

# Making the Research Paper Worth Your Time

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*Jarrold's father is an alcoholic. For as long as Jarrold can remember, his father has been in and out of treatment facilities, gone to counselors, and sometimes attended Alcoholics Anonymous. Jarrold decides to research the question, "How effective is treatment for alcoholism, and which treatments are the most effective, and how effective are they?" He writes a fifteen-page paper citing eight sources. The paper is published in a first-year textbook as a model of what a research paper ought to be.*

So you have to write a research paper, do you? And the key phrase is *have to*. Nobody ever wants or chooses to do a research paper. The research paper isn't so much an assignment as it is a problem. You might feel a bit better to know that it isn't just a problem for students, but for teachers as well. Many writers have tried to find gimmicky ways to make the research project work: one professor entitles her discussion, "Toward a Palatable Research Paper Experience" (Rileigh 1993), while another writes an entire book advocating having students research a famous murder (Kraus 1978). A third has students research a famous historical speech (Gellis 1994). One famous professor simply declared that English teachers should quit assigning research papers, which he called a nonform of writing (Larson 1982), and a high school teacher bluntly titled his article, "Let's Get Rid of Research Papers" (Taylor 1965). But abolishing research papers has never caught on, and somewhere you do need to learn to do a research paper that works, without gimmicks.

I don't have any secret magic formula. And I don't pretend to make the task easy. But based on my having taught students how to do research papers for nearly forty years, I have three general suggestions for you. If you follow them (and then follow them up with effective writing), and steer clear of the five ways that research papers can go wrong, you'll at least have a shot at

impressing your professors, and more important, at learning something worth your time, effort, and (let's be honest here) agony.

## Choose a Topic that Matters—To You

*Carissa's best friend was killed by a drunk driver. Knowing that the Texas legislature was considering a bill that would lower the legal definition of intoxication from a blood-alcohol level (BAL) of .01 percent to .008 percent, she decides to write a research paper about the tremendous toll taken by drunk drivers and how much good the proposed legislation might do. When she finishes, her paper includes interviews, pictures of wrecked cars and teens who have been killed by drunk drivers, as well as analyses of what has happened in other states that have lowered their legal BALs. The paper is twenty pages long and cites twenty-one sources.*

Some teachers will restrict your choice of topics. Others will give you complete freedom. In either case you need to choose a topic that matters to you, if that is at all possible. Why? Three reasons. First, you're going to have to live with the topic for at least several weeks, perhaps an entire semester. Bad topics, like houseguests and fish in the refrigerator, become offensive after the first few days. So choose a topic as carefully as you would a roommate; you'll have to live with it. Second, you're going to learn a great deal about the topic, perhaps even become an expert on it. So it makes sense that the paper be on a topic you already have some reason to be interested in. Then all that knowledge might actually be of use to you later. Third, if you care about the topic, that interest will probably come through in the writing. Instead of a lifeless report, you will end up with an energetic text, one likely to make good reading and to enlighten its audience. I assign no research topics in my writing courses; rather, I require each student to propose three possible topics along with an explanation of why the topic is of direct relevance to him or her.

Here are some tips on places to look for a topic that will work if you are stuck. Many of my students pick a topic or issue they have heard about in connection with their major field of study. That's probably one of the best sorts of topics. Mark, an agriculture major, wrote about whether the U.S. Congress should pass legislation that became the 1995 Freedom to Farm Act. Other students have evaluated the effectiveness of music therapy or of mainstreaming special education students. A drama student, who also sang, wrote on the history of the musical *Showboat* and how its lyrics have been changed over the years in response to charges of racism. In each case, these students chose their topics because they had heard the issue mentioned in a class in their fields. I encouraged them in their choices because I felt that the students would genuinely benefit from becoming experts on these matters and from becoming familiar with the reference materials they would be working with as they progressed into their majors.

*Brad is a zoology major. In one of his courses he has heard that there is an ecological problem in the Great Lakes region of the United States because of a European shellfish called the zebra mussel. He decides to do a research paper on the extent of, causes, and possible solutions to the problem. He learns that masses of the tiny shellfish have sometimes actually closed off the three-foot pipelines with which cities draw their water from Lake Michigan. He writes a twelve-page paper citing twenty-one sources.*

Since my writing students are generally in their first year, many don't have a major yet, or they haven't taken enough coursework in it to know what topics might be of interest to them or to readers. In fact, many don't actually know what the career prospects for someone in that major are. In such cases, I have frequently encouraged students to do career research about the options, working conditions, job market, salary, and so on, for someone graduating with that major. In the last year, one student researched teacher burnout, another the career of pharmacy (including checking into the professional-school requirements and interviewing several pharmacists); a third researched careers in management information systems (MIS) and compared them with those for computer information systems (CIS).

*Yvonne is a returning student in her mid-forties. She is a successful businesswoman, with a family including teenage children. She loves psychology and wants to major in it. She decides to write her research paper on the question, "How good are career opportunities for a student with a major in psychology?" Using sources such as the Occupational Outlook Handbook, put out by the U.S. Department of Labor, plus interviews with professors, she learns that there are a variety of occupations for students of psychology, but that most of them require an advanced degree. Although she would like to have a doctorate in psychology, she realizes that earning one would take about ten years. She doesn't have that kind of time for education before beginning a new career, so she changes her major.*

A third way to choose a topic that has worked for my students has been to research some disease that has affected them or a family member. I have had several effective papers on Alzheimer's disease, and an illuminating one about postpartum depression. The latter was written by a student whose aunt had been severely incapacitated by the birth of a child; she had lost her job and had to move in with the student's family. The student was quite interested in both the extent and the causes of such depression, since she anticipates having children herself someday. Another student wrote a moving and enlightening paper about endometriosis, a disease of the female sexual organs, which she had been diagnosed with as a senior in high school, just a few months before entering my class.

*Arturo wants to be a doctor, and his mother suffers from diabetes. He decides that he will research this disease to see what recent findings have been made*

*about causes and treatments. But as he reads, including sources on the Internet, he discovers that more research about the disease is needed and that the subject is underfunded. So his paper goes beyond discussing the newest treatments and becomes an argument for more federal spending on diabetes research. He writes eighteen pages of text based on thirty-six sources.*

Many of my students come to class with issues that they are concerned about: rape, drunk driving, immigration policy, advertising ethics, the history of performance magic, interracial marriage. I will approve virtually any topic as long as the student convinces me in a short proposal that he or she really has a reason to care about it. One student began with the general topic of horses, and eventually derived a compelling argument about the breeding of Arabian stallions.

My approving of a topic is not meant to restrict students to topics I myself have some interest in or that I deem "proper." It is simply to help the student avoid problems I can foresee down the research path. Some important topics (such as "the effectiveness of the Texas teacher-certification exam") are either too localized or too specialized or too current to be researchable by an undergraduate with limited time. Some require too much background knowledge. Others may involve areas that I know our library is weak on (such as law). Still others are what English teachers call "chestnuts" (such as abortion or capital punishment), topics discussed so often that they are likely to produce only a rehashing of prior arguments. By the way, I also tell my students, "If you already know the position you intend to take on a research topic, then you shouldn't do that topic. You would be reading (not researching) to back up your current bias, rather than to learn."

### *Paige's Story: Part I*

Paige Wilt was taking a second-semester required composition course. A returning student, married, commuting, a mother, she wanted to become a mathematics teacher. When I assigned the research paper, I made my usual pitch to the class—they were to choose topics they had a genuine reason for wanting to become experts on, ones they cared about. Paige had several possibilities, but she settled on a topic she had heard mentioned in a mathematics course, the Saxon method of teaching math. Her teacher hadn't said much about it, but he'd implied that the Saxon method was unusual and that there were claims that it was more successful than traditional methods. Saxon had even been the subject of a *60 Minutes* profile, although I don't think Paige knew that. I encouraged Paige to pursue the topic because I was pretty sure it would hold her interest and because knowing about alternative ways of teaching math would be useful in her career. We'll return to Paige's story throughout this chapter, since Paige provides a good example of how and why effective research can pay off.

## Make Your Research Thorough (and Current)

Once you have a topic, whether it is still a broad noun (like “Sickle-Cell Anemia”) or a focused issue question (like, “Is Chemical Castration Effective in Controlling Deviant Sexual Behavior?”), you should probably read one or two sources that give you an overview of the topic, such as an entry in a good current encyclopedia. But the next big step is to generate as full a list of sources as possible. There aren’t many tricks or shortcuts here. Mostly what is required is familiarity with a library, patience, industry, and some good luck. As part of their learning, I want my students to find out about the wide variety of source types that they might find useful. And this primarily means that they have to become familiar with all the types of indexes available in a quality library. This material is new and surprising to students who have just finished high school.

For this stage of the work, I don’t actually want students to read about their topics. Instead I want them to comb the relevant indexes that would deal with it, including our library computerized catalog, relevant computerized indexes such as MEDLINE, the Social Science Index, the Educational Resources Information Center (ERIC) index, the Reader’s Guide to Periodical Literature index, microfiche sources such as NewsBank, and the index to government documents. By the time they have examined all those indexes, they should have a large list of potential sources—and it will grow as they begin their reading. These will be print rather than Web sources. Later they can supplement their material with Web site data. For advice on effective library searching, see Chapter 5 of this collection.

Although there is plenty of garbage in print, and one of the goals of doing a research paper is to learn to separate the credible from the crap, you have a much better chance of getting dependable information from print-based sources than from Web sites. The reason is simple: most print sources have gone through some sort of review by people other than the author. Someone somewhere, an editor, a fact checker for a magazine, an outside referee for a journal, has had to examine the writing and decide that it is worth making available to readers. But any flake can put up a great-looking Web site, give it an impressive-sounding name, like Center for Holocaust Studies, and then put out entirely fabricated information. Similarly, it’s easy to sign onto e-mail discussion lists whether you are an expert with knowledge to share or an ex-con with an ax to grind. (Learning to tell the difference between a dependable site or posting and fraudulent ones has become an important part of doing research, but is not a topic I have the space to get into. Chapter 11 of this book addresses it in some depth, however.)

To simplify this task of bibliography building, I offer you three tips. The first is that it will be useful to interview someone who knows about the area of research—as you will see that Paige did—not just to get the ideas of an expert, but to get informed research suggestions. As an English teacher, I

cannot be familiar with all the indexes or the major journals that apply to other fields, but I know that such indexes exist. So I suggest that you, like my students, make appointments with professors in whatever field your topic relates to. For instance, Wendy, a physical education major, wanted to locate studies of the effect of high school team sports on the character of the participants. I had no idea what index treated research on physical education, so I sent her to a colleague who was a specialist in that field. Wendy ended up citing such journals as the *Research Quarterly for Exercise and Sport*; the *Journal of Physical Education, Recreation and Dance*; and the *Journal of Sport Behavior*, none of which I had ever heard of.

You may be reluctant to visit professors—for many reasons; often you just don’t want to bother them. But if you go see professors because of their expertise, most will regard your visit not as a bother but an opportunity. They are flattered and eager to talk and likely to bend over backward to help. You may have trouble getting them to stop offering advice. Not uncommonly, the professor can pull a book with a directly relevant chapter from his shelves, or perhaps can refer you to the main journal that would carry the most appropriate article. Sometimes she may even know of a pertinent and timely article that would not even be indexed yet. Obviously, you shouldn’t go into such an interview without preparation, including some background reading and prepared questions. The expert won’t want to tutor you from square one. But when you can tell the professor what you have already learned, and where you have looked, and perhaps the nature of a problem you are having, then the odds are good that the interview will help.

★ My second tip is to try to locate a fairly recent scholarly article or book on your topic—that source will be a gem. The key word here is *scholarly*. This source will be helpful not necessarily for its content, which may be obscure or somewhat off your point, but for the citations it contains. One feature that makes a book or article scholarly is that the author has done his or her homework on the topic and has cited the sources used. If you find one article that cites twenty sources, and you look each of them up, finding that they each cite twenty sources, you are on your way. This happened to Paige when she researched the Saxon method and to Wendy when researching the effects of participation in team sports. The span of research won’t be as wide as it seems because many of the citations will overlap. But that is important too. When you find that every article about how students are taught to read cites “Reading: A Psycholinguistic Guessing Game,” by Kenneth Goodman, then you know that it’s an important article, and you will need to read it.

Locating scholarly sources for your paper is important for another reason that I already mentioned. Since scholars disagree with one another, there is no guarantee that even a scholarly article is “right” about whatever it says. But scholarly articles and books (such as the one you hold in your hand) are not published until other scholars and editors have examined and critiqued them. So if an article appears in a major journal, you can’t be sure it’s correct, but

you can be pretty sure it's respectable. You can't be sure of that about a magazine article, or about a popular book, or about many sources from the Internet. Open access is one of the Internet's great strengths—and one of its major weaknesses.

Let's  
know  
it's  
new

✱My final tip about doing research is to make careful use of a major national newspaper, such as the *New York Times*. Now, you are probably saying that your topic doesn't have anything to do with news events; it's about whether requiring students to wear school uniforms improves their behavior and performance. But a paper like the *Times* treats all reports of studies on publicly important issues as news. So it carries all sorts of relevant information about the economy, politics, education, crime, scientific controversies, sociological findings, and so on. I have seen a good research paper on the possible carcinogenic effects of saccharine that used only sources from the *New York Times*. And the *Times* is indexed all the way back to the late 1800s, when the indexes were actually handwritten. That means that if you are dealing with any U.S. historical topic or figure, you can go back and read original coverage. It's not only interesting to see how newspapers treated a topic, but you may actually locate "new" information in lost details. This is the sort of research you would do if you were trying to locate a downed ship, or write a movie about nurses in the Civil War. In fact, one of my graduate students is currently examining local newspapers in Paris, Texas, where she is developing a fascinating analysis of a lynching mentioned in passing by Ida B. Wells, an early-twentieth-century civil rights orator.

*Jeff doesn't have a major, but he is interested in history, and he has often heard his grandfather tell about being on the U.S.S. Indianapolis when it was sunk in the Pacific Ocean by a Japanese torpedo. His grandfather spent four days in the water before being rescued, and later the captain of the ship was court-martialed. Jeff decides to do his research about what happened to the ship and to the captain. He writes a twenty-two-page paper citing twenty-one sources, arguing that the navy was wrong to convict the captain and offering a hypothesis about why the captain was court-martialed at all. His sources include newspaper accounts from 1945 about the daily progress of the court proceedings.*

### Paige's Story: Part 2

After I approved her topic, the Saxon method of teaching mathematics, Paige went to work assembling a bibliography of relevant sources. Since our university has historically been a major producer of teachers and we have a large college of education, I knew she would be able to find the information needed. She used three indexes, all of them computerized, to generate an initial list of print sources to consult. One was our library book catalog, which didn't produce anything directly about the Saxon method, but did yield a lot of titles of

books about teaching mathematics, sources of information that would contrast with the Saxon method. A second index was the *Reader's Guide to Periodicals*, which indexes mostly popular magazines. We suspected Saxon was famous enough that there might have been articles about his method in magazines such as *Reader's Digest* and *Parents* magazine.

But since this was a relatively specialized topic, we didn't expect those sources to yield the most useful material. For that, a more specialized index was needed. Paige used one of the major resources for researching education, the ERIC index. She wanted some recent articles in scholarly journals, or some papers that had been presented at conferences.

Furthermore, print sources would not exhaust the supply of information. In general, print sources are what we call secondary sources. Someone else has discovered the information or ideas and recorded them so that a reader may use them at secondhand. But what about using some primary sources, those in which Paige would be the first to gather data? She had originally heard of the Saxon method in a math class, so another logical step was to talk to her teacher and other people likely to have direct knowledge of the method. So in addition to reading, Paige also interviewed the head of the math department and several other professors. Then she got a lead on some high school and elementary math teachers in her hometown and interviewed them. Since no one had yet solicited these teachers' views and made them publicly available, Paige was doing primary research, thus genuinely making a contribution to the ongoing discussion about the Saxon method.

During the interviews, someone mentioned to Paige that the Saxon method was going to be discussed at the annual meeting of the National Council of Teachers of Mathematics (NCTM), to be held in Houston that very semester. Being both a serious student and dedicated future teacher, Paige joined the NCTM and went to the conference, where she hoped to be able to interview Saxon himself. She borrowed a miniature tape recorder from me so that she could get an accurate record without carrying around any bulky equipment. As it turned out, Saxon was unable to attend, but representatives of his company were there, handing out information about his textbook series, and they were more than willing to talk with Paige. In addition, she attended several sessions of the official conference program in which math teachers presented talks about the method.

Now, Paige was an unusual student, and she was unusually lucky in happening upon the Houston meeting of the NCTM. But the closer you can come to emulating her approach, the more successful your research is likely to be. You'll need to find out what individual periodical indexes cover the field or fields your topic falls into. All the major fields of study have their own continuing indexes (such as *The Agriculture Index*, *The Music Index*, *The Index of Labor Law*, the *MLA International Bibliography*, *The Index to Government Publications*, and the *Social Sciences Index*). There are even indexes to book

reviews and to newspapers. Many indexes are now available online or on CD-ROM, so that they are searchable by subject, keyword, author, and date.

## Remember That Research Papers Are Arguments

In our culture, the primary meaning of the word *argument* is a verbal battle with two opposing sides, each trying to defeat the other. But when English teachers say that they want you to write an “argumentative” paper, they don’t mean that you have to find a controversial subject that you can fight with someone about. They want you to “make” an argument, not “have” one. And to *make* an argument, all you need is a claim or thesis plus a supporting case (evidence based on research) that gives readers good reasons for believing that the claim or thesis is one they should accept.

### What Are the Major Types of Argument?

Arguments can be classified in many ways. In my experience, the most useful classification scheme is based simply on looking at the type of question you want to answer through the research; that question also determines what sort of assertion you will make in your thesis.

Four types of question are most likely to come out of your research.

1. You may ask an *interpretive* question, such as, “What are the most recent discoveries in our research into treating cancer?” The thesis of such a paper would match the question in being limited to an interpretive claim, such as, “The two most promising lines of cancer research at this time are . . .” One of my students, Hope, wrote a paper asking, “What were Abraham Lincoln’s real views on race?” The issue had come up in her first-year history class. She focused the question in her title: “Abraham Lincoln: True Emancipationist or Calculating Politician?” Hope’s answer to the research question came on her final page:

Lincoln believed that all men should be free. He did not believe, however, that all men were equal. [She had shown earlier that Lincoln did not believe that the two races could live together and that he supported efforts to have African Americans emigrate and create colonies in such places as Haiti or Colombia] . . . Lincoln had two major goals. Save the Union, and free the slaves. He accomplished both of these goals by using the slavery issue to help save the Union and the Union issue to help abolish slavery. So, true emancipationist? Calculating politician? He used both aspects of himself to get what he wanted and to make the nation what it is today.

I tell my students that they can remember the chief principles of a strong interpretation argument by memorizing the acronym STAR, which stands for having *sufficient*, *typical*, *accurate*, and *relevant* evidence for your thesis.

2. You might ask a *causal* question, such as, “What has caused the increase in homelessness in America?” or, “What according to the most trustworthy research are the causes of Alzheimer’s disease?” Obviously, the thesis for such topics is a direct assertion of what we believe we know about causes. And the paper will be argumentative because causation is complex, and the writer who claims to know what the major causes are will need to provide proof for that claim and acknowledge other viewpoints.

Causal arguments are difficult to make convincingly. You might recall all the years that it took to provide sufficient evidence from well-designed studies to show that cigarette smoking really does cause various lung diseases, even though not everyone who smokes will become ill. The big danger lies in claiming that because one event occurred and a second one followed it, that one caused the other. For instance, a number of people have asserted that after organized prayer was determined to be illegal in public schools, we had a series of public school shootings. These folks have concluded that lack of prayer led to the shootings. Other people have said that the *Roe v. Wade* Supreme Court decision making abortions legal in some cases caused all sorts of evil actions, including school shootings. Neither one is good reasoning. Just because you broke a mirror one morning doesn’t make that the cause of the C— you got on your history paper later that day. This is called the fallacy of *post hoc, ergo propter hoc* (Latin, meaning After the fact, therefore because of the fact).

3. You might want to answer some sort of *evaluative* question, such as, “How harmful has the Miranda warning been to the effective prosecution of criminals?” or, “How effective are females in the military?” Again, the thesis will be a one-sentence answer to the question, and the paper will be dedicated to providing good reasons and good evidence for a reader in order to get him or her to share the views you have reached after carefully researching the topic. Paige Wilt’s paper on the Saxon method of teaching mathematics was essentially an evaluation of Saxon’s approach.

In writing an evaluation, the essential reasoning involves looking at the purpose of the thing that you are trying to evaluate (“What is the purpose of teaching geometry?”), then deriving from that purpose some standards of evaluation (How can we tell when a method of teaching math is effective?), and then measuring the item being evaluated against our standards.

4. Finally, you may want to answer a *policy* question, a question about what *should* be done. For example, you might ask, “What can American high schools do to protect students from classroom violence?” or, “Should elderly drivers be required to retake driving tests every year?” There are two ways to conceptualize a policy argument. One is to think of it as a problem/solution paper. So you must first show that there is some problem now (which requires interpretation and evaluation) and then propose a plan that you can argue (by causation) would help solve that problem

and would not itself cause major new ones. The second way to think of a policy argument is as a comparative evaluation: You have two (or more) possible policies, the current one and one or more suggested changes. Overall, when you examine both good and bad consequences of each one, which seems to be the superior procedure?

As I just implied, these four types of argument are not independent. They all involve your interpretation of the data you find, and they form a sort of hierarchy of complexity, leading upward from straight interpretation to policy. In order to argue that we should or shouldn't take some action (policy argument), you have to evaluate how effective the current policy is. If some inadequacy exists in the current policy (found in the evaluation), you have to examine the causes of the problem. In order to get at the causes, you will have to interpret evidence about what is going on. In writing about Lincoln's views on race, Hope could have chosen to shift her focus from "What were Lincoln's real views?" to "Does Lincoln deserve his admired position as the Great Emancipator?" The first is an interpretive question, the second evaluative. These four sorts of questions are called *stases* of argument, and they exist in a sort of box-within-a-box structure. And whatever one you are doing means you have committed yourself to making certain argumentative moves for the reader.

### *Paige's Story: Part 3*

At this point, Paige had more than enough information to write with. It had seemed from the start that the likely point at issue—that is, the topic the paper would argue over—would be an evaluation: "Is the Saxon method superior in teaching high school mathematics to more traditional methods?" But as Paige got into her research, a second issue, one she could not have known ahead of time, came up: "Given the state of Texas requirements for what must be taught at each grade level, could the Saxon method be adopted by a Texas school?" [The Saxon method tends to integrate algebra and geometry, whereas the Texas requirements at that time kept them separate and taught in different years.]

That new issue led to some further interviews with teachers. Eventually Paige decided to maintain her focus on the evaluation, but also to mention the difficulty of using the method in Texas. Some of the articles published about the Saxon method had been glowing, but as usual, other work pointed to problems, so Paige had to take a cautious stance. She wasn't a convert to the Saxon method, although she saw some possible good in it. In the end, her paper had a mixed or balanced evaluative thesis, rather than arguing strictly for one side or the other. We call such positions "nuanced," and academic readers tend to value them (and thus to reward students who reach them).

It ought to go without saying that following the advice I have just given means that research is a time-consuming and frustrating process. It isn't a question of

finding enough material. You need the best material available. And finding it takes time, time in the library, time to set up interviews, time to make thoughtful use of the Internet, and time to write and revise different parts of the paper. You may spend three hours in the library or on the Internet looking for specific information and never find it. But don't feel that you have wasted three hours. This was work that had to be done, even though it didn't produce useful results. You are still three hours closer to your goal.

## **\* Five Ways That a Research Paper Can Go Wrong**

### *Insufficient Research*

Often my students ask me some variation of, "How many sources do we have to use?" I'm always taken aback by the question, even though after teaching first-year research papers all these years, I shouldn't be. It results I think from certain artificial exercises done under the rubric of research in high school, where students actually were told how many sources to find, and from a failure to understand the point of doing research. The goal is to find the best answer currently available to the question you are dealing with. And logically, you can't know whether you have figured out the best answer if there is material available about your topic that you haven't looked at. How many sources do you need? All of them. That puts a huge demand on you as a researcher, but it's the honest answer.

Since it is easier to locate sources that are several years old, one way for research to be insufficient is for it to be outdated. A second way is for the student writer to use just the conclusions reached by the sources, without going into the details or procedures used. Here, for instance, is a paragraph in which a student tries to show social consequences of teacher burnout. (In the previous paragraph, she had discussed physical symptoms.)

There are social symptoms to burnout also. Not having time for family or friends is a real concern for teachers. They lose touch with reality because they are always sitting behind a stack of papers (Greenberg 1984, 65). If family members do not understand what the person is going through, it can make the situation more difficult. Taking on extra tasks, and taking home too much work bring this about and it is very bad, if not fatal to a marriage (Cedoline 1982, 29). Some teachers can also become cynical and not be as effective on the job as they should be because they have just kind of given up or they may start laughing maliciously about other teachers or students (Shapiro 1993, 44).

The paragraph asserts three different social harms of teacher burnout, one from each of three different sources. But a skeptical reader will not find these conclusions convincing. Take a look at the first claim—teachers lose touch with reality because they have lots of papers to grade. What sort of study has been done that can tell whether many teachers have lost touch with reality?

How would losing touch be measured? What proportion of teachers might this apply to? Who is Greenberg, to be cited as an authority? Do other authorities agree that we have a significant problem with teachers who have lost touch with reality? And if they have, why blame it on the papers they grade rather than the constant pressures of (often overcrowded) classrooms? If indeed this claim can be clarified and substantiated, then it needs to have several paragraphs devoted to it. And the same sort of criticism would apply to each of the other assertions. (By the way, this paper was written in the fall of 1999, but the sources cited—Greenberg 1984; Cedoline 1982; and Shapiro 1993—are not recent. The first two sources are almost as old as the student writing the paper. Apparently she believes that nothing that could affect burnout has changed in American education in the last decade and a half.)

### Superficial Sources — Sometimes Internet

Another way the research can be insufficient is for the student to use the most obvious or easily available sources, without pushing to see what other types of sources have to say. You already know that sources of information are not all equally trustworthy—for instance, a story from the *National Enquirer* versus a story from a respected newspaper such as the *New York Times*. And that same principle has to be applied more widely, even to various books in a library, as well as to sources on the Internet.

I can illustrate this with another paper from last semester. Josh had trouble coming up with a topic, but eventually he settled on the U.S. plans to construct a space station. It didn't take him long to find an entire book on the space station in our library (Brian O'Leary's *Project Space Station*, 1983) plus the *Space Station Freedom Media Handbook* put out by NASA. He also found an online source put up by an agency called the National Research Council in 1993.

Of course, you would expect NASA to praise space exploration; the *Media Handbook* is mainly a piece of promotional advertising, although it also contains useful historical information about the program. As it turns out, the O'Leary book is almost equally positive about the significance of putting up the station. And Josh cited it about benefits and expenses as if it were current in 1999 rather than from 1983. That left him with a lot of factual background information, but it also left him with the impression that there was no significant disagreement. He found a couple of further articles using the *Reader's Guide* and wrote his paper defending the space station and claiming that the only argument about it was over its expense. Unfortunately, Josh had not been critical enough about his research. Not only were his sources unrelievedly pro-space, they were also dated. He didn't realize that where science and politics are concerned, things change. A 1983 source isn't very helpful in 1999.

In order to get the most relevant and current information, he needed to get into government documents that would tell him what the current status of funding for a space station is and what arguments were put forth in Congress

when the subject was discussed. He also should have consulted accounts of the topic in the *New York Times* and the *Washington Post* from the dates of the last several congressional debates. His eight sources were not nearly enough.

### The Pro/Con Summary

After becoming frustrated with the wealth of information that seems to support several sides of the same issue, some students have come to ask me if they could just write a summary of the pros and cons on the issue—such as the pros and cons of allowing organized prayer in public schools. But that task, although it takes some selectivity and organizational skill, doesn't really involve the critical thinking of argument. After all, if you are a citizen in a democracy (or an elected official, or a judge), you can't just say, Well, there are good arguments for each viewpoint. You will ultimately be required to make some decision on the basis of your best judgment as to what view is the strongest. That doesn't mean you neglect any side. Nor does it mean that your position is determined forever. If you write a paper in which you assert that the arguments for three different positions are just about equal, but that finally you believe position A is the better choice, if new evidence comes to your attention tomorrow, you are free to change to position B.

Recently, one of my students chose to research whether mandatory school uniforms are a good idea in the United States. And she found a good many relevant sources, some of them arguing that elementary schools that require uniforms have fewer discipline problems, fewer fights, and improved test scores. On the other side were a variety of protests that requiring uniforms, though legal, violated the *principles* of individual rights and freedom of choice. In fact, I thought that she had written a pro/con summary. But she surprised me on the last page by taking a stand against uniforms. That would have been fine, but it should have come sooner. As it was, she was rejecting the claims of fewer fights and improved test scores, but she had never criticized those studies to tell her reader why she didn't find them persuasive. It isn't always necessary to state your thesis early. Sometimes, in fact, it's a good idea to frame the issue as a question early in your paper, and then lead your reader to your viewpoint slowly, as Hope did in her paper on Lincoln. But this writer hadn't led me to her viewpoint; after a more or less balanced summation of arguments for uniforms and arguments against them, she simply dropped her view on me. That won't fly. If you find major articles and their claims unconvincing, that's fine, but you have a responsibility to explain why they are inadequate.

### The Imitative Narrative Structure

Sometimes the topic involves an event or series of events that have already occurred, such as the assassination of President John F. Kennedy (that's a chestnut to stay away from) or the passage of NAFTA or the construction of

the space station. When you write on such a topic, you may have a natural tendency to want to follow the narrative line; that is, to begin with the first relevant episode and then to proceed to the following ones, carefully documenting at each point, who said what, what law was passed, and so on. In fact, Josh, writing about the space station, actually began back in the nineteenth century, discussing the first person who had dreamed of some sort of colony in space. And when Jeff wrote about the controversy over the sinking of the U.S.S. *Indianapolis* during World War II, he actually began the body of his paper with the grandfather of the ship's captain, who had been commander-in-chief of the Asiatic Fleet. Then he narrated the captain's graduation from Annapolis in 1920. Finally, he discussed the construction of the *Indianapolis* in 1930, fifteen years before the relevant events.

Those structures, while natural, aren't effective, because that writer is giving up the opportunity to create a structure that helps make his argument. Restructuring chronology is the way to go, even when ultimately it's important to tell your story. Jeff, for instance, writing on the sinking of the *Indianapolis*, would probably have been better off if he had begun months later and presented the outcome of the court martial that its captain had been put through. After explaining that the captain had been convicted, he could have stated his main thesis that the conviction was fraudulent, the product of the navy's need to find a scapegoat for the greatest naval loss of life the United States had ever experienced in one episode.

MORAL: Impose a shape of your own rather than accepting a shape handed to you by the materials. (And that goes equally well for writing about a piece of literature: don't go from beginning to end of a novel, poem, or play.)

### The Data Dump

This one is the worst of all. Such papers simply gather lots of information from a variety of sources and patch it together, sometimes around a sequence of subtopics but more often around the different sources used. You can spot one version of it by tracing the parenthetical citations through the paper. You will get a string of citations to one source, usually with the pages in the order they appeared in the original, followed by material drawn from a second source, and so on.

## Research and the Composition Process

There is a lot more to say about doing the research, taking notes, drafting the paper, organizing the paper, proofreading, using citations, but I would have to write several more chapters to go into those topics. Too often, I think, students believe that once they have done their research, all they have to do is "write it up." Everything they have been taught about the need for an extended

composing process—for prewriting, for careful revision at the global level—goes out the window, as they try to "compile" their research into one document overnight, or over a weekend. As some students tell me, "I'm almost done. All I have to do is write it up." The phrase "write it up" nearly makes me shriek. Although I hope this chapter flows naturally and smoothly, I didn't just "write it up." It was composed in separate chunks over an initial period of two months. The idea for the four main headings did not emerge until after most of the initial writing, so the draft you are reading is a result of major reorganization and major revision. Further revision was done months later in response to suggestions from the editors of this volume.

Although a poor writing process will ruin the best research in the world, if you don't have a topic you can live with, solid research on it, and an argument to build about it, your paper won't work, no matter how good a writer you are. If you follow my suggestions, you should at least be ready to start composing.

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