

Research is the backbone of many college papers. A paper based on good research has a straight and healthy spine capable of supporting whatever burden is placed upon it. A paper with lousy research has a puny, twisted spine that can't support itself. You create a paper with a healthy spine when you do these things:

- Clarify the assignment requirements for your paper
- Give yourself time to do the research you need *before* you start writing
- Create a well-constructed thesis statement
- Narrow your paper's focus to the angle and elements defined by your thesis statement
- Keep your notes organized and document your source materials

There's a lot more to an assignment than just the final page or word count. When you are assigned an essay, pay close attention to the research requirements. Academic research is supposed to be based on academic or scholarly sources, but you might find that you and your professor have a difference of opinion about what "academic" and "scholarly" mean. Some professors and instructors do not accept papers based on Internet website sources; other professors and instructors do not accept papers based on popular media websites. Some assignments require that you use books on reserve at the library, specific journals, movies, websites, and the like. Your professor or instructor will usually include instructions indicating which and what kinds of sources are acceptable. If instructions aren't there or are unclear, ask for clarification.

Much of your research will involve usage of the Internet, the library, and various databases available through library systems or by subscription. You may also have the option of using interviews, filmmaking, photography, and other information-gathering methods to support your writing project. Various research resources have advantages and disadvantages.

While Wikipedia® has been touted as a popular Internet source for all sorts of information, it is not necessarily reliable and it isn't always scholarly. Information on Wikipedia can be changed at any time by a person who believes that something is inaccurate. You can even edit the Wikipedia® page where the editing policy is stated; that should make you a little nervous as a researcher. If the content you find on Wikipedia® on Tuesday night can be erased or changed by Thursday morning, then your resources are not all that stable; the reliability of your supporting evidence is only assured for about 24 hours on Wednesday. If your paper is due in 72 hours, there's a possibility that your instructor, should she decide to spot-check your bibliography, may not find the information you quoted or cited. Professors and instructors often advise against using Wikipedia® for this reason.

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News websites may also be unreliable for similar reasons. While some of the larger news organizations maintain archival files of news articles and broadcasts, smaller organizations may do a clean sweep of the news files every day or week. You may find something relevant to your topic in yesterday's news, but it may be long gone by the time you turn your paper in two weeks from Monday. The message "Page cannot be found" is a disheartening one for any researcher who relies on the Internet.

Google® or any of the other search engines may be a great way to narrow your search to the hundred thousand or so web pages where your topic may exist. Keep in mind, though, that the Internet is filled with commercial websites, where information has been slanted (using all sorts of rhetorical devices and/or logical fallacies) to persuade potential customers to buy products and services. The Internet also has its share of personal opinion sites, where the information is based on hearsay, innuendo, and gut feeling instead of proof and evidence. Hearsay, innuendo, and gut feeling may be academia's starting point for hypothesis and investigation, but proof and evidence are its standard. You would be wise to heed the standard.

Bottom line: Avoid using for research the sites that look and sound commercialized or where you feel like you are being pressured into believing what you are reading. Websites about controversial topics such as abortion, welfare, sexuality, sexual identity, dieting, politics, and religion may rely on logical fallacies and emotional appeals as well as logical appeals to convey their message. Evidence of emotional appeals and logical fallacies on a site can be a signal that you're going to need hip boots to wade through all the junk. A research paper based on junk is not a healthy one.

Your instructor or professor may also give instructions about the usage of primary and secondary sources. **A primary source is the original text (book, article, story, poem, movie, song, photo, or artwork) on which your research is based. A secondary source is a text based on another text; a secondary source analyzes or offers comments on the primary text.** For example, you may have been studying Jack Kerouac's *On the Road* in your English comp class. Your professor assigns you a research paper on Kerouac's work in which you are to use the primary source and three secondary sources. Your primary source is Kerouac's *On the Road*. Your secondary sources are articles you find in academic journals, where the author analyzes some aspect of *On the Road*. These are possible secondary sources:

Foxe, Gladys. "'And nobody knows what's going to happen to anybody:' Fear and Futility in Jack Kerouac's *On the Road* and Why It Is Important." *Psychoanalytic Review* 95.1 (2008) 45-60. *Academic Search Premier*. Cline Library, Northern Arizona University. 29 Nov. 2008. <<http://find.galegroup.com/itx/start.do?prodId+AONE>>

Nelson, Andrew. "Jack Kerouac Shrine." *National Geographic Traveler* 24.8 (2007) 34. *Academic Search Premier*. Cline Library, Northern Arizona University. 29 Nov. 2008. <<http://find.galegroup.com/itx/start.do?prodId+AONE>>

"Writing, or Typing?" *America* 197.12 (2007) 4. *Academic OneFile*. Cline Library, Northern Arizona University. 29 Nov. 2008. <<http://find.galegroup.com/itx/start.do?prodId+AONE>>

If your assignment instructions specify a number of sources, limit yourself to that number. List the primary and secondary sources that you actually used to build the content of your paper. Don't list all the books and articles you checked out but didn't actually read because you thought there might be something useful in one of them but it turned out there wasn't. Unless your paper is about the way *Dictionary.com* defines words so uniquely that you are quoting the definitions and their origins, don't provide a separate *Dictionary.com* entry for every word you looked up while you were writing your paper. Don't cite the MLA style guide because you had to look up the format for citing a movie. Your essay is supposed to be a thing of joy to read, not a portrait of your passive-aggressive tendencies or your martyrdom in the name of higher education.

If your assignment instructions don't specify a number of sources, you may want to include citations of the source materials you read that led you to the source materials you actually used, especially if the information therein is not common knowledge. Again, you don't have to include citations of dictionary, thesaurus, and style guide reference searches unless you are writing specifically about these subjects.

Give yourself adequate time

Plan your research project. I know. That sounds crazy when you're taking five or six classes and they all have research papers due the Monday after Thanksgiving break. However, if you look at the syllabus at the start of the semester and can schedule your research work so that it doesn't all happen during the same two weeks in mid-November, you will be better off. And you won't have to live in the library. Use a planner or a calendar. Create your own "Wall of Work" (see Chapter 1). Even if you don't have all the knowledge you need at mid-semester to write a paper that's due the last day of class, you can start thinking about a possible topic and planning how much time you can devote to research and writing.

We've already discussed in Chapter 12 the importance of a strong thesis statement. As you plan your research schedule, you can also start planning the thesis statement for your paper. A strong thesis statement will help you narrow your focus from the wide-wide topic of (whatever your topic is) to the more focused thesis of (a single aspect of that topic). For example, if you know that you have to write an informative essay for your English comp class, you can ask your instructor ahead of time what the subject or focus of the paper is supposed to be. Once you have an answer, you can start directing your thoughts toward that subject and identifying aspects of your interests or study that relate to the subject.

What kind of research is acceptable? "Reliable, current, scholarly research" will be the answer you're most likely to hear from your instructor. If you are interpreting data or statistics, look for information that is recent – at best no more than a few years old. If you are interpreting scientific evidence, look for the most recent dates relevant to your topic. If you are interpreting humanities-oriented materials such as literature, philosophy, and art history, you may more likely be searching by subject rather than for the most recent opinion about your topic, so a bit of latitude is acceptable on the "currency timeline." Take into account, though, that the humanities are often influenced by cultural and social developments, so outdated research may sound irrelevant.

Take into account, too, the credibility of the source of the information you find. Is the

Holistic Critical Thinking Scoring Rubric By Dr. Peter A. Facione, Santa Clara University, and Dr. Noreen C. Facione, R.N., FNP, University of California San Francisco	
4	<p><i>Consistently does all or almost all of the following:</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Accurately interprets evidence, statements, graphics, questions, etc.<input type="checkbox"/> Identifies the salient arguments (reasons and claims) pro and con.<input type="checkbox"/> Thoughtfully analyzes and evaluates major alternative points of view.<input type="checkbox"/> Draws warranted, judicious, non-fallacious conclusions.<input type="checkbox"/> Justifies key results and procedures, explains assumptions and reasons.<input type="checkbox"/> Fair-mindedly follows where evidence and reasons lead.
3	<p><i>Does most or many of the following:</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Accurately interprets evidence, statements, graphics, questions, etc.<input type="checkbox"/> Identifies relevant arguments (reasons and claims) pro and con.<input type="checkbox"/> Offers analyses and evaluations of obvious alternative points of view.<input type="checkbox"/> Draws warranted, non-fallacious conclusions.<input type="checkbox"/> Justifies some results or procedures, explains reasons.<input type="checkbox"/> Fair-mindedly follows where evidence and reasons lead.
2	<p><i>Does most or many of the following:</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Misinterprets evidence, statements, graphics, questions, etc.<input type="checkbox"/> Fails to identify strong, relevant counterarguments.<input type="checkbox"/> Ignores or superficially evaluates obvious alternative points of view.<input type="checkbox"/> Draws unwarranted or fallacious conclusions.<input type="checkbox"/> Justifies few results or procedures, seldom explains reasons.<input type="checkbox"/> Regardless of the evidence or reasons, maintains or defends views based on self-interest or preconceptions.
1	<p><i>Consistently does all or almost all of the following:</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Offers biased interpretations of evidence, statements, graphics, questions, information, or the points of view of others.<input type="checkbox"/> Fails to identify or hastily dismisses strong, relevant counterarguments.<input type="checkbox"/> Ignores or superficially evaluates obvious alternative points of view.<input type="checkbox"/> Argues using fallacious or irrelevant reasons, and unwarranted claims.<input type="checkbox"/> Does not justify results or procedures, nor explain reasons.<input type="checkbox"/> Regardless of the evidence or reasons, maintains or defends views based on self-interest or preconceptions.<input type="checkbox"/> Exhibits close-mindedness or hostility to reason.

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Figure 10 The Holistic Critical Thinking Scoring Rubric is designed to help evaluate the usefulness and effectiveness of source materials.

author identified? Is the author an expert on the subject? What are his or her credentials? Reliable, scholarly research comes from reliable, authoritative, scholarly sources – people who know their stuff and present it in a credible, appropriate way in forums that are recognized by the academic community. If no author information is provided, do some research to find out the author’s relationship to the information.

Even when you find current information from reliable or scholarly sources, you may wonder if it’s “good enough” to meet your needs. How do you evaluate the resource materials you find? On the facing page is a chart, the “Holistic Critical Thinking Scoring Rubric.” Let it serve as a guide you can use to evaluate resource materials and other readings you have to complete. The higher the score on the rubric, the more effective the source will be in supporting your ideas in a scholarly fashion.

Keep your notes organized as you research. In the chapter on essay and thesis development, I suggested you keep a sheet of paper, note cards, or a word processing file open where you can copy and paste source material information and citations, with a short summary of the article or the quoted sentences and/or phrases that you hope to use. This will help you keep track of the information you need to create your bibliography. Without this list, you’ll be scrambling at the last minute to figure out where you found this or that quote or paraphrased information, and your bibliography will be a wreck.

If you’re the type that prints out source materials, save a tree and read through the source materials *before* you print them to make sure they contain information you can use. A title can be misleading. An abstract – that summary paragraph that’s provided at the start of some articles – may sound like the article is ideal, but you may find that the article’s “usefulness” is more likely your wishful thinking that you would like to get the research done. You don’t need to print out fifteen pages of something to discover that it’s not applicable to your research.

While we’re speaking of abstracts, here are a couple of points to consider. Think of an article abstract as a teaser the way movies have teasers or previews. An article abstract on a database provides a short glimpse or summary of the article; it does not provide everything you ever wanted to know about a subject. It may contain the article’s thesis statement and a sentence or two that summarizes the article’s conclusion, but the abstract does not provide the depth of information that the article provides. The abstract may be vague, or there may be jargon or language specific to the authors’ field of study that can create confusion if you use the information without explaining it. Don’t use the abstract as your source material or quote from the abstract. Here’s a comparison of abstract and article conclusions that illustrates the point:

ABSTRACT CONTENT: Conclusion: Physicians are better able to identify obesity and its associated health risks, but some negative stereotypical attitudes persist. These attitudes affect current treatment practices. Increased awareness, training, and study are required to combat the continuing increase in obesity rates. (Warner et al.)

ARTICLE CONTENT: Conclusions: In 2001, the Surgeon General called for a change in the perception of obesity, recognizing it as the source of serious health problems. Our findings show that, in comparison with previous studies, physicians are better able to identify obesity and are more aware of the long-term health consequences. However, there has not been a consistent positive change in attitudes.

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Although some attitudes have increased, there have also been significant increases in negative stereotypical attitudes. It is unclear why attitudes have not shifted with this call to action, and this represents an area for further study. Provider-recommended treatments have notably increased not only with the use of lifestyle modifications but also with a large increase in the use of pharmacotherapy and surgery. Unfortunately, obesity rates continue to increase, and further study will be required to determine what interventions are successful in deterring obesity and the actions providers can take to enhance treatments. (Warner et al.)

Digital information gathering

If you have the option of using interviews, making a video, taking photos, or other methods to research and gather information for an assignment, use an option where you either already have the skills or are willing to invest the time and effort to learn the skills before you need them. Make sure, too, that you allow enough time for surprises. Interviewing success depends on coordinating your schedule with the schedule of your interview subject and making sure that you have functioning equipment (tape recorder or video camera). Using a video camera or digital camera to capture images may not seem like a challenge – unless you're on a tight deadline, it's been raining for six days, your photo subject is away on vacation, the trees you wanted to photograph have been cut down or burned, or the presentation you planned to record that is the crux of your argument has been postponed till next semester.

Interviewing is a great way to gather timely information from sources close to your topic. I encouraged my students to conduct interviews for their career-focus essays; some interviewed professors, athletes, and administrators who had the kinds of jobs they wanted to have some day. With a little practice, an interview can be conducted in person, over the phone, or by written correspondence (email or letter). Here are some tips for conducting an effective interview. If you are conducting the interview in written format, you may want to send the questions to the interview subject several days in advance to allow him or her time to respond thoughtfully to your questions. And send a thank-you note when you've completed the interview to show your appreciation.

Interviewing 101

1. Be familiar enough with the subject that you can ask responsible and substantive questions.
2. Ask open-ended questions (Avoid asking anything that can be answered with *yes* or *no*.) Ask for details, including data or specific statements, such as "What in particular is most important about this idea and why?"
3. Record your interview, if possible. Otherwise, take complete notes.

4. Be silent as you wait for an answer. While silence can be awkward to both the interviewer and the interviewee, sometimes the interviewee will start talking if the interviewer appears to be waiting for an answer.
5. Your role as interviewer is to get information from the interviewee, not to get into a debate about the topic. If the interviewee says something that you don't understand or agree with, you may want to ask for clarification, such as "I'm sorry, I must have misunderstood that. Can you please repeat that?" Stay away from playing devil's advocate or trying to shut the interviewee down by disagreeing.
6. If you aren't familiar with the spelling of a word or name mentioned by the interviewee, ask him or her to spell it out.
7. Be sure to get the first and last name of the interviewee, and a title, and the correct name of the organization or agency he or she represents.
8. As the interview draws to a close because you as the interviewer feel like the subject has been exhausted, ask the interviewee if there is anything else that he or she wants to add. Defer to the interviewee's expertise. You will often encourage the interviewee to make a clarification or bring up another point if you say something like this: "I feel like we've covered most of the topic, but you're the expert on this subject and there may be something I'm not aware of that you want to add so that what I write will be correct."
9. Ask the interviewee if you can contact him or her if you have any questions. Ask what sort of contact would be most convenient, such as phone or email.
10. Ask the interviewee if there are any additional resources where information can be found.
11. Be courteous at all times. The interviewee is doing you a favor.
12. Say thank you or write a thank-you note.

Video and digital images are particularly helpful if you have to provide visual support for your assignment. Video with audio can be used as a source for quotes, just as taped interviews can. Allow yourself enough time to edit video so that you present only the most relevant information in your presentation. Photographs will also be more effective if you use an image manipulation software program to crop out any extraneous background clutter, straighten odd angles, and improve the overall quality of the images you use.