6 Supporting Materials and Research Techniques*

Remember the challenge you would get as a child if you made a claim? Some rather obnoxious kid would sneer and reply, "Oh, yeah? Well, who says so?" That nasty child actually had a point. A claim is only as valid as the evidence that supports it. Let's move from childhood to the college classroom. Why would you believe anything your professor tells you? Think about it. You begin class the first day and immediately you uncritically absorb as gospel truth whatever a complete stranger tells you. How do you know the information is accurate? The answer directs us straight to the content of this chapter. We judge the quality of information based on how well it is supported. The answer to "Oh, yeah? Well, who says so?" becomes a bit more complex. Presumably your professor studies the subject matter, carefully seeks reliable information, prepares assignments based on experience and consultation with experts, and regularly contributes knowledge to the field through his or her own research and teaching activities. But if you've ever been misled—and who hasn't?—you recognize the value of being a careful consumer of information.

This chapter equips you to be a more effective producer, seeker, and user of information. The first part of the chapter explores the kinds of resources that can make what you say believable. The second part of

* This chapter was written by Roy Schwartzman, John Fisher, Frank Baudino, Carolyn Johnson, Lori Mardis, Sarah G. Park, Connie Jo Ury, and Patricia J. Wyatt.

the chapter guides you through the process of finding these resources efficiently.

Supporting Materials

Research and supporting material will help convince the audience that you are an expert in the topic you are speaking about. Any resources that can render a presentation's content more precise, more authoritative, or more believable qualify as **supporting material**. Such material allows speakers to makes their claims stronger by backing up assertions with something beyond "because I say so." Some of the supporting materials you will use are facts, statistics, examples, testimony, and narratives. Each type of supporting material has its strengths and limitations. To assemble the strongest basis for your presentations, employ a wide variety of supporting materials. No single type of support is "best" for everyone under all circumstances. Mixing the types of support allows you to benefit from each one's strengths while avoiding the vulnerability of relying too heavily on a single support strategy. Varying the types of support also reduces the likelihood of the audience tiring of an overworked technique. If you have ever been bored to tears by a presentation that was simply a long sequence of numbers, you recognize the value of varying supporting materials.

Facts as Supporting Material

Facts are verifiable information about states of affairs. When stating a fact, you claim that something actually is (or was) the case and that others could agree to its correctness. Facts can demonstrate the existence of a person, object, or condition. Suppose you make a claim and someone asks, "Is that a fact?" The question requires you to demonstrate that the fact actually is true. For example, if you claim your birthday is January 12th, it becomes a fact if you can confirm it by producing a birth certificate, driver's license, or other documentation. That's the beauty of facts: properly documented, facts carry a high presumption of truth. Facts have such authority that the phrase "true fact" seems almost unnecessary, since if something were false it would not seem to qualify as a fact. The simple categorization of facts as true or false is an advantage and a drawback. The advantage is that facts can be proven conclusively. The drawback is that facts permit few shades of meaning: they are true or false—those are the only options. Facts are not especially subtle.

Despite their apparent authority, facts have limitations. Purely factual presentations rarely generate intense interest or commitment. Popular characterizations of this dryness include phrases such as "cold, hard facts," an observation that facts tend to be impersonal. After all, facts are supposedly the same facts for every audience, so they do not lend themselves well to customization. Furthermore, few people make commitments or take action solely on facts. Instructors of this course have heard innumerable student speeches about various diseases. The forgettable speeches about an illness simply list the causes, symptoms, and treatments. The memorable, inspirational speeches go beyond the brute facts to offer personal insights about the disease: examples of its impact, stories of victims or survivors, and insights from people with special knowledge.

You may have heard the phrase "the facts speak for themselves," but that statement is misleading. Facts always must be placed in some sort of context so others know what to do with them. For instance, I might mention to you the fact that a student in this course has been absent for the past three weeks. Faced with this fact, you might ask, "So what? What am I supposed to conclude from this information?" The conclusion does not magically appear from the fact alone. Is the student ill? Is she lazy?

Was she kidnapped? We might need more facts before deciding what actually happened. Remember that truth is a product of the quantity and quality of factual support, so look for documentation of facts as well as for the sheer amount of factual evidence.

Finally, whether a statement qualifies as a fact can get slippery. Facts often are entangled in webs of interpretations and opinions. On the old television detective show *Dragnet*, Sergeant Joe Friday used to instruct witnesses to tell "just the facts." That instruction might prove tougher to follow than it appears. Many statements that seem to be facts, such as "It's been a long time since we talked," "You're quite young,"

MORALITY MATTERS: CHECKING POLITICAL FACTS

A good source of facts about politics is FactCheck.org (2004). It is "a nonpartisan, nonprofit, 'consumer advocate' for voters that aims to reduce the level of deception and confusion in U.S. politics." The organization monitors "the factual accuracy of what is said by major U.S. political players in the form of TV ads, debates, speeches, interviews, and news releases." Findings are reported on the web pages of FactCheck.org. The web pages are a project of the Annenberg Public Policy Center of the University of Pennsylvania. By applying the best practices of both journalism and scholarship, the organization hopes to increase public knowledge and understanding. Review some of FactCheck.org's findings. What manipulations of facts do you find by various political candidates? How would you have corrected these factual errors to make the campaigns more accurate and honest?

"She's tall," are relative to the situation or observer. The three statements you just read depend on each communicator's perception of intimacy, the age of speaker and audience, and the height of the speaker (just to name a few conditions). Just as beauty is in the eye of the beholder, some facts may be facts only from the perspective of the communicator.

Statistics as Supporting Material

Statistics are any information presented in a numerical form. Statistics are an invaluable form of support. They have the advantage of being very precise and the audience usually accepts them as authoritative. Statistics offer more exactness than any other form of support. Supporting a claim with statistics makes the message more convincing than speaking in generalities (O'Keefe, 1998).

Examples (statistics):

- "The hippopotamus weighs 3,628 pounds."
- "73 percent of women voters support nomination of a woman as president of the U.S."

Examples (non-statistical generalities):

- "The hippopotamus weighs a lot."
- "Most women voters support nomination of a woman as president of the U.S."

Statistics carry an aura of authority because supposedly "numbers don't lie." Unfortunately the situation with statistics is more complicated.

Mark Twain claimed that British Prime Minister Benjamin Disraeli said there are three kinds of lies: "lies, dammed lies, and statistics." The point: statistics can be manipulated easily to create whatever impression a communicator wants. Raw numbers alone say nothing—the interpretations of the numbers have impact. The power of numbers requires us to know how to interpret statistics and how to use them in

presentations. Financial analysts observe that investors often react uncritically to numbers that corporations and government agencies concoct to make themselves look good (Schiff, 2005). Statistical confusion also plagues the classroom.

Immense confusion surrounds the use of statistical norms. Grades and test scores provide the classic example. You take a test and perform well, scoring 98%. Then you discover than the class average was horrendous: 56%. Other students clamor for points to be added or for a new test, since the test "obviously" was too difficult. Puzzled, you keep quiet. What's happening here?

The difficulty lies in assuming "average" means "normal," and further assuming that "normal" is desirable. Actually, the term "average" could designate any of three different statistical measures. The **median** is halfway between the lowest and highest value in a distribution of numbers. So the median score of a test is halfway between the high score and the low score—even if no student actually earned that score. The **mode** is the most frequently occurring value in a numerical distribution. Thus the modal score on a test is the most common grade earned by students. The mode may be much higher or lower than the median. The arithmetic **mean** is what we usually call the average: the sum of all values divided by the number of entries.

Let's apply these terms to an imaginary set of test scores. Suppose students in a class earn the following grades (with 100 being a perfect score).

20	86
69	86
75	86
78	98
80	100
82	

That series yields the following calculations: mean = 78.1; median = 60; mode = 86. Depending on which so-called "average" we use, we will reach quite different conclusions

about the performance of the entire class. Now if we only alter the lowest grade, watch what happens to the statistics:

65	86
69	86
75	86
78	98
80	100
82	

We find the mode unchanged at 86, but the median zooms to 82.5 while the mean jumps to 82.2. Only a few especially high or low values can drastically alter a mean or median. That's why judging means, medians, or modes from very few numbers can be misleading: there aren't enough instances to reach a conclusion about averages of any kind.

Means, medians, and modes can be manipulated by altering which numbers are included in calculations. I worked at a university that routinely bragged about its brilliant undergraduates as measured by standardized test score averages. Sure enough, the mean score on these widely recognized tests was impressive—except the university conveniently didn't count hundreds of students enrolled in remedial programs for students with low test scores! Including these students would have pulled the overall mean significantly lower than what the university saw as acceptable, so these students simply vanished from the calculations.

Useful examples abound beyond the classroom. Suppose you are deciding where to move and start a new career. You notice that Twinkletown, Montana has an average yearly temperature of 70 degrees Fahrenheit. Sounds like paradise, doesn't it? Maybe not after you unpack the statistics. It turns out that Twinkletown has a hot spell every summer when the temperature exceeds 100 degrees. For a few days during winter, the daytime high stays well below zero. Most of the year the temperature hovers at or below freezing, with a handful of days per year when the temperature reaches the

ideal 70 degrees. The average temperature over the year tells almost nothing about the climate on each day (Huff & Geis, 1993). Or suppose that you hear someone claim a friend is a mathematical genius because she is in the class with the highest average math scores. "Just because she comes from the class with the highest *average* doesn't mean that she is automatically a high-scorer in math. She could be the lowest math scorer in a class that otherwise consists of math geniuses! (Trochim, 1999) So if you hear the "average" salary among your high school class is now $250,000 or that the "grade point average" of a student organization is 4.0, what does that tell you about each person's record? Hard to say. It all depends on how "average" was calculated.

Take special care when using data from surveys. Statistics must be accurate, both in their calculation and in their use. "If the survey asked the wrong question, asked the wrong group of people or was subject to any other major problem, there is no statistical analysis method in the world that can create meaningful information from the raw data" (British Broadcasting Company, 2003). The wording of questions on surveys, the order of their presentation, and the options available for response (e.g., is "don't know" an option?) can affect the outcome (Sigelman, 1981; Hogan, 1997). Surveys can tell interpreters whatever they want to hear based on the construction of the survey instrument. That's why two surveys administered to the same people at the same time on the same issue can yield strikingly different results. Statistics, like computers, are only as good as the information gathered. "GIGO," or "Garbage In, Garbage Out," applies to both.

Other dangers lurk in statistics. Beware of communication that uses statistics too eagerly. **False precision** describes information presented with statistical exactness when the data actually cannot be measured so precisely. Some statistics simply cannot be obtained. Suppose you hear this claim:

"My grief is 39 percent worse than your depression." By what standards of measurement? Other statistics are obviously just estimates. For example, a certain skin cream reduces the appearance of wrinkles by 53 percent. How do the researchers assign a percentage to the subjective appearance of wrinkles? Probably the skin cream simply made a lot of people believe they had fewer wrinkles.

How do you use statistics wisely in your presentations? Statistics can be abstract and difficult to visualize, especially when they are very large or very small quantities. Since many people are not mathematically inclined, they may distrust statistics or treat all statistical data as incomprehensible.

- To avoid information overload, limit the amount of statistical information you present at one time. It is easy to overwhelm an audience with numbers. Use statistical data when you need the numerical precision; otherwise, you risk confusing or boring the audience with tedious lists of numbers.

- Use analogies to help the audience visualize numbers. For example, the wings of the Airbus A380, the largest passenger airline ever built (at least up to 2005) span the length of a football field (Croghan, 2005).

- Give life to statistics by embedding them in stories or examples. Provide some context that helps the audience interpret statistical data. For example, "The Airbus A380 will be unveiled today in Toulouse, France. Heads of state, and some 5,000 other guests will celebrate the debut of a mammoth flying machine that weighs 1.2 million pounds when fully loaded for takeoff, and seats 555 people—at least" (Croghan, 2005).

- Use presentational aids (such as a picture or chart) to help listeners keep track of numbers. These visual representations make quantities more concrete. Hearing that pro basketball

player Yao Ming is seven feet six inches tall has some impact, but displaying a life-size cardboard cutout of him would show the audience just how tall he is.

We need to read statistics critically to use them well. Joel Best (2001) provides a list of questions a reader (or audience member) should ask, paraphrased here:

- What was the source?

- How might the number have been obtained?

- Is the type of measurement appropriate?

- Do other measurements yield the same statistics?

- How do these statistics compare with others?

- What might explain discrepancies between different statistics?

- Do the interpretations fit the statistical data?

- How could the statistics be manipulated to support a particular view?

These questions provide a useful checklist for deciding whether to use or believe statistical information.

Examples as Supporting Material

Examples are specific instances of an idea. Examples provide some of the most useful supporting material because they make concepts more concrete, showing practical illustrations that clarify content. Examples can simplify complicated material by connecting it with ordinary experience. On course evaluations, students routinely praise teachers who provide examples of complex ideas. Learning by example is crucial far beyond academics. We identify models of good behavior or skillful performance, defining quality by these reference points. We praise leaders by saying they serve as "examples for others." Case studies, which

are descriptions of individual experiences, furnish examples of illness and treatment in medical journals.

Two types of examples can furnish supporting material. **Actual examples** are true instances that illustrate a point. Some speakers might identify themselves as actual examples. My students have described their experiences as actual examples of cancer survivors, airplane pilots, powerlifters, and all sorts of other roles. Sometimes actual examples aren't available because you are discussing possibilities instead of real events. **Hypothetical examples** fit these situations because they provide "what if" scenarios that clarify ideas. Hypothetical examples usually can be identified by phrases such as: "suppose that. .," "let's imagine. . .," "picture this. . .," or "what would happen if. . . ." Much historical fiction begins with hypothetical situations, such as: "Suppose the South had won the American Civil War." Science fiction operates almost entirely on hypotheticals, such as: "You have a machine that can travel to any point in time." Hypothetical examples play a huge part in safety tests. NASA stages hypothetical emergencies to train astronauts how to cope with malfunctions that might occur during space travel. Fire drills are hypothetical examples of what could happen in an actual fire. Simulations for pilot training, weapons operation, and other military tasks employ hypothetical examples to prepare personnel for their missions.

Examples can carry enormous force in presentations. A well-chosen example can outweigh statistical information for an opposing position; audiences tend to side with examples over statistics if the two conflict (Allen, Preiss, & Gayle, 2006). Some research finds that a single vivid example convinces audiences more than statistical data (Koballa, 1986), although this effect is not universal. Examples can leave lasting impressions because they provide memorable connections with concrete experience, a feature notably absent from statistics.

How can examples work for you? Although hypothetical examples are not real, they should be realistic. Actual and hypothetical examples must seem plausible to the audience. Examples work best when they are specific. Instead of saying simply, "Here's an example of _____," identify why the example illustrates your idea effectively.

Examples do have drawbacks. An example may or may not illustrate a point accurately. **Unrepresentative examples** do not represent typical cases and may mislead the audience. If a company wants to "prove" its willingness to hire Hispanic workers, it might select its few Hispanic employees to feature constantly in advertisements. Although the company still hires very few Hispanics, the prominence of these few examples gives the false impression that Hispanic employees are widespread. The exception does *not* prove the rule—unrepresentative examples distort the larger reality.

Examples alone rarely prove a point. For almost every example supporting one view, an equally compelling counterexample supports an opposing view. Collecting examples of voters will not give the results of an election; only a statistical analysis of the entire vote count generates reliable results.

Testimony as Supporting Material

Unless you are already a recognized authority on a topic, you will need to rely on testimony, or the words of other people that validate a point. We encounter testimonials every day, from students recommending their favorite classes to coroners certifying a cause of death. Testimony assumes special importance in the courtroom, where witnesses can determine a trial's outcome. In every situation, the quality of testimony depends on the quality of the source. More than any supporting material, the quality of testimony depends on who gives it.

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MORALITY MATTERS: ACTUAL OR HYPOTHETICAL?

Consider the following case, similar to many that have occurred in this course. A student gives a speech that includes a touching description of his sister's battle with anorexia. The student says that she is an example of the horrors of the disease, since she died from it. The example deeply moves the class and the instructor, drastically improving the quality of the speech. Afterward, you express your sympathy to the speaker about the death of his sister. The speaker laughs and admits the example was hypothetical. He doesn't even have a sister. The example was included for dramatic effect. What would you do in this situation? What general guidelines might you recommend for using hypothetical examples ethically in presentations?

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Two main types of testimony can furnish support. **Lay testimony** comes from ordinary people who have some direct experience relevant to the topic. In the courtroom, lay testimony includes eyewitnesses (who directly observed something) and character witnesses (who endorse the virtues of someone else). Since lay testimony involves only reporting first-hand experience, no special credentials of lay witnesses are necessary (Gothard, 1989). The main advantage of lay testimony is that it tends to be non-technical and has an air of "real-life" authenticity that can connect with everyday people (Sundby, 1997). Lay testimony, however, suffers from its inability to offer insight beyond direct experience. This lack of perspective also renders lay testimony prone to bias and distortion. Lay sources may offer little rationale

to back their claims. Some communicators accumulate a lot of lay testimony (such as signatures on a petition) so the testimony appears to speak as a popular mandate or "voice of the people."

Expert testimony comes from people who have identifiable credentials in the field being discussed. Legitimate experts who have special training in the subject matter can render careful, reasoned, unbiased judgments. The U.S. Federal Trade Commission actually requires experts endorsing a product in advertisements to have no "material connection" with the sponsor (such as being a stockholder) and "to have a certain amount of proficiency in the area that relates to the product being sold" (Purkey, 2003, p. 384). Expert testimony can include far more detail because of the source's knowledge, and (unlike laypeople) experts can speak authoritatively on matters beyond their personal experience (Hay, 2006). Specialized education or training may give experts deeper insight, but the drawback is that experts may be unable to translate their technical knowledge into terms non-experts can understand. How do we judge the quality of expert testimony? Legal researchers suggest evaluating the following factors (Rubin, 2001):

- Is the expert recognized by the relevant community of experts in that field?

- Does the expert use techniques employed by respected experts?

- What are the expert's qualifications?

- How well does the expert know the literature in the field?

- How clearly does the expert explain the method and the conclusion?

Simply labeling someone as an "expert" is not enough. The audience must have a reason to believe the person has the credentials and skill to be trusted.

Lay testimony and expert testimony are complementary—each has strengths and weaknesses that balance the other. The wisest strategy would be to rely on a variety of testimony, expert and lay, as support (Sundby, 1997). Generally, expert testimony carries greater weight because the sources have passed some standards for qualifying as authorities and thus have earned a reputation for credibility (Hay, 2006). Consider this: if you had to select a surgeon to perform an operation on you, wouldn't you need referrals from other physicians (expert testimony) and want recommendations from former patients (lay testimony)?

When selecting testimony, note the risks of **celebrity testimony**, the support of well-known but minimally qualified sources. Just because a source has a famous name does not translate into legitimate reasons to believe that source more than others. Approximately 20 percent of all television advertisements include celebrity endorsements, and one-tenth of all advertising expenses pay celebrity spokespersons (Gass & Seiter, 2003, p. 74). Why should we believe someone simply on the basis of notoriety? For all his remarkable skills as a basketball player, I doubt that Michael Jordan has special insight on the underwear I should buy (although he recommends Hanes®). Bill Cosby offers thoughtful media critiques and brilliant comedy, but his endorsement of Jell-o® pudding has no more authority than yours or mine. Some celebrities do have direct or expert knowledge about certain topics, so be sure the testimony falls within the source's range of credentials.

Narratives as Supporting Material

Narratives are stories. Because humans have been raised with stories and stories fill much of our lives in books, television, and movies, narrative is a natural communication technique. Some theorists believe that narratives actually constitute our identity as humans; we are our stories (Fisher, 1987). Storytelling is an ancient art that seems to

infuse cultures throughout the world. Because of this universal appeal, audiences naturally gravitate to stories. Listeners can picture the events and imagine themselves in a story interacting with the characters. An effective narrative invites audiences to enter the world of that story. That's why children beg for bedtime stories.

Narratives provide useful supporting material because they bring life to ideas and events, describing them in a context that includes character, action, and setting. This connection between narratives and lived experiences makes stories excellent ways to show applications of abstract ideas. Many stories traditionally have taught moral lessons because these abstract principles become more understandable when applied to people in particular times and places. The parables in the Hebrew Bible and New Testament qualify as narratives that instruct audiences.

Not just any story will work as a narrative. For audiences to find a narrative compelling, it must have **coherence** and **fidelity** (Fisher, 1987). A coherent narrative "hangs together" well by having clearly defined characters, logical plot progression, and consistency. A narrative has fidelity if it "rings true" to audiences by connecting with values they hold dear.

Effective storytelling takes a lot of practice, but some of the following basic hints should improve your use of narratives:

- Clearly distinguish factual from fictional narratives. Although fictional stories should be plausible, they should not lead the audience to mistake them for actual events.

- Make your stories vivid by including dialogue and specific descriptions.

  Example (poor): "A long time ago an elephant came to town. People said they were scared."

  Example (better): "A decade before any of you were born, Dumbo the elephant waddled into town. Windows rattled and floors shook as he pounded through downtown. Eliza the plumber plunged into the basement, screaming, 'The world is ending!'"

- Keep the plot organized. Tell only what the listeners need in order to understand the story, and check the sequence of events for gaps in time or logic.

- Give the characters in your stories distinct identities so the audience remembers them.

- Try to draw a moral from the story. What does the story mean? What should the audience learn? Explicitly stating this conclusion makes any argument the story illustrates more compelling (O'Keefe, 2002).

A narrative need not be long to be compelling. Listen to the stories told by Appalachian storytellers such as Orville Hicks. These brief tales have memorable details because the images are concise and precise: "That rooster said, 'We got company coming tomorrow, and I hear them say they gonna put me in a chicken pie'" (Hicks, 2006). The character has a distinctive style, conveyed in only one sentence.

That's Debatable: Conflicting Stories

Find two stories that supposedly describe the same event, such as different news reports. Examine the different stories. Which one do you find more compelling and why? Support your claim by referring to narrative coherence and fidelity.

A major strength of stories is that they can provide lifelike illustrations for abstract ideas. Unlike other types of supporting

Type of Supporting Material	Advantages	Limitations
Facts	1. Can be definitely confirmed 2. Universally acknowledged if true	1. Often mixed with opinions 2. Not very adaptable to specific audiences; generates low emotional involvement
Statistics	1. Most precise supporting material 2. Well suited for visual representation and comparisons	1. Risks information overload if used frequently 2. Highly abstract if not embedded in other types of support
Examples	1. Concretely explains abstract or complex ideas 2. Highly adaptable to specific audiences	1. Opposing examples easy to produce 2. Risk of treating atypical examples as the norm
Testimony (lay)	1. Voice of popular opinion 2. Easy for audiences to relate to everyday people	1. Limited range of authority (personal experience) 2. May not give clear reasons for claims
Testimony (expert)	1. Credibility established through education or training 2. Can offer detailed insight within field of expertise	1. May be very technical 2. Opinions beyond area of expertise carry little weight
Narratives	1. Fits audience desire for structure and characters 2. Shows ideas in action	1. Offers only storyteller's perspective 2. Other stories may reach different conclusions

FIGURE 6.1: COMPARATIVE FEATURES OF SUPPORTING MATERIALS

material, narratives show people and ideas in action, as lived experience. Stories make ideas concrete, realistic, and immediate to the audience. Stories alone, however, do not necessarily prove a point. A story might not resonate with the audience's values and then it falls flat when told. A brilliantly constructed story might not carry a lesson the audience wants to hear. A story also tells only one perspective. For every good story, a different story might be told with equally convincing results becausewhenever we hear a story, we hear only one side: the narrator's.

The Research Process

Now that we have explored how to support our claims, let's consider where we might find this material. **Research** is the process of locating and gathering information to solve a problem or answer a question (Booth, Colomb, & Williams, 2003). You're probably asking: "Why research a topic?" Research is something we do daily. You want a new pair of running shoes, so you ask your friends what they recommend. You check advertisements and may even go online to find out the best product for the kind

of running you do. Finally, you go to several stores and you ask the sales clerks what they have and what they recommend. This is a typical research process that helps us daily in answering everyday questions—in this case: which shoes should I buy?

Sometimes, however, we have more challenging issues that require more in-depth research to get the answers we need. For example, if your speech topic requires you to go beyond your personal experience, you have a problem that requires information. That's when you will want to find published resources or interview experts for information to answer the questions about your topic. The process is similar to finding information for a buying decision, like buying running shoes. You ask others and seek out sources of reliable information. The information you gather becomes supporting material that helps you in backing the claims you make in your speech.

Research has more value than simply fulfilling requirements for an assignment. Research serves a number of purposes for communication, whether oral or written. First, it extends the communicator's range of knowledge; second, it bolsters the communicator's credibility; and, third, it provides information to the audience membersthat help them answer their questions. Let's examine each of these functions.

Of course research prepares you with knowledge about a topic, but research also reduces communication apprehension. The more you know about your topic, the more confident you become. As your knowledge basis increases, so does your feeling that you really can make a solid presentation on the topic. We see this benefit often in this course. Students who engage in thorough research commonly find their fears fading because they are focusing more on the information they will present than on negative thoughts about how the audience will react (Fujishin, 2003). Since you can control your degree of preparation, focus

on the research process instead of worrying about factors beyond your control (such as what the audience will think of your presentation). As the class expert in your topic, you profit from the confidence that comes with knowledge gained through research. Knowledge is power, in this case the power to show your careful preparation.

Another benefit of research is boosting **credibility**, or the degree that audiences believe a communicator. An audience will more likely identify with and believe your claims if you can demonstrate that your claims have solid backing. Audiences find communicators significantly more convincing if they explicitly cite sources supporting their claims (O'Keefe, 1998).

Research also provides resources for listeners. It helps them satisfy their curiosity and pre-empts them from challenging or doubting your claims. Effective research provides responses to questions the audience might have, such as: "Says who?" and "How do you know?" Good research also helps you connect with your audience (Booth, Colomb, & Williams, 2003). You do research for one of three reasons: you've found something really interesting, you've found a solution to a practical problem that is important to your audience, or you've found an answer to a question that is important to your audience. On the other hand, listeners will be interested in your speech because your research entertains them with something interesting they don't know, it helps them solve a practical problem, or helps them understand something better. Of course, your research and your presentation could do all three.

By now you may hear someone in the class complain, "I don't need this--I already know how to research." Oh, really? Studies of information literacy consistently show that students overestimate their own research skills. A multi-year study laments that "students think they know more about accessing information and conducting library research than they are able to

demonstrate when put to the test" (Maughan, 2001, p. 83). Don't worry, though, even Ph.D. students who claim they are excellent researchers often cannot walk the talk by actually utilizing effective research methods (Stubbings & Franklin, 2005). Everyone can improve their research skills, and the most effective researchers recognize the need to learn continuously about research methods.

Credit, Credit, Credit!

Very few of us "know" specific details or statistics without consulting sources. Whenever you look up information about a topic, give credit to the sources you use. Cite your sources, *using the citation style recommended by your instructor*. Commonly used citations styles include those listed in Figure 6.2. Most college and university libraries have style manuals in their reference or reserve collections. Search the library catalog at your school for one of the following style manuals often used by communication departments:

- *Publication Manual of the American Psychological Association*

- *MLA Handbook for Writers of Research Papers*

- *The Chicago Manual of Style*

Ask your professor which style manual (either these or another) to use when citing sources for your class and follow it consistently.

Precise instructions on how to cite sources for your formal outline or other written assignments are no more than a few clicks away.

- The American Psychological Association Web site includes a section that answers questions about APA Style and provides examples of how to cite electronic sources at http://www.apastyle.org/styletips.html.

- The Modern Language Association Web site incorporates answers to Frequently Asked Questions about MLA Style at http://www.mla.org/style_faq.

- Examples for documenting sources using the format recommended by the *Chicago Manual of Style* are provided at http://www.press.uchicago.edu/Misc/Chicago/cmosfaq/tools.html.

- Some college and university libraries provide examples of how to cite online full- text articles. Check your library web page to see if your library provides this service.

To assure academic honesty, your instructor may ask for complete citations and the text of quoted or paraphrased material. Be prepared for this possibility.

Style	Association/Publisher	Some Subject Areas that Use It
MLA	Modern Language Association	English, literature
APA	American Psychological Association	psychology, education, communication, and other social sciences
Chicago	University of Chicago Presses	history, humanities, library science
Scientific	Council of Biology Editors	biology and other natural sciences

Not every discipline uses a single style all the time. Depending on the publication, communication departments might use any of the styles listed. The one constant is that a specific, consistent citation style is always required.

FIGURE 6.2: COMMONLY USED CITATION STYLES

Research Integrity

Chapter 2 concluded with a discussion of how to cite sources orally. These citations are necessary to avoid **plagiarism**, defined as taking credit for someone else's words or creative work as if it is your own. Many professors or perhaps curious audience members will want to check your sources. Anyone reviewing your sources should be able to gain access easily to the materials you are citing and read the materials you have quoted or paraphrased.

When you provide straightforward, correct citations and check your work against your sources to avoid plagiarism, you can save yourself a lot of headaches—and maybe even lost time and money. Many colleges and universities have policies that require instructors to give students committing plagiarism an "F" on an assignment and sometimes in a course. In some institutions, you can be suspended if you commit an act of plagiarism.

So, how do you credit sources honestly and avoid plagiarism in your presentations? If you are using an author's exact words:

- Choose to quote an author's exact words when the phrasing is unique or strengthens your argument.

- Provide a citation for the source immediately before or after the quotation.

- Verbally clarify when you are quoting someone else directly.

  Examples: "In Bubba's own words. . .," "Bubba said—and I quote. . .," "According to Bubba himself. . .," "Quoting Bubba directly. . .," ". . .and that's a verbatim quote from Bubba."

- Provide a citation for the direct quote as discussed in chapter 2.

Sometimes you don't need a direct quote. In these cases, a **paraphrase** summarizes the essence of a source's ideas in your own words. If you want to paraphrase:

- Paraphrase an author's words by stating his or her ideas in your own words with your own phrasing—don't simply repeat what the source said.

- Compare your paraphrased remarks with the author's exact words to make sure you have not copied phrases or sentences from the author.

- Provide a citation for the paraphrased ideas as discussed in chapter 2.

Speakers often use spoken materials such as speeches and multimedia sources. These materials can and should be credited.

- Information drawn from personal communications, speeches, broadcasts, conversations, interviews and other spoken words must be documented with a citation.

- Style manuals provide information about citing sources for the spoken word. College libraries usually have style manuals in their reference collection. Remember that these sources need to be credited in the written documentation of your presentation as well.

Information that is commonly known by the public or your intended audience does not need citations for sources. Examples of commonly known information are:

- President John F. Kennedy was assassinated in 1963 in Dallas, Texas.

- Barbecued armadillo contains calories and fat.

- Ulysses S. Grant was a general in the Union Army during the Civil War.

Unsure if an idea is common knowledge for the intended audience? Use caution: cite a source.

Other situations also call for you to cite your sources within the presentation itself.

- Cite the source when borrowing words, figures, graphs, maps, data, or tables from other authors' work.

- The original source must be cited even if the borrowed information is used for

different purposes than those intended in the original source.

- If you organize your ideas in the same fashion in which an author organized his or her ideas, cite the source of the organizational scheme.

Morality Matters

Aside from the academic and potential legal penalties that result from plagiarism, how is avoiding plagiarism connected with respecting others? If you use the work of others without giving them credit for their written or spoken words, what does this say about your respect for them as authors?

Quality of Research: ABC's of Source Quality

Have you ever been disillusioned when you learned that you believed something you were told, only to find out that you had been misled? Many of us have expressed an opinion only to find out later that what we told others was not based on fact. It happens more often than we might like to admit.

To ensure that the information you communicate is reliable, evaluate your sources. Three criteria for evaluating a source include: the author's education or experience in the field he or she is discussing, the absence of slanted or biased opinions and claims, and a date that is sufficiently current for the topic under discussion. It's even better if your source also includes citations to other reliable sources that strengthen the credibility of the arguments presented.

Evaluating the quality of sources is literally as easy as A-B-C: authority, bias, and currency. First, consider the **authority** of the source. Determine whether the author's

education or experience is adequate and related to the subject. Try these strategies:

- Check the header and footer of a web page for a link to information about the author or sponsor.
- Scan the beginning and end of an article to find a description of the author's credentials. Most academic journals and anthologies in books include biographical information about the authors.
- Search the Library Catalog or a periodical index to locate other books or articles by the same author. Some of these works might give you further insight about the author.

Be careful when judging authority. A mere title does not always mean there are qualifications to support the title. Try to discover the training or background a source has. For example, the author of this text might be a doctor, but if "doctor" means "veterinarian," the credential is irrelevant to the subject matter. Authority can stem from formal education and training or from direct experience.

Bias affects source quality when the source has prejudicial opinions or information that might be tainted by personal interests. Your goal is to find sources that are as objective as possible. For example, I'll tell everyone that the introductory speech communication course is the best course on the planet—but since I also teach it, my viewpoint is tainted by my self-interest (I want my own department to maximize enrollment). Although I may be an authority on the course, my involvement in it makes my opinion suspect because I am not objective. So it isn't surprising that all professors rate their own courses as the best! Try these strategies for uncovering bias:

- Look for footnotes or references that document the information in the source.
- Read the "About Us" or the "About this Site" web page information.

- Skim the text of a source to decide if the author is attempting to sell a product or is making a false claim.

- Look for descriptions or reviews that acknowledge pros and cons of a product, service, or opinion.

Pay particular attention to potential conflicts of interest that might create bias. For example, a senator who owns massive stock in an oil company probably will not provide objective information on regulating oil company profits. *Consumer Reports*, for example, has an excellent reputation as an unbiased source of product information because it is published by an independent agency (Consumers Union) and accepts no advertising.

Currency deals with how recent the information is. Some rapidly changing topics, such as the state of research in nanotechnology, evolution of diagnosis and treatment of some diseases, or developments in a war zone, require the most current information. Always find when the source was written or updated. If you cannot find the date of information, then its currency is uncertain and therefore it does not meet the standard of currency.

Does currency equal quality? Not always. Newer information may be better in many cases, but remember that the newest information may not yet have been checked carefully for accuracy. For example, a blogger might post a very current "news" story based on sheer speculation. After all, most blogs are not reviewed for accuracy prior to posting. Sometimes more durable information is preferable—sources that have stood the test of time. Revered but very old documents such as the Declaration of Independence and the dialogues of Plato are far from current, but they have withstood sustained critical analysis. Sometimes we have to make tradeoffs in research. More current sources may sacrifice thorough documentation that assures accuracy. Authoritative sources with impressive credentials may suffer from bias. That's why it's wise to use several sources;

that way a weakness in one source won't devastate an entire presentation.

Books as an Information Source

You're probably familiar with locating books by searching a web site like Amazon. com. Many fine books can be found this way. Sometimes, though, a more convenient way of locating books in your area is by searching your library's catalog. You can be more assured that these books are available and, better yet, that they won't cost you anything! Many library homepages have a link entitled "Library Catalog" or "Search for Books." Some libraries are a member of a state or regional group that delivers books between libraries, often for free and in a couple of days. Some libraries also provide students with access to electronic books. Check out your library's homepage, or ask your librarian.

Authors of non-fiction books broadly cover a topic. The page length of books provides room for in-depth development of content and analysis. Books can help you understand major theories, definitions of terms, and related issues. In addition, if a book is a collection of essays by several authors, you can find multiple points of view all in one place. Since books tend to cover the background of a topic, the information is valuable for a long time. The printed format keeps the information unchanged, like a "read-only" computer file.

Books do have limitations. The information available in books is usually less current then journal articles because of the length of time necessary to compile the information, write, edit, publish, and market the book. Books in fast-moving subject areas like computer science become outdated faster than books in an area like sociology. Since books can take one to two years to be published, look for information about current and emerging issues in magazines, newspapers, journals, and on web sites.

Periodicals as an Information Source

Periodicals are sources published at regular intervals, such as daily, weekly, bi-weekly, monthly, and quarterly. "Periodical" is also a one-size-fits-all word used for three types of publications: magazines, newspapers, and scholarly journals. Periodical databases allow you to locate articles in periodicals using fast, intuitive search engines. Some of these databases may sound familiar: EBSCOhost, InfoTrac, LexisNexis, ProQuest, and Wilson-Web. Each one differs somewhat in the periodical titles they search and in the amount of full text articles provided. Some focus on multiple subject areas and others on a particular subject or discipline such as education, psychology, chemistry, philosophy, or history. Some databases search only specific types of periodicals such as newspapers or trade journals. Some include full text articles for a very selective group of titles; some provide full text for all or almost all titles they search. Any college librarian can recommend a good database to start your research.

The advantages to searching periodical databases include:

- Periodicals included in most library databases are considered credible and authoritative.

- Many periodical databases allow you to view the full text for all or selected periodicals searched. If the full text article is not available for a title, it is often now possible to "link out" to another database that does have the full text.

- Periodical databases typically have powerful and sophisticated search engines that allow you to enter precise, controlled searches. They may also allow you to search by subject using sophisticated subject directories.

- Periodical databases usually cover many years of each title and sometimes include access to all issues ever published. Many databases are updated daily or weekly, which allow them to provide you the most current articles available for many publications.

- Full text of articles, when available, can be downloaded, emailed, or printed.

Much of the research for the book you are reading was conducted using periodical databases.

The academic world places great stock on journal articles that are **peer-reviewed** or **refereed**. Some instructors require students to consult such sources. Prior to publication, these articles are read and critiqued by experts familiar with the subject area. The reviewers of a peer-reviewed article send their comments back to the editor of the journal. The editor then decides if it is good enough for publication and what needs to be added or corrected. The author then makes the recommended changes. Peer review provides a method of quality control for scholarly work. Many top academic journals publish only a small percentage of material submitted because the standards for acceptance are so high.

Peer-reviewed articles often have very high quality and more research-based content than do non-peer-reviewed articles. By requiring some peer-reviewed articles, teachers are ensuring that the quality and credibility of the article will be excellent. On the other hand, peer-reviewed articles may use fairly technical, jargon-laced language difficult to understand if you are not well-acquainted with the subject. Also, an entire peer-reviewed article can be quite long (one article referenced in this chapter, for example, runs 80 pages!), so you'll need to analyze which parts are relevant to your topic.

The Internet as an Information Source

For the most part, you and the majority of Internet users are engaged in using that portion of the Internet called the **public**

Web (also called the free Web, open Web, or surface Web). The public Web contains a vast array of sources you can access using intuitive search tools like search engines and Web directories. The content available on the public Web is so rich and varied and changes so rapidly, with sites becoming available and others disappearing daily, it is impossible to adequately quantify and characterize. Some generalizations about what sort of content is accessible on the public Web can be useful to guide you toward the Web sources that have the greatest value for academic work. Best of all, most of these free sites can be accessed with powerful and popular Internet search tools you are already experienced using every day.

Government sponsored information sources are common on the public Web. The majority of these sources are free and they alone comprise a deep and diverse collection of vital statistics and demographics, historical records, health information, scientific research, congressional testimony, laws, regulations, and much more. Specialized search engines are available to pinpoint this sort of information.

News sources and archives are a recognizable presence on the World Wide Web. Many international, national, regional, and local newspapers, magazines, television and radio stations have web sites with current, generally reliable, free news articles. Many news articles include audiovisual files as supporting documentation. In addition, large blended news outlets such MSNBC host web sites. Many of these news sources provide a way to send their current news stories to your desktop or e-mail. In additions there are many search engines dedicated to searching for news content on the public Web. Archived news stories are often available only if you subscribe to a commercial news service.

Primary source repositories on the World Wide Web are very important to students and scholars in the humanities and social sciences. Letters, diaries, memoirs, interviews, speeches, personal narratives, oral histories, and other first-hand accounts of historical events and persons predominate in these sources. They are often supplemented by maps, broadcasts, recordings, and various audiovisual files.

Online reference publications and collections can be found on the public Web. Encyclopedias, dictionaries, fact books, handbooks, directories, almanacs, statistical compendiums, and calculators are among the types of publications you might find.

TECH TALK: WICKED WIKIS?

A relatively new and growing online phenomenon is the **wiki** (pronounced WICK-ee): web content that multiple users can edit and repost on the web site. The most extensive and well-known wiki is the online encyclopedia *Wikipedia*. As with any public wiki, use *Wikipedia* with caution. Information is only as reliable as the most recent person who edited it. Since virtually anyone can alter the information, the credentials of the information source may be dubious. The ability to edit quickly, however, also allows information to be quite current. Because the information on wikis is so easy to edit, it also may be more vulnerable than other web content to hacking and pranks. Wikis generally rely on the users to police site content, so the quality of information varies widely. Try comparing *Wikipedia* and other wikis to more traditional web and print content. Where do you find better information? What explains the differences in quality?

Type of Information	Representative Examples
Government Information	United States Bureau of Labor/Bureau of Labor Statistics National Institutes of Health/Health Information
News/Current Events	BBC News CNN Al Jazeera Haaretz
Primary Sources	Library of Congress/American Memory Avalon Project at Yale Law School Weekly Compilation of Presidential Documents
Virtual Reference Collections	Internet Public Library Purdue University Libraries Quick Reference Wikipedia, the free encyclopedia
Organizations	United Nations Carnegie Endowment for International Peace
Open Access Journals	*Crossings: Electronic Journal of Art and Technology* *Didaskalia: Ancient Theatre Today* *Journal of Information Technology Education*
Public Domain E-book Archive	Project Gutenberg Electronic Text Center, University of Virginia Library Online Books Page (University of Pennsylvania)

FIGURE 6.3: PUBLIC WEB CONTENT HANDY FOR ACADEMIC ASSIGNMENTS

Nonprofit organizations, societies, and advocacy groups provide sites that contain news and information as well as studies and research reports. Because these groups typically have a social or political agenda, be careful to evaluate the facts and positions they present carefully for potential bias.

Full text articles and books are also available on the public Web for free. As mentioned above, news organizations provide articles. Online magazines and journals also provide free article content. The open access movement in scholarly publishing is a small but active presence on the Web dedicated to providing a forum for scholars to share their research online. There are also public domain book archives with free e-book content and some reputable books (such as *The Holocaust Chronicle*) are available free on the World Wide Web. The catalog records for many academic and public libraries are accessible through Internet search engines, but the full text of the books that these records refer to are not generally freely available unless they are already in the public domain.

Many students begin and end their search for information with an Internet

search engine such as Yahoo! or Google. But what you don't know might hurt your grade. As big and robust as the public Web is, it contains only a portion of the information available for students and scholars. To access some of the best, most reliable sources for scholarly information, you must know how to get to the **deep Web content**, sometimes called the "invisible Web." The deep Web contains valuable scholarly information located on networks and in databases that Internet search engines and Web directories cannot locate and make freely accessible on the public Web. What this means is that a huge portion of the Internet resources that are the most valuable for college-level research assignments will remain untouched unless you learn to access the deep Web effectively.

Your most valuable asset in taking advantage of the deep Web is the college or university library and the librarians working there. Librarians are experts at exploring the deep Web for the information you need. Some of the assets available in the deep Web that they can guide you to are:

- Full text periodical articles located in subscription databases. Most of the full text articles, especially scholarly journal articles, in subscription databases are not freely available on the public Web.

- Full text articles, essays, multimedia documents, and other documents in subscription reference databases. The full text of these documents comes from online subscription references sources. Some of these reference databases

Type of Information	Deep Web Sources for Content Available in Many College or University Libraries
Full Text Articles	EBSCOhost Academic Search Premier InfoTrac OneFile LexisNexis Academic
Subject Specific Full Text Articles	American History and Life MLA Bibliography (Language and Literature) PsycINFO Communication and Mass Media Complete
Proprietary Primary Source Databases	North American Theatre Online History Study Center
Proprietary Virtual Reference	X Refer Plus LexisNexis Academic Reference Grove Music
Multimedia Archives	ARTSTOR Smithsonian Global Sound Naxos Online Music Library
Subscription E-books	Ebrary NetLibrary Safari Bookshelf (Computer and Information Science books) Literature Online
Search and Analysis Tools for Public Information	LexisNexis Congressional CQ.com

FIGURE 6.4: DEEP WEB CONTENT FOR ACADEMIC ASSIGNMENTS

correspond to print equivalents like encyclopedias. Some are hybrids or aggregates of information found in print and have a unique character unlike the print sources they are derived from.

- The full text of e-books in subscription e-book services.

- Multimedia files such as music files, art reproductions, film and video clips, audio book selections, maps, charts, and many other types of audiovisual files in subscription databases.

- Full text and multimedia primary source archives in subscription databases.

- Search tools that allow you to access free information in a more efficient and easy to use format. For instance, government information is often hard to locate and analyze. Your college or university library may have access to subscription databases that have finding tools to make that job easier. Often these databases also provide summaries and explanations of information like public laws and legislative documents that are concise and easy to understand.

Blogs and RSS Feeds as Information Sources

The *Computer Desktop Encyclopedia* defines a **blog** (short version of *Weblog*) as "a Web site that contains dated entries in reverse chronological order (most recent first) about a particular topic." This definition goes on to describe blogs as frequently updated, Web accessible journals that include personal commentary on a topic with accompanying links to related web sites (*Blog*, 2004). Technically blogs are part of the public Web and blog content can be located and accessed using Internet search engines and Web directories. However, blogs comprise a distinctive and growing presence on the Web and have characteristics that distinguish them

from other Web information. Audio blogs and video blogs also use a similar format to provide journal entries that use audio-visual files to deliver information. Besides the dated entries listed in reverse chronological order and the aim to deliver the latest developments or observation on a topic, specific content and presentation of the content on blogs is as varied as the individuals who produce and maintain them. The great advantage of blogs is that the authors can generate content and post it publicly almost instantaneously. So blogs are among the most current possible information sources. For that very reason, however, they may offer shallow or inaccurate coverage because they have not been subjected to careful editorial review or verification. Because blogs rarely have an editorial policy outside of the whims of their makers, have a healthy dose of skepticism when considering using their content for college level assignments, even if the content you take from blogs is written and maintained by college professors and seasoned scholars. Many blogs basically serve as public diaries, providing minimal evidence for claims.

Finding the appropriate blogs that report on academic subjects can be tedious and time consuming if your Web searching strategy is not focused and precise. The best lists of academic blogs attempt to arrange them by discipline or topic as the names of many of the blogs are not very practical or descriptive. Better yet, some academic blog directories include keyword search capabilities as well. Rich Site Summary (RSS) is a method for syndication of news headlines and other late breaking content such as blog updates. Many news and broadcasting sites as well as blogs now offer RSS "feeds" as a way of aggregating current content and alerting users so they can access that content. RSS feeds typically consist of a list of entries with a title or headline, a brief summary, and a link to that news item. To read RSS feeds, you need to acquire "feed

Type of Information	Blog and RSS Resources
Academic Blogs	BlogScholar: Academic Blogging Portal Scholars Who Blog Grand Text Auto: Academic Blogs
Searching Blogs	BlogScholar: Academic Blogging Portal Technorati Blogdigger Feedster Fagan Finder: Blogs and RSS Search Engines
Searching RSS Content	Blogdigger Feedster Fagan Finder: Blogs and RSS Search Engines
RSS Feed Readers	News Is Free FeedReader NewsGator
Lists of RSS Feed Reeders	RSS Readers AbbeNormal: RSS Readers

FIGURE 6.5.: SEARCHING BLOGS AND RSS FEEDS

reader" or aggregator software. Many free feed readers or aggregators are available, some require installation. Many news sites and blogs provide links to the feed readers they recommend. There are search engines that search RSS feed content exclusively. RSS feeds allow users to follow headlines or new content from a variety of sources (several blogs with similar content, for instance) without having to search each source individually (Sullivan, 2003).

Limits of the Public Web for Legitimate Academic Research

Reliable editors and fact-checkers screen comparatively few sources on the public Web. For that reason, it is up to *you* to do the fact-checking to establish the credibility of Web content—especially as it applies to academic assignments where authority and accuracy are paramount concerns. Using the criteria for evaluating sources, you should always be mindful about establishing the authority of the Web page content provider who is responsible for providing the information. The sponsor of a site, for example, may glean information from other sources. What are those sources? Often the source of the information is separate from the webmaster, the person or group who furnishes the design and assures the functionality of the site.

You should also be very careful about determining whether specific facts or claims on a Web page are accurate. You can establish accuracy by comparing those facts or claims with other sources you find with similar content. This process of checking sources against each other for accuracy is known as **corroboration**. Information that is corroborated across several sources, while not automatically true, tends to have more reliability than one source's isolated assertions. Corroboration is a helpful practice for any source, print or electronic. The most reliable Web pages from an academic standpoint are those that carefully document the facts and observations they make that rely on other sources. These Web pages will often have in-text citations alongside the content that indicate where this

content is derived and will provide a list of the works consulted to create the content in a bibliography usually at the end of the content (also referred to as a Works Cited list or References list).

Personal Interviews as Information Sources

Personal interviews can provide useful information. Interviewers may control what questions are asked, may direct the interview in the direction of their views, or may select resources that fit their viewpoint. Another advantage to personal interviews is the ability to find material that is not available in print or electronic sources. Many times, an interviewer can find information available only through eyewitness accounts or through local resources that might not be available anywhere in print. Some local resources may include city offices, government officials, doctors or lawyers, and family and friends.

Personal interviews also have limitations. The person being interviewed may recall information inaccurately or may have a distorted perspective. It is important that a researcher verify information of this nature through print or online data that can substantiate the information of the source. Also, it is easy to have outdated information, so be sure to check the timeline of an occurrence you might cover before interviewing a source about it.

It is important to view casual conversations for what they are and not as legitimate sources. Interviews need to be planned so that the information gathered is accurate and does not contain biased viewpoints. By planning the interview, it is easier to stay on the topic and not lapse into careless conversation. Here are some steps to develop a good interview:

- Plan your questions.
- Make an appointment for the interview.
- Set a time limit for the interview.
- Record your interview, if possible, to guarantee accuracy of your report.
- Offer your interview source the opportunity to verify the information you are reporting.

For detailed instructions on how to conduct interviews, read ahead in the Interviewing chapter.

Other Types of Information Sources

The materials described below can be obtained either by writing or calling the agency, organization, or business listed in their web sites or printing information from the Web pages you view. Addresses and phone numbers are often listed on web sites under "Contact Us" or "About" links.

Manuals

A number of companies place manuals for their products on the World Wide Web. If you own a radio, a television, a lawn mower, etc. and you lose the manual, you may be able to download a new copy of the manual at the company's web site. Another way to obtain a copy of the manual for a product is call the company and ask for one. A while ago, I ordered an unassembled kitchen island. All 200 or so parts arrived intact—except one: the assembly instructions! I telephoned the company and they e-mailed me the complete document. When a similar incident happened again, I found the complete assembly instructions for a piece of furniture on the manufacturer's web site.

Governments Materials

Federal and state governments publish materials that provide data and background information that can often be used in research reports. For example, *The United*

Source	Web Address
U.S. Government Manual	http://www.gpoaccess.gov/gmanual/
U.S. Government Manual 1935–1951	http://digital.lib.umn.edu/Ebind/docs/govmans.html
State & Local Agencies & Offices, by Topic	http://www.firstgov.gov/Agencies/State_and_Territories/Agencies_by_Topic.shtml
U.S. Census Bureau	http://www.census.gov/
CIA World Factbook (overviews of every country in the world)	http://www.cia.gov/cia/publications/factbook/
Statistical Abstract of the United States	http://www.census.gov/prod/www/statistical-abstract-us.html
County and City Data Book	http://www.census.gov/statab/www/ccdb.html

States Government Manual explains the function of federal agencies and provides phone numbers and Web addresses for each of the agencies described. Search your college or university catalog by keyword for <"United States" and politics and manuals> to find federal government manuals. If you are looking for a state manual, substitute the name of the state for the phrase "United States." Other government sites include wide-ranging statistics such as population, business, geographic, and government data and information.

Overall Source Recommendations

- Use many different types of sources for your research. Not all of the information you need will be found in a book or an article or on a web site. In general, books provide in-depth information, articles are narrowly focused, and web sites may offer only one side of the topic, so you might very well need all three, depending on the assignment.

- Compare content between sources. If three different sources contain the same information, it helps to confirm the accuracy of the material.

- Material that has been reviewed by subject experts prior to publication is likely to provide a high level of quality, credibility, and reliability. The experts provide editors and authors with a professional evaluation of the book or article.

- Stay away from sources that don't clearly identify the author or sponsor (either a person or a corporate group). Some web pages especially fall in this category! It's equally important to locate information about the author's credentials: educational background, work experience, life experience, etc. How do these qualify the author to write

about the topic? Always look for a date of publication. If a source is undated, it's difficult to judge if the information is current enough.

- Just because you recognize the name of a source doesn't mean that it makes it automatically credible. Would you really want to quote the *National Enquirer* in a college assignment?

- Get the real thing. Don't settle for a summary, abstract, or review of a book or article. Otherwise, you're using an "already chewed" version of the original, and not getting the full argument or discussion.

Research Strategies

Before beginning to research, write down what you already know about your topic. Within your explanation, circle important key concepts like names, dates, places, events, and differing viewpoints. Next, write down what questions you would like to have answered and what you would like to learn during your research. Circle important key words within these questions. Answering these questions will help you to write a thesis statement and help you to outline some key words to enter into databases to begin to locate information on your topic.

Example: If I were researching advertising strategies that appeal to Generation Y consumers, one question that I might like to have answered during my research is "the effect of product placement during entertainment on Generation Y consumers."

Important keywords would be **product placement**, **entertainment**, and **Generation Y**.

Broaden Your Search with Synonyms

"Why can't I find anything on my topic?" It's a question we often hear. Most databases also have menus for narrowly-defined vocabulary that can be used to locate precise results. Use the "Help" features in the database to determine if the database has a searchable thesaurus or list of subjects. If you can't find a thesaurus in the database, try to brainstorm alternate words to try in your search. An online thesaurus can also be found at http://www.thesaurus.com. For example, synonyms for long-term airport parking might be satellite parking, economy parking, or budget parking.

Example:

Synonyms for my research question, "the effect of **product placement** within **entertainment** on **Generation Y** consumers" are:

Product Placement	Entertainment	Generation Y
- Product pitches - Branded entertainment	- Television or TV - Movie or movies - Broadcasting - Radio - Advertising or advertisements	- Millennial or millennial - Generation Next - Baby boomer echo -Echo boomers

Note: List variations of keywords (plurals, abbreviations, alternate spellings) in the list. Try to avoid long phrases when writing down your list of synonyms.

Connector	When to Use	How to Use
AND	Narrows a search because both concepts on either side of the AND must be present in the record before it is selected.	product placement AND entertainment AND generation Y
OR	Broadens a search because just one of the concepts on either side of the OR must be present in the record before it is selected. OR is usually used for synonyms, variant spellings, and abbreviations. Parentheses should group the OR concepts together.	(product placement OR product pitches OR branded entertainment)
NOT	Narrows a search because when the concept to the right of the NOT is found within a record, it is excluded from the results. This connector should be used sparingly when a keyword has multiple meanings.	entertainment NOT television

Note: You can combine connectors to locate precise results.

Target Your Search With Boolean Operators (AND, OR, NOT)

Once you have listed important keywords within your questions and explored synonyms for the concepts, you can combine the terms using Boolean Operators (AND, OR, NOT).

Example:

(product placement or product pitches) and (entertainment or television or tv or movies) and (generation Y or millennials or generation next)

The beauty of using Boolean operators as a search strategy is that you can cover many keywords with a single search, saving lots of time and frustration.

Extend Your Search with Truncation

Truncation can be used to locate variant endings or spellings of a word. You simply shorten (truncate) the word to a basic unit and look for variants of the term. When a truncation symbol (usually *, ?, or !) is added to the stem of a word, it will find that stem plus any letter that comes after it. For example, advertis* would locate advertisers, advertisements, or advertising. Check the help option within the database to find which truncation symbol to use.

Example:

(product placement* or product pitch*) and (entertainment or television or tv or movie*) and (generation Y or millennial* or generation next)

Searching Library Catalogs

Library catalogs contain records of items that are owned by the library (books, government documents, videos/DVDs, music scores, books on tape, etc.). You won't find magazine, journal, or newspaper articles in the Library Catalog. Each item's

record is broken into chunks of information or fields that are searchable. Examples of searchable fields are author, title, subject, and call number. When you field search, the computer will only look in that field when it sorts through all of the records in the database. The computer will try to match your keyword(s) with keywords in the record field. For example, an Author Search for "Morrison, Toni" will only look in the author field and retrieve results of items that were written by Toni Morrison.

A **keyword search** looks in multiple fields (such as subject, author, title, etc.) for your search words. Since a Keyword Search looks in multiple fields, it is usually a good place to start your research and retrieve the most results. Keyword Searches also allow you to combine multiple concepts into one search using Boolean Operators (AND, OR, NOT) and truncation.

<u>Example</u> (multiple keyword search):

bully* and school and (prevention or intervention)

Once you have typed in a search a list of results matching the search criteria will be displayed. After selecting one of the results, the typical types of information that will be displayed include the author, title, publisher, description, table of contents, location, call number, and a list of subjects that can be selected to display other items in the catalog with similar topics. To locate the title in the library, you will need to write down the title, location, and complete call number.

Searching Online Article Databases

Who has time to browse through the tables of contents of hundreds of journals, magazines, or newspapers before locating articles relevant to a topic? If you search an online article database, thousands of periodical issues will be simultaneously scanned within seconds until your search criteria are met. Using the research strategies (Boolean operators and truncation), a search can be entered and the database will display which periodicals have articles relevant to your topic. The results are typically displayed as citations. Citations provide the author, title, periodical name, publication information (volume, issue, date, etc.) and page numbers. Selecting individual citations usually displays additional information like an abstract (summary of the article's content) and additional keywords/subjects. Many results will also include links to the full text of the articles. It is a good idea to search more than one database because different databases index different periodicals. There may be some overlap, but some additional citations will be displayed and will provide a better representation of the literature that has been written about your topic. Many database vendors like InfoTrac and EBSCOhost provide the ability to search multiple databases simultaneously. Library web sites often organize article databases by subject or department. Depending on the department or subject that your topic encompasses, the library web site will recommend databases that contain periodicals within that discipline or topic area. You can also ask your librarian to recommend a list of databases that would contain information on your topic.

Internet Searches
The first and most important thing to know for Internet searching is how to choose the right search engine that best fits your research needs. There are so many search engines and each search engine has developed a unique mechanism for collecting, indexing, categorizing, archiving, and displaying search results. Consequently, each search engine has its own strengths and weaknesses. If you want to know where to start, check a reliable search engine review web

site such as Noodle Tools' *Choose the Best Search for Your Information Need* page or Search Engine Watch's *Search Engine Ratings and Reviews* for quick reference. You can also ask the college or university librarian at your school library.

Once you choose your search engine, read through Help pages. In most cases, this will teach you enough about how to use the search engine properly. Each search engine has its own prescribed set of search features and the Help pages will define how to narrow or expand your search, what search syntax to use for operations like phrase searching or operations like field searching. Search engine defaults and special advanced searching capabilities should also be outlined in the Help pages. Some search engines support complex levels of Boolean logic such as proximity searching (using NEAR for instance), while others only support basic Boolean searching. Some search engines may not return any search results when you misspell search terms while others may suggest alternative spellings. Some search engines recognize capitalization, some do not. Taking the time to pay attention to each search engine's unique features and behaviors will improve your search results.

Each search engine has slightly different ways to broaden and narrow searches, and you may have to learn those special features from help documents in each search engine. There are many commonly available search engine features including Boolean Operators (AND, OR, NOT), truncation and wild cards, and phrase search capabilities. Truncation and wild cards are commonly available in most search engines to broaden searches. They allow you to search various forms of a keyword based on stems of the word. Each search engine uses different symbols (such as *, !, or ?) to insert in a word. You may have to read help document in each search engine thoroughly to get take advantage of this feature.

Research and Support for Specific Assignments

We conclude the chapter by recommending some ways to approach research and supporting material for specific topics and assignments. Some assignments require you to go beyond the information-seeking techniques familiar to you. This section helps you navigate those unfamiliar waters.

Interviews

Whether conducting an interview or being interviewed, you need to perform background research on what will be discussed. The use of these sources should be demonstrated in the interview itself (e.g., "Your supervisor Petunia Uvula told me when I interviewed her last Monday . . .") to have the most impact. The research can include written literature (pamphlets, books, articles), interviews with people who know the other person, web pages created by or pertaining to the other person, or other resources that could enlighten you about the topics that will be discussed. Show respect for the other person's privacy and stick with material that is relevant to your objectives and that she or he probably would feel comfortable discussing. A source should be acknowledged at the point it is used in the interview. This form of citation identifies exactly where outside information is being used.

> Example: "According to a 1994 study performed by Elmer Fudd, professor of Rabbitology at Missouri Western State University, the rabbit was the ancestor of all present-day humans. Were your parents rabbits?"

Where do you find research about people who are not well known? There are lots of resources you can use:

- Interview people connected with the person: family members, supervisors,

co-workers, people the individual has supervised, current or former clients.

- Research the organization the person works with.

    Example: If you were interviewing Roy Schwartzman as a professor, you would research the University of North Carolina at Greensboro and the Department of Communication Studies.

- Research the person's field.

    Example: If you were interviewing poet Maya Angelou, you would research modern poetry and the process of creative writing.

- Research the person's hobbies, interests, or personal commitments.

    Example: If you were interviewing actor Angelina Jolie, you would research the process of adopting children from other nations.

- Research the people connected with the person (co-workers, family, friends, or other people who might have some public visibility in the form of publications or a presence on the Web).

How to Research People for Information-Gathering Interviews

- Locate a book written by them by selecting an author search in a local, statewide or national book catalog (select an author search, enter author's name)

- Locate articles written by them by selecting an author search in a library database—a listing of articles in newspapers, magazines and journals (select an author search, enter author's name)

- Search for a biography about them in a library catalog or periodicals database

(select a subject search, enter author's name)

- Use an Internet search engine to locate information about them (enter author's name)

How to Research an Organization (Company, Government, or Non-Profit) for Employment Interviews

- Locate a company's annual report by searching the U.S. Securities and Exchange Commission database called EDGAR located at http://www.sec.gov/edgar.shtml

- Search for the not-for-profit or government web site by typing in the organization's or agency's name in an Internet search engine

- Use business, government, and social science reference materials in your library (ask a librarian)

- Search for statistics about the organization on the Web or also in reference materials in your library

How to Research a Position for Employment Interviews

- Search for information about the career in reference books at your library like *Occupational Outlook Handbook* or *Encyclopedia of Careers and Vocational Guidance*

- Search for information about the company using reference books or business databases

- Search for information about the industry using business databases and web sites

- Search for information about the geographical area using chamber of commerce and tourism web sites

Group Problem-Solving Projects

Group projects often require you to demonstrate ample background research and support. Since several people have collaborated for some time, the level of knowledge the group displays should exceed expectations for one person. Groups tasked with solving a problem need to take special care in demonstrating adequate support since these groups are recommending actions. Groups should not speculate about facts and possible solutions, but instead ground recommendations on solid support that justifies the preferred solution. Research can play a role at many stages throughout the group's deliberations. For example, research might be important in answering the following types of questions:

- Where and when have similar problems arisen?

- What solutions have been attempted in coping with similar problems elsewhere or at other times?

- Which solutions have succeeded or failed and why?

- What can you learn from similar problems and solutions?

- Who can offer information that will contribute to your group understanding the problem and its possible solutions?

Products or Services

If you are advocating a product or service, research for this assignment may differ somewhat from other presentations. Consumer publications such as *Consumer Reports* and *Consumers Digest* often provide useful comparisons of products or services. Many other consumer-oriented publications are available. Make sure to check the publisher, advertising policies, and history of the publication to discover possible bias or unreliability.

Depending on your product or service, you may find abundant resources for discussing the standards for a good product or service. Suppose you want to persuade the audience to buy Festerbest Toothpaste. You could search dental journals to find articles by dentists, hygienists, and researchers who describe the ingredients or qualities that a good toothpaste should have. In your presentation, you would mention these criteria for a good toothpaste and show how Festerbest meets those standards better than any other toothpaste. Researching standards can give you some high-quality expert testimony.

Another area of research especially useful if you are designing your own product or service is to investigate the competition. Consider who already has a similar product or service in the market niche. Who might be likely to move in? According to sales consultant Timothy F. Bednarz (1999), you should know your competitor's products even better than the competitor does.

You also can find materials produced by organizations dealing with the product or service you want to promote. This category of items includes pamphlets, annual reports, training manuals, and other in-house materials. Be careful, however, because these resources tend to be biased in favor of the organization that produced them. Balance such items with more objective sources.

It might be helpful to search for financial information about a company, especially if your presentation involves promoting the wares of a publicly held corporation. A wide array of financial information is available on most major corporations through electronic databases such as Business Source Premier or Regional Business News. Most public libraries include basic business references that can report on the financial stability and growth of a corporation.

Finally, your research might involve testimony from users of the product or service. You could interview people familiar with

what you are promoting to show that previous users have been satisfied. Remember, however, that such evidence usually counts as lay testimony. You should supplement it with more expert testimony and other types of supporting material.

Controversial Issues

When researching controversial issues within the library catalog, online article databases, and Internet search engines, combine your search term with one of the following truncated keywords to search for information advocating or against an issue:

> advantag*, against*, analy*, argument*, attitud*, attribut*, benefit*, compar*, contrast*, controvers*, cost*, disadvantage*, discuss*, editorial*, evaluat*, favor*, improv*, legal*, mistak*, moral*, need*, oppos*, politic*, position*, progressive*, religio*, respect*, success*, support*, view*, vital

> Example:

> Cloning and (advantag* or benefit* or need*)

Ask your librarian which databases are best for coverage of controversial issues. Many databases like *Issues and Controversies* and *CQ Researcher* provide articles on controversial issues. *Issues and Controversies* from Facts.com contains a Pro/Con Index which will lead to articles on many types of issues that are in debate. *CQ Researcher* is available either as a print periodical or in an electronic version. These reports are published by Congressional Quarterly and each report covers issues, background, chronology, the current situation, pros and cons of the issue, the outlook, and a bibliography.

Also ask your librarian for books and periodicals available in your library that cover controversial topics including:

- *Congressional Digest* where each monthly issue discusses one topic including an outline of actions taken by the U.S. Congress, an overview, and a pro and con section.
- *Contemporary World Issues* is a series of books that include information about controversial global issues.
- *Current Controversies* is a series of books providing information about controversial issues.
- *Current Issues* is a multivolume set of encyclopedias that include topics like AIDS, census, marijuana and smoking.
- *Editorials on File* is a biweekly publication that indexes and provides the full text of editorials from more than 150 daily North American newspapers.
- *Opposing Viewpoints* is a series of books providing information about both sides of controversial issues.
- *Gallup Poll Monthly* is a monthly publication that provides survey results from sample adults living in telephone households within the United States.

Medical and Health Topics

Medical and health information is an area where fraud is highly likely to occur. You must careful to evaluate sources for authority of the authors, bias of the information, documentation of the facts with citation of sources, and currency of the material. Few fields of study change as quickly as the medicine. Just a few months can make a difference in the facts!

According to the National Cancer Institute (2005):

> *The growing popularity of the Internet has made it easier and faster to find health information. Much of this information is valuable; however, the Internet also allows rapid and widespread distribution of false and misleading information. It is important for*

people to carefully consider the source of information.

Look for sources of health information that are regularly updated and are published by well-respected research organizations. Many of these types of organizations maintain web sites, which are frequently updated.

Highlights

1. Supporting material enhances a presentation's content by making it more believable.

2. Facts are verifiable statements about actual people, things, events, or conditions. Facts can be proven conclusively but are rather impersonal.

3. Statistics are any information in numerical form. Statistics provide the most precise support, but numbers can be manipulated to affect interpretation.

   a. The median is halfway between the low and high value in a set of numbers.

   b. The mode is the most commonly occurring value in a set of numbers.

   c. The mean is the so-called average: the sum of all numbers in a set divided by how many items are in the set.

   d. Statistics can reflect false precision, assigning numerical value to vague or immeasurable quantities.

4. Surveys can manipulate results by the way questions are phrased and ordered.

5. Examples provide concrete illustrations of ideas.

   a. Actual examples are true instances.

   b. Hypothetical examples deal with possibilities ("what ifs").

   c. Unrepresentative examples can mislead by treating atypical instances as the norm.

6. Testimony uses the words of others to support a claim.

   a. Lay testimony comes from ordinary people describing their experience.

   b. Expert testimony comes from people with special credentials on a topic.

   c. Celebrity testimony comes from famous people whose experience and expertise may be dubious.

7. Narrative coherence (logical plot, believable characters) and fidelity (connection to audience values) form the basis of compelling stories.

8. Research is the process of gathering, evaluating, and using information from external sources to answer questions or solve problems.

9. Research is necessary to bolster personal credibility, and properly crediting sources avoids plagiarism.

10. Sources must be evaluated for authority, bias, and currency. Only sources that meet all three criteria are reliable.

11. Peer-reviewed (refereed) sources of information are useful because their contents have been evaluated by experts in the field before publication.

12. Use many different types of sources (books, periodicals, web sites, etc.) to get the best range of background and support.

13. Your research will yield better results if you construct a list of synonyms for key terms and then search using strategies such as Boolean operators and truncation.

Apply Your Knowledge

SL = Activities appropriate for service learning

⌨ = Computer activities focusing on research and information management

🎬 = Activities involving film or television

🎵 = Activities involving music

1. ⌨ Select a potential speech topic and develop a list of keywords and phrases that might generate further information on that topic. Select your library's online databases or conduct an Internet search for this concept. Use truncation and Boolean operators to generate as many potential sources of information as possible. List your findings by citing them in one of the standard citation formats listed in this chapter. After compiling your list of potential sources, compare it with the results of other students. Why did some students get more usable results than others? Which strategies seemed to work best on particular topics?

2. Select an editorial or a letter to the editor that appears in your local newspaper. Identify all the types of supporting material (facts, statistics, testimony, examples, narratives) the author uses. Next, evaluate the quality of that supporting material. How well does each type of supporting material work to make the author's point? Finally, rewrite the letter or article using one or more types of supporting material effectively.

3. 🎬 Usually we tune out the advertisements on television, but here you should carefully watch all the advertisements aired during your favorite television program (or, if you prefer, while listening to commercial radio). What types of supporting material does each advertisement use? Why do you think the sponsor chose to use that type of supporting material? What other types of supporting material might make the sponsor's point more effectively?

4. SL In consultation with your community partner, identify a key issue that the organization faces in attempting to serve the community. Use the research techniques explained in this chapter to generate an annotated bibliography about the issue. Fully cite each source of reliable information you find. Beneath the citation for each source, describe in a brief paragraph what it tells you and the community partner about the issue. Present your complete annotated bibliography to the community partner to use as an information resource.

5. ⌨ Select at least three different web sites or blogs to visit. Examine the sites thoroughly and evaluate them for authority, bias, and currency. Which of the sites offers the best quality of information overall and why?

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