topic are not yielding results when you search library or Internet **databases** (organized collections of information).

If you are running into challenges locating information related to your topic, you may not have chosen the specific key terms needed. Because libraries and online databases generate search results based on algorithms that target keywords, the best way to find the appropriate terminology associated with your topic is to practice generating key terms. You may need a range of keywords, some for library searches and others for online searches. When considering the difference between keyword searches in academic libraries versus online sources, note that most academic libraries use Library of Congress Subject Headings (LCSH) for subject searches of their online catalogs. Many databases use subject searches based on algorithms that may be unique to that database. Don't become discouraged if you find that the terms for searching in your academic library may be somewhat different from the terms for searching online. As you begin to find sources related to your subject, take notes on the variety of terms that describe your research area. These notes will come in handy as both keyword and subject searches throughout your research process.

The following steps and examples will help you get started:

- Begin by limiting your topic to one or two sentences or questions. (*What effects do a region's water and temperatures have on fall foliage?*)
- Highlight specific words that are key to understanding or finding answers to your question. (*What effects do the amount of water a region gets and temperatures for that region have on colors of fall foliage?*)
- Consider words assumed but not mentioned in your question. For instance, the example question implies a search around trees and rainfall; however, *trees* and *rainfall* are not mentioned. Add these words to the words highlighted in your question.
- Consider synonyms for the words you highlighted. A search for synonyms for *fall* yields *harvest*, *autumn*, and *autumnal equinox*. A search for synonyms for *leaves* yields *foliage*, *fronds*, and *stalks*. Be sure you understand the meaning of each synonym so that you can choose those that best capture the concepts you seek to research.
- Try different combinations of the key terms and synonyms to help you find as many sources as you can.

You can find more information about key terms and searches by consulting Writing Process: Informing and Analyzing.

Locating Sources

Once you have identified sources to fit both your and your readers' needs, you can begin to locate these sources. Throughout the research process, look for sources that will provide enough information for you to form your own opinions or answer your research question(s). Use source materials as support for your own words and ideas. The following are possible locations for source materials:



FIGURE 13.2 New York City Public Library, Rose Main Reading Room (credit: "Grand Study Hall, New York Public Library" by Alex Proimos/Wikimedia Commons, CC BY 2.0)

Libraries

While much of your writing and research work happens online, libraries remain indispensable to research. Your university's physical and/or online library is a valuable resource, providing access to databases, books and periodicals (both print and electronic), and other media that might not otherwise be accessible. In many cases, experienced people are available with discipline-specific research advice. To take full advantage of library resources, keep the following suggestions in mind:

- **Visit early and often.** As soon as you receive a research assignment, visit the library (physically, virtually, or both) to discover resources available for your project. Even if your initial research indicates a wealth of material, you may be unable to find everything during your first search. You may find that a book has been checked out or that your library doesn't subscribe to a certain periodical. Furthermore, going to the library can be extremely helpful because you likely will see a range of additional sources simply by looking around the areas in which you locate initial sources.
- **Check general sources first.** Look at dictionaries, encyclopedias, atlases, and yearbooks for background information about your topic. An hour spent with these sources will give you a quick overview of the scope of your topic and lead you to more specific information.
- **Talk to librarians.** At first, you might show a librarian your assignment and explain your topic and research plans. Later, you might ask for help in finding a particular source or finding out whether the library has additional sources you have not checked yet. Librarians are professional information experts; don't hesitate to use their expertise.

General Reference Works

General reference works provide background information and basic facts about a topic. To locate these sources, you will need a variety of tools, including the online catalog and databases, as well as periodical indexes. To use these resources effectively, follow this four-step process:

1. Consult general reference works to gain background information and basic facts.
2. Consult specialized reference works to find relevant articles on all topics.
3. Consult the library's online catalog to identify library books on your topic.
4. Consult other sources as needed.

The summaries, overviews, and definitions in general reference works can help you decide whether to pursue a topic further and where to turn next for information. Because the information in these sources is necessarily general, they will not be sufficient alone as the basis for most research projects and are not strong sources to

cite in research papers.

Following are some of the most useful general reference works to provide context and background information for research projects:

- **Almanacs** and **yearbooks** provide up-to-date information, including statistics on politics, agriculture, economics, and population. See especially the *Facts on File World News Digest* (1940–present), an index to current events reprinted in newspapers worldwide, and the *World Almanac and Book of Facts* (1868–present), which reviews important events of the past year as well as data on a wide variety of topics, including sports, government, science, business, and education. In addition to current publications, almanacs from recent years or from many years ago provide information about the times in which they were written.

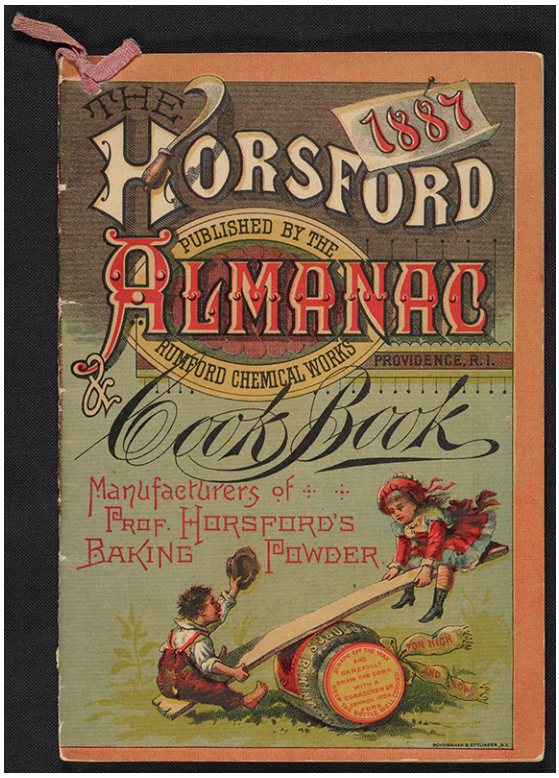


FIGURE 13.3 This edition of the *Horsford Almanac and Cook Book* dates from 1887. Published as an "advertising almanac" by a baking powder company, this short almanac featured recipes for a healthful diet as well as general almanac data. (credit: "The Horsford 1887 almanac and cook book" by Science History Institute/Wikimedia Commons, Public Domain)

- **Atlases** such as the *Hammond World Atlas*, the *National Geographic Atlas of the World*, and the *Times Atlas of the World* can help you identify places anywhere in the world and provide information on population, climate, and industry.
- **Biographical dictionaries** contain information about people who have made some mark on history in many different fields. Consult the following: *Contemporary Authors* (I962–present), containing short biographies of authors who have published during the year; *Current Biography* (1940–present), containing articles and photographs of people in the news; and *Who's Who in America* (1899–present), the standard biographical reference for living Americans.
- **Dictionaries** contain definitions and histories of words, along with their syllabication, and correct spelling and usage.
- **Encyclopedias** provide basic information, explanations, and definitions of virtually every topic, concept, country, institution, historical person or movement, and cultural artifact imaginable. One-volume works

such as the *Random House Encyclopedia* and the *Columbia Encyclopedia* give brief overviews. Larger works, such as the *New Encyclopædia Britannica* (32 volumes, also online), contain more detailed information.



FIGURE 13.4 Both print and electronic texts provide excellent general resources for people of all ages. (credit: "The future of books" by Johan Larsson/flickr, CC BY 2.0)

Databases

Databases, usually accessed directly through your library website, are indispensable tools for finding both journal and general-audience articles. Some databases contain general-interest information, indexing articles from newspapers, magazines, and sometimes scholarly journals as well. While these databases can be useful when you begin your research, once you have focused your research topic, you likely will need to use subject databases, which index articles primarily from specialized scholarly and technical journals.

The difference between scholarly journal and other articles is important. Although at times these lines are blurred, think of articles found in popular journals or magazines as published widely and usually addressing a general audience. Such materials are useful for obtaining introductory or background information on a topic as well as a sense of the range of factors to consider. Indeed, these sources may help you narrow your topic by giving you a basic understanding of the range and scope of the "conversation" you are entering in your research process. Scholarly journal articles, on the other hand, typically are written and published by academic researchers. These publications often have more specialized information and vocabulary and are most useful after you have narrowed your topic and developed specific research questions. Within the range of scholarly articles are those that are peer reviewed or found in peer-reviewed journals. These journal articles are generally more specific and contain more reliable information because they are written by experts and reviewed by other experts in the field before the article is published. See Compiling Sources for an Annotated Bibliography for more information about peer-reviewed publications.

A good starting point for research is a **general-interest database**, which covers a wide range of topics from many sources. Several major general-interest databases are listed below; however, many others may be available at your library. A librarian likely can help you find those that may be specific to your university.

- **Academic OneFile from Gale**. Based on the access capabilities of your institution, you may be able to use this database, which indexes citations, abstracts, and some full texts in such subjects as the physical sciences, technology, medicine, social sciences, the arts, theology, literature, and more. By using this database, you may be able to retrieve the full text of articles provided in PDF and HTML formats and audio versions of texts in MP3 format.
- **Academic Search Complete** from EBSCOhost. Your library also may provide you with access to this

database, which indexes citations, abstracts, and full text from journal articles, books, reports, and conference proceedings in all disciplines. An advantage of this database is that you can retrieve full-text articles provided in PDF and HTML forms. Academic Search Complete also provides searchable cited references for nearly 1,000 journals.

- **CQ Researcher**. This general database is unique because it publishes well-researched, single-themed 12,000-word reports by respected journalists who have established ethos because of their history of in-depth, unbiased coverage of health, social trends, criminal justice, international affairs, education, the environment, technology, and the economy. These reports can be beneficial at any research stage because they provide an overview, background, chronology, assessment of the current situation, tables and maps, pro/con statements from opposing positions, and bibliographies. Files from before 1996 are in HTML format; newer ones, beginning January 1996, are PDFs.
- **Factiva**. Many students find Factiva a useful general tool because it provides full-text news articles and business/industry information from newswires, newspapers, business and industry magazines, television and radio transcripts, financial reports, and news service photos. Within the Factiva database, most content is HTML, though other formats are available for export. The database contains news sources from 1979 to the present and financial data from the 1960s to the present.
- **Google**. One of the most frequently used databases for any research is Google. Students often use Google to begin their searches because they can find material from many different sources, both formal and informal, including blogs, journals, websites, and popular magazines. For academic research, you may find it useful to begin with a general Google search and then move to Google Scholar. Google Scholar provides a simple way to do a broad search for scholarly literature across a variety of disciplines and sources—articles, theses, books, et cetera. Within the Google database, you will also find more information or effective uses of Google for your research purposes. See Compiling Sources for an Annotated Bibliography for more information about Google Scholar.
- **Opposing Viewpoints in Context from Gale**. As you familiarize yourself with your topic, you may find this database helpful for understanding the parameters of the discussion on your topic. Opposing Viewpoints offers over 20,000 pro/con viewpoint essays on controversial issues and current events, plus thousands of topic overviews, primary source documents, social activist biographies, court case overviews, related full-text periodical articles, statistical tables, and multimedia content.
- **Gale in Context**. This database provides curated topic pages that combine academic journal articles, primary sources, reference works, essays, news sources, multimedia, and biographies about people, events, places, and time periods.
- **Web of Science from Clarivate Analytics**. The three Web of Science databases index citations from journal articles and conference proceedings in the sciences, social sciences, arts, and humanities. You can access cited reference searches, analyze trends and patterns, and create visual representations of citation relationships. Its contents date from 1900 to the present.

Government Documents

The U.S. government publishes numerous reports, pamphlets, catalogs, and newsletters on most issues of national concern. To access documents from published in 1976 and onward, consult the Catalog of U.S. Government Publications. To find documents published prior to 1976, consult the *Monthly Catalog of United States*. Both resources should be available electronically and contain listings for materials in formats such as nonprint media, records, CDs, audiocassettes, videotapes, slides, photographs, and other media. Many of these publications may be located through your university's library catalog as well. Consult a librarian to find out what government documents are available to you and in what forms.

Archives/Special Collections



Many libraries have donated records, papers, or writings that make up archives or special collections containing manuscripts, rare books, architectural drawings, historical photographs and maps, and so on. These, as well as items of local interest such as community and family histories, artifacts, and other

memorabilia, are usually found in a special room or section of the library. By consulting these collections or archives, you also may find local or regional atlases, maps, and geographic information systems (GIS). Maps and atlases depict more than roads and boundaries. They include information on population density, language patterns, soil types, and much more. And, as discussed later in this chapter, these materials can figure into research projects as primary data.

University libraries' special collections often house items donated by alumni, families, and other community groups. For example, one state university library's special collections, housing a collection of Black Panther and American Communist Party newspapers and pamphlets, celebrated Black History Month with an exhibit featuring the Black Panther Party and the Black Power movement. Included in the exhibit were Black Panther newspapers and pamphlets published in the 1960s and 1970s, as well as earlier civil rights literature from the American Communist Party. This exhibit not only helped students become aware of information about the time and movement but also demonstrated the range and depth of the university's archive collection.

Interlibrary Loans

Even though libraries house many materials, you may need a source unavailable at your library. If so, you usually can get the source through a networked system called interlibrary loans. Your library will borrow the source for you and provide some guidance as to the form of the materials and how long you will have access to them.

Whichever search tool you use, nothing is magic about information gathered. You will need to use critical skills to evaluate materials gathered from sources, and you will still need to ask these basic questions: Is the author identified? ls that person a professional in the field or an interested amateur? What are their biases likely to be? Does the document represent an individual's opinion or peer-reviewed research?

Evaluating Sources

One key to judging the validity of sources is analysis. You already may be familiar with analysis, which involves looking at texts, media, or other artifacts to examine their individual parts and make interpretive claims about them. In the research process, analysis involves collecting data, deciding how you want to use that data *(what are you looking for?),* and applying those criteria to your data. For example, if you were looking at how the presence of social media has changed in television programs in the last five to seven years, you would determine what shows you want to view and what patterns you want to study.

As you analyze sources, you evaluate them in terms of your research needs. On the basis of your needs assessment, you will determine whether a source is acceptable or unacceptable, good or bad, trustworthy or biased. Although firm categories can be useful, you may find a more nuanced evaluation helpful as well. When you look for sources and evaluate them, begin with general questions such as these:

- How do I want to use this source?
- Am I able to use it in that way?
- Might this source be more valuable if used in another way?

When you ask whether a source is acceptable, the answer usually depends on what you want to do with it. Even biased, false, or misleading material can be useful, depending on how a researcher puts it to use. For instance, you may be writing about a particular historical event and come across a magazine article featuring a biased account of that event. If your purpose is to write a brief but accurate description of the event, then this account is of little use. *But what if your purpose is to write a critical analysis of the ways in which misleading media coverage of an event has influenced public perception of it?* Suddenly, the biased account becomes useful as a specific example of the media coverage you wish to analyze.

A source's value, therefore, is a function of your purpose for it. Labeling a source as good or bad, truthful or misleading, doesn't really evaluate its use to you as a researcher and writer; truthful sources can be used poorly, and misleading sources can be used effectively. What matters is whether the source fits your purpose.

Finally, when evaluating a source, consider time (*when was it judged true?*) and perspective (*who said it was true, and for what reason?*).

Locate the Date

Most documents, especially those created since the advent of copyright laws at the end of the 19th century, include their date of publication. Pay attention to the date a source was created, and reflect on what might have happened since then. Information may be outdated and useless. On the other hand, it may still be highly useful—and continuing usefulness is the reason many old texts remain in circulation. Once you locate the source's date, you can decide whether it will be relevant for your purpose. If you are studying change over time, for example, old statistical information would be useful baseline data to demonstrate what has changed. But if you are studying current culture, dated information may be misleading. In other words, when evaluating whether a dated source serves your purpose, know what that purpose is.

Identify Perspective



To identify and evaluate perspective, ask what viewpoint, or perspective, it represents. *Who created the source, and for what purpose?* This question can be difficult to answer immediately because an author's viewpoint is not always identified or summarized in the source itself—and when it is, the information provided, being a creation of the author, cannot always be believed. To trust a source, you need to analyze its assumptions, evidence, biases, and reasoning, which together constitute the author's perspective. ln essence, you need to ask these questions: *What is this writer's purpose? Is it scholarly analysis, political advocacy, entertainment, or something else?* Consider the following:

- Will a quick perusal of the introduction or first chapter reveal the writer's assumptions about the subject or audience?
- Can you tell which statements are facts, which are inferences drawn from facts, and which are strictly opinions?
- Does a first reading of the evidence persuade you? Is the logic of the position apparent and/or credible?
- Does the writer omit relevant points?
- Do the answers to these questions make you more or less willing to accept the author's conclusions?

Although trying to answer these questions about every source may seem daunting or even futile at first, have patience and give the research process the time it needs. At the beginning of a research project, when you are still trying to gain context and overview and have looked at only one source, you likely will have difficulty recognizing an author's purpose and viewpoint. However, as you read further and begin to compare and contrast one source with another, differences will emerge, especially if you read extensively and take notes. The more differences you note, the more critically aware you become and the more you understand how and where a source might help you.

Review Critically

To review a source with a critical eye, ask both first and second questions of the text. The answers to first questions are generally factual, the result of probing the text (identifying the title, table of contents, chapter headings, index, and so on). The answers to second questions are more inferential, the result of analyzing assertions, evidence, and language in the text (identifying the perspective of the author and their sources).

Review Internally

Does information in one source support or contradict information in other sources? Do a subject search of the author across platforms to find out how other experts view the author and how your source fits in with the author's other works.

13.2 The Research Process: How to Create Sources

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Locate and create primary research materials.
- Apply methods and technologies used for research and communication in various fields.

Introducing Research as Evidence and Compiling Sources for an Annotated Bibliography explain the difference between primary and secondary sources in the research process. Almost all of the source-gathering information in this chapter thus far has focused on gathering secondary sources. However, your research assignment may require that you use primary sources—not only those you find in the library but also those you create yourself, outside the library, by doing **field research**, also called **fieldwork**.

Conducting Field Research

If not applicable for this class, you may be asked at some point in your college career to conduct fieldwork, which is considered primary research (the collection or development of primary sources). You may already have engaged in primary research by performing experiments in a laboratory for a science course or by documenting your observation of a musical or artistic performance.

Fieldwork is the kind of research done when a person goes out into the "field" to collect data. This term is often used by both biologists, who may observe nature to understand plant growth, and anthropologists, who observe people to understand human cultural habits. Social scientists interested in language use and development, for example, have borrowed the term *fieldwork* to describe the ways they collect data about how people learn or use language. In fact, fieldwork is common to subjects such as education, medicine, engineering, sociology, journalism, criminology, and advertising.

Different disciplines—and different rhetorical situations—require different kinds of fieldwork. If your task, for instance, is to find out what consumers think of a new product, you may need to create and distribute a survey or questionnaire. If you want to find out how many people stop at a certain fast-food restaurant along the highway just to use the restroom, as compared with the number of customers who purchase food, you will have to spend some time observing the location.

No matter what kind of data you collect, the way you represent your research in your written work requires careful attention to fairness and accuracy. These ideas are particularly important when you write about the people you interview or observe. The way you represent them, as well as their words and actions, may present challenges. Be aware of those challenges by considering personal biases as you write about your research participants. Finally, be considerate of interviewees' time, and acknowledge their help by sending a follow-up email thanking them.

Planning Field Research

Unlike a library, which bundles millions of bits of every kind of information in a single location, "fields" are everywhere, including the campus of your university (academic departments, administrative offices, labs, libraries, dining and sports facilities, and dormitories) as well as the neighborhood beyond the campus (theaters, restaurants, malls, parks, playgrounds, farms, factories, schools, and so on). Field information is not cataloged, organized, indexed, or shelved for your convenience. Obtaining it requires diligence, energy, and careful planning. Some considerations are listed below:

- **Think about your research question.** What field sources might strengthen your argument or add to your report?
- **Select your contacts and sites.** Find the person, place, thing, or event that you would see as most helpful to you. Will you set up observations, conduct interviews, distribute surveys, or use a combination of methods?
- **Schedule research in advance.** Interviews, trips, and events don't always work out according to plans.

Allow time for glitches, such as having to reschedule an interview or return for more information.

- **Do your homework.** Visit the library or do a Google search before conducting extensive field research. No matter from whom or from where you intend to collect information, having background knowledge can help you make more insightful observations and formulate better interview questions.
- **Log what you find.** Record visits, questions, phone calls, and conversations in a **research log (https://openstax.org/r/reasearchlog)**. From the very beginning of your research, enter information about topics, questions, methods, and answers into a journal, or use another record-keeping method. Record even dead-end searches to remind yourself that you tried them. This method of organizing information is the writing task for this chapter and will be discussed at length in Glance at the Research Process: Key Skills and Annotated Student Sample.



FIGURE 13.5 Biologists work in the field to gather samples for further study. (credit: "Biologists track frogs in Eastern Oregon desert" by U.S. Bureau of Land Management/Maria Thi Mai/Wikimedia Commons, CC BY 2.0)

Observation

In general, fieldwork that relies on observation as a method of data collection involves taking notes while observing events, activities, people, places, animals, and so on. Observations can range from a single visit to one event or location to several visits over an extended period. Consider your research question and topic to determine whether you need to observe over time or just once to get the information you need. You can prepare for your observation by doing some of the preliminary work in your research log. At this time, consider the limitations of only one observation session, which may yield only partial information.

As you plan for your observation, and before you arrive, decide whether you will be a **participant observer**, which involves taking part in what you are observing. For example, if you observed a volleyball club meeting that you attend regularly, and thus know most of its members or join in activities, you would be a participant observer. You will need to consider, though, how well you will be able to focus on the observation tasks. *How actively will you participate in the group/event? While participating, how frequently will you be able to jot down notes or otherwise document your experience? Might you become distracted and forget your observation tasks, and if so, how will you handle that possibility?*

Another option is to be a **nonparticipant** observer. In this capacity, you try to let your presence go unnoticed. Although you are there and observing, you do not influence the situation in any way. If you sat in a corner of an art class at your university to observe what materials students use, for example, you would be an unobtrusive and nonparticipant observer.

When you observe, take detailed notes; without them, you may forget much of what you observed after you leave a site. After recording your notes in your research log, review and rewrite your observation notes as soon

after your site visit as possible. Take precise notes, indicating the color, shape, size, texture, and arrangement of everything relevant as applicable. Pay special attention to any anomalies you notice in a situation. Visual images provide excellent memory aids, so consider sketching, photographing, or videotaping the site you visit. If you speak your notes into a recording device, you will also pick up the characteristic sounds of the site.

Your observation notes will become very important as you begin to analyze your data. When you have finished observing, review your notes to consider them for analysis. Ask yourself what kinds of questions or conclusions your observations raise. Record your questions and conclusions in the speculations section of your research log; this material serves as your tentative interpretation of observation notes. These questions and conclusions can help direct further analysis of what you have observed and what you write based on those observations.

For example, consider that you want to determine whether seating is an issue for students eating in on-campus restaurants. You might organize your observations, questions, and speculations as shown in Table 13.2.

Observations	Questions and Speculation
Student enters campus restaurant with friends. Friends look around for seating before rejoining student at the counter. Friends take over five minutes to find an empty table that will seat them. Both the students searching for tables and the student at the counter keep checking their watches. The time is between classes but later in the afternoon than normal lunch time: 2:30.	How many seats are available in the campus restaurant? Are students at the tables eating, studying, or both? The students appear concerned about time and the opportunity to eat as a group.

TABLE 13.2 Observations, questions, and speculations

In the "Observations" column, the writer describes, whereas in the "Questions and Speculation" column, the writer evaluates the situation. The "Questions and Speculation" section is particularly important, as different observers usually will have different interpretations. Moreover, both columns might be different at different times of the day or on different days of the week. To increase the validity of your findings, you might get a second opinion on your interpretation by sharing your observations with a peer.

Surveys

Researchers in the social sciences often use surveys to collect data from a large number of individuals or from groups of people. A **survey** is a structured interview in which respondents are all asked the same questions and their answers are tabulated and interpreted. A survey would be a good source of data if, for example, you were comparing the eating habits of students who eat off campus with those of students who eat in college dining facilities. Or you may want to conduct research that compares the overall eating habits of students in one on-campus dining facility with those of students in another. You might ask questions such as these:

- How often do you eat at a campus facility? This question could provide several options to assist survey takers with some ranges.
- When you eat on campus, which of these dining facilities do you choose? A list of the dining facilities you are comparing would follow this question to refamiliarize survey takers with the names of the venues.

For research purposes, respondents to surveys can be treated as experts because they are being asked for opinions or information about their own behavior. Design your survey questions to be answered quickly and to generate useful information about your topic. To get this kind of information, ask questions skillfully. *What* and *who* questions are easy for respondents to answer easily and accurately. Less valuable for a survey is a *why* question, which requires a more thorough and planned answer. Respondents are less likely to give the proper

attention to a *why* question for this reason. Furthermore, wording that suggests a right or wrong answer reveals the researcher's biases more than the subject's candid responses.

The format of the questioning and the way the research is conducted also influence responses. For example, to get complete and honest answers about a sensitive or highly personal issue, the researcher would probably use anonymous written surveys to ensure confidentiality. Other survey techniques include oral interviews in which the researcher records each subject's responses on a written form. Surveys are usually brief in order to gain the cooperation of a sufficiently large number of respondents. To enable the researcher to compare answers, the questions are usually closed, although researchers may sometimes ask open-ended questions to gain additional information or insights. Treated briefly here, surveys involve complex procedures for the designing of questions, distribution of the survey, and assessment of the results.

A complication arises when a survey requests sensitive information, such as personal experience with drugs, alcohol, or sex, from identifiable subjects. Colleges and universities have "human subject" boards or committees that need to approve any research that could compromise the privacy of students, staff, or faculty. Consequently, consult your instructor before launching any survey on or off campus. However, the simple, informal polling of people to request opinions takes place quite often in daily college life, such as every time a class takes a vote or an instructor asks the class for opinions or interpretations of texts.

In one case, a student who was writing a self-profile wanted to find out how others perceived her. First, she listed 10 people who knew her in different ways—her mother, father, older sister, roommate, best friend, favorite teacher, and so on. Next, she invited each to list five words that best characterized her. Finally, she asked each to call her answering machine on a day when she knew she would not be home and name those five words. ln this way, she was able to collect original outside opinion (fieldwork research) in a nonthreatening manner. She then wove those opinions into her profile paper, combining them with her own self-assessment. The external points of view added an interesting (and sometimes surprising) view of herself as well as other voices to her paper.

Interviews



Conducting interviews is another method of gathering information. Consulting, interviewing, and using information gathered from professionals in specific fields can offer authoritative perspectives. Other possibilities include interviewing people who have direct experience with your research topic.

If you are comfortable talking to people you don't know, then you have a head start as a successful interviewer. In many respects, a good interview is simply a good conversation. If you consider yourself shy, don't worry; you can still learn how to ask insightful interview questions that will elicit useful answers. Before conducting an interview, determine whether it is more appropriate to use a formal question-and-answer session, an informal exchange of ideas, or something in between.

Your chances of gathering helpful interview material increase dramatically when you prepare ahead of time and formulate the questions you want to ask. Consider the following guidelines:

- **Select the right person.** People differ in both the amount and the kind of knowledge they have. Not everyone who knows something about your research topic will be able to provide the information you need. Ask yourself
  - what information you need;
  - why you need it;
  - who is likely to have it; and
  - how you might gain it.

  Most research projects benefit from more than one perspective, so plan on more than one interview. For example, to research Lake Erie pollution, you could interview someone who lives on the shore, a chemist who knows about pesticide decomposition, a vice president of a nearby paper company, and people who

frequent the waterfront.

- **Know your subject.** Before you talk to an expert about your topic, make sure you know something about it yourself. Be prepared to explain your interest in it, know the general issues, and learn what your interview subject has already said about it in books, articles, or interviews. ln this way, you will ask sharper questions, get to the point faster, and be more interesting for your subject to talk with.
- **Create a working script.** A good interview doesn't follow a script, but it usually starts with one. Before you begin an interview, write the questions you plan to ask, and arrange them so that they build on each other—general questions first, specific ones later. Your written questions can remind you to get back on track, should you or your subject digress.
- **Ask both open and closed questions.** Different kinds of questions elicit different kinds of information. Open questions place few limits on the answers given: *Why did you decide to major in business? What are your plans for the future?* Closed questions specify the information you want and usually elicit brief responses: *When did you receive your degree? From what college?* Open questions usually provide general information; closed questions supply details.
- **Ask follow-up questions.** Listen closely to the answers you receive. When the information is incomplete or confusing, ask follow-up questions to request clarification. Such questions are seldom scripted, so plan on using your wits to direct your subject toward the information you consider most important.
- **Use silence.** If you don't get an immediate response to a question, wait a bit before asking another one. ln some cases, your question may not have been clear, and you will need to rephrase it. But in many cases, your interview subject is simply collecting their thoughts, not ignoring you. After a slight pause, you may hear answers worth waiting for.
- **Read body language.** Be aware of what your subject is doing while answering questions. *Does the subject look you in the eye? Fidget and squirm? Look distracted or bored? Smile?* From these visual cues, you may be able to infer when your subject is speaking most frankly, doesn't want to give more information, or is tired of answering questions.
- **Take content notes.** Many interviewers take notes on a pad that is spiral bound on top and thus allows for quick page flipping. Don't try to write down everything, just major ideas and telling statements in the subject's own words that you might want to use as quotations in your paper. Omitting small words, focusing on the most distinctive and precise language, and using common abbreviations are all techniques to make taking notes more efficient.
- **Take context notes.** Note your subject's physical appearance, facial expressions, and clothing as well as the interview setting itself. These details will be useful later when you reconstruct the interview, helping you represent it more vividly in your paper.
- **Record audio with permission only.** If you plan to record the interview, ask for permission in advance. The advantage of recording is that you have a complete record of the conversation. Sometimes, when hearing the interview subject a second time, you notice important things you missed earlier. However, recording devices may make subjects nervous. Be aware, too, that transcribing a recording is time consuming. It's a good idea to have a pen in hand to catch highlights or jot down additional questions.
- **Confirm important assertions.** When your subject says something especially important or controversial, read back your notes aloud to check for accuracy and to allow your subject to elaborate. Some interviewers do this during the interview, while others do it at the end.
- **Review your notes.** Notes taken during an interview are brief reminders of what your subject has said, not complete quotations. Write out the complete information as soon after the interview as you can, certainly within 24 hours. Supplement the notes with other remembered details while they are still fresh, recording them in your research log or directly into a computer file that you can refer to as you write your paper.
- **Interview electronically.** It is possible, and useful, to contact individuals electronically. Phone interviews are quick and obvious ways of finding out information on short notice. Even better is asking questions via email, which is less intrusive than telephoning, as your subject can answer quickly, specifically, and in writing at a convenient time. Other electronic media for interviews include Skype, Zoom, Google Meet, and

Microsoft Teams. All of these tools allow you to see the interviewee physically without having to travel for an in-person interview.

13.3 Glance at the Research Process: Key Skills

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Locate and evaluate primary and secondary research materials, including journal articles and essays, books, scholarly and professionally established and maintained databases or archives, and informal electronic networks and Internet sources.
- Practice and apply strategies such as interpretation, synthesis, response, and critique to compose texts that integrate the writer's ideas with those from appropriate sources.
- Apply methods and technologies commonly used for research and communication in various fields.

Your task in writing an argumentative research paper as outlined in Writing Process: Integrating Research is to present original thinking that is supported by researched evidence. You may wonder how a college student will think of anything new to say about a topic that already has been researched by many others. First, keep in mind that your original thinking does not necessarily have to be groundbreaking—something never considered by others in the field—though it might be. Your original thinking may be something smaller but equally important, such as offering an alternative viewpoint on some evidence, interpreting existing evidence in a new way that sheds light on current questions in the field, or pointing out a flaw in the current thinking regarding a topic.

Synthesis

One skill that will help you develop this original thinking is **synthesis**. As explained in Writing Process: Integrating Research, synthesis involves combining information gathered from various sources and making connections among those sources to create a new, deeper, or changed understanding of a topic. In other words, you examine how information or opinions you have read in one place relate to what you have read in another place or to your own thoughts. To practice the skill of synthesis, use Figure 13.6, which illustrates how thinking can change like ripples of water.



FIGURE 13.6 Synthesizing research (attribution: Copyright Rice University, OpenStax, under CC BY NC-SA 4.0 license)

Keeping Track of Sources

Because unorganized or incorrectly documented research may be less than useless, many researchers make the effort to keep their notes and comments on their sources in a **research log**. An organized record of all sources consulted, a research log includes publication information, notes taken from the sources, and

commentary about their relation to other sources or to the thesis of your paper. Having a dynamic tool such as this makes it easier to document sources in your works cited or references list and place in-text citations in your paper. It also helps with the research itself, showing at a glance what information you already have and where it comes from so that you can avoid repetition. Equally important, commentary on notes helps you synthesize information efficiently.

Key Research Skills

In addition to synthesis and research log maintenance, a good researcher needs the following skills to perform required tasks:

- **Critical analysis:** Ability to think about what text or data means and how the parts relate to the whole.
- **Critical thinking:** Ability to analyze, make inferences, evaluate, synthesize, and draw conclusions on the basis of researched information.
- **Data collection:** Ability to gather facts and research on a topic through various kinds of sources, field research, observation, interviews, surveys or questionnaires, experimentation, and/or focus groups.
- **Field research:** Ability to collect raw data outside a laboratory, library, or workplace setting; observation and data collection in the subject's natural environment.
- **Interviewing:** Ability to engage in questions and answers with experts or those who have knowledge to share regarding a research topic.
- **Note-taking:** Ability to identify and record information that will later be used to support a thesis.
- **Organization:** Ability to plan, document, and track research to incorporate into a unified composition.
- **Paraphrasing:** Ability to restate an idea in your own words.
- **Summarizing:** Ability to restate in your own words the main ideas and key details of a text.
- **Synthesis:** Ability to combine information from different sources and make connections among them to form a new conclusion or deeper understanding of a topic.
- **Technology:** Ability to use computers, databases, and other forms of technology to conduct research.
- **Time management:** Ability to plan research tasks over several weeks or months.

13.4 Annotated Student Sample: Research Log

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Demonstrate the ability to inquire, learn, think critically, and communicate when reading in varying rhetorical and cultural contexts.
- Identify and analyze relationships between ideas, patterns of organization, and interplay between verbal and nonverbal elements in written texts.
- Practice and apply strategies such as interpretation, synthesis, response, and critique to compose texts that integrate the writer's ideas with those from appropriate sources.

Introduction

Lily Tran created this log entry during the research process for an argumentative research paper assigned in her first-year composition class, as shown in this Annotated Student Sample.

LIVING BY THEIR OWN WORDS

Planning to Write



FIGURE 13.7 National Guard soldiers at the Glendale, Arizona, food bank, 2021 (credit: "U.S. Air National Guard" by Tech. Sgt. Michael Matkin/flickr, CC BY 2.0)

> **Freewrite:** I found this photograph in an article I was reading about food insecurity during the COVID-19 pandemic. I copied and pasted it here as inspiration for my argumentative research paper.

Lily Tran includes a visual in the freewrite section of her research log. The visual may or may not appear in the final paper, but here, it serves to stimulate her writing and thinking about her topic and possibly connect to other information she finds.

> For a sustainable future, food production and processing have to change. So does global distribution.

Tran begins to establish problem-and-solution reasoning, recognizing that there are different stages to food production and that all will be affected by any proposed solution.

> The necessary changes will affect nearly all aspects of life, including world hunger, health and welfare, use of land resources, habitats, water, energy use and production, greenhouse gas emissions and climate change, and economics, as well as cultural and social values.

Tran also employs cause-and-effect reasoning in beginning to think about the effects of any proposed change.

> These needed changes may not be popular, but people will have to accept them.

She recognizes potential counterarguments to address if the paper is to be persuasive.

Information	Connection to Thesis/Main Points	Notes/Cross-References/Synthesis
Date: 12/07/2020 Their report states, "If society continues on a 'business-as-usual' dietary trajectory, a 119% increase in edible crops grown will be required by 2050" (Berners-Lee).	Shows why a solution to food sustainability is needed	Create a concrete example to support this statistic. For example, if Farmer Joe grows . . . Tie to the explanation of the problem for which I'm proposing a solution.
Tran cites and quotes an alarming statistic from a secondary source.	*She makes a connection to her thesis.*	*She anticipates that not all readers will respond to the statistic alone. To counteract this possibility, she may decide to create an original anecdotal example.* *Tran then connects the information to the text structure: problem/solution.*
Source/Citation: Berners-Lee, M., et al. "Current Global Food Production Is Sufficient to Meet Human Nutritional Needs in 2050 Provided There Is Radical Societal Adaptation." *Elementa: Science of the Anthropocene*, vol. 6, 2018, online.ucpress.edu/elementa/article/doi/10.1525/elementa.310/112838/Current-global-food-production-is-sufficient-to (https://openstax.org/r/onlineucpress). Accessed 7 Dec. 2020. *Tran uses MLA 8th edition style guidelines to create this citation for her log entry. She includes all information needed for citing the entry in the works cited list for her paper.*		

TABLE 13.3 Research log entry

Discussion Questions

1. If Lily Tran were to use the photo, what information or questions might she enter in the right-hand column of her research log?
2. Why do you think Tran has chosen a direct quotation instead of a summary or paraphrase?
3. Why is the information in the center column important to include in a research log?

13.5 Research Process: Making Notes, Synthesizing Information, and Keeping a Research Log

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Employ the methods and technologies commonly used for research and communication within various fields.
- Practice and apply strategies such as interpretation, synthesis, response, and critique to compose texts that integrate the writer's ideas with those from appropriate sources.
- Analyze and make informed decisions about intellectual property based on the concepts that motivate them.
- Apply citation conventions systematically.

As you conduct research, you will work with a range of "texts" in various forms, including sources and documents from online databases as well as images, audio, and video files from the Internet. You may also work with archival materials and with transcribed and analyzed primary data. Additionally, you will be taking notes and recording quotations from secondary sources as you find materials that shape your understanding of your topic and, at the same time, provide you with facts and perspectives. You also may download articles as PDFs that you then annotate. Like many other students, you may find it challenging to keep so much material organized, accessible, and easy to work with while you write a major research paper. As it does for many of those students, a research log for your ideas and sources will help you keep track of the scope, purpose, and possibilities of any research project.

A research log is essentially a journal in which you collect information, ask questions, and monitor the results. Even if you are completing the annotated bibliography for Writing Process: Informing and Analyzing, keeping a research log is an effective organizational tool. Like Lily Tran's research log entry, most entries have three parts: a part for notes on secondary sources, a part for connections to the thesis or main points, and a part for your own notes or questions. Record source notes by date, and allow room to add cross-references to other entries.

Summary of Assignment: Research Log

Your assignment is to create a research log similar to the student model. You will use it for the argumentative research project assigned in Writing Process: Integrating Research to record all secondary source information: your notes, complete publication data, relation to thesis, and other information as indicated in the right-hand column of the sample entry.

Another Lens. A somewhat different approach to maintaining a research log is to customize it to your needs or preferences. You can apply shading or color coding (https://openstax.org/r/shadingorcolorcoding) to headers, rows, and/or columns in the three-column format (for colors and shading). Or you can add columns to accommodate more information, analysis, synthesis, or commentary, formatting them as you wish. Consider adding a column for questions only or one for connections to other sources. Finally, consider a different visual format (https://openstax.org/r/visualformat), such as one without columns. Another possibility is to record some of your comments and questions so that you have an aural rather than a written record of these.

Writing Center

At this point, or at any other point during the research and writing process, you may find that your school's writing center can provide extensive assistance. If you are unfamiliar with the writing center, now is a good time to pay your first visit. Writing centers provide free peer tutoring for all types and phases of writing. Discussing your research with a trained writing center tutor can help you clarify, analyze, and connect ideas as well as provide feedback on works in progress.

Quick Launch: Beginning Questions

You may begin your research log with some open pages in which you freewrite, exploring answers to the following questions. Although you generally would do this at the beginning, it is a process to which you likely will return as you find more information about your topic and as your focus changes, as it may during the course of your research.

- What information have I found so far?
- What do I still need to find?
- Where am I most likely to find it?

These are beginning questions. Like Lily Tran, however, you will come across general questions or issues that a quick note or freewrite may help you resolve. The key to this section is to revisit it regularly. Written answers to these and other self-generated questions in your log clarify your tasks as you go along, helping you articulate

ideas and examine supporting evidence critically. As you move further into the process, consider answering the following questions in your freewrite:

- What evidence looks as though it best supports my thesis?
- What evidence challenges my working thesis?
- How is my thesis changing from where it started?

Creating the Research Log

As you gather source material for your argumentative research paper, keep in mind that the research is intended to support original thinking. That is, you are not writing an informational report in which you simply supply facts to readers. Instead, you are writing to support a thesis that shows original thinking, and you are collecting and incorporating research into your paper to support that thinking. Therefore, a research log, whether digital or handwritten, is a great way to keep track of your thinking as well as your notes and bibliographic information.

In the model below, Lily Tran records the correct MLA bibliographic citation for the source. Then, she records a note and includes the in-text citation here to avoid having to retrieve this information later. Perhaps most important, Tran records *why* she noted this information—how it supports her thesis: *The human race must turn to sustainable food systems that provide healthy diets with minimal environmental impact, starting now.* Finally, she makes a note to herself about an additional visual to include in the final paper to reinforce the point regarding the current pressure on food systems. And she connects the information to other information she finds, thus cross-referencing and establishing a possible synthesis. Use a format similar to that in Table 13.4 to begin your own research log.

Information	Connection to Thesis/Main Points	Notes/Cross-References/ Synthesis
Date: 6/06/2021 It has been estimated, for example, that by 2050, milk production will increase 58 percent and meat production 73 percent (Chai).	Shows the pressure being put on food systems that will cause the need for more sustainable systems	Maybe include a graph showing the rising pressure on food systems. Connects to similar predictions about produce and vegan diets. See Lynch et al.
Source/Citation: Chai, Bingil Clark, et al. "Which Diet Has the Least Environmental Impact on Our Planet? A Systematic Review of Vegan, Vegetarian and Omnivorous Diets." *Sustainability*, vol. 11, no. 15, 2019, www.mdpi.com/2071-1050/11/15/4110 (https://openstax.org/r/mdpi4110). Accessed 6 Dec. 2020.		
Date:		
Source/Citation:		
Date:		
Source/Citation:		

TABLE 13.4 Model research log

Types of Research Notes

Taking good notes will make the research process easier by enabling you to locate and remember sources and

use them effectively. While some research projects requiring only a few sources may seem easily tracked, research projects requiring more than a few sources are more effectively managed when you take good bibliographic and informational notes. As you gather evidence for your argumentative research paper, follow the descriptions and the electronic model to record your notes. You can combine these with your research log, or you can use the research log for secondary sources and your own note-taking system for primary sources if a division of this kind is helpful. Either way, be sure to include all necessary information.

Bibliographic Notes

These identify the source you are using. When you locate a useful source, record the information necessary to find that source again. It is important to do this as you find each source, even before taking notes from it. If you create bibliographic notes as you go along, then you can easily arrange them in alphabetical order later to prepare the reference list required at the end of formal academic papers. If your instructor requires you to use MLA formatting for your essay, be sure to record the following information:

1. Author
2. Title of source
3. Title of container (larger work in which source is included)
4. Other contributors
5. Version
6. Number
7. Publisher
8. Publication date
9. Location

When using MLA style with online sources, also record the following information:

10. Date of original publication
11. Date of access
12. URL
13. DOI (A DOI, or digital object identifier, is a series of digits and letters that leads to the location of an online source. Articles in journals are often assigned DOIs to ensure that the source can be located, even if the URL changes. If your source is listed with a DOI, use that instead of a URL.)

It is important to understand which documentation style your instructor will require you to use. Check the Handbook for MLA Documentation and Format and APA Documentation and Format styles. In addition, you can check the style guide information provided by the Purdue Online Writing Lab (https://openstax.org/r/purdueonlineWL).

Informational Notes

These notes record the relevant information found in your sources. When writing your essay, you will work from these notes, so be sure they contain all the information you need from every source you intend to use. Also try to focus your notes on your research question so that their relevance is clear when you read them later. To avoid confusion, work with separate entries for each piece of information recorded. At the top of each entry, identify the source through brief bibliographic identification (author and title), and note the page numbers on which the information appears. Also helpful is to add personal notes, including ideas for possible use of the information or cross-references to other information. As noted in Writing Process: Integrating Research, you will be using a variety of formats when borrowing from sources. Below is a quick review of these formats in terms of note-taking processes. By clarifying whether you are quoting directly, paraphrasing, or summarizing during these stages, you can record information accurately and thus take steps to avoid plagiarism.

Direct Quotations, Paraphrases, and Summaries

A **direct quotation** is an exact duplication of the author's words as they appear in the original source. In your

notes, put quotation marks around direct quotations so that you remember these words are the author's, not yours. One advantage of copying exact quotations is that it allows you to decide later whether to include a quotation, paraphrase, or summary. ln general, though, use direct quotations only when the author's words are particularly lively or persuasive.

A **paraphrase** is a restatement of the author's words in your own words. Paraphrase to simplify or clarify the original author's point. In your notes, use paraphrases when you need to record details but not exact words.

A **summary** is a brief condensation or distillation of the main point and most important details of the original source. Write a summary in your own words, with facts and ideas accurately represented. A summary is useful when specific details in the source are unimportant or irrelevant to your research question. You may find you can summarize several paragraphs or even an entire article or chapter in just a few sentences without losing useful information. It is a good idea to note when your entry contains a summary to remind you later that it omits detailed information. See Writing Process Integrating Research for more detailed information and examples of quotations, paraphrases, and summaries and when to use them.

Other Systems for Organizing Research Logs and Digital Note-Taking

Students often become frustrated and at times overwhelmed by the quantity of materials to be managed in the research process. If this is your first time working with both primary and secondary sources, finding ways to keep all of the information in one place and well organized is essential.

Because gathering primary evidence may be a relatively new practice, this section is designed to help you navigate the process. As mentioned earlier, information gathered in fieldwork is not cataloged, organized, indexed, or shelved for your convenience. Obtaining it requires diligence, energy, and planning. Online resources can assist you with keeping a research log. Your college library may have subscriptions to tools such as Todoist or EndNote. Consult with a librarian to find out whether you have access to any of these. If not, use something like the template shown in Figure 13.8, or another like it, as a template for creating your own research notes and organizational tool. You will need to have a record of all field research data as well as the research log for all secondary sources.

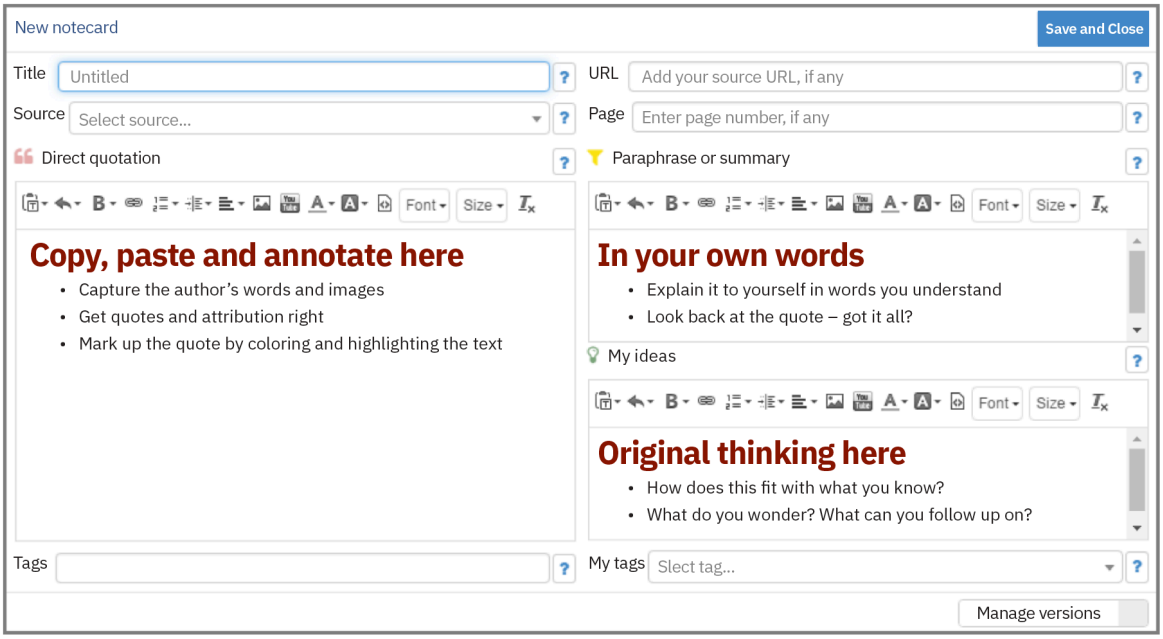


FIGURE 13.8 Electronic note card (attribution: Copyright Rice University, OpenStax, under CC BY NC-SA 4.0 license)

13.6 Spotlight on … Ethical Research

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Participate effectively in collaborative processes involving field research in a variety of disciplines.
- Develop projects using the characteristic processes of various disciplines.
- Analyze and make informed decisions about intellectual property based on the concepts that motivate them.
- Apply citation conventions systematically.

Whenever you do research, especially field research involving human participants, fair and ethical treatment of your subjects is expected. Included in this treatment are respect for privacy and, when required, anonymity. Related to fair and ethical treatment is your respect for the work of others, as demonstrated by attributing credit to sources from which you borrow information. Not doing so is one aspect of plagiarism.

Working with Human Participants and Institutional Review Boards

To comply with federal regulations and ethical principles, universities maintain institutional review boards (IRBs) that monitor how researchers treat their research participants. A range of research involvement exists when working with human subjects; whether your research involves taking blood samples, conducting psychological experiments, or simply distributing surveys, you must be aware of and consult your university's IRB for policies and guidelines. In most cases, as undergraduates, you will not be working on research that is potentially risky or harmful to human participants. For example, it is unlikely you will be involved in conducting medical or psychological research. However, you may work on a project that requires field research such as interviews or observations. Although participants in a fieldwork project will probably not incur the same amount of risk as participants in clinical experiments, the IRB may have some questions nonetheless:

- Will participation be voluntary?
- Will the selection of research subjects be fair?
- Will confidentiality be preserved?
- Will there be any risks to participants?
- Will the study yield important results for society?

Whenever you conduct fieldwork, whether it is via interviews, observations, or surveys, keep in mind ethical considerations for your participants and the ways you represent them in your work. See Tracing a Broad Issue in the Individual for more information.

Plagiarism

Plagiarism is putting one's name on a paper written by a friend and submitting it as one's own. Plagiarism is buying or downloading a paper from an Internet site and pretending to have written it. And plagiarism is pasting in a phrase, sentence, paragraph, passage, or portion of anybody else's work in a paper and not giving that author credit. ln these examples, the intent to plagiarize is deliberate and obvious, something that serious and honorable students would never do.

However, plagiarism also occurs when well-meaning students get careless when taking notes or copying notes into actual drafts. Following are three examples of unintentional plagiarism:

- A student copies a passage word for word from an Internet site and pastes it into a paper but forgets to include quotation marks or author attribution.
- A student summarizes a published author's idea but omits both author name and source title.
- A student credits an author's idea in a signal phrase (According to John Smith . . .) but omits quotation marks around the author's exact phrases.

All of these may be unintentional, but each is an act of plagiarism, easily avoidable by more careful research

and writing practice.

What Plagiarism Is Not

While you cannot publish the work of others, you may publish material that is **common knowledge**—that is, historical, cultural, or geographical information that an educated adult would be expected to know. Nor do you need to attribute material that appears in multiple sources, such as dates of historical events, names and locations of states and cities, general laws of science, and statements of well-known theories.

You do not need to document phrases in widespread use in your culture or well-known information found in textbooks or lectures in the field in which you are writing. For example, in a paper written about Austrian psychoanalyst Sigmund Freud (1856–1939) for a psychology class, you would not document the term *superego*, a word Freud frequently used. For more about what plagiarism is and is not, see Spotlight on … Citation.

Avoiding Plagiarism

Ensuring that your voice, ideas, critical thinking, connections, and analysis are the focus of your essay and not allowing borrowed materials to "take over" are critical to avoiding plagiarism. Additionally, keeping an accurate research log will assist you in recording, attributing, and clearly citing borrowed materials. When you think about plagiarism, consider what seems fair and how you might feel if someone were to use your work without giving you credit. Here are a few tips for avoiding plagiarism:

- In your research log, and subsequently in your essay, put quotation marks around language that comes directly from your sources. Use internal citations and appropriate reference pages for academic papers.
- Use internal citations for paraphrases and summaries, and do your best to capture the sentiment of the author you cite, even when using your own words.
- Keep accurate, thorough research notes so that you have the source information you need to work efficiently and cite accurately. For all copied sources, write who said what, where, and when. When quoting directly, do not distort or intentionally modify an author's meaning.
- Plan your work schedule to allow time for careful reading of your sources and effective use of them.

Another way to avoid plagiarism is to make sure that you have enough time to write and revise your project multiple times. Many students often find that postponing or avoiding the research process forces them to become rushed and to present a product that reflects insufficient attention to attribution.

Further Reading

Here are a few resources that you may find helpful throughout your research processes.

"Your Research Toolbox," University of Massachusetts Amherst: https://people.umass.edu/curtis/academics/researchtoolbox/researchlog.html

"Observing," Purdue Online Writing Lab (notes on conducting fieldwork): https://owl.purdue.edu/owl/research_and_citation/conducting_research/conducting_primary_research/observing.html

"Using Citation Generators Responsibly," Purdue Online Writing Lab: https://owl.purdue.edu/owl/research_and_citation/using_citation_machines_responsibly.html

Works Cited

OWL: The Purdue Online Writing Lab. Purdue U, 2021, owl.purdue.edu/owl/purdue_owl.html. Accessed 25 Jan. 2021.