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The Information Literacy User's Guide: A Remixed Open, Online Textbook

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THE COLLEGE OF NEW ROCHELLE

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A REMIXED Open, Online Textbook

Edited by Alexandra Fernandes Hall

Remixing Authors: Lusiella Fazzino, Michael Kahn, Marie Octobre, Natalia Sucre, Julie Turley

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About the Remixing Authors

Lusiella Fazzino is Assistant Professor and Scholarly Communications Librarian at The College of New Rochelle Gill Library. She holds a JD from Suffolk University Law School, a MLIS from Simmons College. She has developed DigitalCommons@CNR, CNR's digital repository. Concerned with open educational resources, open access, licensing and copyright, she advises and educates the CNR community on these issues. She has been the recipient of several professional grants: Computer Services Special Interest Section (CS-SIS), American Association for Law Libraries (AALL) 2015, Southern New England Law Librarians Association (SNELLA) 2015, New Jersey Law Librarians Association (NJLLA) 2014 and the Law Librarians of New England (LLNE) 2014. She has remixed Chapter 6: Present.

Alexandra Fernandes Hall is the Digitization and Technical Services Manager at The College of New Rochelle Gill Library. She holds a Master of Science in Library and Information Science from the State University of New York at Buffalo. She supports all aspects of DigitalCommons@CNR . She has edited the CNR *remixed* version of the Information Literacy User's Guide.

Michael Kahn is the Learning Commons Librarian at The College of New Rochelle's Brooklyn Campus where he presently teaches multiple sections of Research and Information Literacy, a stand-alone credit bearing course required of all students. Prior to that, he taught information literacy as an Assistant Professor, Information Literacy at ASA College where he also chaired the LIB100 Curriculum Committee. Michael shared what he has learned from his many years of experience teaching information literacy as a panel member at the ACRL's most recent conference in 2015. He has remixed Chapter 2: Plan.

Marie M. Octobre is an Associate Professor/Reference Librarian at The College of New Rochelle (CNR), Gill Library Brooklyn Campus. She received her BA and MLS degrees from St. John's University in New York. She has taught the Research Information Literacy course at CNR for several years. Marie is also a member of the Information Literacy Committee at CNR. She has remixed Chapter 5: Manage.

Natalia Sucre is the Learning Commons Librarian for The College of New Rochelle's DC 37 campus. She earned her M.L.S. from Queens College, CUNY and her Ph.D. in Comparative Literature from Yale University. Before coming to The College of New Rochelle, she gained broad experience in liberal arts education while working as a reference and instruction librarian at Hofstra University and CUNY colleges and as a writing, Spanish language, and literature instructor in the CUNY system, Rutgers University, and Luther College (Iowa). She has published papers and given talks on Latin American 20th Century literature. Currently involved in community-based urban agriculture projects in Brooklyn, she is a member of ALA's Sustainability Round Table. She has remixed Chapter 3: Gather.

Julie Turley is the Learning Commons Librarian at The College of New Rochelle's Harlem Campus where she teaches a credit-bearing research and information literacy course. Previously, she was a reference-and-instruction librarian in the City University of New York system. She has a chapter on the rock band Motley Crue in the ABC-CLIO encyclopedia The 100 Greatest Bands of All Time (2015) and has just co-authored a scholarly article arguing for the inclusion of "rock 'n' recovery" memoirs in academic libraries. She has remixed Chapter 4: Evaluate.

Table of Contents

1

Identify

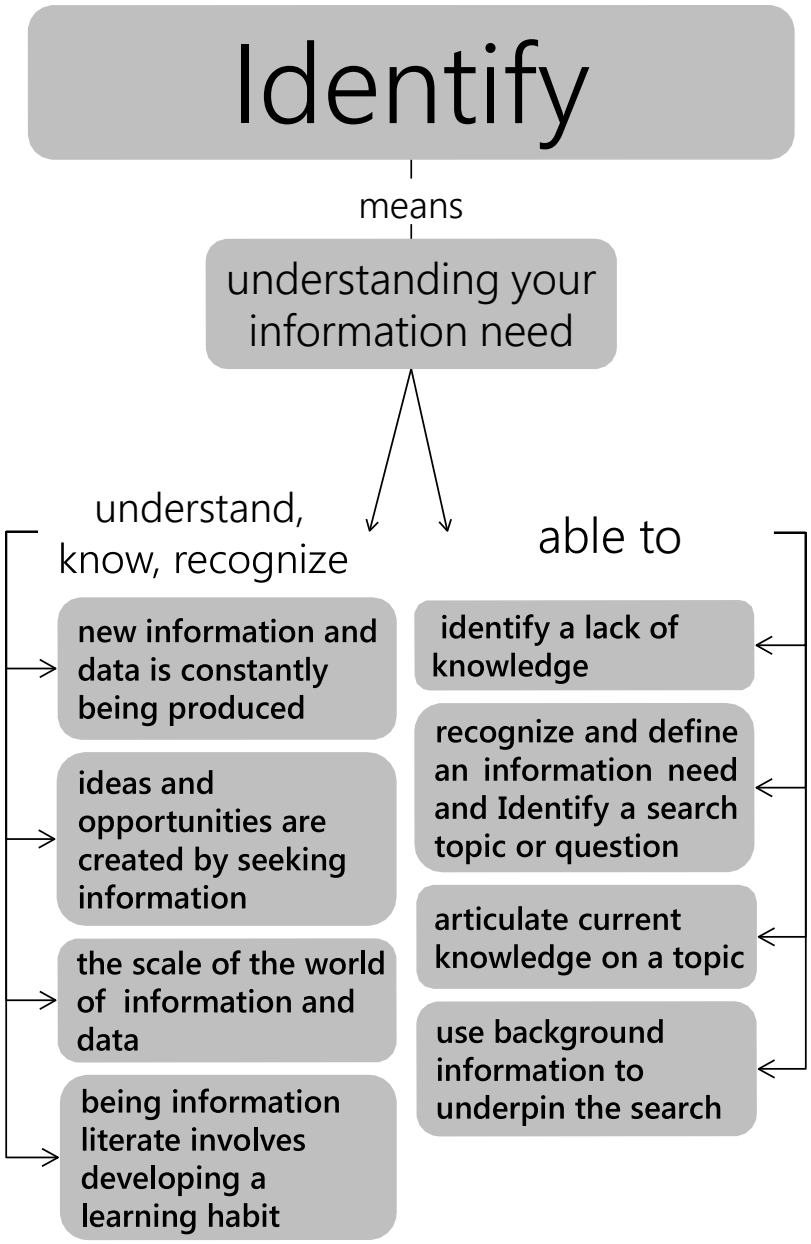
In this chapter, you will learn about the first pillar of information literacy. While the pillars are normally presented in a certain order, it is important to remember that they are not intended to be a step-by-step guide to be followed in a strict order. In most research projects, you will find that you move back and forth between the different pillars as you discover more information and come up with more questions about your topic. In this chapter you will learn how to identify your information need so that you can begin your research, but it is likely that you will also revisit some of the ideas in this chapter to make sure you are actually meeting that need with your research findings.

A person proficient in the Identify pillar is expected to be able to identify a personal need for information. They understand

- That new information and data is constantly being produced and that there is always more to learn
- That being information literate involves developing a learning habit so that new information is being actively sought all the time
- That ideas and opportunities are created by investigating/seeking information
- The scale of the world of published and unpublished information and data

They are able to

- Identify a lack of knowledge in a subject area
- Identify a search topic/question and define it using simple terminology
- Articulate current knowledge on a topic
- Recognize a need for information and data to achieve a specific end and define limits to the information need
- Use background information to underpin the search
- Take personal responsibility for an information search
- Manage time effectively to complete a search



Proficiencies in the Identify pillar

Scenario

Norm Allknow was having trouble. He had been using computers since he was five years old and thought he knew all there was to know about them. So, when he was given an assignment to write about the impact of the Internet on society, he thought it would be a breeze. He would just write what he knew, and in no time the paper would be finished. In fact, Norm thought the paper would probably be much longer than the required ten pages. He spent a few minutes imagining how impressed his teacher was going to be, and then sat down to start writing.

He wrote about how the Internet had helped him to play online games with his friends, and to keep in touch with distant relatives, and even to do some homework once in a while. Soon he leaned back in his chair and looked over what he had written. It was just half a page long and he was out of ideas.

Identifying a Personal Need for Information

One of the first things you need to do when beginning any information-based project is to identify your personal need for information. This may seem obvious, but it is something many of us take for granted. We may mistakenly assume, as Norm did in the above example that we already know enough to proceed. Such an assumption can lead us to waste valuable time working with incomplete or outdated information. Information literacy addresses a number of abilities and concepts that can help us to determine exactly what our information needs are in various circumstances. These are discussed below, and are followed by exercises to help develop your fluency in this area.

Understanding the Context of an Information Need

When you realize that you have an information need, it may be because you thought you knew more than you actually do, or it may be that there is simply new information you were not aware of. One of the most important things you can do when starting to research a topic is to scan the existing information landscape to find out what is already out there. We'll get into more specific strategies for accessing different types of information later in the book, particularly in the Gather chapter, but for now it pays to think more broadly about the information environment in which you are operating.

For instance, any topic you need information about is constantly evolving as new information is added to what is known about the topic. Trained experts, informed amateurs, and opinionated laypeople are publishing in traditional and emerging formats; there is always something new to find out. The scale of information available varies according to topic, but in general it's safe to say that there is more information accessible now than ever before.

Due to the extensive amount of information available, part of becoming more information literate is developing habits of mind and of practice that enable you to continually seek

new information and to adapt your understanding of topics according to what you find. Because of the widely varying quality of new information, evaluation is also a key element of information literacy, and will be addressed in the Evaluate chapter of this book.

Finally, while you are busy searching for information on your current topic, be sure to keep your mind open for new avenues or angles of research that you haven't yet considered. Often the information you found for your initial need will turn out to be the pathway to a rich vein of information that can serve as raw material for many subsequent projects.

When you understand the information environment where your information need is situated, you can begin to define the topic more clearly and you can begin to understand where your research fits in with related work that precedes it. Your information literacy skills will develop against this changing background as you use the same underlying principles to do research on a variety of topics.

From Information Need to Research Question

Norm was abruptly confronted by his lack of knowledge when he realized that he had nothing left to say on his topic after writing half a page. Now that he is aware of that shortcoming, he can take steps to rectify it.

Your own lack of knowledge may become apparent in other ways. When reading an article or textbook, you may notice that something the author refers to is completely new to you. You might realize while out walking that you can't identify any of the trees around your house. You may be assigned a topic you have never heard of.

Exercise 1: Identifying What You Don't Know

Wherever you are, look around you. Find one thing in your immediate field of view that you can't explain.

What is it that you don't understand about that thing?

What is it that you need to find out so that you can understand it?

How can you express what you need to find out?

For example: You can't explain why your coat repels water. You know that it's plastic, and that it's designed to repel water, but can't explain why this happens. You need to find out what kind of plastic the coat is made of and the chemistry or physics of that plastic and of water that makes the water run off instead of soaking through. (The terminology in your first explanation would get more specific once you did some research.)

All of us lack knowledge in countless areas, but this isn't a bad thing. Once we step back and acknowledge that we don't know something, it opens up the possibility that we can find out all sorts of interesting things, and that's when the searching begins.

Taking your lack of knowledge and turning it into a search topic or research question starts with being able to state what your lack of knowledge is. Part of this involves stating what you already know. It's rare that you'll start a search from absolute zero. Most of the time, you'll at least have heard something about a topic, even if it is just a brief reference in a lecture or reading. Taking stock of what you already know can help you to identify any erroneous assumptions you might be making based on incomplete or biased information. If you think you know something, make sure you find at least a couple of reliable sources to confirm that knowledge before taking it for granted. Use the following exercise to see if there is anything that needs to be supported with background research before proceeding.

Exercise 2: Taking Stock of What You Already Know

As discussed above, part of identifying your own information need is giving yourself credit for what you already know about your topic. Construct a chart using the following format to list whatever you already know about the topic:

Name your topic at the top.

In the first column, list what you know about your topic.

In the second column, briefly explain how you know this (heard it from the professor, read it in the textbook, saw it on a blog, etc.).

In the last column, rate your confidence in that knowledge. Are you 100% sure of this bit of knowledge, or did you just hear it somewhere and assume it was right?

When you've looked at everything you think you know about the topic and why, step back and look at the chart as a whole. How much do you know about the topic, and how confident are you about it? You may be surprised at how little or how much you already know, but either way you will be aware of your own background on the topic. This self-awareness is key to becoming more information literate.

This exercise gives you a simple way to gauge your starting point, and may help you identify specific gaps in your knowledge of your topic that you will need to fill as you proceed with your research. It can also be useful to revisit the chart as you work on your project to see how far you've progressed, as well as to double check that you haven't forgotten an area of weakness.

What do you know?	How do you know it?	How confident are you in this knowledge?

Once you've clearly stated what you do know, it should be easier to state what you don't know. Keep in mind that you are not attempting to state *everything* you don't know. You are only stating what you don't know in terms of your current information need. This is where you define the limits of what you are searching for. These limits enable you to meet both size requirements and time deadlines for a project. If you state them clearly, they can help to keep you on track as you proceed with your research.

One useful way to keep your research on track is with a "KWHL" chart. This type of chart enables you to state both what you know and what you want to know, as well as providing space where you can track your planning, searching and evaluation progress. For now, just fill out the first column, but start thinking about the gaps in your knowledge and how they might inform your research questions. You will learn more about developing these questions and the research activities that follow from them as you work through this book.

What do you already Know about your topic?	What do you Want to know about your topic?	How will you find information on your topic?	What have you Learned about your topic?

Defining a research question can be more difficult than it seems. Your initial questions may be too broad or too narrow. You may not be familiar with specialized terminology used in the field you are researching. You may not know if your question is worth investigating at all.

These problems can often be solved by a preliminary investigation of existing published information on the topic. As previously discussed, gaining a general understanding of the information environment helps you to situate your information need in the relevant context and can also make you aware of possible alternative directions for your research. On a more practical note, however, reading through some of the existing information can also provide you with commonly used terminology, which you can then use to state your own research question, as well as in searches for additional information. Don't try to reinvent the wheel, but rely on the experts who have laid the groundwork for you to build upon.

Once you have identified your own lack of knowledge, investigated the existing information on the topic, and set some limits on your research based on your current information need, write out your research question or state your thesis. The next exercise will help you transform the question you have into an actual thesis statement. You'll find that it's not uncommon to revise your question or thesis statement several times in the course of a research project. As you become more and more knowledgeable about the topic, you will be able to state your ideas more clearly and precisely, until they almost perfectly reflect the information you have found.

Exercise 3: Research Question/Thesis Statement/Search Terms

Since this chapter is all about determining and expressing your information need, let's follow up on thinking about that with a practical exercise. Follow these steps to get a better grasp of exactly what you are trying to find out, and to identify some initial search terms to get you started.

1. **Whatever project you are currently working on, there should be some question you are trying to answer. Write your current version of that question here.**
2. **Now write your proposed answer to your question. This may be the first draft of your thesis statement which you will attempt to support with your research, or in some cases, the first draft of a hypothesis that you will go on to test experimentally. It doesn't have to be perfect at this point, but based on your current understanding of your topic and what you expect or hope to find is the answer to the question you asked.**
3. **Look at your question and your thesis/hypothesis, and make a list of the terms common to both lists (excluding "the", "and", "a", etc.). These common terms are likely the important concepts that you will need to research to support your thesis/hypothesis. They may be the most useful search terms overall or they may only be a starting point.**

If none of the terms from your question and thesis/hypothesis lists overlap at all, you might want to take a closer look and see if your thesis/hypothesis really answers your research question. If not, you may have arrived at your first opportunity for revision. Does your question really ask what you're trying to find out? Does your proposed answer really answer that question? You may find that you need to change one or both, or to add something to one or both to really get at what you're interested in. This is part of the process, and you will likely discover that as you gather more information about your topic, you will find other ways that you want to change your question or thesis to align with the facts, even if they are different from what you hoped.

A Wider View

While the identification of an information need is presented in this chapter as the first step in the research process, many times the information need you initially identified will change as you discover new information and connections. Other chapters in this book deal with finding, evaluating, and managing information in a variety of ways and formats. As you become more skilled in using different information resources, you will likely find that the line between the various information literacy skills becomes increasingly blurred, and that you will revisit your initial ideas about your topic in response to both the information you're finding and what you're doing with that information.

Continually think about your relationship to the information you find. Why are you doing things the way you are? Is it really the best way for your current situation? What other options are there? Keeping an open mind about your use of information will help you to ensure that you take responsibility for the results of that use, and will help you to be more successful in any information-intensive endeavor.

2

Scope

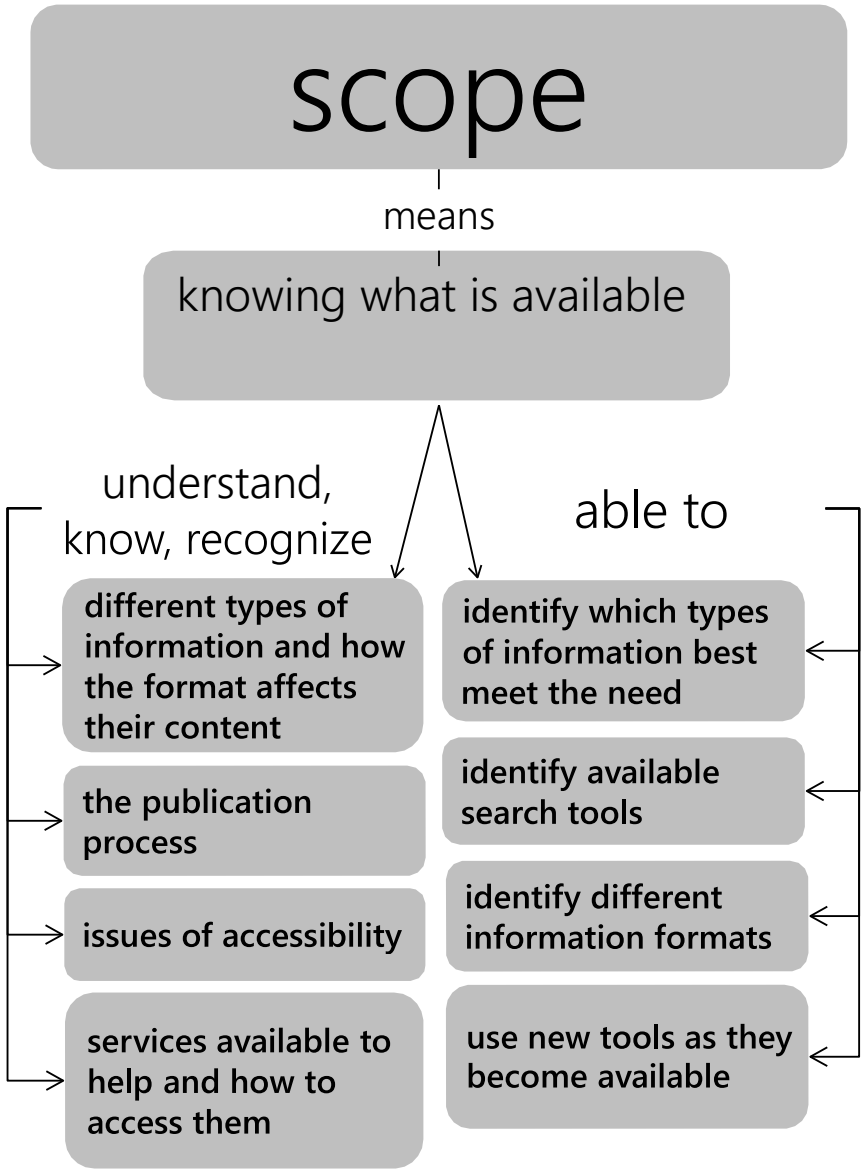
A person who is information literate in the Scope pillar is able to assess current knowledge and identify gaps.

The above statement is from the Seven Pillars of Information Literacy, the model of information literacy presented in the Introduction of this book. The following list, from the creators of the Seven Pillars model, provides more detail about the Scope pillar. Components include:

- "Know what you don't know" to identify any information gaps
- Identify which types of information will best meet the need
- Identify the available search tools, such as general and subject specific resources at different levels
- Identify different formats in which information may be provided
- Demonstrate the ability to use new tools as they become available

Additionally the information literate person in the Scope pillar understands

- What types of information are available
- The characteristics of the different types of information source available to them and how they may be affected by the format (digital, print)
- The publication process in terms of why individuals publish and the currency of information
- Issues of accessibility
- What services are available to help and how to access them



Proficiencies in the Scope pillar

Now let's examine these concepts.

Scenario

Pedro has lived in Bedford Stuyvesant, Brooklyn his entire life. Over the past few years he has seen a steep increase in the rent he pays for the apartment he lives in. From talking to friends and family members in his neighborhood, he has learned that they too are facing the challenge of trying to find the money necessary to pay for higher rent costs. In fact, some of his friends have even moved out of the neighborhood because they could no longer afford to continue living there anymore. After calling his city councilman's office to get a better understand of what is going on, Pedro has learned that his neighborhood is undergoing a transformative process called gentrification.

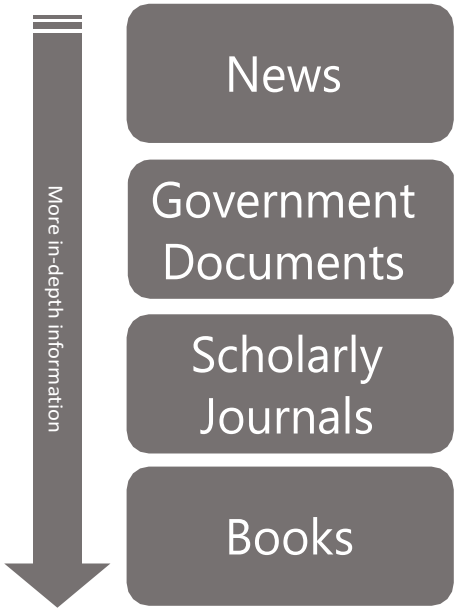
Pedro has heard that the mayor is holding a public hearing on the issue of gentrification. Deciding that he deserves to have his voice heard, Pedro has arranged with his place of employment to attend the hearing. He is hoping that he will be able to make a brief statement at the hearing that explains the impact gentrification is having on his neighborhood and suggest steps that could be taken to minimize these effects.

Pedro realizes that not everyone sees gentrification as problematic as he does. In fact, many real estate developers are very supportive of gentrification. If he is to make a strong case outlining the negative impact that can be produced by gentrification then he must get a greater understanding of both sides of the gentrification issue.

It is at this point that Pedro realizes that he doesn't know as much as he thinks about gentrification. He also realizes that he isn't even fully sure how to perform the research to get a better understand of the issue of gentrification. The fact that Pedro is aware that there are gaps in his knowledge about gentrification and how to go about conducting research is actually a good thing. You can't find the answers to questions if you don't have any questions! Information literacy skills will empower Pedro to find the information he is looking for and help him make a persuasive argument when he speaks at the mayor's hearing.

Different Information Formats and Their Characteristics

In addition to knowing that you are missing essential information, another component of information literacy is understanding that the information you seek may be available in different formats such as books, journal articles, government documents, blog postings, and news items. Each format has a unique value. The graphic below represents a common process of information dissemination. When an event happens, we usually hear about it from news sources—broadcast, web, and print. More in-depth exploration and analysis of the event often comes from government studies and scholarly journal articles. Deeper exploration, as well as an overview of much of the information available about the event, is often published in book format.



Information sources from less in-depth to more in-depth

Pedro realizes that he needs to obtain an overview of the entire gentrification debate. He also needs to determine how severe the impact of gentrification is on people who have lived all their lives in Bedford Stuyvesant and throughout New York City. Where can he find such an overview and how can he trust that the overview is accurate andcomplete?

Pedro believes that he can find this information online and uses Google to search the World Wide Web. He quickly finds that there is an overwhelming amount of online information about gentrification. His search has resulted in more than 4,000,000 sites. Pedro knows that he doesn't have to peruse all of these resources, but those that that he does examine do not provide a comprehensive overview of the issues. He also notices that many of the sites are obviously advocating their own point of view.

A better first step is to identify a library that contains academic resources so that Pedro will have access to more scholarly treatments of the subject. Pedro can use the College of New Rochelle's Gill Library catalog or Worldcat.org (that will allow him to search numerous academic libraries at once).

Library Catalogs

A library catalog is a database that contains all of the items located in a library as well as all of the items to which the library has access. It allows you to search for items by title, author, subject, and keyword. A keyword is a word that is found anywhere within the record of an item in the catalog. A catalog record displays information that is pertinent to one item, which could be a book, a journal, a government document, or a video or audio recording.

If you search by subject in an academic library catalog you can take advantage of the controlled vocabulary created by the Library of Congress. Controlled vocabulary consists of terms or phrases that have been selected to describe a concept. For example, the Library of Congress has selected the phrase "Motion Picture" to represent films and movies. So, if you are looking for books about movies, you would enter the phrase "Motion Picture" into the search box. Controlled vocabulary is important because it helps pull together all of the items about one topic. In this example, you would not have to conduct individual searches for movies, then motion pictures, then film; you could just search once for motion pictures and retrieve all the items on movies and film. You can discover subject terms in item catalog records.

Many libraries provide catalog discovery interfaces that provide cues to help refine a search. This makes it easier to find items on specific topics. Pedro can then click on any of these suggested refinements to focus his search. For example, Pedro wants to know about the impact of gentrification on rent costs. If Pedro were to enter the search term "rent" into a catalog with a discovery interface, the results page will include suggestions for refinements including "landlord and tenant" and "rental housing".

Searching the catalog for gentrification, Pedro finds several good resources on his topic and now he needs to locate them. The College of New Rochelle Gill Library catalog will provide a list of the campuses that own the book he wants to read. He can then link to the institution's own library catalog to find out more information on the location and status of the item.

Using this method, Pedro finds several good resources on his topic. The College of New Rochelle Gill Library catalog will provide a list of the campuses that own the book he wants to read. He can then link to the institution's own library catalog to find out more information on the location and status of the item.

Why should Pedro choose books instead of another format? Books can provide an overview of a broad topic. Often, the author has gathered the information from multiple sources and created an easy to understand overview. Pedro can later look for corroborating evidence in government documents and journal articles. Books are a good information resource for this stage of his research.

Once Pedro starts to locate useful information resources, he realizes that there are further gaps in his knowledge. How does he decide which books to use? He needs the most current information, because he certainly doesn't want to get caught spouting outdated information. Looking at publication date will help him to choose the most recent items. Pedro notices that there are some books that The College of New Rochelle's Gill Library has but they aren't held by the library at the New Rochelle campus he attends. How can he get these books? Luckily, The College of New Rochelle's Gill Library provides a service called intercampus loan. This allows the library to send a book from one campus to another. Pedro is a student at The College of New Rochelle's Brooklyn campus. Using intercampus loan, Pedro is able to request a book held by The College of New Rochelle's Rosa Parks campus to be sent to the Brooklyn campus. A librarian at The College of New Rochelle's Gill Library shows Pedro how to submit an intercampus loan requests. This saves Pedro the need to travel to the Rosa Parks campus to borrow and return the book.

There are also books that Pedro wants to read that the college doesn't hold. These books are held by other colleges or public libraries. Luckily, the college library can borrow those books from another library on his behalf. When a library borrows a book from another library on a library patron's behalf, it is called interlibrary loan. The college library provides this service too. A librarian at The College of New Rochelle's Gill Library shows Pedro how to submit an interlibrary loan request. By submitting an interlibrary loan request through the college's library catalog Pedro is able to have the books he is interested in delivered to the Gill Library at CNR from another college or a public library. He can then check out and return the book to Gill Library at CNR.

Checking for Further Knowledge Gaps

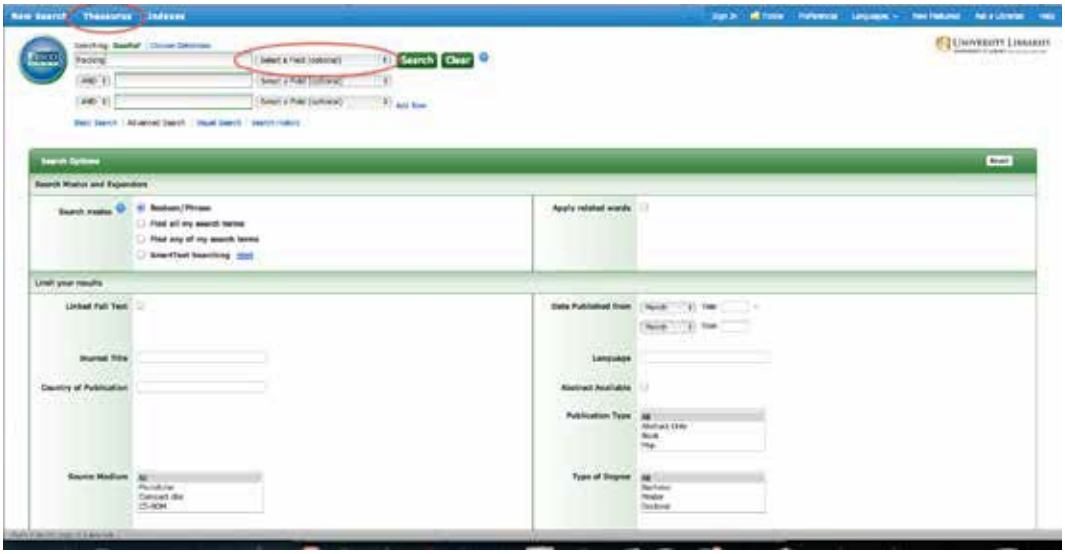
Pedro has had a chance to review the books that he chose and although his understanding of the issues associated with gentrification have improved, he still needs more specific information from the point of view of the real estate industry, the government, and grass roots civil rights movements within the community. Pedro knows that if he doesn't investigate all points of view, he will not be able to speak intelligently about the issues involved in the gentrification debate. Where will he get this information? Because this information should be as current as possible, much of it will not be available in book format. Pedro will need to look for scholarly journal articles and government documents. It is not likely that the public library will have the depth and scope of information that Pedro now needs. Fortunately, Pedro is a college student and is able to use the resources at his college's academic library. However, when Pedro visits the library, he finds that the amount of information available is overwhelming. There are many databases that will help Pedro find journal articles on almost any topic. There are also many kinds of government information, some in article format, some as documents, and some as published rules and regulations. Pedro suddenly feels out of his element and doesn't have any idea of where to start his research.

Databases

Pedro should start his search for journal articles with research databases. Research databases contain records of journal articles, documents, book chapters, and other resources. Online library catalogs differ from other research databases in that they contain only the items available through a particular library or library system. Research databases are often either broad or comprehensive collections and are not tied to the physical items available at any one library. Many databases provide the full-text of articles and can be searched by subject, author, or title. Another type of database provides just the information about articles and may provide tools for you to find the full text in another database. The databases that contain resources for a vast array of subjects are referred to as general or multidisciplinary databases. Other databases are devoted to a single subject, and are known as subject-specific databases. Databases are made up of:

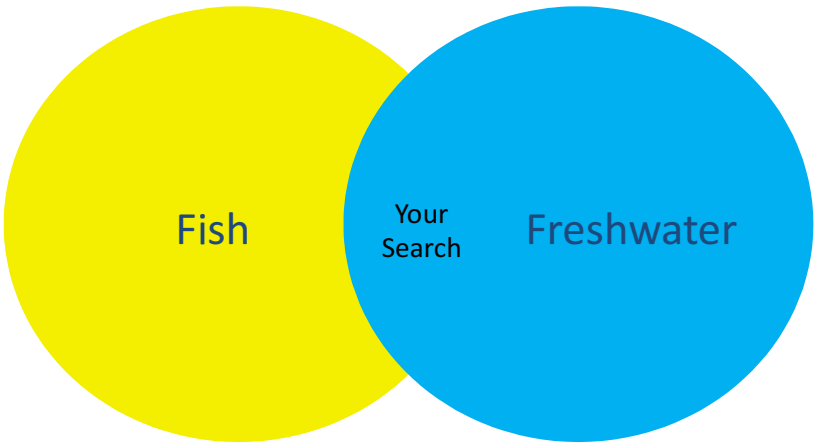
- Records: A record contains descriptive information that is pertinent to one item which may be a book, a chapter, an article, a document, or other information unit.
- Fields: These are part of the record and they contain information that pertains to one aspect of an item such as the title, author, publication date, and subject.
- The subject field can sometimes be labeled subject heading or descriptor. This is the field that contains controlled vocabulary. Controlled vocabulary in a database is similar to controlled vocabulary in a Library Catalog, but each database usually has a unique controlled vocabulary unrelated to Library of Congress classifications. Many databases will make their controlled vocabulary available in a thesaurus. If the database you are searching does not have a thesaurus, use the subject field in a record to find relevant subject terms.

Below is the first screen of a general database called EBSCO Academic Search Complete. This database provides general scholarly journal articles on a wide range of issues. The thesaurus is circled. Clicking on the thesaurus allows you to find controlled vocabulary that will focus your search. In this search, Pedro has typed the word "gentrification" in the search box he retrieved 1,899 records. When Pedro uses the controlled vocabulary phrase "urban renewal" he is able to increase his search results. In fact, he has retrieved too many records. Now she wants to limit his search, but he still wants to obtain the most relevant articles available.



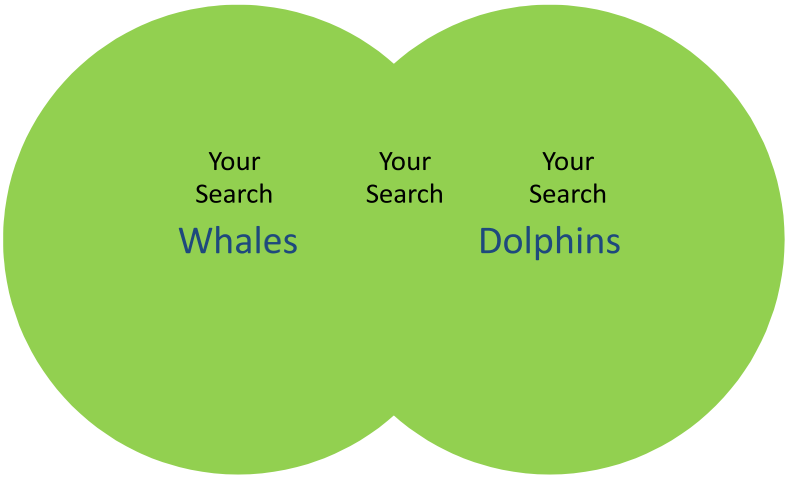
Boolean Operators

One way to limit a database search is to use Boolean operators; words you can add to a search to narrow or broaden your search results. They are *and*, *or*, and *not*. You can usually find these words in the advanced search query area of a database. *And* will narrow your search. For example, if you are interested in fresh water fishing you would enter the terms "*fish and freshwater*." Your results would then include records that only contained both of these words.



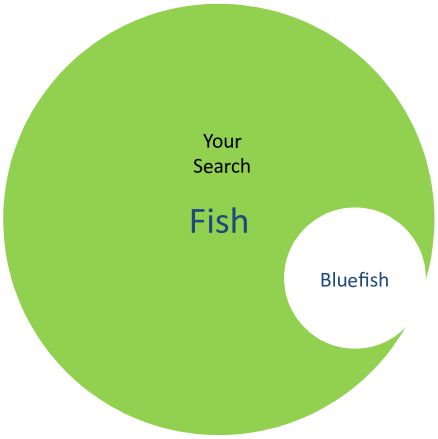
The green overlapping area in the diagram above represents the results from the "*fish and freshwater*" search.

Or will broaden your search and is usually used with synonyms. If you are interested in finding information on mammals found in the Atlantic Ocean, you could enter the terms "*whales or dolphins*".



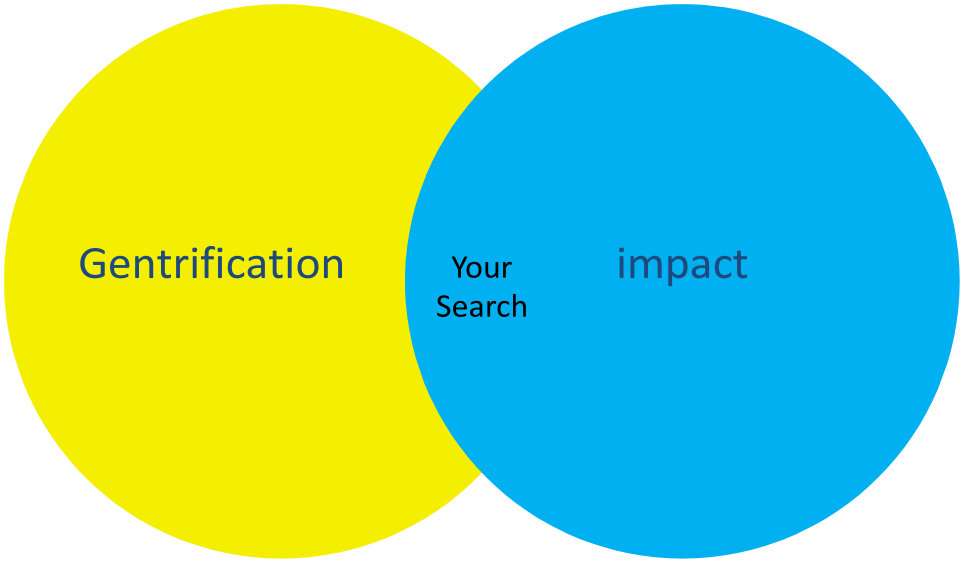
The circles above represent the *or* search. All of the records that contain one or another, or both of your search terms will be in your results list.

Not will eliminate a term from your results. If you were looking for information on all Atlantic Ocean fish except Bluefish, you would enter "*fish not bluefish*."



The larger green circle represents the results that you would retrieve with this search.

Let's go back to Pedro's search of the Academic Search Complete database. If you remember, he searched the controlled vocabulary term, "gentrification" Since Pedro wants to know more about the impact of gentrification, he can use *and* with the word "impact" to focus and limit his results. Pedro's search query is now "*gentrification AND impact*." You can see this represented below. The overlapping area represents the records this search will retrieve.



More information on Boolean Operators can be found in the Plan chapter.

Database searching can seem confusing at first, but the more you use databases, the easier it gets and most of the time, the results you are able to retrieve are superior to the results that you will get from a simple internet search.

Other Information Sources

After taking some time to think about his goal, which is to present a persuasive argument on why the negative impacts of gentrification are of significant concern to him and his community, Pedro is now ready to attend the mayor's public hearing on gentrification. But Pedro still has some more research to do. Since he is going to speak at a government hearing, Pedro decides to concentrate on obtaining relevant government information. After all, he hopes to become part of the government, so she should have some knowledge of the government's role in the issue of gentrification.

Government information consists of any information produced by local, state, national, or international governments and is usually available at no cost from the Federal, state, and local level. One example would be the website of the State of New York at http://www.ny.gov/. Since Pedro is attending a hearing being held by the mayor of New York City, he decides to search for information about gentrification at http://www1.nyc.gov/, the official website of the City of New York. As Pedro discovers, by searching the official website of the City of New York he actually finds a wealth of

reliable and free information from a reliable government source that relates to gentrification in New York City.

Pedro breathes a sigh of relief when he finds articles on New York City's website that address the impact of gentrification on city residents. Helpful as always, the reference librarian continues to assist Pedro to find the most useful information as he navigates through the city's website and print and electronic government related information sources held by the library. Since much of this information is freely available to the public, Pedro is able to access the site from home and spends many hours reading the documents.

Conclusion

Pedro has demonstrated that he is competent in the Scope information literacy pillar. He was able to determine that there were gaps in her knowledge and she formulated a plan to locate information to close those gaps. Pedro became aware that information was available in many different formats and he was able to choose the formats that were most relevant to his needs: books and government information. In addition, he was able to navigate a complex information environment—the websites of New York State and New York City -to identify the information that was most useful for his purpose. He did encounter some barriers:

- The information he found using Google was not useful because there was too much and it was biased.
- He had to determine which information formats would best serve her needs.
- His public library didn't always have the required information.
- He was overwhelmed by the resources available at the academic library.

Pedro was able to overcome all of these common research pitfalls. Consulting a reference librarian was a good way for him to obtain information that she might otherwise have not thought to use.

Exercise: Searching in Databases

1. **Search both the Gill Library catalog and Worldcat.org to identify possible books about Pedro's topic,** gentrification**. Choose a few resources based on information provided in catalog record and explain why these resources will help Pedro solve his knowledge gap.**
2. **Using The College of New Rochelle's online catalog, identify two online resources on one specific topic. Compare these resources in terms of content and currency. Which resource would be most useful for obtaining an in depth understanding of the topic? Which would be more useful for gaining a broad overview of the topic? If you are unsure about how to find and search The College of New Rochelle's Gill Library catalog, please read the relevant parts of the next chapter before attempting this exercise.**

3. In 2003 the United States invaded Iraq in part based on the argument that Iraq possessed weapons of mass destruction. Use a newspaper database that The College of New Rochelle's Gill Library holds, such as Newspaper Source to find a newspaper article written during 2011 that address the question of whether or not Iraq was in possession of weapons of mass destruction. You can use the database limiters to limit results by year. Then read an article addressing this topic that was written in 2016. Compare the information we had in 2001 with the information that we now have on that issue. Again, you can use the database limiters to limit results by year. What are some differences you may have found between the two articles? What are some possible information sources that would provide the missing information from the early reports? If you are unsure about how to find and search a database, please read the relevant parts of the next chapter before attempting this exercise.

3

Plan

Scenario

Lisa's Science and Human Values professor just assigned the course project and Lisa is delighted that it isn't the typical research paper. Rather, it involves writing a Wikipedia article to help readers understand a topic. It will certainly help Lisa get a grasp on the topic herself! Learning by attempting to teach others, she agrees, might be a good idea. The professor wants the Wikipedia article to be written for people who are interested in the topic and with backgrounds similar to the students in the course. Sarah likes that a target audience is defined, and since she has a good idea of what her friends might understand and what they would need more help with, she thinks it will be easier to know what to include in her Wikipedia article. Well, at least easier than writing a paper for an expert like her professor.

An interesting feature of this course is that the professor has formed the students into teams. Lisa wasn't sure she liked this idea at the beginning, but it seems to be working out okay. Lisa and her group members all love Facebook and have Facebook pages. But some of the members of the group have children and they have noticed how their children often spend a large amount of time on their Facebook pages. In fact, George, a member of the group, has noticed that the longer his daughter Shanice spends on Facebook, the lonelier she seems to be. Some members of the group can't understand how Facebook could make someone lonely. After all, you can have so many friends on Facebook! The group debates this topic for a while until another group member, Dashon turns to the group and says, "Why don't we see if any research has been done on this topic? In fact, why don't we devote our project to issue of Facebook and loneliness!" While the group likes the topic, Lisa's teammate, Chris, seems concerned and asks, "Isn't that an awfully big topic?" The team checks with the professor, who agrees they would be taking on far more than they could successfully explain on their webpage. Their professor points out that researchers have actually looked into the relationship between Facebook and loneliness. He suggests they develop a draft thesis statement to help them focus, and after several false starts, they come up with:

Does Facebook usage increase or decrease feelings of loneliness among users?

They decide this sounds more manageable. Because Sarah doesn't feel comfortable on the technical aspects of setting up the webpage, she offers to start locating resources that will help them to develop the page's content.

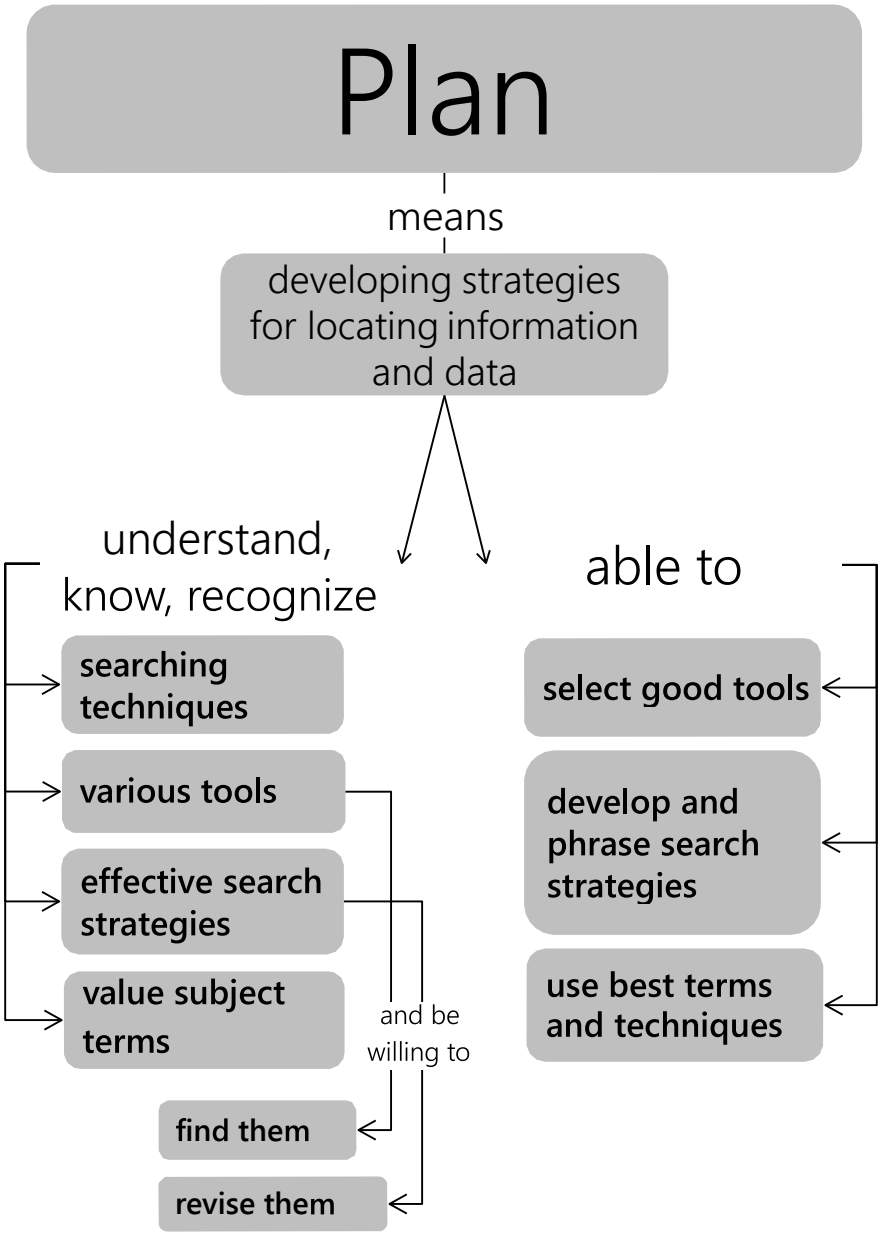
Before we learn more about what happens with Sarah and her team, let's look at the components of the Plan pillar. The overall ability is: "Can construct strategies for locating information and data." That is a fairly short sentence, but a great deal is packed into it. It includes

- Understanding a range of searching techniques
- Understanding the various tools and how they differ
- Knowing how to create effective search strategies
- Being open to searching out the most appropriate tools
- Understanding that revising your search as you proceed is important
- Recognizing that subject terms are of value

And these are just the items to understand! There are also the things you need to be able to do:

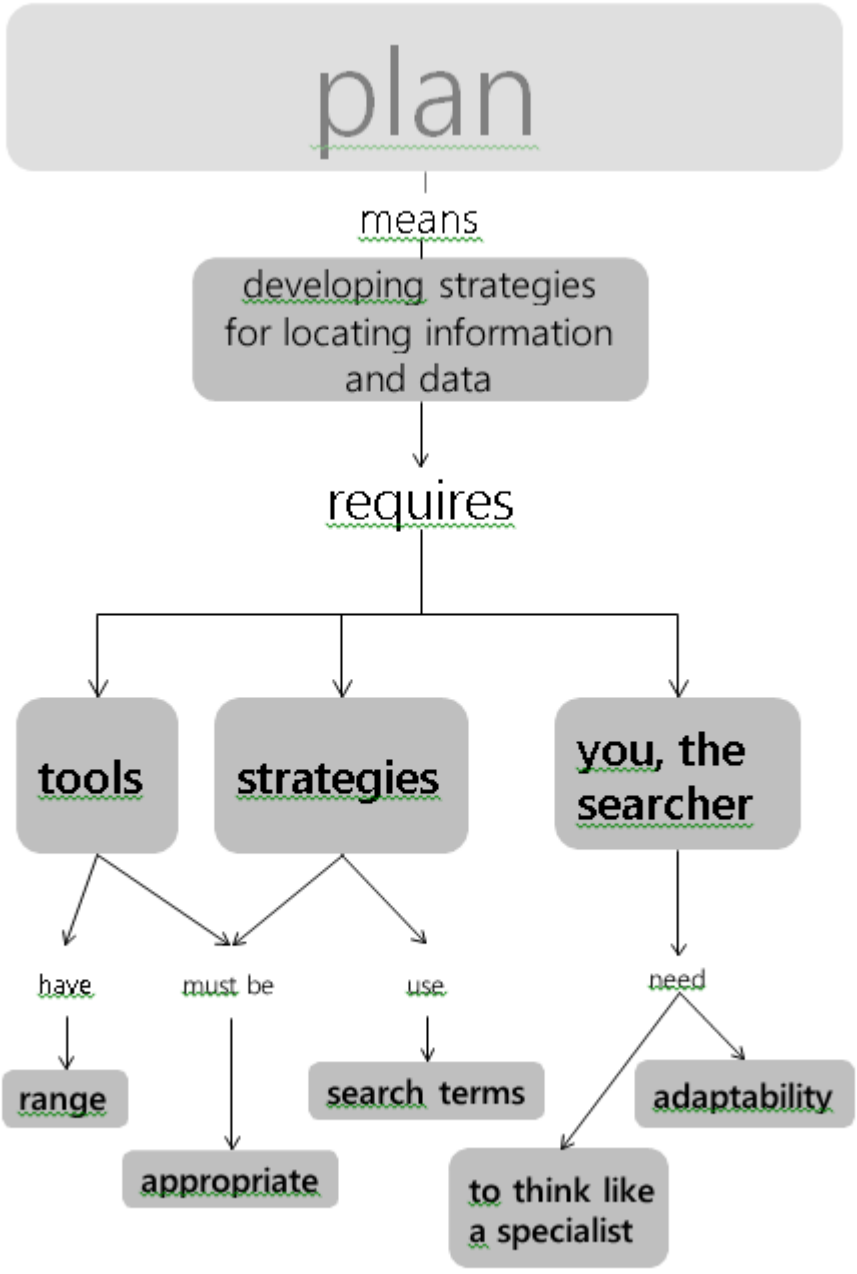
- Clearly phrase your search question.
- Develop an appropriate search strategy, using key techniques.
- Selecting good search tools, including specialized ones.
- Use the terms and techniques that are best suited to your search.

Here is a visual representation of these components:



Proficiencies in the Plan pillar

Now, take a look at the essence of these items condensed into another concept map:



Proficiencies in the Plan pillar simplified

The second concept map is simplified. The focus is on the key elements: the tools and strategies that you use and the mindset that will help you as you plan your research. This may seem a bit daunting, so let's see how Lisa tackles the project. She sometimes falters, but that happens even to experienced researchers. As you read through Lisa's quest for good information, think about the range and appropriateness of the strategies she uses. What would you do differently? What approaches seem to be good ones? (While there is some mention of particular research tools and resources in this chapter, they will be discussed in depth in the Gather chapter.)

As you read about Lisa's quest for information, and reflect on your own information searches in the past, remember particularly the bullet within the Plan pillar that emphasizes the need to revise your search as you work. It is very important to do this, and to build time into the process so that you are able to revise. As you learn more about your topic, or the terms used in conjunction with its concepts, or key scholars in the field, it is only natural that you will need to shift focus, and, perhaps, change course. This is a natural part of the research process and indicates that your efforts are bearing fruit. Let's return to Lisa…

The next time the class meets, Lisa tells her teammates what she has done so far:

"I thought I'd start with some scholarly sources, since they should be helpful, right? I put a search into the online catalog for the library, but nothing came up! The library should have books on this topic, shouldn't it? I typed the search in exactly as we have it in our thesis statement. That was so frustrating. Since that didn't work, I tried Google, and put in the search. I got over 3 million results, but when I looked over the ones on the first page, they didn't seem very useful. Some of the websites I found do discuss college stress but don't mention the role diet plays. For example, one website discusses how exercise can help one cope with college stress. I did find some websites that do mention that diet has an impact on college stress but don't provide in-depth information about what types of diets best help reduce college stress. Instead, the information on the websites are too general to be used for a college assignment. Our group is supposed to use scholarly sources written by researchers and professors. The websites I found don't provide much information about who wrote the information they provide. The results all seem to have the words I typed highlighted, but most really weren't useful. I am sorry I don't have much to show you. Do you think we should change our topic?"

Alisha suggests that Lisa talk with a reference librarian. She mentions that The College of New Rochelle has librarians that are eager to show students how to find the information they need to find for their college assignments and Life Arts Projects (LAPs). She even says a librarian came to talk to another of her classes about doing research, and it was really helpful. The librarian also explained that when students come to a librarian for help they aren't "bothering" the librarian. Just the opposite! The librarian actually said he enjoys helping students perform research as it is his job to do so. The librarian isn't there to write your paper. But the librarian is there to help you! Alisha thinks that maybe Sarah shouldn't have entered the entire thesis statement as the search, and maybe she should have tried databases to find articles. The team decides to brainstorm all the search tools and resources they can think of.

Here's what they came up with:

Search Tools and Resources
Wikipedia
Professor
Google search
JSTOR database

Based on your experience, do you see anything you would add?

Lisa and her team think that their list is pretty good. They decide to take it further and list the advantages and limitations of each search tool, at least as far as they can determine.

Search Tools and Resources		
Search Tool	Advantages	Limitations
Wikipedia	**Easy access, list of references**	**Professors don't seem to like it, possibly misinformation**
Professor	**The expert!**	**Not sure we can get to office hours; we want to appear self-directed**
Google search	**Lots of results**	**We need a better search term**
JSTOR database	**Authoritative, scholarly articles**	**None that we know of**

Alisha suggests that Lisa should show the worksheet to a librarian and volunteers to go with her. The librarian, Mr. Harrison, says they have made a really good start, but he can fill them in on some other search strategies that will help them to focus on their topic. Would Sarah and Alisha like to learn more?

Let's step back from this case study again, and think about the elements that someone doing research should plan before starting to enter search terms in Google, Wikipedia, or even a scholarly database. There is some preparation you can do to make things go much more smoothly than they have for Lisa.

Self-Reflection

As you work through your own research quests, it is very important to be self-reflective. The first couple of items in this list have been considered in the Identify chapter:

- What do you really need to find?
- Do you need to learn more about the general subject before you can identify the focus of your search?
- How thoroughly did you develop your search strategy?
- Did you spend enough time finding the best tools to search?
- What is going really well, so well that you'll want to remember to do it in the future?

Another term for what you are doing is metacognition, or thinking about your thinking. Reflect on what Lisa is going through as you read this chapter. Does some of it sound familiar based on your own experiences? You may already know some of the strategies presented here. Do you do them the same way? How does it work? What pieces are new to you? When might you follow this advice? Don't just let the words flow over you, rather think carefully about the explanation of the process. You may disagree with some of what you read. If you do, follow though and test both methods to see which provides better results.

Selecting Search Tools

After you have thought the planning process through more thoroughly, start to think about where you can look for information. Part of planning to do research is determining which search tools will be the best ones to use. This applies whether you are doing scholarly research or trying to answer a question in your everyday life, such as what would be the best place to go on vacation. "Search tools" might be a bit misleading, since a person might be the source of the information you need. Or it might be a web search engine, a specialized database, an association—the possibilities are endless. Often people automatically search Google first, regardless of what they are looking for. Choosing the wrong search tool may just waste your time and provide only mediocre information, whereas other sources might provide really spot-on information and quickly, too. In some cases, a carefully constructed

search on Google, particularly using the advanced search option, will provide the necessary information, but other times it won't. This is true of all sources: make an informed choice about which ones to use for a specific need.

So, how do you identify search tools? Let's begin with a first-rate method. For academic research, talking with a librarian or your professor is a great start. They will direct you to those specialized tools that will provide access to what you need. If you ask a librarian for help, she or he may also show you some tips about searching in the resources. This chapter will cover some of the generic strategies that will work in many search tools, but a librarian can show you very specific ways to focus your search and retrieve the most useful items.

If neither your professor nor a librarian is available when you need help, check your school's library website to see what guidance is provided. There will often be subject-related guides, often called LibGuides, or lists of the best resources to assist researchers. There may be a directory of the databases the library subscribes to and the subjects they cover. Take advantage of the expertise of librarians by using such guides. Novice researchers usually don't think of looking for this type of help, and, as a consequence, often waste time.

The College of New Rochelle's Gill Library homepage can be found at http://library2.cnr.edu/

When you are looking for non-academic material, consider who cares about this type of information. Who works with it? Who produces it or help guides for it? Some sources are really obvious, and you are already using them—for example, if you need information about the weather in London three days from now, you might check Weather.com for London's forecast. You don't go to a library (in person or online), and you don't do a research database search. For other information you need, think the same way. Are you looking for anecdotal information on old railroads? Find out if there is an organization of railroad buffs. You can search on the web for this kind of information, or, if you know about and have access to it, you could check the Encyclopedia of Associations. This source provides entries for all U.S. membership organizations, which can quickly lead you to a potentially wonderful source of information. Librarians can point you to tools like these.

As you consider the information presented in this chapter, keep the scope of the information you are looking for in mind. In the previous chapter we examined the topic of identify in detail. The breadth and depth of the information you require will have an impact as you plan.

Consider Asking an Expert

Have you thought about using people, not just inanimate sources, as a way to obtain information? This might be particularly appropriate if you are working on an emerging topic or a topic with local connections. There are a variety of reasons that talking with someone will add to your research.

For personal interactions, there are other specific things you can do to obtain better results.

Do some background work on the topic before contacting the person you hope to interview. The more familiarity you have with your topic and its terminology, the easier it will be to ask focused questions. Focused questions are important if you want to get into the meat of what you need. Asking general questions because you think the specifics might be too detailed rarely leads to the best information. Acknowledge the time and effort someone is taking to answer your questions, but also realize that people who are passionate about subjects enjoy sharing what they know. Take the opportunity to ask experts about sources they would recommend.

Determining Search Concepts and Keywords

Once you've selected some good resources for your topic, and possibly talked with an expert, it is time to move on to identify words you will used to search for information on your topic in various databases and search engines. This is sometimes referred to as building a search query. When deciding what terms to use in a search, break down your topic into its main concepts. Don't enter an entire sentence, or a full question. Different databases and search engines process such queries in different ways, but many look for the entire phrase you enter as a complete unit, rather than the component words. While some will focus on just the important words, such as Lisa's Google search that you read about earlier in this chapter, the results are often still unsatisfactory. The best thing to do is to use the key concepts involved with your topic. In addition, think of synonyms or related terms for each concept. If you do this, you will have more flexibility when searching in case your first search term doesn't produce any or enough results. This may sound strange, since if you are looking for information using a Web search engine, you almost always get too many results. Databases, however, contain fewer items, and having alternative search terms may lead you to useful sources. Even in a search engine like Google, having terms you can combine thoughtfully will yield better results.

The following worksheet is an example of a process you can use to come up with search terms. It illustrates how you might think about the topic of violence in high schools. Notice that this exact phrase is not what will be used for the search. Rather, it is a starting point for identifying the terms that will eventually be used.

TOPIC: Violence in high school		
CONCEPTS:		
Violence	AND	High school
OR		OR
Bullying		Secondary school
OR		OR
Guns		Twelfth grade
OR		
knives		

Now, use a clean copy of the same worksheet to think about the topic Sarah's team is working on. How might you divide their topic into concepts and then search terms? Keep in mind that the number of concepts will depend on what you are searching for. And that the search terms may be synonyms or narrower terms. Occasionally, you may be searching for something very specific, and in those cases, you may need to use broader terms as well. Jot down your ideas then compare what you have written to the information on the second, completed worksheet and identify 3 differences.

TOPIC: The impact of Facebook use on loneliness among adolescents					
CONCEPTS:					SUBJECTS
Facebook	AND	loneliness	AND	adolescents	
OR		OR		OR	
_____		_____		_____	
OR		OR		OR	
_____		_____		_____	
				OR	
				_____	

Now compare your answers with those shown on the next page.

TOPIC: The impact of Facebook use on loneliness among adolescents						
CONCEPTS:						SUBJECTS
Facebook	AND	loneliness	AND	adolescents		
OR		OR		OR		
social media		lonely		adolescent		
OR		OR		OR		
online social networking		isolation		teenagers		
				OR		
				teens		

Boolean Operators

Once you have the concepts you want to search, you need to think about how you will enter them into the search box. Often, but not always, Boolean operators will help you. You may be familiar with Boolean operators. They provide a way to link terms.

We will start by capturing the idea of Facebook. Facebook is just one example of an online social networking site. We will use *Facebook and online social networking* as the first step in our sample search. You could do to two separate searches by typing one or the other of the terms into the search box of whatever tool you areusing:

Facebook

online social networking

You would end up with two separate result lists and have the added headache of trying to identify unique items from the lists. You could also search on the phrase

Facebook and online social networking

But once you understand Boolean operators, that last strategy won't make as much sense as it seems to.

There are three Boolean operators: *and, or*, and *not*.

And is used to get the intersection of all the terms you wish to include in your search. With this example

Facebook and online social networking

you are asking that the items you retrieve have both of those terms. If an item only has one term, it won't show up in the results. This is not what the searcher had in mind—she is interested in both Facebook and online social networking, because she doesn't know which term might be used. She doesn't intend that both terms have to be used. Let's go on to the next Boolean operator, which will help us out with this problem.

Or is used when you want at least one of the terms to show up in the search results. If both do, that's fine, but it isn't a condition of the search. So *or* makes a lot more sense for this search:

Facebook OR online social networking

Now, if you want to get fancy with this search, you could use both *and* as well as *or*:

Facebook AND (loneliness or isolation)

The parentheses mean that these two concepts, loneliness and isolation, should be searched as a unit, and the search results should include all items that use one word or the other. The results will then be limited to those items that contain the word *Facebook*. If you decide to use parentheses for appropriate searches, make sure that the items contained within them are related in some way. With *or*, as in our example, it means either of the terms will work. With *and*, it means that both terms will appear in the document.

You can experiment searching in a database.
In the database, Academic Search Complete, type *Facebook.*
How many results do you get?
Then type *Facebook AND loneliness.*
Did you get more or less results? Why?
Then type *Facebook AND (loneliness OR isolation).*
Did you get more or less results? Why?
Which result list looked better?

The third Boolean operator, *not*, can be problematic. *Not* is used to exclude items from your search. If you have decided, based on the scope of the results you are getting, to focus only on a specific aspect of a topic, use *not*, but be aware that items are being lost in this search.

For example, if you entered

Facebook and (adolescents or teens) not adults

you might lose some good results.

You can combine as many terms using as many ANDs and ORs and NOTS as you need. Just make sure to separate your similar terms using parenthesis as shown below:

(Facebook OR online social networking OR social media) AND (loneliness OR lonely OR isolation) AND (adolescents OR adolescent OR teenagers OR teens) NOT adults

Other Helpful Search Techniques

Using Boolean operators isn't the only way you can create more useful searches. In this section, we will review several others.

Truncation

In this search:

Teenagers AND Facebook you might think that the items that are retrieved from the search can refer to teenagers and teens. If you did, you spotted a problem. Because computers are very literal, they usually look for the exact terms you enter. While it is true that some search functions are moving beyond this model, you want to think about alternatives, just to be safe. In this case, using the singular as well as the plural form of the word might help you to find useful sources. Truncation, or searching on the root of a word and whatever follows, lets you do this.

So, if you search on

teen* AND Facebook

You will get items that refer either to the singular or plural version of the word *teen*, but also *teens* and *teenager* and *teenagers*.

Look at these examples:

adolescen* educat*

Think of two or three words you might retrieve when searching on these roots. It is important to consider the results you might get and alter the root if need be. An example of this is *polic**. Would it be a good idea to use this root if you wanted to search on *policy* or *policies*? Why or why not?

In some cases, a symbol other than an asterisk is used. To determine what symbol to use, check the help section in whatever resource you are using. The topic should show up under the truncation or stemming headings.

Here is the same search terms worksheet you saw earlier, but with truncation acknowledged:

TOPIC: Facebook has been shown to both increase and decrease loneliness among adolescents depending on the reason why it is being used.					
CONCEPTS:					SUBJECTS
Facebook	AND	lone*	AND	Adolescent*	
OR		OR		OR	
social media		isolat*		Teen*	
OR					
online social networking					
An asterisk (*) is most commonly used for truncation.					

Phrase Searches

Phrase searches are particularly useful when searching the web. If you put the exact phrase you want to search in quotation marks, you will only get items with those words as a phrase and not items where the words appear separately in a document, website, or other resource. Your results will usually be fewer, although surprisingly, this is not always the case. Try these two searches in the search engine of your choice:

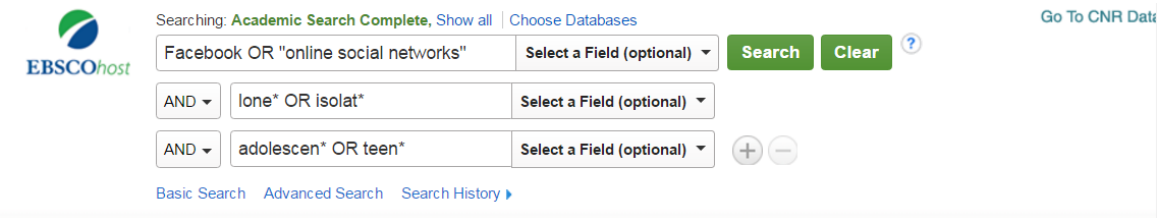
"essay exam"

essay exam

Was there a difference in the quality and quantity of results? If you would like to find out if the database or search engine you are using allows phrase searching and the conventions for doing so, search the help section. These help tools can be very, well, helpful!

What Boolean Searching in a Database Looks Like:

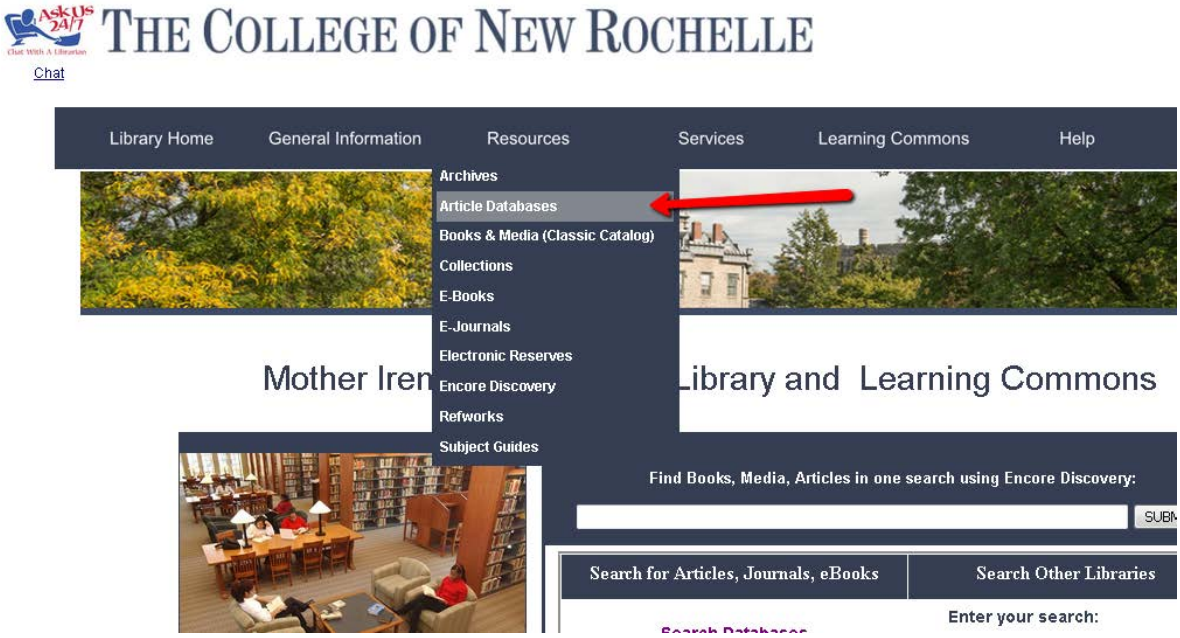
The Boolean searching we discussed above, works best in databases produced by database vendors such as Ebsco, ProQuest, and Gale. Such databases can be accessed through the library homepage of virtually all colleges including The College of New Rochelle's Gill Library homepage. For example, a partial view of a Boolean search in the Academic Search Complete, a database that can be found through The College of New Rochelle's Gill Library homepage, would look like this:

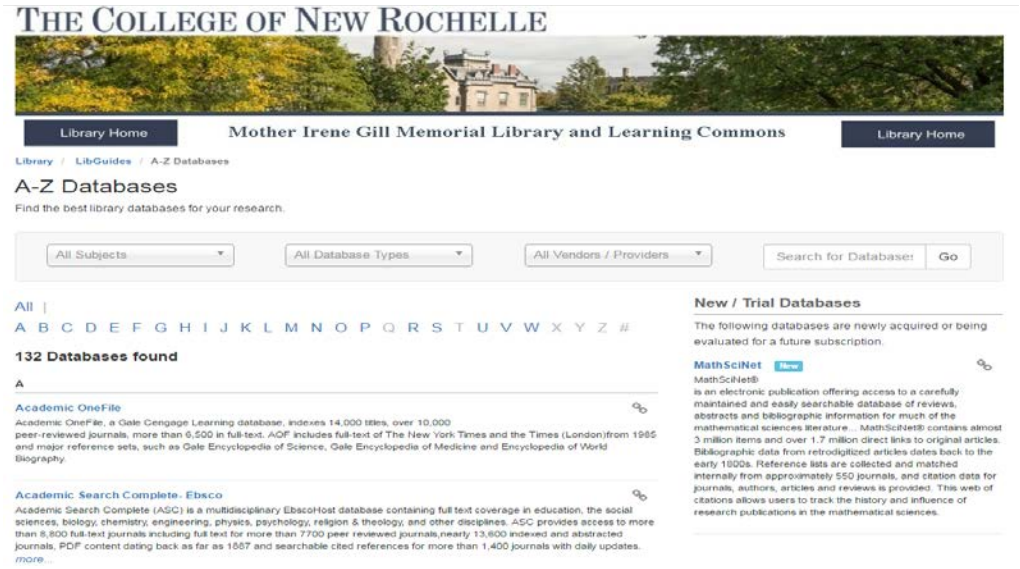


Exercise 1:
Database Search

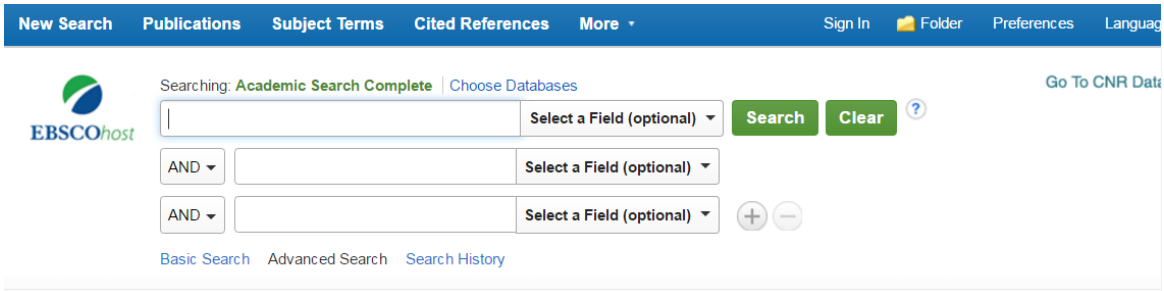
Go to The College of New Rochelle Gill Library homepage. You can find it at http://library2.cnr.edu/index.htm

The following will appear:





Here you can see all the databases The College of New Rochelle's Gill Library has. Click on the second databases listed, Academic Search Complete Ebsco. The following will appear:



How does this search screen look different than an average Google search box? Create a Boolean search string. Then try performing a Boolean search in this database. Examine your results. Try to find at least two results that address your topic. Think about your search results. Did you find quality scholarly articles that were written recently that could help you with your research? If not, how could you revise your search so that you get more results that more directly relate to your topic?

Boolean Searching using Google

What about Google, one's favorite search engine? Can one perform Boolean searching in

Google? The answer is that you can. However, performing a Boolean search in Google looks slightly different.

Boolean AND

-Google does not use the *Boolean AND*. Instead, AND is assumed. Therefore, if you entered into Google *Facebook loneliness,* it would be the same as entering *Facebook AND loneliness.*

Boolean OR

-Google does use the Boolean OR. Therefore, if you wanted to search for websites with either the words teen or adolescent you were enter *teen OR adolescent*.

Boolean NOT

-Google does not use the Boolean NOT. Instead, Google expects you to place a minus sign right before the term you want to exclude from your search. Therefore, if you wanted to search for articles with the words Facebook, loneliness, adolescents, but not teens, you would enter *Facebook loneliness adolescents –teens.*

Phrase Searching

-Like the databases, Google supports phrase searching by using quotation marks. Searching for social media as a phrase would simply be done by entering *"social media"*.

Truncation-Google does support truncation by using the asterisk sign. Therefore, if you wanted to search for all words with the root teen such as teens, teenager, and teenagers, you would enter *teen**.

Boolean Searching Using Google's Advanced Search

Advanced searching allows you to refine your search query and prompts you for ways to do this. Consider the basic Google.com search box. It is very minimalistic, but that minimalism is deceptive. It gives the impression that searching is easy and encourages you to just enter your topic, without much thought, to get results. You certainly do get many results. But are they really good results? Simple search boxes do many searchers a disfavor. There is a better way to enter searches.

Advanced search screens show you many of the options available to you to refine your search, and, therefore, get more manageable numbers of better items. Many web search engines include advanced search screens, as do databases for searching research materials. Advanced search screens will vary from resource to resource and from web search engine to research database, but they often provide advanced searching features that make it easier for you to perform a more precise using Implied Boolean operators.

For example, Google has an Advanced Search feature. There you will find

- an "all the words" option which is the same as using the Boolean *and*
- an "exact word or phrase" option which is the same as using quotation marks to perform a phrase search
- an "any of these words" option which is the same as using the Boolean *OR*
- a "none of these words" feature which is the same as using the Boolean *NOT*

Google's Advance Search page also allows you to narrow your search using

- Limiters for date, domain (.edu, for example), type of resource (articles, book reviews, patents)

Let's see how this works in practice.

Exercise 2: Advanced Google Searches

Go to the advanced search option in Google. You can find it at http://www.google.com/advanced_search

By clicking the above link the following will appear:

Take a look at the options Google provides to refine your search. Compare this to the basic Google search box. One of the best ways you can become a better searcher for information is to use the power of advanced searches, either by using these more complex search screens or by remembering to use Boolean operators, phrase searches, truncation, and other options available to you in most search engines and databases.

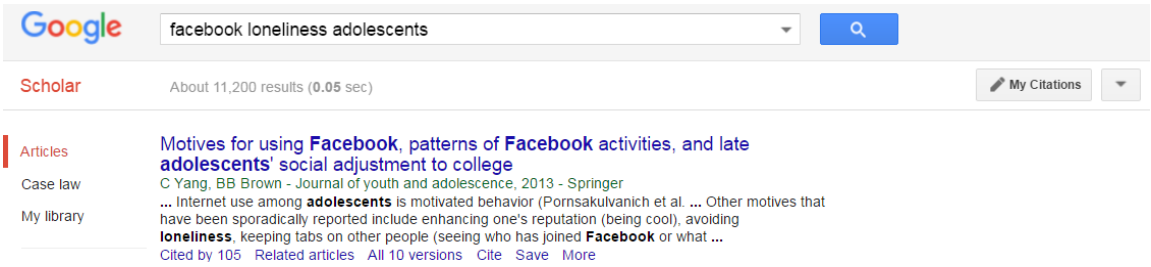
While many of the text boxes at the top of the Google Advanced Search page mirror concepts already covered in this chapter (for example, "this exact word or phrase" allows you to omit the quotes in a phrase search), the options for narrowing your results can be powerful. You can limit your search to a particular domain (such as .edu for items from educational institutions) or you can search for items you can reuse legally (with attribution, of course!) by making use of the "usage rights" option. How- ever, be careful with some of the options, as they may excessively limit your results. If you aren't certain about a particular option, try your search with and without using it and compare the results. If you use a search engine other than Google, check to see if it offers an advanced option: many do.

Google Scholar

Many people don't know this but Google actually has a special section where you can search

for the scholarly articles that your professor expects you to read as part of your college research. Unsurprisingly, it is called Google Scholar! You can find it at https://scholar.google.com/

By searching for the above link the following will appear:



Google Scholar allows you to search for scholarly articles written by professors, doctors, and researchers. In many cases you will only be able to read the abstract, or summary, of the articles listed in the results. However, in some cases you can read the article's full text too. Google Scholar also contains books, so make sure you are reading a scholarly article and not a book if that is what you are looking for.

Like the regular Google Search, Google Scholar also offers an advance search option that you can access by clicking on the drop down button from the upper right corner within the Google Scholar results as shown below so that a drop down menu including an option to do an Advanced Search is shown below:

Subject Headings

In the section in this chapter on advanced searches, you read about field searching. To explain further, if you know that the last name of the author whose work you are seeking is Wood, and that he worked on forestry-related topics, you can do a far better search using the author field. Just think what you would get in the way of results if you entered a basic search such as *forestry and wood*. It is great to use the appropriate Boolean operator, but oh, the results you will get! But what if you specified that *wood* had to show up as part of the author's name? This would limit your results quite a bit.

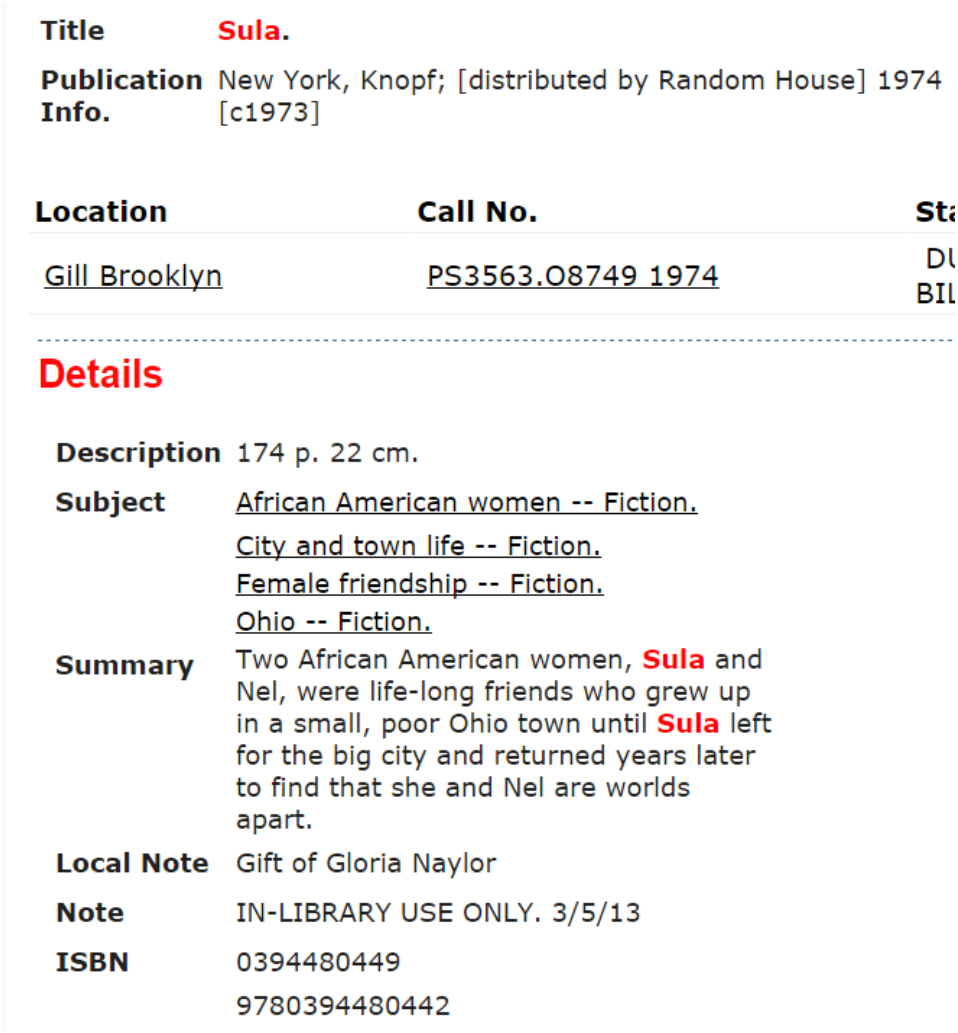
So what about *forestry*? Is there a way to handle that using a field search? The answer is yes (why else bring it up?). Subject headings are terms that are assigned to items to group them. An example is cars—you could also call them autos, automobiles, or even
more specific labels like SUVs or vans. You might use the Boolean operator *or* and string these all together. But if you found out that the sources you are searching use *automobiles* as the subject heading, you wouldn't have to worry about all these related terms, and could confidently use their subject heading and get all the results, even if the author of the piece uses *cars* and not *automobiles*.

How does this work? In many databases, a person called an indexer or cataloger scrutinizes and enters each item. This person performs helpful, behind-the-scenes tasks such as as- signing subject headings, age levels, or other indicators that make it easier to search very precisely. An analogy is tagging, although indexing is more structured than tagging. If you have tagged items online, you know that you can use any terms you like and that they may be very different from someone else's tags. With indexing, the indexer chooses from a set group of terms. Obviously, this precise indexing isn't available for web search engines—it would be impossible to index everything on the web. But if you are searching in a database, make sure you use these features to make your searches more precise and your results lists more relevant. You also will definitely save time.

You may be thinking that this sounds good. Saving time when doing research is a great idea. But how will you know what subject headings exist, so you can use them? Here is a trick that librarians use. Even librarians don't know what terms are used in all the databases or online catalogs that they use. So a librarian's starting point isn't very far from yours. But

they do know to use whatever features a database provides to do an effective search. They find out about them by acting like a detective.

You've already thought about the possible search terms for your information need. Enter the best search strategy you developed, which might use Boolean operators or truncation. Scan the results to see if they seem to be on topic. If they aren't, figure out what results you are getting that just aren't right, and revise your search. Terms you have searched on often show up in bold face type, so they are easy to pick out. Besides checking the titles of the results, read the abstracts (or summaries), if there are any. You may get some ideas for other terms to use. But if your results are fairly good, scan them with the intent to find one or two items that seem to be precisely what you need. Get to the full record (or entry), where you can see all the details entered by the indexers. Here is an example from The College of New Rochelle's Gill Library classic catalog for the book Sula, commonly read by students at The College of New Rochelle. Keep in mind that the catalog or database you are using may have entries that look very different.



Title **Sula.**

Publication Info. New York, Knopf; [distributed by Random House] 1974 [c1973]

Location	Call No.	Sta
Gill Brooklyn	PS3563.O8749 1974	DU BIL

Details

Description 174 p. 22 cm.

Subject African American women -- Fiction.
City and town life -- Fiction.
Female friendship -- Fiction.
Ohio -- Fiction.

Summary Two African American women, **Sula** and Nel, were life-long friends who grew up in a small, poor Ohio town until **Sula** left for the big city and returned years later to find that she and Nel are worlds apart.

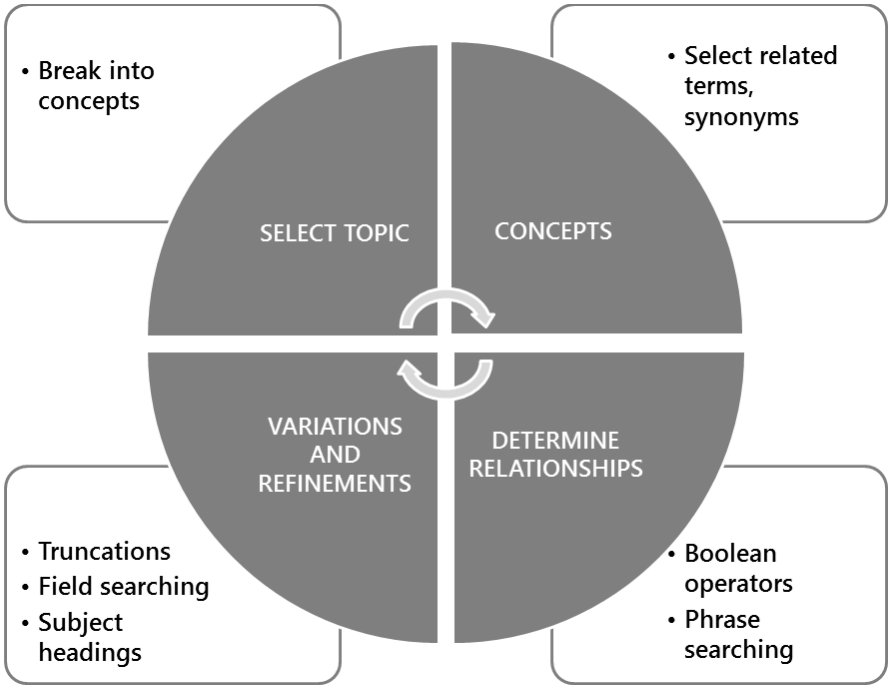
Local Note Gift of Gloria Naylor

Note IN-LIBRARY USE ONLY. 3/5/13

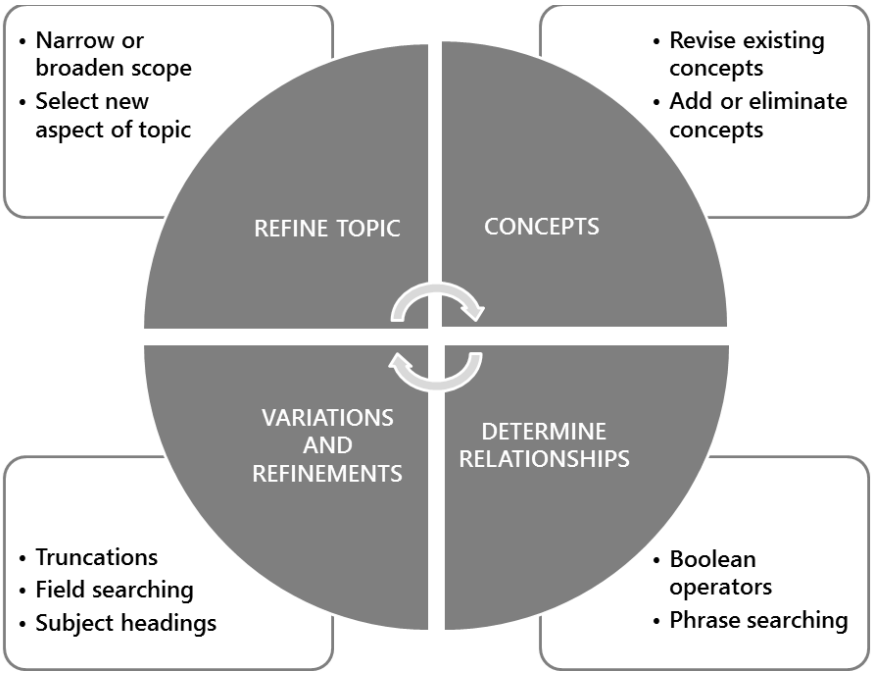
ISBN 0394480449
9780394480442

Once you have the "full" record (which does not refer to the full text of the item, but rather the full descriptive details about the book, including author, subjects, date, and place of publication, and so on), look at the subject headings (they may be called descriptors or some other term, but they should be recognizable as subjects) and see what words are used. They may be identical to the terms you entered, but if not, revise your search using the subject heading words. The results list should now contain items that are relevant for your need. From reading this, you now know that the subject heading for city and town life is just that, city and town life, and not, for example, urban and rural life. Reading the subject headings can also give you a sense of what a book is about. As you can see above, the book Sula has four subject headings. By reading those subject headings you know that Sula is a fictional account of female friendship between African American women in the setting of city and town life in Ohio.

This chapter presents a strategy for developing a successful search. This figure reviews the key points:



It is tempting to think that once you have gone through all the processes around the circle, as seen in this diagram, your information search is done and you can start writing. How- ever, research is a recursive process. You don't start at the beginning and continue straight through until you end at the end. Once you have followed this planning model, you will often find that you need to alter or refine your topic and start the process again, as seen here:



This revision process may happen at any time, before or during the preparation of your paper or other final product. The researchers who are most successful do this, so don't ignore opportunities to revise.

So let's return to Lisa and her search for information to help her team's project. Lisa realized she needed to make a number of changes in the search strategy she was using. She had several insights that definitely led her to some good sources of information for this particular research topic. Can you identify the good ideas she implemented?

Exercise 3: Reviewing Search Strategies

Take this quiz online!

1. Now that the team has a draft thesis statement, the next step would be to:

   a. Enter the thesis statement into a database, rather than the catalog

   b. Select keywords and enter them into Google

   c. Dissect the thesis statement to determine key terms, related terms, and Boolean operators or other searching techniques

2. If you are interested in the use of social media such as Twitter by college students

for research purposes, which of the following is the best general search strategy:

a. (social media and Twitter) and research and college students

b. Social media and college students and research purposes

c. (social media or Twitter or Facebook) and research and college student*

3. The best place to start the search online is:

a. An online guide on the library's website

b. Google

c. The library's catalog

4. When searching a subject-specific database, it is especially important to…

a. Use any search refinements they provide that make sense

b. Check for the best subject headings to use

c. Both a. and b

5. Sarah realized that the order for doing the best research most often includes these steps:

a. Select topic, select keywords, do search, read and understand results, create product
b. Select topic, select keywords, do search, read and understand results, revise search and return to the process as needed, create product
c. Check for online assistance on the library's website, do the search, revise the search as needed, create product

4

Gather

Scenario

Qiana Weaver is feeling overwhelmed by one of her class assignments. Qiana would have been happy if the assignment was to write a traditional research paper, but her professor has asked the class to solve a real life problem. The professor has asked the class to imagine a large metro area undergoing a natural disaster such as a flood or a tornado (not difficult for anyone living in New York City in the first decades of the 21st century!). Here's the hard part though: Each group in the class is required to plan a hypothetical information command center for this city. The professor explains that the government needs to obtain accurate, up-to-date information on the scope of the damage and injuries sustained due to the disaster. This information is vital for the city to be able to provide adequate emergency and medical assistance to its citizens.

How should they go about creating a plan for such a resource? Qiana and her classmates do some brainstorming and decide to approach this assignment as if they were actually producing a research paper. Their first step will be to research recent disasters. They reason that this will provide some information about the way some metro areas have gathered information during disasters. If an information gathering strategy worked for other cities, it will work for their hypothetical city. There certainly have been a lot of natural disasters recently, so it shouldn't be too hard to find some information. Super Storm Sandy and Hurricane Irene are two recent events that immediately come to mind. The group starts to research Super Storm Sandy with Google and Wikipedia.

Qiana and her classmates are engaging in the Gather pillar of the Seven Pillars of Information Literacy model. Just as municipalities needed to gather reliable information in order to provide vital services to their citizens, Qiana and her group members need to gather information that will help them complete this assignment.

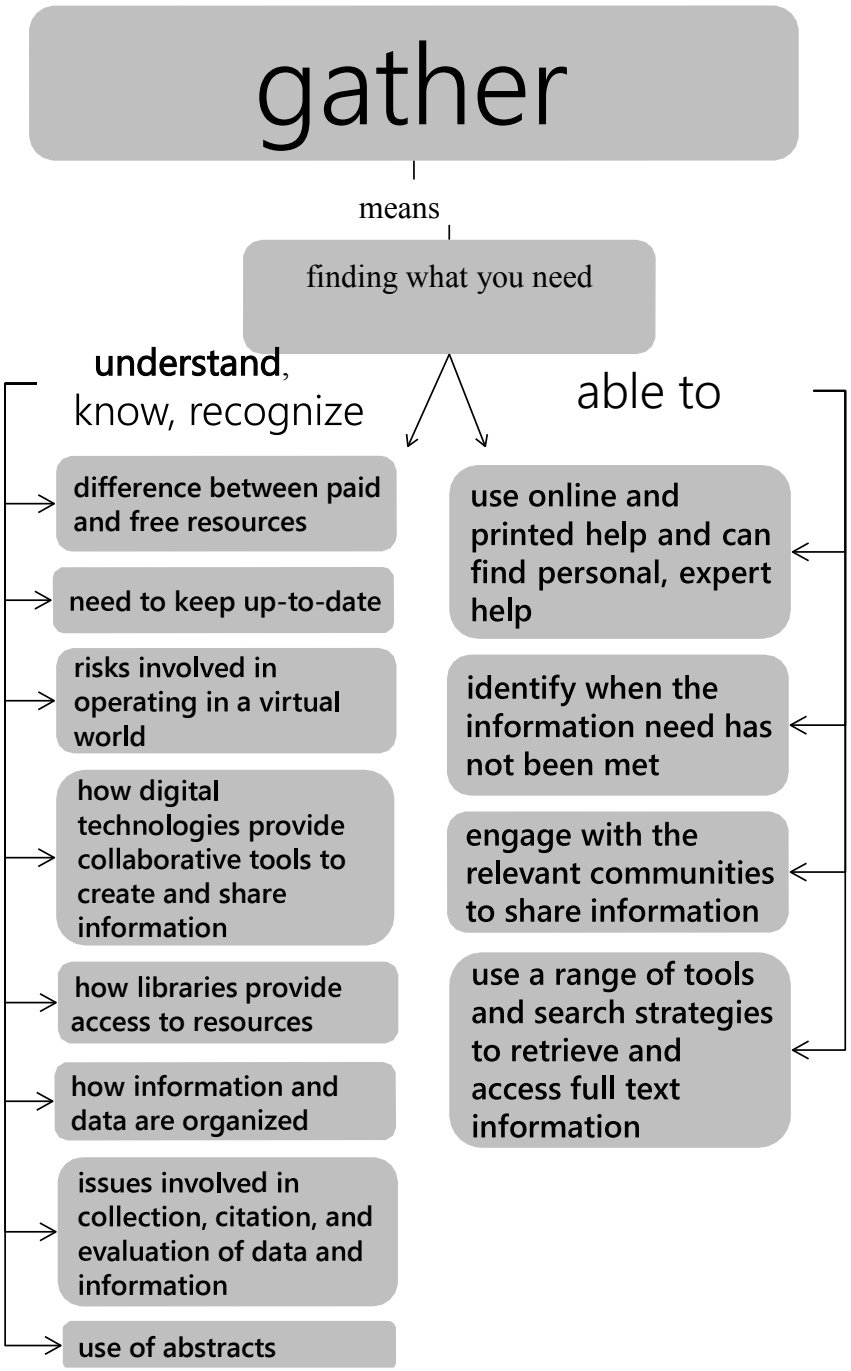
These information needs are components of the Gather pillar, which states that the information literate individual understands

- How information and data are organized
- How libraries provide access to resources
- How digital technologies provide collaborative tools to create and share information
- The issues involved in collection of new data
- The different elements of a citation
- The use of abstracts
- The need to keep up-to-date
- The difference between free and paid resources
- The risks involved in operating in a virtual world
- The importance of appraising and evaluating search results

They are able to

- Use a range of retrieval tools and resources effectively
- Construct complex searches appropriate to different digital and print resources
- Access full text information, both print and digital, read and download online material and data
- Use appropriate techniques to collect new data
- Keep up to date with new information
- Engage with their community to share information
- Identify when the information need has not been met
- Use online and printed help and can find personal, expert help

The abilities connected with the Gather pillar overlap, in some aspects, with those in other chapters. Where this is the case, those abilities are not addressed in depth in this chapter.



Proficiencies in the Gather pillar

Information Formats and the Internet

Traditionally, information has been organized in different formats, usually because of the time required to gather and publish it. For example, the purpose of news reporting is to inform the public about the basic facts of an event. This information needs to be disseminated quickly, so it is published daily in print, online, on broadcast television, and radio media. More in-depth treatment of information takes longer to research, write, and publish, and traditionally has been and still is published in scholarly journals and books.

Today, information is published in traditional formats as well as in newly evolving formats on the Internet. These new information formats are loosely defined as Web 2.0 formats and can include electronic journals, books, news websites, blogs, Twitter, Facebook, and location postings. The coexistence of all of these information formats is messy and chaotic. The process for finding relevant information is not always clear.

One way to make some sense out of the current information universe is to thoroughly understand traditional information formats. We can then understand the organizing ideas behind the information formats found online. There are some direct correlations between traditional and online formats such as books and journal articles, but there are also some newer formats like tweets that didn't exist until recently.

Let's look at the news industry. Many traditional newspapers are shutting down and those that remain are retrenching. While there are many reasons for this, one of the major trends has been the rise of the Internet. In the United States, more than 50 per cent of the population reads the news online (Organisation for Economic Co-operation and Development, 2009, p. 44).

Indeed, online news sites provide a different and, some might argue, a more relevant experience for the reader. They offer video and sound, up-to-the-minute updates on breaking news, and the ability to interact with the content by posting comments. The blogs and interactive features that enhance online news sites contain dynamic information; that is, unlike the stable nature of traditional formats, these new formats often change quickly and easily. Another important feature of online news is that search engines can deliver content from the site in response to a query. In other words, readers don't have to visit a site such as the *New York Times* in order to read its content.

All this has both positive and negative consequences. The positive consequence is that readers can quickly and conveniently obtain information from a variety of sources on a topic or event. The negative consequence is that it is more difficult to evaluate the credibility of the sources. The Evaluate chapter in this book provides some good strategies for evaluating information sources.

For Qiana and her group, all of this means they will have to research many different kinds of information resources in order to create an effective information command center.

Wikipedia: A Key to Source Types

(From the references list of the Wikipedia article, "Hurricane Sandy")

One of the first results Qiana and her group got when they Google "super storm Sandy" is the Wikipedia article on Hurricane Sandy. Now, you know already that some professors may consider this an unreliable source to list in a research paper or problem-solving project. Still, a Wikipedia article can be a good place to start research in many ways. Because Wikipedia requires that all information in an article come from a published, citable source, the references section of a Wikipedia article is an excellent place to examine the different kinds of sources required to address a topic. On the Hurricane Sandy page, Qiana and her group found references to newspaper articles, blogs, scholarly articles, and primary sources in the form of government agency documents—from reports to memorandum (Hurricane Sandy, 2016). Missing from this list were scholarly books. A little more exploration showed that these are also crucial to a more in-depth understanding of their topic. The group took a quick look at an open access scholarly article included in the Wikipedia source; in scanning the article's reference page, they found interesting scholarly book titles as well.

Newspaper Articles

A member of Qiana's team noticed that many of the sources referenced to in the Wikipedia article were articles from major national newspapers such as the *The New York Times*, *The Washington Post*, and *USA Today*. Qiana's group decided to consult a specific newspaper to see what role the paper played in helping a specific metro area understand the destruction caused by the storm. The group chose *The New York Times*, which can be accessed online. At first, they used the date range filter to limit their results to articles published during the very first days of the storm, October 29- 30, 2012. However, they found more useful information

published in *The New York Times* in the days and even weeks after the storm. Qiana's initial search of *The New York Times* consisted of the phrase "super storm Sandy" limited to October 29, 2012; the search resulted in some blog postings from reporters and many stories about damage from the storm. However, when Qiana reentered her search without a date limit, she retrieved articles that analyzed how the region's municipalities performed during the storm. It takes time to conduct this type of analysis, so looking for information published days, weeks, or months after the storm took place was a good strategy, given the group's focus on disaster planning.

Many other newspapers can be accessed online or through certain library databases. Go to the databases section of your library web page, select to view the databases listed by subject, and look for the heading "News" or "Newspapers." Some databases in your local or college library such as *Academic OneFile* and *Academic Search Complete* will include access to newspaper and magazine articles in addition to scholarly articles; others, such as *Info Trak Newsstand,* and *Newspaper Source* are dedicated specifically to news and allow you to search a topic in a wide range of newspapers at once.

Blog Posts & Twitter

The group also noticed that the Wikipedia article "Hurricane Sandy" draws from several blogs, some personal, some connected to a range of groups and organizations. Many of these blogs include Twitter feeds through which bloggers can easily send out links to relevant blog posts in tweets limited to 140 character. Blog posts can vary in informational quality, from the highly personal and subjective response to the information-packed analysis. In the Evaluate chapter, you will review how to determine the purpose and nature of different kinds of blogs.

Examining blog results and searching Twitter for tweets emitted during the super storm Sandy crisis, Qiana's group discovered key people, cities, technologies, and other resources associated with Super Storm Sandy. These gave them ideas for new subject areas to research and search terms to try. The students' review of tweets also provided an otherwise unthought-of insight. As Qiana and her group scanned Twitter feeds posted during Super Storm Sandy, they noted that people were using Twitter to inform their friends and relatives about their whereabouts, their health, and their surrounding conditions. In the absence of televisions and radios, which did not work in many places after the storm due to blackouts, mobile technologies like Twitter served as effective communication tools. Realizing this, the group quickly incorporated a Twitter feed into their command center's communication plan.

Primary Sources

While many of the members of Qiana's group were from the greater metro New York area, only two lived in a neighborhood severely affected by the storm. The group soon realized that these members' firsthand experience was invaluable to their project, and they sought out interviews with other friends and acquaintances who had experienced super storm Sandy and the emergency operation that followed up close. We call this type of information primary source material. Primary sources are accounts from those who have firsthand knowledge of an event or an experience. Photographs, diaries, autobiographies, speeches, and interviews are all

primary sources.

In this case, the primary sources were still alive and accessible to Qiana's group. In many cases, while researchers are not able to interview someone with firsthand knowledge of their research topic, they can usually find primary sources in other formats. It is important to remember that primary sources are not limited to a single format. In fact, the range of documents we discussed above in relation to Super Sandy Storm —tweets, blog posts, government agency reports—all provide firsthand information and, therefore, primary sources.

Researchers may find primary sources in a variety of locations. Books, journals, newspapers, news programs, emails, websites, and music and art collections may all contain primary sources. You can find primary sources through your college or public library online catalog. Try searching your topic keyword plus (Boolean operator AND) "sources" or "diaries" or other such terms.

Libraries, museums, and other cultural organizations house materials they consider of special historical value in an archives department. Digitization of archival material or primary sources is a growing trend. Many online sites provide digitized collections of diaries, letters, and audiovisual material related to historical events. The American Memory project through the Library of Congress and the New York Public Library Digital Collections are excellent websites for such material.

Scholarly Journal Articles

The results of the research that Qiana and her group have done are useful, but Qiana is concerned that there might be too much focus on super storm Sandy. She wants to find more information on crisis and disaster management in general. Qiana thinks that there might be general standards or practices the group should incorporate into their plan. Journal articles and books might provide this information.

Qiana isn't sure which specific disciplines will cover the information she seeks, so she starts her search for journal articles by using a multidisciplinary database to which her library subscribes. She constructs and executes a search query and finds that the abstracts included in the results help her choose several peer-reviewed, or scholarly, articles to read.

Scholarly journal articles usually include an abstract at the beginning of the article. An abstract summarizes the contents of the article; it briefly explains the article's purpose, main ideas, methods, and conclusions. Abstracts are often included in the database record. Researchers use abstracts to decide whether retrieving the whole article will be helpful to them or not.

Qiana and her group quickly find that reading scholarly articles is hard work. Because scholarly articles are written by experts for experts, they are difficult to grasp fully for anyone who doesn't have in-depth knowledge of a given discipline and topic. However, Qiana discovered it was possible to get what the group needed from these sources by reading them according to certain ground rules. Always read the abstract carefully, then skip to the discussion and/or conclusion section; after that, return to the article's introduction to understand the author's purpose better and look into any other section that seems specifically relevant to your topic.

Reading in this way isn't cheating or skimping; academic articles are actually written to be read in this sped-up fashion. The writers know the typical researcher has limited time.

Most of the articles that Qiana chooses are available in PDF format from the database, but there are a few articles that look very relevant that don't have links to a PDF. Qiana really wants to read these articles so he decides to try to find out if there is another way to obtain the full text. She consults a librarian who instructs her to look for the title of the journal (not the article) in the online catalog. The catalog record will provide information on whether the journal is available online from another database or if it is available in print.

Journals, and the articles they contain, are often quite expensive. Libraries spend a large part of their collection budget subscribing to journals in both print and online formats. You may have noticed that a Google Scholar search will provide the citation to a journal article but will not link to the full text unless your selected library provides access to it. This happens because Google does not subscribe to journals. It only searches and retrieves freely available web content. However, libraries do subscribe to journals and have entered into agreements to share their journal and book collections with other libraries. If you are affiliated with a library as a student, staff, or faculty member, you have access to many other libraries' resources, through a service called interlibrary loan. Do not pay the large sums required to purchase access to articles unless you do not have another way to obtain the material, and you are unable to find a substitute resource that provides the information you need.

There is one more feature Qiana found while searching in databases and Google Scholar: Some —including Google Scholar— offer the option of an alert service on a previous search. This feature allows Qiana to enter the most productive search strings, as well as her email address. When new items appear in the database that fit her search, she receives an alert. Qiana found this to be a great way to keep up to date with new articles on her topic without having to initiate a new search.

Books

Next, Qiana's group looks for books on their topic. They search the library's online catalog using search terms that were successful in their database searches. They find some great titles and head to the library stacks to retrieve them.

Most academic libraries use the Library of Congress classification system to organize their books and other resources. The Library of Congress classification systems divides a library's collection into 21 classes or categories. Each class receives a specific letter of the alphabet. Two and three letter combinations serve to represent subcategories within the larger classification. Most academic libraries mark their bookshelves with a Library of Congress letter- number combination to correspond to the Library of Congress letter-number combination on the spines of library materials. We refer to these as call numbers; the online library catalog

provides the call number for every physical item the library holds on its shelves.

Qiana uses the call numbers to locate some books that she found in the catalog. She is happily surprised to find that there are also some very useful books sitting on the shelf right next to the books she previously identified. Browsing the shelves where you have found a relevant book is a handy way to find additional information resources on a topic. It is more efficient to first search the online catalog to locate relevant resources and then search the shelves.

Library of Congress Classification

Below are the general categories; for a more in-depth view of the subcategories visit the Library of Congress Classification Outline website.

A General Works — includes encyclopedias, almanacs, indexes
B BJ Philosophy, Psychology
BL BX Religion
C History — includes archaeology, genealogy, biography
D History — general and eastern hemisphere
E-F History — America (western hemisphere)
G Geography, Maps, Anthropology, Recreation
H Social Science
J Political Science
K Law (general)
KD Law of the United Kingdom and Ireland
KE Law of Canada
KF Law of the United States
L Education
M Music
N Fine Arts — includes architecture, sculpture, painting, drawing
P-PA General Philosophy and Linguistics, Classical Languages, and Literature
PB-PH Modern European Languages
PG Russian Literature
PJ-PM Languages and Literature of Asia, Africa, Oceania, American Indian Languages, Artificial Languages
PN-PZ General Literature, English and American Literature, Fiction in English, Juvenile Literature
PQ French, Italian, Spanish, Portuguese Literature
PT German, Dutch, and Scandinavian Literature
Q Science — includes physical and biological sciences, math, computers
R Medicine — includes health and human sexuality
S Agriculture
T Technology — includes engineering, auto mechanics, photography, home economics

U Military Science
V Naval Science
Z Bibliography, Library Science, Citation

Citations

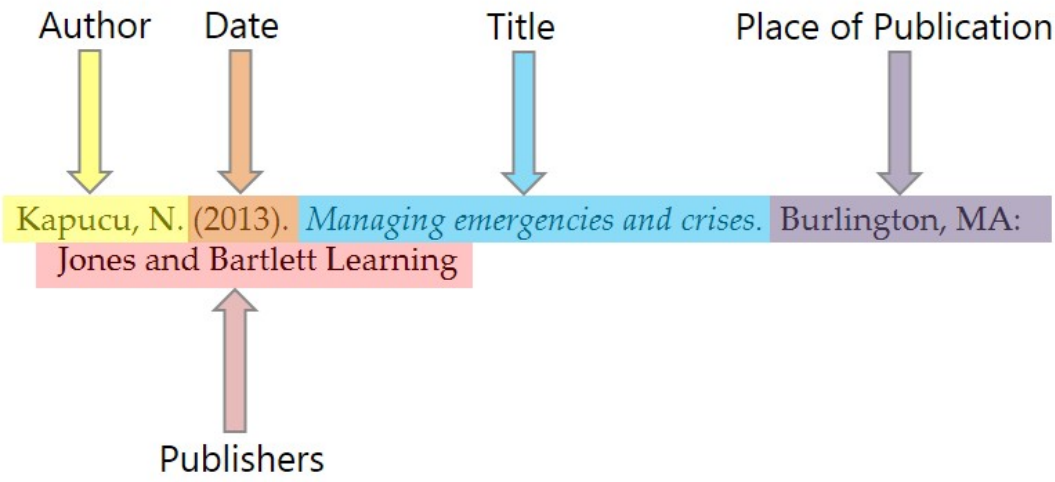
As Qiana's group starts to read and digest all of the information they have gathered, they notice that many articles and books contain references to other articles and books –just like their initial Wikipedia article. These consist of citations to resources that authors have quoted or paraphrased in their work or have used to research for their publications. Some of these citations look like they would provide great information. However, which are books, which articles, which something else? The group is confused.

Citations can be confusing. There are many different citation styles and not many hard and fast rules about when to use a particular style. Your professor may indicate which citation style you should use. If not, the general rule of thumb is that the Social Sciences and Education disciplines use APA (American Psychological Association) citation style, while the Humanities and Arts disciplines use MLA (Modern Language Association) or the Chicago style. You can find detailed information about how to format a citation in these styles by consulting the latest Publication Manual of the American Psychological Association, for APA citations, the most recent copy of the MLA Handbook for Writers of Research Papers, or the current Chicago Manual of Style. You should be able to find copies of these publications in the reference section of your library. You can also obtain guidance on formatting citations in the APA and MLA style through various online sources. Two excellent guides are: Trinity College's CiteSource and the LaGuardia Community College MLA and APA Citation Style page. Both have excellent visuals to help you select the citation model you need for your particular source type.

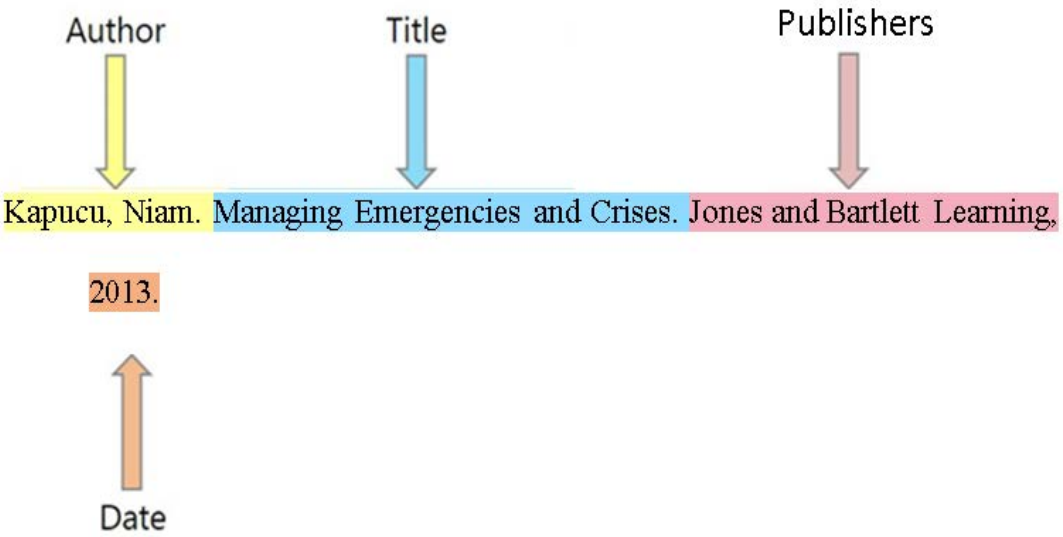
However, just knowing which citation style is used doesn't always clear up the confusion. Each type of information format is cited differently. The most common formats that you will encounter are books, chapters in books, journal articles, and website articles or blog posts.

Study the citations depicted in the following pages. You will see there are differences between citation styles. Note that each information format contains different elements. When you try to determine whether a citation is for a book, book chapter or journal, think about the elements specifically associated with each of these formats. For example, a journal article appears in a journal that is published in a volume and issue. If you see volume and issue numbers in the citation, you can assume that the citation is for a journal article. A book chapter is usually written by a different author from the editors of the whole book. A whole book is often the easiest citation to decipher. It contains the fewest elements.

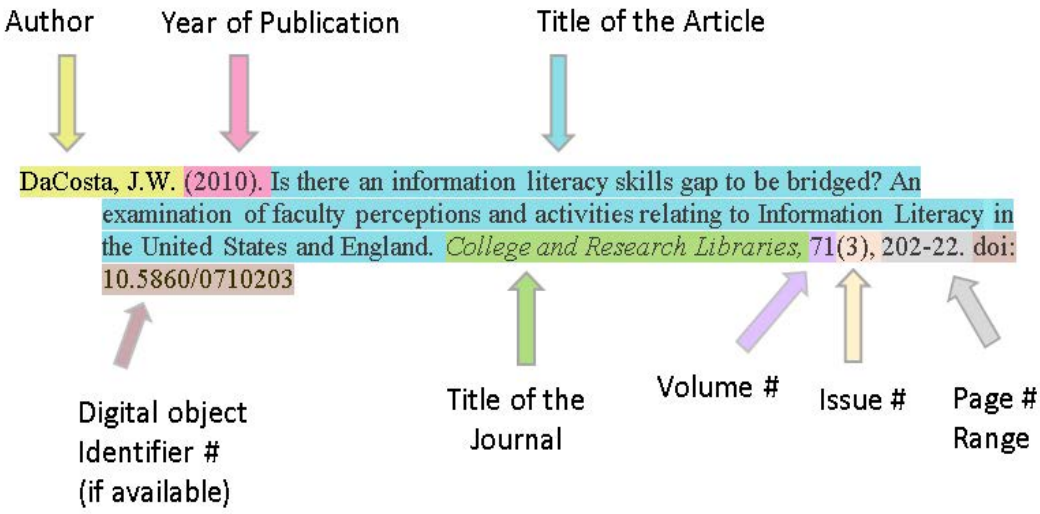
Citation to a Book
APA



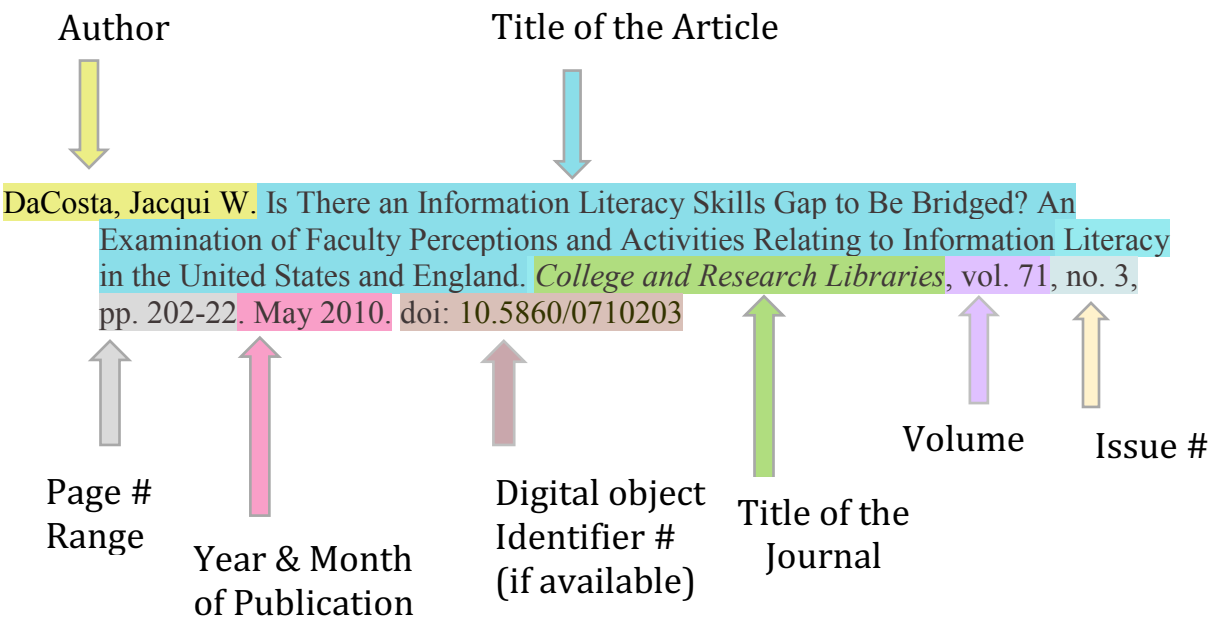
Citation to a Book
MLA



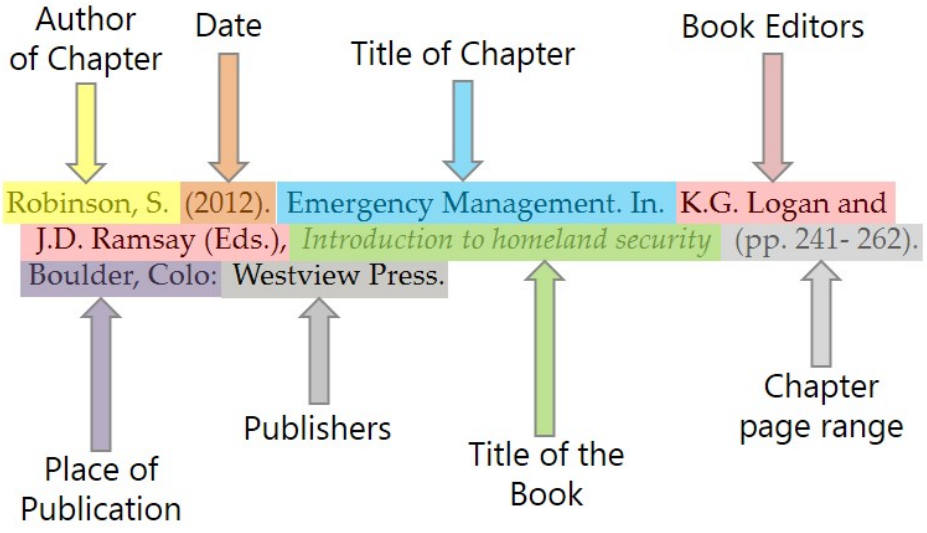
Citation to an Article from a Scholarly Journal
APA



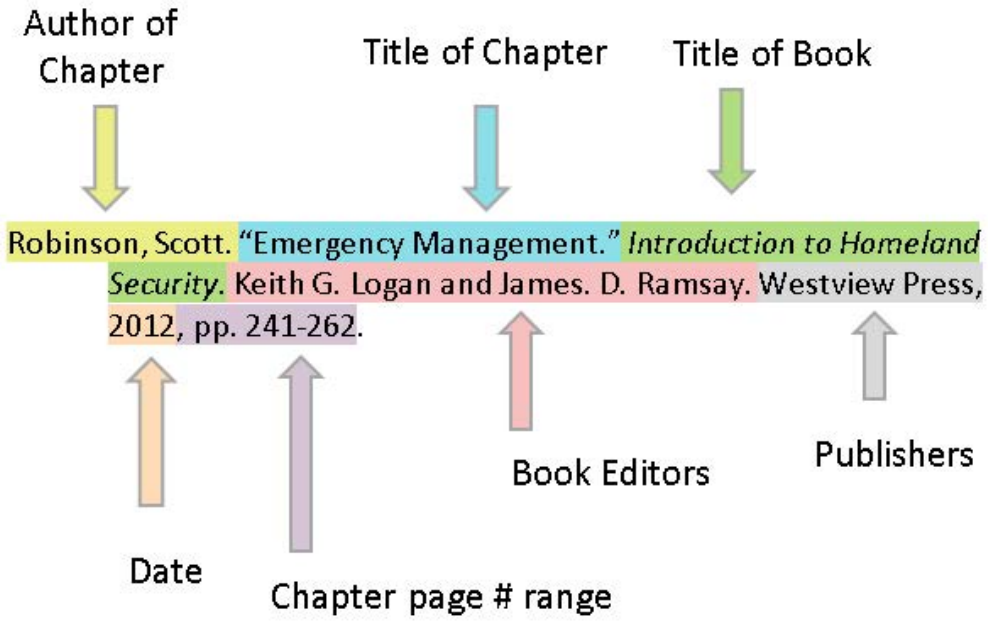
Citation to an Article from a Scholarly Journal
MLA

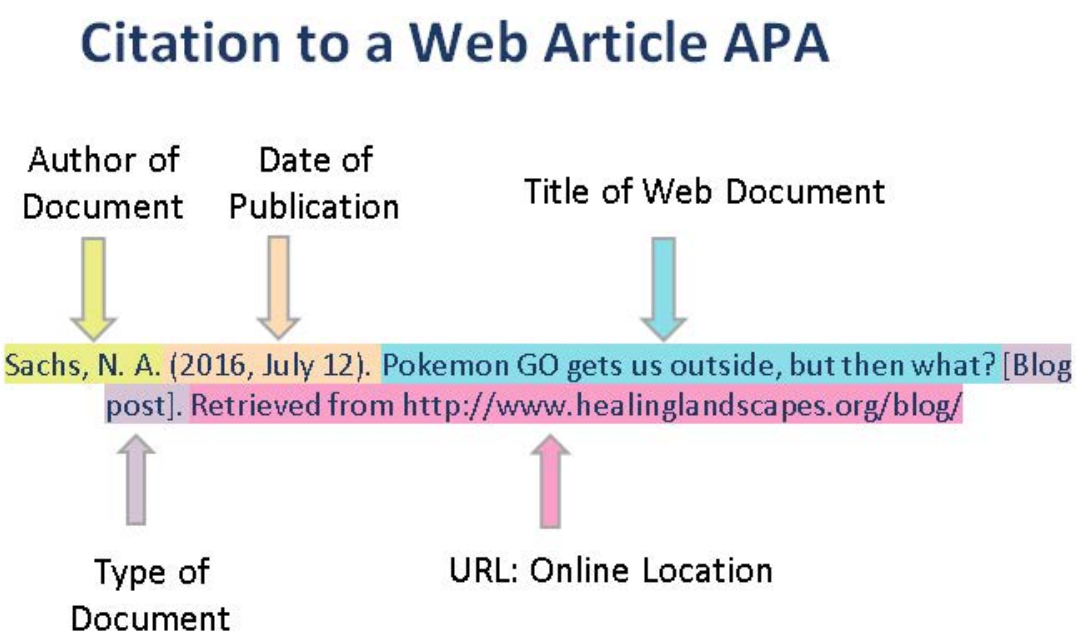


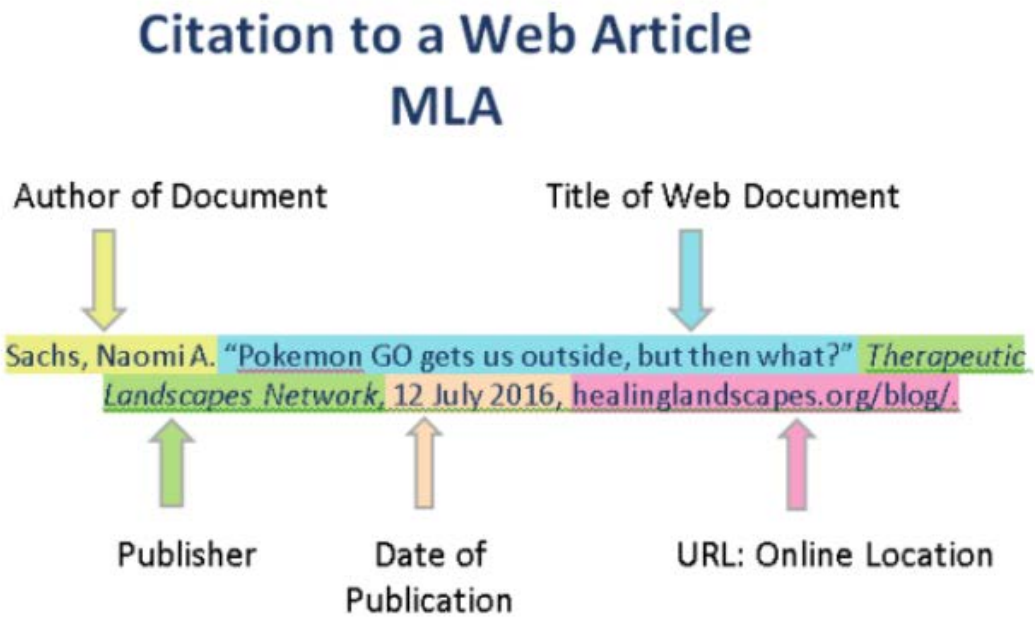
Citation to a Chapter in a Book APA



Citation to a Chapter in a Book MLA







This chapter has discussed citations in relation to finding resources. You will encounter citations again in the Manage chapter, which covers how to use citations to share information with others.

Sharing Information

Qiana had a chance to talk with members of some of the other groups in her class about the hunt for information. They spoke informally before class started, but she wished there was a more effective way to exchange tips, since the discussion was so helpful to all the groups who participated. They decided to set up a shared Google doc where they could all access each other's strategies. It felt a little strange at first, being collaborative in this way, rather than competitive; but it really helped everyone to learn more and do their best job. One group was struggling to find information that met their needs, but between working with a librarian and consulting the shared Google doc, they succeeded with their project.

Conclusion

Qiana and her classmates have spent time gathering information to help them create a realistic and accurate crisis command center. They accessed and used online newspapers and online journal articles. They also searched and used Web 2.0 information sources in the form of Twitter feeds and blogs. They even gathered some very useful hard copy books. During this process, the students learned about different ways that information is organized including the Library of Congress classification system. Qiana was amazed at the wealth of quality information she was able to gather. It took her a while and the process was more complicated than just searching the web, but Qiana now feels more confident about acing the assignment. She also feels that she learned more than how to set up a command center. She learned how to engage in academic research!

Exercise 1: Comparing Search Strategies

1. **Find a newspaper article about a national event, such as the 2013 Boston Marathon bombing. Make note of your search strategy.**

   Next, find a newspaper article about a local event, for example, a flood in your area or a local crime or election. Make a note of your search strategy for this search.

   Compare the two strategies. How are they alike? How are they different? Which newspaper article was easier to find? Why?

2. **Set up some combinations of keywords to search a topic. Now, use your prepared keyword combinations to search for sources on that topic in the Book section of your online library catalog and in a multidisciplinary research database like *Academic Search Complete*. How did you have to change your search strategy to find both relevant books and relevant articles on your topic?**

3. **Set up some combinations of keywords to search a topic. Now, use your prepared keyword combinations to search for sources on that topic in a**

multidisciplinary research database like *Academic Search Complete* and in *Google Scholar*. Compare the different kinds of results you got in each search both in terms of direct access to materials and in terms of kinds of sources.

Exercise 2: Primary Sources

1. Where would you find a speech by Franklin Delano Roosevelt in which he said, "The only thing we have to fear is fear itself."?

a. Web site of Presidential Speeches

b. Newspaper article dated Oct. 29, 1941

c. A print publication titled "Vital Speeches of the Day," which has been published since 1934

d. All of the above

2. Which of the following sources is the most likely to contain an interview with Steven Spielberg about his film "Lincoln," produced in 2012?

a. Article from a news magazine dated November 23, 2012

b. A blog written by a fan of Steven Spielberg

c. IMDb—A large online database of movie and television information

d. All of the above

3. Which source would have the original copy of a diary written a woman who lived in Tennessee during the Civil War?

a. The Library of Congress American Memory Project web site

b. The Southern Historical Collection, Univ. of North Carolina at Chapel Hill

c. Local public library's collection

d. All of the above

4. Which of the following is a primary source?

a. review of the film "Lincoln" by Steven Spielberg
b. A nonfiction book about the Civil War titled The Fall of the House of Dixie : The Civil War and the Social Revolution that Transformed the South
c. The Facebook privacy policy
d. An article on a current event, based on reports gathered from bystanders

Exercise 3: Identifying Citations

1. **Joshi, M. (2013). Inclusive institutions and stability of transition toward democracy in post-civil war states. *Democratization. 20*(4), 743-770.**
    a. **Journal Article**
    b. **Book**
    c. **Book Chapter**
    d. **Web Article**
2. **Janney, Caroline E. *Remembering the Civil War: Reunion and the Limits of Reconciliation*. University of North Carolina Press: 2013.**
    a. **Journal Article**
    b. **Book**
    c. **Book Chapter**
    d. **Web Article**
3. **Blattman, Christopher and Edward Miguel. "Civil War." *Journal of Economic Literature* vol. 48, no. 1, March 2010, pp. 3-57.**
    a. **Journal Article**
    b. **Book**
    c. **Book Chapter**
    d. **Web Article**
4. **Barney, William L. "Rush to Disaster: Secession and the Slaves' Revenge." *Secession Winter: When the Union Fell Apart.* Robert J. Cook, William L. Barney and Elizabeth R. Varon. Johns Hopkins University Press, 2013. 77-96.**
    a. **Journal Article**
    b. **Book**
    c. **Book Chapter**

d. Web Article

5. **Cooper, W.J. (2012)** ***We have the war upon us: The onset of the Civil War, November***

   1860- April 1861. **New York: Alfred A. Knopf.**

   a. Journal Article

   b. Book

   c. Book Chapter

   d. Web Article

6. **Cockrell, T. (2013). Patriots or Traitors: Unionists in Civil War Mississippi. In**

   M.B. Ballard (Ed.), ***Of times and race: Essays inspired by John F. Marzalek***

   (pp 23-35). Jackson, Mississippi: University Press of Mississippi.

   a. Journal Article

   b. Book

   c. Book Chapter

   d. Web Article

7. **Doyle, Don. "How the Civil War Changed the World."** ***Opinionator Blogs*****, 19 May 2015, opinionator.blogs.nytimes.com/2015/05/19/how-the-civil-war-changed-the- world/.**

   a. Journal Article

   b. Book

   c. Book Chapter

   d. Web Article

References

Hurricane Sandy. (2016, August 6). In *Wikipedia, The free encyclopedia*. Retrieved 20:13, August 11, 2016, from https://en.wikipedia.org/w/index.php?title=Hurricane_Sandy&oldid=733289641

Organisation for Economic Co-operation and Development. (2009). The evolution of news and the internet. Retrieved from http://www.oecd.org/sti/ieconomy/45559596.pdf

5

Evaluate

Introduction

In 2010, a textbook being used in fourth grade classrooms in Virginia became big news for all the wrong reasons. The book, *Our Virginia* by Joy Masoff, had caught the attention of a parent who was helping her child do her homework, according to an article in *The Washington Post*. Parent Carol Sheriff was a historian for the College of William and Mary and as she worked with her daughter, she began to notice some glaring historical errors, not the least of which was a passage that described how thousands of African Americans fought for the South during the Civil War.

Further investigation into the book revealed that, although the author had written textbooks on a variety of subjects, she was not a trained historian. The research she had done to write *Our Virginia,* and in particular the information she included about Black Confederate soldiers, was done through the Internet and included sources created by groups like the Sons of Confederate Veterans, an organization which promotes views of history that deemphasize the role of slavery in the Civil War.

How did a book with errors like these come to be used as part of the curriculum and who was at fault? Was it Masoff for using untrustworthy sources for her research? Was it the editors who allowed the book to be published with these errors intact? Was it the school board for approving the book without more closely reviewing its accuracy?

There are a number of issues at play in the case of *Our Virginia*, but there's no question that evaluating sources is an important part of the research process and doesn't just apply to Internet sources. Using inaccurate, irrelevant, or poorly researched sources can affect the quality of your own work. Being able to understand and apply the concepts that follow is crucial to becoming a more savvy user and creator of information.

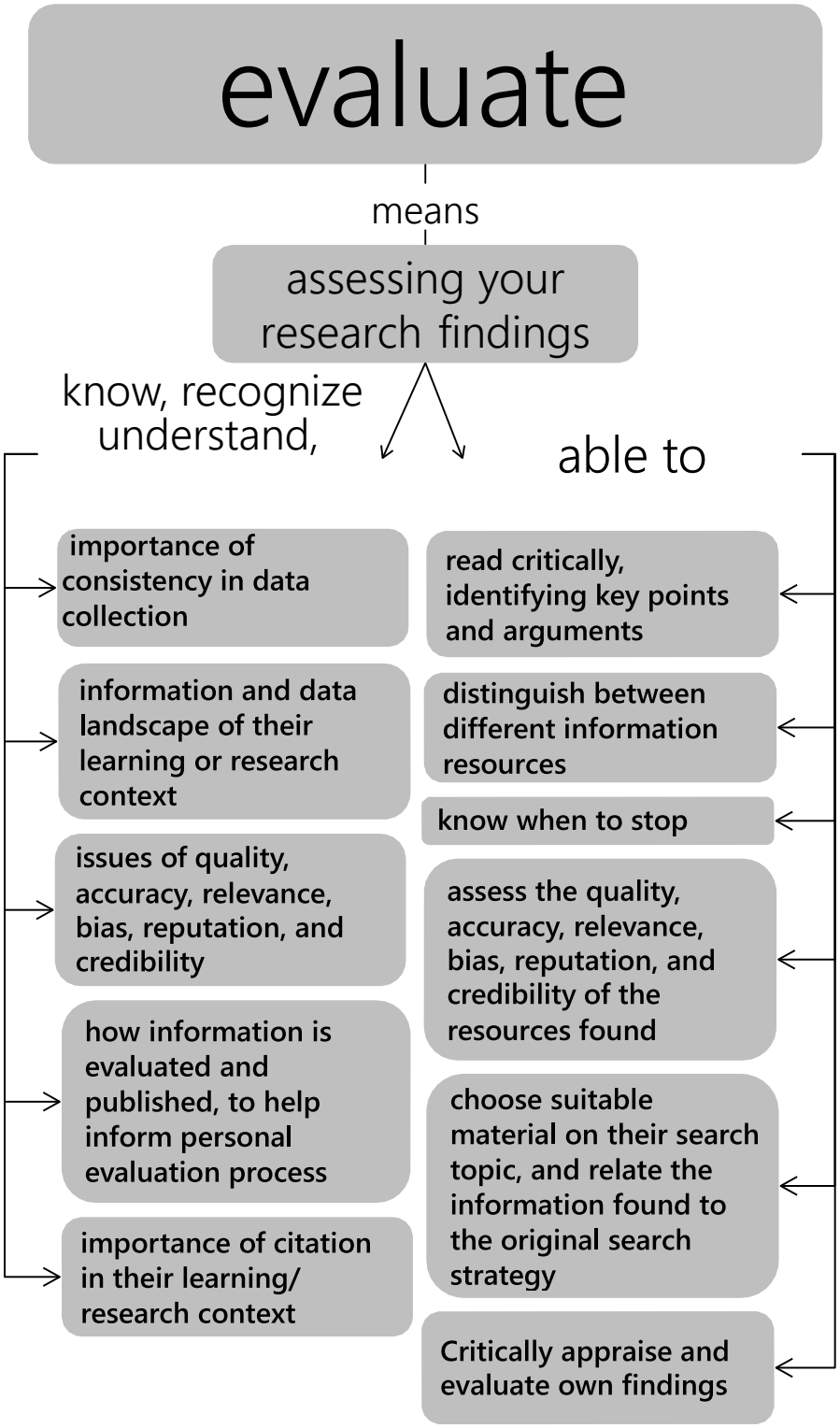
The Evaluate pillar states that individuals are able to review the research process and compare and evaluate information and data. It might be the most important aspect of the process.

Good researchers understand

- What information and data exists and which of it to use for a particular research assignment
- Issues of quality, accuracy, relevance, bias, reputation and credibility, relating to information and data sources
- How information is evaluated and published to help inform their personal evaluation process
- The importance of consistency in information and data collection
- The importance of citation in their learning/research context

Good researchers are able to

- Distinguish between different information resources
- Choose material appropriate to their research topic and intended audience
- Assess the quality, accuracy, relevance, bias, reputation and credibility of the information resources found
- Read the information critically, identifying key points and arguments
- Relate the information found to the original search strategy
- Critically evaluate their own findings and those of others
- Know when to stop



Proficiencies in the Evaluate pillar

The first section of this chapter will talk about some of the ideas and concepts behind evaluating sources (the "able to" column above), while the second section will give you the opportunity to put your evaluation skills into practice.

Distinguishing Between Information Resources

Information is published in a variety of formats, each with its own criteria for evaluation. Consider the following formats.

Social Media

Social media is a quickly rising star in the landscape of information gathering. Facebook updates, tweets, wikis, and blogs have made information creators of us all and have a strong influence not just on how we communicate with each other, but also on how we learn about current events or discover items of interest. Anyone can create or contribute to social media and nothing that's said is checked for accuracy before it's posted for the world to see. So do people really use social media for research? Currently, social media like Tweets and Facebook posts are really only useful as primary sources, treated as the objects under study rather than secondary sources of information on a topic. However, now that the Modern Language Association has a recommended way to cite a tweet, social media may, in fact, be gaining credibility as a resource.

News Articles

These days, social media will generally be among the first to cover a big news story, but news articles will report after more information has been gathered. News articles are written by journalists who either report on an event they have witnessed firsthand, or after making contact with those more directly involved. The focus is on information that is of immediate interest to the public and these articles are written in a way that a general audience will be able to understand. These articles go through a fact-checking process, but when a story is big and the goal is to inform readers of urgent or timely information, inaccuracies may occur. In research, news articles are often best treated as primary sources, especially if they were published immediately after a current event.

Magazine Articles

While news articles and social media tend to concentrate on what happened, how it happened, who it happened to, and where it happened, magazine articles are more about

understanding *why* something happened, usually with the benefit of at least a little hindsight. Writers of magazine articles are usually journalists accustomed to relying heavily on investigation and interviews for research. Fact-checking in magazine articles tends to be more accurate because magazines publish less frequently than news outlets and have more time to get facts right. Depending on the focus of the magazine, articles may cover current events or just items of general interest to the intended audience. The language may be more emotional or dramatic than the factual tone of newspaper articles, but magazine articles are written at a similar reading level so as to appeal to the widest audience possible. A magazine article is considered a popular source rather than a scholarly one, which gives it less authority and value in a research context, but doesn't take away the value completely.

Scholarly Articles

Scholarly articles are written by and for experts in a field and generally describe formal research studies or experiments conducted to provide new insight on a topic, rather than reporting current events or items of general interest. You may have heard the term "peer review" in relation to scholarly articles. This means that before an article is published, outside scholars formally review it in order to confirm that the information is accurate and the research it discusses is valid. This process adds a level of credibility to the article that you would not find in a magazine or news article. Scholarly articles tend to be long and feature specialized language that is not easily understood by someone who does not already have some level of expertise on the topic. Though they may not be as easy to use, scholarly articles carry a lot of authority in a research context, especially if you are working in a field related to science or technology. These sources will give you information to build on in your own original research.

Books

Because a topic can be covered in more depth in a book than in most other types of sources, books have been a staple of the research process since Gutenberg invented the printing press. Also, the conventional wisdom for books is that anyone can write one, but only the best ones get published. This is becoming less true as books are published in a wider variety of formats and via a wider variety of venues, including self-publishing, than in previous eras. This is something to be aware of when using a book for research purposes. For now, the editing process for formally published books is still in place. Research in the humanities, which includes topics such as literature and history, continues to be published primarily in this format.

Choosing Materials

How do you choose a source for your research? Does the source you found relate to your topic in some way, either supporting or refuting it? Will you choose a recent source because your topic requires the most up-to-date information? Do the authors seem like they have authority to write about this topic?

These are important criteria to varying degrees, but there are other criteria you may want to keep in mind when deciding if a source will be useful to your research:

Quality

Scholarly journals and books are traditionally considered to be higher quality information sources because they have gone through a more thorough editing process that ensures the quality of their content. Information on the Internet can also be of a high quality, but there is less of a quality assurance process in place for free online information. Currently, the highest quality information, even on the Internet,often requires a subscription or other form of payment foraccess.

Clues to a source's level of quality are closely related to thinking about how the source was produced, including what format it was published in and whether it is likely to have gone through a formal editing process prior to publication.

Accuracy

A source is accurate if the information it contains is correct. Sometimes it's easy to tell when a piece of information is simply wrong, especially if you have some prior knowledge of the subject. But if you're less familiar with the subject, inaccuracies can be harder to detect, especially when they come in the form of exaggerations or inconsistencies in a particular text.

To determine whether a source is accurate, you need to look more deeply at the content of the source, including where the information comes from and what evidence the author uses to support their views and conclusions. It also helps to compare your source against another source. A reader of *Our Virginia* may not have reason to believe the information the author cites from the Sons of Confederate Veterans website is inaccurate, but if they compared the book against another source, there is a good chance the inconsistencies would become more apparent.

Relevance

Relevance has to do with deciding whether the source actually relates to your topic and, if it does, how closely it relates. Some sources may be an exact match; for others, you may need to consider a particular angle before you can tell whether the source applies to your topic. When searching for relevant sources, you should keep an open mind—but not too open. Don't pick something that's not really related just because it's on the first page or two of results, or because it looks good at first glance. This is a common practice of new researchers, but you should think about what you find more carefully:

You can assess the relevance of a source by thinking about how it connects to your research topic or research question. Keep in mind that the source may not need to match on all points, but it should match on enough points to be usable for your research beyond simply satisfying a requirement for an assignment.

Bias

An example of bias is when someone expresses a view that is one-sided without much consideration for information that might challenge or negate what they believe. Bias is most prevalent in sources that cover controversial issues where the author may attempt to persuade their readers to one side of the issue without giving fair consideration to the other side of things. If the research topic you are using has ever been the cause of heated debate, you will need to be especially watchful for any bias in the sources you find.

Bias can be difficult to detect, particularly when we are looking at persuasive sources that we want to agree with. If you want to believe something is true, chances are you'll side with your own internal bias without consideration for whether a source exhibits bias. When deciding whether there is bias in a source, be aware of dramatic language and images, poorly supported evidence against an opposing viewpoint, or a strong leaning in one direction.

Reputation

Is the author of the source you have found a professor at a university or a self-published blogger? If the author is a professor, are they respected in their field or is their work heavily challenged? What about the publication itself ? Is it held in high regard or relatively un-known? Digging a little deeper to find out what you can about the reputation of both the author and the publication can go a long way toward deciding whether a source is valuable.

You can investigate the reputation of an author by looking at any biographical information that is available as part of the source. Looking to see what else the author has published and whether this information has positive reviews is also important in establishing whether the author has a good reputation. The reputation of a publication can also be investigated through reviews, word-of-mouth by professionals in the field, or online databases that keep track of statistics related to a journal's credibility.

Credibility

We just discussed how to determine the trustworthiness of an author. Similarly, credibility has to do with the believability or trustworthiness of a source based on evidence, such as information about the author and the reputation of the publication. A research paper that used sources written by someone with no expertise on a topic, or relied on a source that appeared in a publication that was known for including low quality information, or one riddled with spelling and formatting errors would most likely earn a poor grade.

In general, credibility can be determined by taking into account all of the other criteria discussed for evaluating a source. Knowing that some types of sources, such as scholarly journals, are generally considered more credible than others (for example, self-published websites) may also help. Specifically, deciding whether a source is credible may come down to a gut feeling. If something about a source doesn't sit well with you for any reason, you may decide to pass it over.

Identifying Key Points and Arguments

Evaluating a source by way of its title, author, and summary information is only the first step. The evaluation process continues when you begin to read the source in more detail and make decisions about how (or whether) you will ultimately use it for your own research.

When you begin to look more deeply at your source, pay close attention to the following features of a document.

Introduction

The purpose of the introduction--if your source has one--is to give information about the source as a whole. There are different types of introductions, including forewords and prefaces that may be written by the author of the book or by someone else with knowledge of the subject. Introductions can include background information on why the topic was chosen, background on the author's interest in the topic, context pertaining to why the topic is important, or the lens through which the topic will be explored. Knowing this information before diving into the rest of the work will help you understand the author's approach to the topic and how it might relate to the approach you are taking in your own research.

Table of Contents/Menu

If your source is a book or an entire website, it will most likely divided into chapters or sections, each covering a particular aspect of the overall topic. For books, these chapter titles are gathered into a list called the table of contents. For a website, this list is usually found in the section called "menu." It's recommended to start with these lists in order to get a "big picture" understanding of the information included within. A book's table of contents and a website's menu can also help researchers concentrate only on the areas that relate most closely to their own research. Will you need the whole source or just parts of it?

List of References

Just as the looking over the beginning of a document is recommended, it can also be helpful to examine the end of a document. For example, if the source you're using is research-based, it should have a list of references that usually appear at the end. Reviewing these references will give you a better idea of the kind of work the author put into their own research. Did they put as much work into evaluating their sources as you are? Can you tell from the citations if the sources used were credible? When were they published? Do they represent a fair balance of perspectives or do they all support a limited point of view? What information does the author use from these sources and in what way does he or she use that information? Use your own research skills to spy on the research habits of others to help you evaluate the source. Remember, just because something has been published, doesn't mean it's reliable.

Evaluating Your Findings

In the case of *Our Virginia,* the author used a biased source as part of her research. Unfortunately, the inaccurate information she got from that source negatively affected the quality of her own work. Likewise, if anyone had used her book as part of their research, it would have set off a chain reaction of inaccurate information. In other words, whatever information they cited from *Our Virginia* would naturally have to be called into question, possibly diminishing the value of their own conclusions.

Evaluating sources you use for quality, accuracy, relevance, bias, and credibility is a good first step in making sure your conclusions are valuable. It also can be helpful to evaluate the sources used by your own sources. This takes extra time, but looking at the reference list, bibliography, or notes section of any source you use to gauge the quality of the research done by the author whose work you are using can be an important extra step.

Knowing When to Stop

For some researchers, the process of searching for and evaluating sources is a highly enjoyable, rewarding part of doing research. For others, it's a necessary burden on the way to constructing and sharing their own ideas and conclusions. Whichever end of the spectrum you most closely identify with, here are a few ideas about the ever-important skill of knowing when to stop.

You've satisfied the requirements for the assignment and/or your curiosity on the topic

If you're doing research as part of a course assignment, chances are you've been given a required number of sources. Novice researchers may find this number useful to understand how much research is considered appropriate for a particular topic. However, a common mistake is to focus more on the number of sources than on the quality of those sources. Meeting that magic number is great, but not if the sources used are low quality or otherwise inappropriate for the level of research being done.

You have a deadline looming

Nothing better inspires forward motion in a research project than having to meet a deadline, whether it's set by a professor, an advisor, a publisher, or yourself. Time management skills are especially useful, but since research is a cyclical process that sometimes circles back on itself when you discover new knowledge or change direction, planning things out in minute detail may not work. Leaving yourself enough time to follow the twists and turns of the research and writing process goes a long way toward getting your work in when it's expected.

You need to change your topic

You've been searching for information on your topic for a while now. Every search seems to come up empty or full of irrelevant information. You've brought your case to a research expert, like a librarian, who has given advice on how to adjust your search or how to find potential sources you may have previously dismissed. Still nothing. It could be that your topic is too specific or that it covers something that's too new, like a current event that hasn't made it far enough in the information cycle yet. Whatever the reason, if you've exhausted every available avenue and there truly is no information on your topic of interest, this may be a sign that you need to stop what you're doing and re-evaluate your topic.

You're getting overwhelmed

The opposite of not finding enough information on your topic is finding too much. You want to collect it all, read through it all, and evaluate it all to make sure you have exactly what you need. But now you're running out of room on your flash drive, your Dropbox

account is getting full, and you don't know how you're going to sort through it all *and* look for more. The solution: stop looking. Go through what you have. If you find what you need in what you already have, great! If not, you can always keep looking. You don't need to find everything in the first research attempt. There is plenty of opportunity to do more if needed!

From Theory to Practice

Looking back, the *Our Virginia* case is more complicated than it may have first appeared. It wasn't just that the author based her writing on research done through the Internet. It had more to do with the quality of the sources she found there and the effect that using those sources then had on the quality of her own work. These mistakes happened despite a formal editing process that should have ensured better accuracy, and an approval process by the school board that should have evaluated the material more closely. When both of these processes failed, it was up to one of the book's readers, the parent of a student who compared the information against her own specialized knowledge, to figure it all out.

Now that you know more about the theory behind evaluating sources, it's time to apply the theory. The following section will help you put practice the concept of source evaluation using something called the CRAAP test, and related hands-on activities.

Evaluating Resources in Practice

When you begin evaluating sources, what criteria should you consider? The CRAAP test, developed by librarians at California State University at Chico, is a set of common criteria you can use to evaluate any source, and is particularly helpful for sources on the free Web. Let's consider what each of these criteria—or evaluative elements—means.

Currency

One of the most important and interesting steps to take as you begin researching a subject is selecting the resources that will help you build your thesis and support your assertions. Certain topics require you to pay special attention to how current your resource is—because they are time sensitive, because they have evolved so much over the years, or because new research comes out on the topic so frequently. When evaluating the currency of an article, consider the following

- When was the item written, and how frequently does the publication it is in come out?
- Is there evidence of newly added or updated information in the item?
- If the information is dated, is it still suitable for your topic?
- How frequently does information change about your topic?

Exercise 1: Assess Currency

Assessing currency means understanding the importance of timely information

Imagine that you are writing a paper for a political science class on Japan's environmental policy since the Kyoto Treaty. Identify one resource that you would find helpful in your research, and one resource that you would find less helpful. Write one sentence explaining why you would or would not use each resource, paying special attention to the currency of each item.

Relevance

Understanding what resources are most applicable to your subject and why can help you focus and refine your thesis. Many topics are broad and as a result, searching for information on them produces a wide range of resources. Narrowing your topic and focusing on resources specific to your needs can help reduce the piles of information and help you focus in on what is truly important to read and reference. When determining relevance, consider the following:

- Does the item contain information connected in some way to your research question or thesis?
- Read the article's introduction, thesis and conclusion.
- Scan main headings and identify article keywords.
- For book resources, start with the table of contents at the front or index at the back—how wide a scope does the item have? Do you need part or all of this resource?
- Does the information presented support or refute your ideas?
- If the information refutes your ideas, how will this change your argument?
- Does the material provide you with current information?
- What is the material's intended audience?

Exercise 2: Find Relevant Sources

Relevance is the importance of the information for your specific needs

You are researching a paper where you argue that vaccinations have no connection to autism. Which of these resources would you consider relevant? Why or why not?

Hviid, Anders, Michael Stellfield, Jan Wohlfart, and Mads Melbye. "Association Between Thimerosal-Containing Vaccine and Autism." ***Journal of the American Medical Association*** **290, no. 13 (October 1, 2003): 1763-1766. http://jama.jamanetwork.com/article.aspx?articleid=197365**

Chepkemoi Maina, Lillian, Simon Karanja, and Janeth Kombich. "Immunization Coverage and Its Determinants among Children Aged 12 - 23 Months in a Peri-Urban Area of Kenya." *Pan-African Medical Journal* 14, no.3 (February 1, 2013). http://www.panafrican-med-journal.com/content/article/14/3/full/

Authority

Understanding more about your information's source helps you determine when, how, and where to use that information. Is your author an expert on the subject? Do they have some personal stake in the argument they are making? What is the author's background? When determining the authority of your source, consider the following

- What are the author's credentials?
- What is the author's level of education, experience, and/or occupation?
- What qualifies the author to write about this topic?
- What professional or political affiliations does the author have? Could these affiliations affect their position?
- What organization or body published the information? Is it authoritative? Does it take an explicit position on certain issues or demonstrate a bias?

Exercise 3: Identify Authoritative Sources

Authority is the source of the information—the author's purpose and what their credentials and/or affiliations are.

The following items are all related to a research paper on women in the work-place. Write two sentences for each resource explaining why the author or authors of each article might or might not be considered authoritative in this field:

Carvajal, Doreen. "The Codes That Need to Be Broken." *New York Times*, January 26, 2011. http://www.nytimes.com/2011/01/27/world/27iht-rules27.html

Sheffield, Rachel. "Breadwinner Mothers: The Rest of the Story." *The Foundry Conservative Policy News Blog*, June 3, 2013. http://blog.heritage.org/2013/06/03/breadwinner-mothers-the-rest-of-the-story

Baker, Katie J.M. "Your Guide to the Very Important Paycheck Fairness Act." *Jezebel* (blog), January 31, 2013. http://jezebel.com/5980513/your-handy-guide-to-the-very-important-paycheck-fairness-act

Accuracy

When determining the accuracy of a source, consider the following:

- Is the source well-documented? Does it include footnotes, citations or a bibliography?
- Is information in the source presented as fact, opinion, or propaganda? Are biases clear?
- Can you verify information from referenced information in the source?
- Is the information written clearly and free of typographical and grammatical mistakes? Does the source look to be edited before publication? A clean, well-presented paper does not always indicate accuracy, but usually at least means more eyes have been on the information.

Exercise 4: Find Accurate Sources

Accuracy is the reliability, truthfulness, and correctness of the content.

Which of the following articles are peer-reviewed? How do you know? How did you find out? Were you able to access the articles to examine them?

1. **Coleman, Isobel. "The Global Glass Ceiling?"** ***Current*** **524 (2010): 3-6.**
2. **Lang, Ilene H. "Have Women Shattered the Glass Ceiling." Editorial,** ***USA Today,*** **April 14, 2010. http://usatoday30.usatoday.com/news/opinion/forum/2010-04-15-column15_ST1_N.htm**
3. **Townsend, Bickley. "Breaking Through: The Glass Ceiling Revisited."** ***Equal Opportunities International*** **16, no. 5 (1997): 4-13. (PAYWALL**

Purpose

Knowing why information was created is a key to evaluation. In other words, understanding if the information is fact, opinion or propaganda will help you decide how and why to use information

- Is the author's purpose to inform, sell, persuade, or entertain?
- Does the source have an obvious bias or prejudice?
- Is the article presented from multiple points of view?
- Does the author omit important facts or data that might disprove their argument?
- Is the author's language and tone informal, joking, or emotional?
- Is the information clearly supported by evidence?

Exercise 5: Identify the Information Purpose

"Purpose" has to do with the reason the information exists—determine if the information has clear intentions or purpose, and by extension, if the information is fact, opinion, or propaganda.

Take a look at the following sources. Consider what motivated the creation of each source.

- **http://www.chevron.com/globalissues/climatechange/**
- **http://www.beefnutrition.org/**
- **Fahrenheit 911 – Movie. http://www.imdb.com/title/tt0361596/**
- **Lydall, Wendy. *Raising a Vaccine Free Child*. Inkwazi Press, 2009**
- **https://www.nwf.org/What-We-Do/Protect-Habitat/Gulf-Restoration/Oil-Spill.aspx**
- **http://zapatopi.net/treeoctopus/**
- **Owen, Mark and Kevin Maurer. *No Easy Day: The Firsthand Account of the Mission That Killed Osama Bin Laden.* New York: Penguin, 2012.**
- **Your Brain on Video Games http://www.ted.com/talks/daphne_bavelier_your_brain_on_video_games.html**

Conclusion

When you feel overwhelmed by the information you are finding, each element of the CRAAP test can help you determine which information is the most useful to your research topic. How you respond to what you find out using this test will depend on your topic and your angle on it. There might be an instance when you want to use two overtly biased resources to support an overview of typical arguments in a particular field. Perhaps your topic is historical and currency means the past hundred years rather than the past one or two years. Use the CRAAP test, be knowledgeable about your topic, and you will be on your way to evaluating information efficiently and well!

6

Manage

Now that you have gone through the processes involved to find and evaluate information, the next step is to start working with it. This is where the Manage pillar comes in: it focuses on the need to organize information professionally and ethically.

Individuals understand

- Their responsibility to be honest in all aspects of information handling and dissemination (e.g. copyright, plagiarism, and intellectual property issues)
- The need to adopt appropriate data-handling methods
- The role they play in helping others in information seeking and management
- The need to keep systematic records
- The importance of storing and sharing information and data ethically
- The role of professionals, such as data managers and librarians, who can advise, assist, and support with all aspects of information management.

They are able to

- Use bibliographical software if appropriate to manage information
- Cite printed and electronic sources using suitable referencing styles
- Create appropriately formatted bibliographies
- Demonstrate awareness of issues relating to the rights of others including ethics, data protection, copyright, plagiarism, and any other intellectual property issues
- Meet standards of conduct for academic integrity
- Use appropriate data management software and techniques to manage data

What is Plagiarism?

In short, plagiarism is when you use words, thoughts, or ideas that belong to someone else without giving them credit. In the classroom (and in the world of publishing), documenting your information sources is the only way others can tell how thorough and careful you've been in researching your topic. If you don't tell readers where your information came from, they may think (and many do) that you either made up the information or "stole" it. Failing to cite your sources is plagiarism.

By managing the sources in your papers, you encourage others to do the same and you can be a go-to expert for your friends and classmates when they need help with how to find out how to cite sources properly. The information and advice you impart may help them avoid serious difficulties. Some students truly don't know that they are doing something wrong when they paraphrase information without citing the information source. They might feel that paraphrasing the words of someone who is clearly an expert on the topic is the best way to write an accurate paper. And because they aren't quoting it directly, it doesn't need quote marks or attribution, does it? While the penalties they receive might (and this is a big "might") be less severe than someone who buys a paper online or copies and pastes big sections of material into their work, the penalties could still be substantial. Raising your friends' awareness so they won't face this situation would be a kind thing to do.

Unintentional Plagiarism

Have you ever thought about why teachers and professors seem to spend way too much time urging everyone to be sure to cite all of their sources properly? You've heard it all before: footnote this, endnote that, put this in the bibliography, capitalize this word, where are the italics, the commas, periods, hanging indents, yada yada yada! It's enough to make you give up and just wing it. But hold on a second while you gather your thoughts. Why do your professors always spend so much time urging you to do something that seems to have little practical purpose?

Scenario

Jackie was working on her 10-page research paper at the last minute. It was 3:30 am and her paper was due in class at 9:00 am. She finished the last sentence at 5:15 am, did a spellcheck and voila! Done! Groggy yet awake she went to class, turned in the paper and waited for her grade. She received an email from her professor that read, "There are some major issues with your research paper that I need to discuss with you. Please see me." Uh oh. What could it be?

When she nervously went to see him, Professor Muntz told Jackie that she hadn't cited any of her sources, and because she included a lot of direct quotes in her paper, she was guilty of plagiarism. She received an F on her paper and may be referred to the school administration for academic dishonesty. Was she really guilty of something that bad? In fact, yes she was. In this chapter we will discuss the importance of managing your information sources and some tips on how to easily and effectively avoid Jackie's pitfall.

Real World Cases

Students often feel that they are being singled out in regard to plagiarism and academic dishonesty. But that is far from the case. There are numerous examples of scholars and other professionals who have been caught plagiarizing. One such person is Doris Kearns Goodwin (2006, 1987), a famous historian who wrote the noted *Team of Rivals: the Political Genius of Abraham Lincoln*. She included material in an earlier book, *The Fitzgeralds and the Kennedys*, from three other sources without citing it, according to an article written by Nelson (2002).

Although she has since published other works, her reputation has been tarnished, and people may not take her work as seriously because of this. Unfortunately, as Nelson points out in his article, she is not the only well-known historian caught plagiarizing.

Another example, with a dramatic outcome, is that of Eugene Tobin. He was the president of Hamilton College in New York State, when it was discovered that he had included plagiarized material in speeches he had given over the course of almost a decade. He resigned from his position as the head of this prestigious institution, admitting his guilt (Isserman, 2003). Other college presidents and administrators have also been caught violating academic trust: if you try a search using the terms *plagiarism* and *college president*, you may be dismayed at the number of results.

Like some of the historians Nelson cites in his article, many students fall into a trap when they do research because they fail to mention where they found all of their information. Thousands of students in schools, colleges, and universities are guilty of committing plagiarism, but often they don't know they are plagiarizing.

Let's look at plagiarism and how to avoid it, and then continue on to some other intellectual property issues you may need to deal with.

Keeping Track of Your Sources

Try this the next time you do research. If you find some great articles on your topic, collect the following information about each as soon as you realize they will be helpful resources:

- Author name(s)
- Title of the article
- Name of the journal
- The volume number
- The issue number
- The date of the issue
- The name of the database where you found the article

Or, if you found a book, note the following once you think it might contain useful information:

- Author name(s)
- Title of book
- Place of publication
- Publisher's name
- Year of publication

Or, if you found a website you want to use, collect the following details before you leave the site:

- Author name(s)
- Title of article or webpage
- Title of overall website
- The date of the webpage (if any)
- The URL (or web address)

You might be able to get some of this information with a simple screenshot, but be sure to fill in any missing elements.

This information is often referred to as bibliographic information or metadata. It consists of essential information that identifies the information resource used to inform a research project.

You may not use every single item that you found when you gathered your sources, but having a list of all of the sources you considered will help you keep track of everything you use for your paper.

As you read each source, write down any of the authors' ideas, quotes, or thoughts you want to use and be sure to write down page numbers, if the source provides them. When you put your paper together, you will then have all the information you need to properly cite any quote, idea, or thought that came from each source.

Reference Management Software

Many researchers take the time to gather all of this information before they start writing. However, when they are ready to compile their footnotes or bibliography they can't find their preliminary notes. It may be the case that some notes are in one notebook, other notes are in a file in their computer and still others are missing entirely. Fortunately, software has been developed that helps researchers manage their source material. You may have heard of some of these reference management products. Endnote, Refworks, Mendelay, and Zotero, among others, all help manage the information gathering and retrieval process.

In addition to providing one central location for all of your references, these reference managers can

- import bibliographic information directly from a library catalog database,
- provide additional space for personal notations,
- create a bibliography or list of references in a variety of citation styles such as APA, MLA, Chicago, and more.

Some academic libraries provide access to Endnote or Refworks. If your library does not, Zotero is available free for use with the Firefox browser and Mendeley is also available at no charge from www.mendeley.com.

When to Cite

Now that you have gathered all of your information resources, you need to be mindful about how you used them in your research project. There are some very firm rules about what constitutes plagiarism:

- If you copy a sentence or paragraph verbatim (exactly) from a book, article, website, blog posting, or anywhere online or in print, you must provide information on the author and the publication in which the sentence or paragraph appears. This is known as "citing a source."
- If you use some of the exact phrases in a sentence or paragraph, even if you are not copying the whole sentence or paragraph, you must cite your source.
- If you use original information that you have obtained from an interview or conversation with someone, you must cite your source.
- If you do not use the exact sentence or phrase but paraphrase it, or use the ideas inherent in the exact sentence or phrase, you must cite your source.
- If you reprint images, maps, diagrams, charts, or tables, you must cite your source.
- If you embed video files or audio files into your work, you must cite your source.

Exercise 1: Plagiarism Quiz

The following paragraph is from an article titled, "Hydraulic fracturing overview: Growth of the process and safe drinking water concerns" in the March 1, 2012 issue of *Congressional Digest.*

The use of hydraulic fracturing continues to increase significantly, as more easily accessible oil and gas reservoirs have declined and companies move to develop unconventional oil and gas formations. Hydraulic fracturing is used for oil and/or gas production in all 33 U.S. states where oil and natural gas production takes place. According to industry estimates, hydraulic fracturing has been applied to more than 1 million wells nationwide, (p. 71).

Which of the following sentences does not plagiarize?

a. As of March 2012, hydraulic fracturing has been applied to more than 1 million wells nationwide.

b. Hydraulic fracturing has become more prevalent nationwide. More than one million wells have been created.

c. According to the *Congressional Digest*, more than one million wells in the United States use hydraulic fracturing (Hydraulic fracturing overview, p. 71).

d. None of the sentences contain plagiarism.

Citation Styles

Citing sources and avoiding plagiarism should always be an author's intent, but it is easy to get confused about how to cite. Citation styles were introduced in the Gather chapter, but it is worth repeating that there are many different citation styles. The three styles that are used most often are American Psychology Association (APA), Modern Language Association (MLA), and Chicago Manual of Style (CMS). There are no hard and fast rules about when to use each style. Professors often have a preference for one style over another, so make sure that you check with your instructor about which style they prefer.

Creating properly formatted citations has become easier in recent years with the introduction of reference management software and citation generators. A citation generator is software that will help to correctly format your citations. Some popular citation generators are Noodlebib and Easybib, both are available for a fee. There are also free citation generators available online. You can search the web to retrieve them. These generators are handy to use but some often contain errors so it is important to check the results for accuracy. The following resources are useful tools for all writers.

- *Publication Manual of the American Psychological Association*, 6th edition for APA citations
- *MLA Handbook for Writers of Research Papers*
- *The Chicago Manual of Style*
- *Citation Fox* (available at the University at Albany, University Libraries website)

You should be able to locate some of these manuals in the reference section of your library.

Citation Fox provides citation examples for over 500 different source types for both APA (6th edition) and MLA style (7th edition) (Germaine et al., 2014). While created by the University Libraries faculty, it is an open access resource available to all at

http://library.albany.edu/cfox. (Note that the MLA citations do not reflect the 8th edition of MLA style handbook which includes important revisions to previous MLA citation guidelines).

Where to Go For Help

Even if you are a very organized person and have diligently collected bibliographic information on all of the information resources that you consulted during the research process, you may misplace essential information on a resource. You may think that since you can't find this information, you will be unable to use it. But there is another option—consult a librarian. Librarians have comprehensive knowledge about how information is organized and retrieved. They also have a wealth of information resources at their fingertips. Even if you can't retrace your steps to find the missing data, it is likely that a librarian will be able to help you find the bibliographic information you need. Librarians can also help you determine when and how to cite your work. They may even be able to help you navigate citation generators and reference managers.

Librarians at your library are available to help you in person and with Hands-on Help, by telephone, and via email and chat. Ask Us 24/7 is a reference chat service where you can get assistance 24 hours a day, seven days a week. Note that you may not be speaking with a librarian from your institution. A good place for an overview of library services and tools are the Gill Library's research or subject guides. See for example the guide on writing research papers on the Gill Library website (2016).

Ethical Issues and Intellectual Property

The Manage pillar includes the practice of professional and ethical use of information. Ethical treatment of information assumes that you are treating an author's rights appropriately and avoiding an act of academic dishonesty such as plagiarism. As a creator of information yourself, you should understand the importance of respecting other authors' rights and following the general rules set forth in legal documents (see the Useful Links about Intellectual Property section for citations to some of these documents).

There are many examples of intellectual property issues that you can find in the media. For example, in June 2013 as the authors were working on this textbook, the Supreme Court of the United States overturned the law that had previously allowed gene patenting. (Association for Molecular Pathology et al. v. Myriad Genetics Inc., 2013). It might sound strange, but up until now if you were a scientist who studied the human genome and happened to discover a new gene, under the earlier law, you could patent it, thus assuring that whenever a person needed to have a medical test involving the gene they would have to pay you as a patent holder. These types of tests usually weren't covered by insurance companies and were very expensive.

As an information creator, you want to be respectfully treated by others. That is why you

should constantly strive to improve your ability to practice fair treatment of other authors' works, including being cognizant of copyright, patents, and other issues associated with intellectual property (United States Copyright Office, 2011).

Academic Integrity

You have already learned about plagiarism, often enemy number one when it comes to academic success involving research and writing. But there are other issues under the larger umbrella of academic dishonesty. First of all, every academic institution has a set of academic regulations that explain what is expected of students. Students are required to make themselves familiar with these rules.

Other examples of dishonesty that are mentioned in academic regulations are multiple submissions (one may not submit one project for two different classes), cheating on examinations, and forgery. Professors are dismayed when they have to talk to the students about these issues because, inherently, every teacher wants to believe that her students are honest. Unfortunately, plagiarism is so common that educators have begun using plagiarism detection software, such as **Turnitin** (see the Useful Links section). You obviously don't want to be identified as committing plagiarism by this software.

It is imperative to understand that everybody has to be accountable for their own work and respectful of the work of others. Future scholarship depends on the accuracy and integrity of prior scholarship. That is why, when doing research one must use the information produced by other people responsibly, i.e. provide citations within the text and a list of references at the end of the paper with full citation information that will allow retrieval of the document. Remember what you have learned in this chapter about managing your sources and citation style. If you are diligent about applying this knowledge and careful about giving credit where credit is due, you should have no worries.

Glossary

Bibliography: A list of source materials that are used or consulted in the preparation of a work or that are referred to in the text (dictionary.com, 2016).

Copyright: The exclusive right to make copies, license, and otherwise exploit a literary, musical, or artistic work, whether printed, audio, video, etc.: works granted such right by law on or after January 1, 1978, are protected for the lifetime of the author or creator and for a period of 70 years after his or her death (dictionary.com, 2016).

Creative Commons: A set of various licenses that allow people to share their copyrighted work to be copied, edited, built upon, etc., while retaining the copyright to the original work (often used attributively): We're happy for other sites to share these photos under Creative Commons; a creative commons license (dictionary.com, 2016).

Easybib: An intuitive information literacy platform that provides citation, note taking, and research tools that are easy-to-use and educational (easybib.com, 2016).

Noodlebib: An online research management platform that helps students stay organized as they evaluate information, build accurate citations, archive source material, take notes, outline topics, and prepare to write (noodletools.com, 2016).

Plagiarism: An act or instance of using or closely imitating the language and thoughts of another author without authorization and the representation of that author's work as one's own, as by not crediting the original author (dictionary.com, 2016).

Turnitin: An Internet-based plagiarism-prevention service created by iParadigms, LLC, first launched in 1997. Typically, universities and high schools buy licenses to submit essays to the Turnitin website, which checks the documents for unoriginal content. The results can be used to identify similarities to

existing sources or can be used in formative assessment to help students learn how to avoid plagiarism and improve their writing (dictionary.com, 2016).

Zotero: [zoh-TAIR-oh] is a free, easy-to-use tool to help you collect, organize, cite, and share your research sources (zotero.org, 2016).

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7

Present

Scenario

Norm Allknow from the Identify chapter has done a lot of work since the last time we saw him. His research supports his thesis statement and he's got something to say. Now he needs to figure out how to say it.

He writes a 10-page paper starting with his thesis statement, followed by some facts from his research, and then briefly concludes that he has proved his point. He hands it in to his teacher and he's finished. Except that he starts to feel like he just did an awful lot of work for an audience of one person. Who else might be interested and how might he reach them? How can he communicate his message in ways other than a straightforward paper? How can he get the most out of his effort?

Presenting the Results of Your Research

In earlier chapters we discussed how to identify a research topic and how to focus in on specific questions that we hoped to answer. Then we discussed ways to search for, organize, and evaluate information that would help to answer those questions. Now it's time to think about the best way (or ways) to present the information.

Individuals adept at the Present pillar can apply the knowledge they have gained. They can present the results of their research, synthesize new and old information and data to create new knowledge, and disseminate their work in a variety of ways.

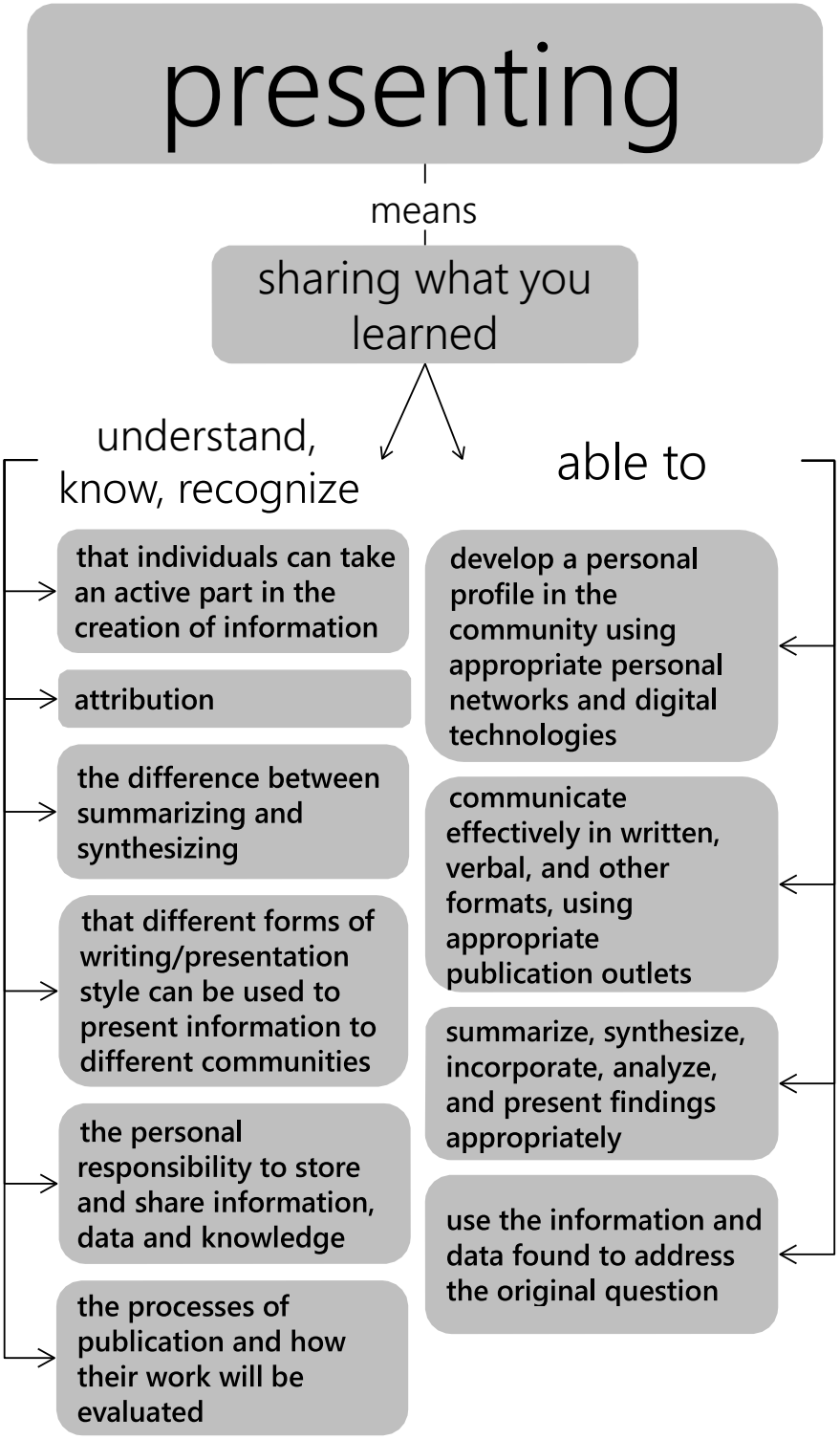
They understand

- The difference between summarizing and synthesizing
- That different forms of writing/presentation style can be used to present information to different communities
- That data can be presented in different ways
- Their personal responsibility to store and share information and data

- Their personal responsibility to disseminate information & knowledge
- How their work will be evaluated
- The processes of publication
- The concept of attribution
- That individuals can take an active part in the creation of information through traditional publishing and digital technologies (e.g. blogs, wikis)

They are able to

- Use the information and data found to address the original question
- Summarize documents and reports verbally and in writing
- Incorporate new information into the context of existing knowledge
- Analyze and present data appropriately
- Synthesize and appraise new and complex information from different sources
- Communicate effectively using appropriate writing styles in a variety of formats
- Communicate effectively verbally
- Select appropriate publications and dissemination outlets in which to publish if appropriate
- Develop a personal profile in the community using appropriate personal networks and digital technologies (e.g. discussion lists, social networking sites, blogs, etc.)



Proficiencies in the Present pillar

Processing What You Find

In many or even most cases, during the process of finding a variety of information sources, you will begin to develop an answer to your research question. Even if you feel that you've already found the proof you need to support your thesis, it is still important to review the information and data you have to be sure you're clear about what it is (and isn't) telling you. Be careful not to let your own opinion lead you into a misinterpretation of your sources.

One useful way to consolidate the information you've found is to summarize what you think it says, and then find a definite source for each specific item in your summary. You can start by filling in the final box in the chart below, from the Identify chapter.

What do you already Know about your topic?	What do you Want to know about your topic?	How will you find information on your topic?	What have you Learned about your topic?

However, an expanded version of this same box can tell you a lot more about where the information is from, and will also prove useful when you need to cite a specific bit of information in your bibliography. In the left column of the following box, list what you have learned, bit by bit. In the right column, list where you found it. If it was found in more than one source, list them all and think about which one you find to be the most reliable or useful. Depending on where and how you present your findings, you may be called upon to defend your sources, so it pays to be prepared for this. Make certain to be mindful in choosing trustworthy sources and using the proper citation style (M.L.A., A.P.A., etc.) to cite the sources correctly.

What have you learned about your topic?	Where did you learn it?

This exercise is just one way to process your information and may not be the best way for everyone. Summarizing in paragraph form is another way to accomplish the same task, with the added benefit that what you write in the summary can often become part of your final product. Just be careful that you aren't using paraphrased material without properly citing the source it came from. Verbally summarizing your findings, and especially your arguments in favor of your conclusions, to a friend, classmate, or teacher is an excellent way to confirm your mastery of the topic. While the means of summarizing can vary, the key at this point is to make sure you understand what you've found and how it relates to your topic and research question.

Now that you're confident in your knowledge of your topic, you can formally answer your original research question when you present what you've found. Did your original thesis/hypothesis turn out to be true? If so, say so! If not, why not? Be sure you're able to state the specifics that prove or disprove your projections. Was anything a surprise? Do any of your findings suggest future research possibilities?

One of the most satisfying parts of doing research is having something to add to a topic's base of knowledge. Think about what you found in relation to your original research question and compare it to all of the sources you examined on your topic. Did you discover something new? If your research involved experiments, you may have new results or data sets that others can use. Even if you didn't generate new data, maybe you saw new connections between existing sources that no one has written about before. Think about this as you begin to put together the presentation of your findings, you may have something to share!

Choosing How to Present

The way you finally present your research findings is largely dependent on your original goals. If you were doing the research for a class project, it's likely that the teacher provided you with fairly specific requirements and it would obviously be a good idea to stick to them.

Even if you did initially do the research for a class project though, you may find yourself in a situation similar to Norm at the beginning of the chapter, wanting to share your work more widely. You've already done the work, so why not get all the benefit you can?

Some of the more common ways of presenting information are discussed below, but the descriptions of them are not exhaustive and remember that these are not nearly all of the options. In addition, you can often combine more than one method of presentation to highlight different elements of your findings or to reach multiple audiences.

Written

Writing is the most established way to share your research findings. Benefits of writing include the ability to proofread, edit, and rewrite to get your presentation exactly right. Done skillfully, writing can hold your audience's attention and effectively deliver information. Done poorly, it can confuse or bore your audience to the point that they stop reading. To avoid this second possibility, if at all possible, have someone read your writing before you give it to the final audience. Take constructive criticism to heart, so that your voice is clearly heard.

Traditional Paper

One of the most common ways to present research findings, especially for students, is in a short paper written as a class assignment. The way this type of paper is formatted is determined by the teacher, and is fairly straightforward. The goal is usually to demonstrate to the teacher that you have understood the topic and can draw some conclusions from what you've learned.

Thesis/Dissertation

At higher levels of education, you may be called upon to write a thesis paper or even a dissertation. At this point, you are entering the realm of high level professional or scholarly expertise, and will be expected to produce original ideas and the necessary supporting research to contribute to your field. The type of writing in theses and dissertations varies depending on the subject area, but generally these manuscripts are longer and more detailed than a traditional class paper. They also use more discipline-specific language, and can take several years to complete.

Scholarly Journal Article

Articles published in scholarly journals undergo a peer-review process (see the Evaluate chapter) to ensure that they are reliable and significant additions to the literature on a topic. If you get to a point in your research where you feel you have a contribution that others could use, investigate the possibility of submitting an article for publication, especially if your research is relevant to your intended career. It can be difficult to determine which journal to submit your article to, so don't hesitate to ask teachers, colleagues, or even the editor of the journal if your article's content is appropriate.

Soon, the School of New Resources will give its students the opportunity to publish their work in Serviam, the undergraduate online scholarly journal at The College of New Rochelle. The online journal is still in the planning stages and will be available in the near future.

If you are interested in publishing your research paper or Life Arts Project (L.A.P.) in Serviam, have your professor recommend it for submission. Once your professor has agreed to recommend your work, you will be able to submit it online. The work will be peer reviewed before being accepted. For further information on Serviam, the online peer reviewed undergraduate research journal, contact Lusiella Fazzino, Scholarly Communications Librarian at CNR, lfazzino@cnr.edu.

Blog/Tweet/Other Social Media

A relatively new option for getting your information out to a wide audience is to use social media tools. If you have your own blog or website you can easily publish your findings for the entire world to see (getting people to actually look at it is another issue, with many possible solutions). You can also use Facebook, Twitter or other tools to let people know what you're working on and to direct them to more detailed information that you've posted elsewhere online. While this may seem unusual, it is becoming more and more popular for researchers to share work online as it progresses, so that other interested parties can contribute and ask questions, making the final product more robust, whatever form it ends up taking.

Spoken

Presenting information verbally might seem easier than writing or terrifying, depending on your experience and personality. Ideally you will be thoroughly prepared and able to clearly explain your findings, while also being able to respond effectively to unanticipated questions. It takes practice and a deep knowledge of your topic to do this—even the best speakers get flustered once in a while. Don't be afraid to say you don't know the answer and always offer to follow up on a question.

Class Presentation/Speech

As with the class paper, a class presentation is one of the first experiences most students will have with verbally presenting their research. One great benefit of this type of presentation is that you will most likely receive detailed feedback on how well it was received and perhaps even get some suggestions on how to improve your delivery. Your fellow students will also be faced with the same task and can even provide this type of feedback before the actual presentation takes place.

Conference Presentation or Poster Session

As your expertise on a topic grows, you may want to reach a wider audience. You will also want to reach an audience that is interested in your topic. An excellent place to find this audience is at a professional conference in your field. Aside from the many other benefits of attending professional conferences, presenting at a conference will help you begin to make yourself known to other researchers in similar subject areas. Responding to audience questions will give you the chance to prove that you really know your material or, alternately, can point out gaps in your knowledge that may lead to new research opportunities. Poster sessions are a great way to get your feet wet, as your poster will be available for you to refer to and the atmosphere is not quite as overwhelming as standing in front of a full audience for a presentation.

At the School of New Resources, Dr. Bront who teaches the Ways of Knowing seminar class organizes a poster session where her students can display their work. Called the "Journey to Ways of Knowing" poster session, students are able to present the research conducted for their Life Arts Project.

Even if you are not in her class, consider attending this event, held every Spring. It is a great way to learn how to design a poster or about poster sessions in general. Your fellow classmates will appreciate you showing support of their accomplishments.

Contest

There may be local, regional national or even international contests in which you may want to enter your work, depending on the topic of the work. For example, 4humanities.org is a collaborative of digital humanities scholars founded in 2010. The organization holds an annual student contest for undergraduate and graduate students, with significant prizes. Submission guidelines and contest rules can be found on the Website.

Audiovisual

Visual images can have an immediate impact on how your audience reacts to and understands your presentation. Choose them wisely and use them at appropriate times! Below are just a few brief thoughts about how you might use visuals in your presentations.

Powerpoint/Prezi/Other Presentation Software

Powerpoint has been around long enough that most everyone knows it. For many purposes a slideshow that you speak over, or even a slideshow that is posted online for individual viewing, can succinctly get your point across. Newer presentation tools such as Prezi (prezi.com) use a similar underlying idea but enable you to create more dynamic presentations directly online. Another presentation tool is Microsoft Sway. A fun, animated tool which is good for brief, memorable presentations is PowToon. Keep in mind that in most cases, tools such as these are meant to accompany a speaker and to use them effectively takes forethought and practice.

Images

Images can be powerful tools to grab attention, condense information, and tell your story. Different types of images can be useful in different contexts. In an art class you may use reproductions of famous paintings or drawings, or images you've created on your own. In a business class, graphs and charts may be more appropriate. Just make sure the images you choose actually make your presentation more effective rather than distracting attention from your main point.

Song

Keeping your audience in mind, don't be afraid to present your material in an unusual manner. If you can create a song (as one example), you may make your audience curious enough to stay around for more detailed information later!

Video

With the tools available now, it is possible to create a quality video product to present your information without extensive training or a lot of money. New online tools are constantly being introduced (and retired, unfortunately) which enable you to enter your content (words, images, video, etc.) and have it processed into a completed video in a short amount of time. Your library is also likely to have tools available for you to use to create video and audio projects, including not only the editing software, but often the video cameras, microphones, and hard drives you'll need to create original content. Don't hesitate to ask a librarian for both access and help using these resources. Many libraries also offer introductory courses on the software they provide to get you off to a running start.

Choosing a Presentation Format

The examples above give you an idea of the variety of presentation venues available, but it's up to you to decide which is most appropriate at a given time. If you're unsure, experiment.

Exercise 1: Present Your Information in Different Formats

Take what you've learned about your topic and express it as a written paragraph, a 140 character tweet, and a Prezi. Try to draw a picture that clearly explains your findings. Which of these seems most complete? Which seems most effective? Which seemsmost attention grabbing? Which was the hardest to do? Attempting this exercise might help you to make your decision about which format to use, although there are other things to consider first, particularly your intended audience.

Audience

Who you plan to present to affects how, when, and what you will present. If you're presenting your findings in a paper that only your teacher will ever see, you will focus exclusively on what that teacher has asked for. When you're presenting for a less well-defined audience however, you must imagine what they may already know (or not) about your topic, as well as what might interest them and what forms of presentation might be most appealing to them.

Exercise 2: Plan for Your Audience

Audience	What might they know?	What presentation methods might appeal most?
Teacher of the class		
Fellow students		
Experts at a conference		
Your family at a holiday gathering		
A group of elementary school students		
Newscaster interviewing you		

How do the different audiences affect what you might or might not include in your presentation about your topic? How do they affect the ways you might choose to present the information?

Many times you will present to an audience composed of various groups or unknown groups (particularly if you're posting the presentation online). If you've considered a number of different audiences and chosen the content and methods most likely to appeal to most of them, your chances of success will be higher than if you only include what is most interesting to you.

Your Role in Creating and Sharing Information

When you finally do publish the results of your research, there are some things to think about in terms of what happens next. What will you do with the information now that you're finished with it? If you've written a paper for a class there may be only one copy. Do you save it and the associated notes you've made in case you need them later or do you throw it away once you get the grade? It can be difficult to project what may be useful in the future.

If you've published more widely, there are likely to be more copies, either physical or digital. Who is responsible for maintaining those copies? In a more formal situation such as a scholarly journal, the article will be maintained as part of the archives of that journal. (However, there are some questions about online-only journals. What happens if the journal goes out of business? Some journals have contingency plans for this, but not all.) If you've given a speech, do you keep the notes? If you've published on a blog, are you archiving the blog, or will it disappear once you stop using it? Even if you decide to save absolutely everything, unless you have a plan for organizing it, you may not be able to find a specific item when you need it.

Another consideration about what happens after your work is shared is what the reaction to it might be. This depends on the audience, but if you've created something really interesting or important, you may find that there is follow-up to be done. You might just be responding to comments on a blog posting or you could find yourself presenting your findings at conferences and continuing to develop your research on the topic. There may be negative feedback as well, and this is where thinking ahead about how you can support each of your arguments is important. Online, of course, there may be everything from kudos to spam and you'll have to decide how seriously to take all of that feedback. As time goes by, you may find that your work is being cited by other researchers, which is a wonderful validation of your efforts.

You are a Creator of Information

During the research process, at times it can feel as if you are just collecting what others have written or said, and that your presentation is just going to repeat what is already known on the topic. While this may be true for introductory-level papers, once you know a little more

about your topic, you will be synthesizing what you've discovered, and drawing your own conclusions. Once you publish these conclusions you will have created new information.

Before the advent of online tools, publishing your new information was difficult and often expensive. It was hard to reach a large audience because of the physical limitations of producing and distributing paper copies of publications. Now anyone can publish anything and make it available to the entire Internet-connected world in a matter of seconds. This

means that you have a great opportunity to share your ideas and to communicate with people around the world who are interested in similar topics. It also means that you have to carefully consider what you publish because anyone, even an unintended audience, can find what you've published.

In addition to being able to share information freely, you also have access to tools to create and edit audio and video materials that were prohibitively expensive to create or adapt not too long ago. You can now share more interactive and engaging material with a wider audience than ever before. This is a great opportunity and a great responsibility— use it wisely!

Wider Connections

When you begin to share your own work, you gain insight into the processes of producing and publishing information, which will help you the next time you need to find sources for a research project. Now that you know what it took for you to produce information in a given format, you know what other creators had to do to produce their work. This can help you decide which sources will be most reliable and valuable for your own research.

Presenting your information is usually considered the final step in the research process. You tell the audience what you've found out and you go home. However, as we've seen, sometimes in the process of presenting or preparing to present, you uncover new questions and need to Identify that new information need. Or you may discover that what you thought was a reliable source was not so reliable and you need to Evaluate a little more. The research process is not linear, but a continuous cycle with various entry and exit points that change depending on your goals, topic, and methods. Ideally, for those who enjoy it, it never ends!

Glossary

Microsoft SWAY - https://sway.com/
A presentation software by Microsoft which is bundled in with your Microsoft Office Suite and Microsoft 365, allowing you to incorporate all your One Drive material. It is ideal for storytelling and narratives rather than the traditional presentation of a topic.

Poster session -
A poster session is a visual presentation in the form of a poster of your research on a given topic. It is usually presented at a workshop or a conference. It may even be used for a class. See tips on how to create an effective poster and different software options for creating a poster: http://guides.nyu.edu/posters

PowToon - https://www.powtoon.com/
An animation presentation software. This is a great way to make your presentations fun and captivating. There is a free version as well as a subscription based version. There are very good tutorial and case studies.

Prezi - https://prezi.com/
A presentation software that is a common alternative to Powerpoint slides. It uses zoom and space to create a very appealing and engaging presentation.

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