Information Literacy: A Practical Guide

INFORMATION LITERACY: A PRACTICAL GUIDE

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INTRODUCTION

Overview

This book is a hands-on guide to academic research with a critical, informed lens. It walks readers through how to choose the right sources based on their research needs, the flow of information, and their specific context. The research process is broken into manageable steps starting with identifying information needs, forming strong questions, and building effective search strategies using keywords and tools like Search@UW, databases, and search engines.

It also covers how to evaluate sources by recognizing bias, understanding author expertise, and judging relevance and trustworthiness. The last section focuses on using sources in academic writing, including how to read scholarly articles, follow citations, and stay organized. Throughout, the book highlights campus resources like the UW-Green Bay Learning Center and the Library's Research Help services to support students at every stage.

How to use this book

Finding and Using the Table of Contents

Sometimes the table of contents is overlooked! To see the table of contents for the book, look on the left side. You'll see a box that says "Contents" (See image 1 below).

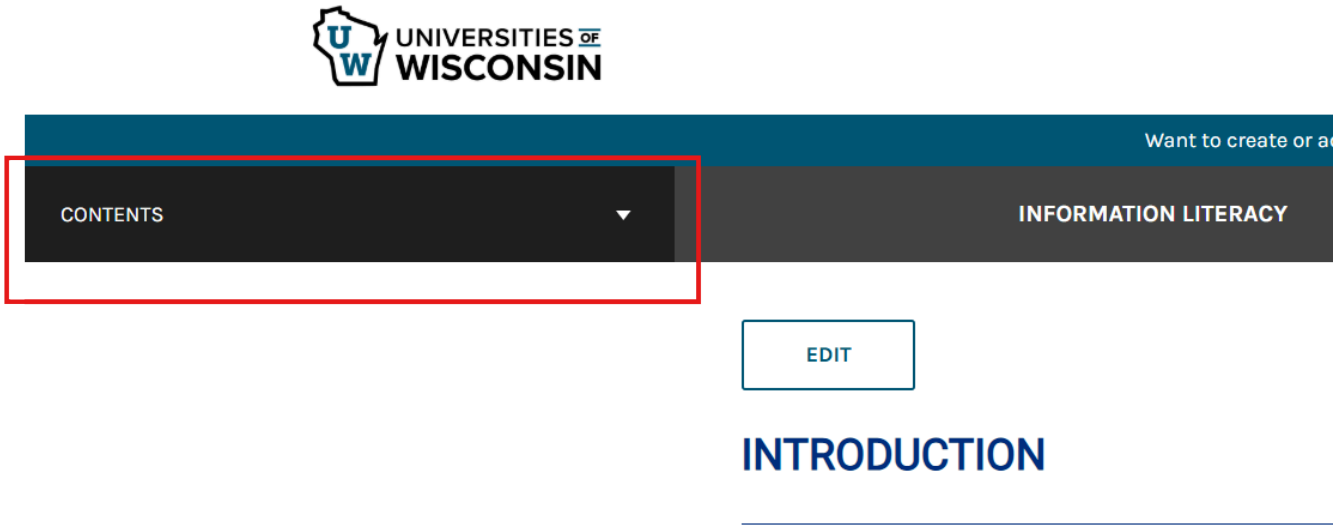


Image 1: The "Contents" box in this book that can be clicked to see the table of contents.

Click the "Contents" box to enter the table of contents, then you can click the "+" signs (See image 2 below) to see the expanded list of chapters in those sections.

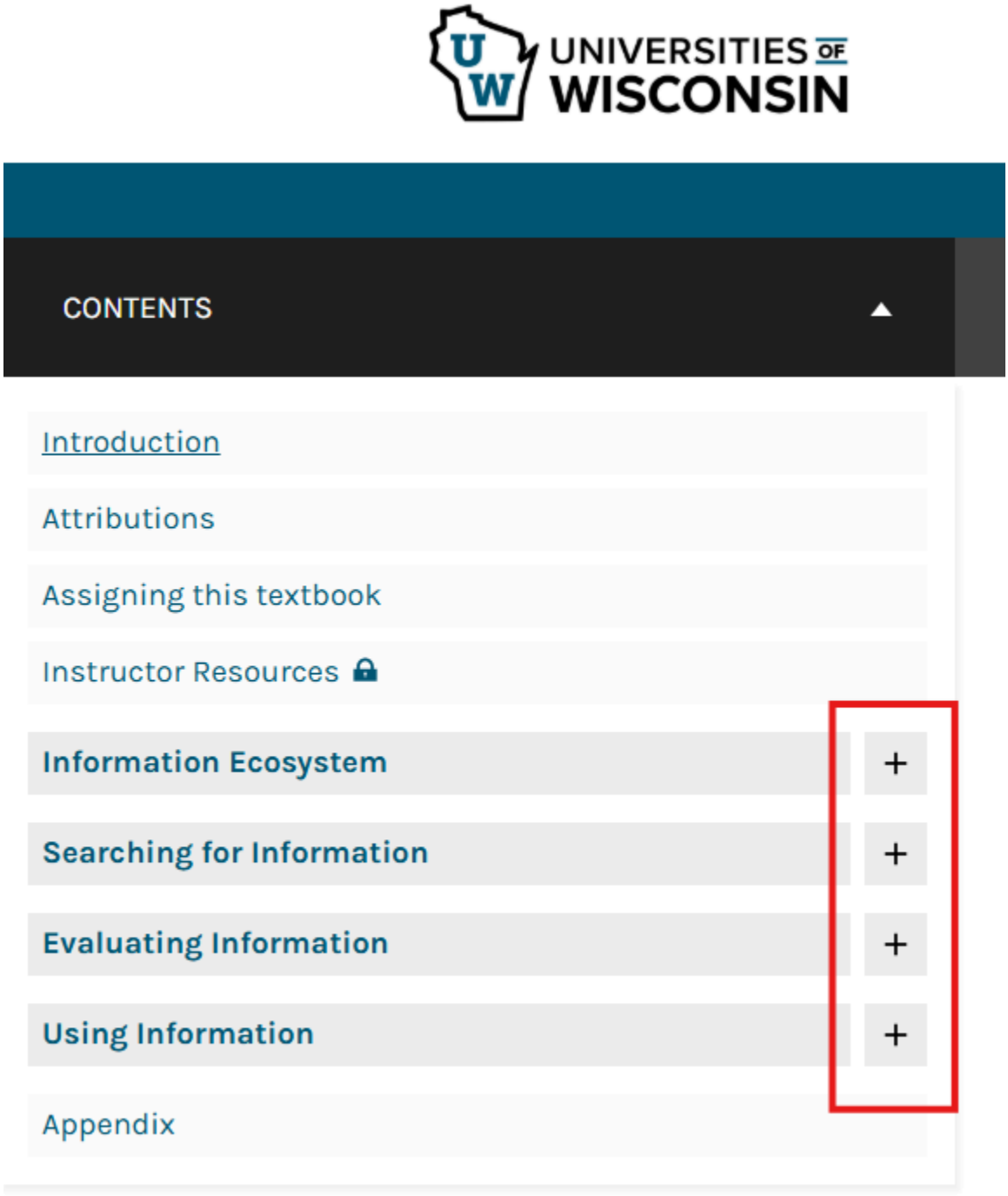


Image 2: The plus signs for the section headings that can be clicked to see the chapters for each section.

Downloading the Textbook

For the best experience, including using videos and interactive quizzes, we recommend reading this textbook in your web browser. If you prefer, you can download a PDF or ePub version instead, but just keep in mind that if you download the textbook, you will not be able to use features such as videos and interactive quizzes.

Authorship

This OER was created to support UW-Green Bay's core curriculum requirements for information literacy, but it can be used in many ways to support college-level research and information literacy skills. It was developed by the UW-Green Bay Library's Research Services team: Renee Ettinger, Anna Merry, Jodi Pierre, Carli Reinecke, and Brian Schlender.

ASSIGNING THIS TEXTBOOK

While you're welcome to assign the entire textbook, most instructors prefer to assign only selected chapters. Each chapter has its own unique URL, which can be shared as an external link in your Canvas course.

Each chapter also includes an automatically graded knowledge check-in. You can integrate chapters into Canvas as assignments, allowing you to assign them for a small grade and track student completion. If you're an instructor at UW-Green Bay, please fill out our short survey to begin the process. To learn more about Canvas integration, visit the Add a Graded Assignment to the LMS guide.

At the end of each chapter, you'll also find a set of reflection questions. We recommend using these for in-class discussions or Canvas discussion boards to help students synthesize and apply what they've learned.

INFORMATION ECOSYSTEM

Photo by Emma Henderson on Unsplash

Unit Learning Objectives

- Articulate the differences between types of sources, with regards to the information lifecycle,

the information creation process and identifying characteristics of each source type.
- Identify when use of each type of source is appropriate.

Unit Overview

This unit helps you select sources based on your research needs, the lifecycle of information, and the context of your work. You'll get to know different types of sources like scholarly articles, books, trade publications, magazines, news, multimedia, and social media by looking at their credibility, purpose, audience, and how best to use them. You'll also explore tools for checking peer review, creating research plans, and understanding the value of multiple, and sometimes conflicting, perspectives. We'll take a closer look at generative AI, including how to spot AI hallucinations and why critical thinking matters when using newer technologies in your research.

This unit contains content that may help fulfill the UW-Green Bay Core Curriculum Learning Outcomes for Information Literacy, specifically:

IL 2: Students will critically evaluate sources of information, considering both the expertise and credibility of the creators and the contextual factors that influence the information's creation, dissemination, and purpose.

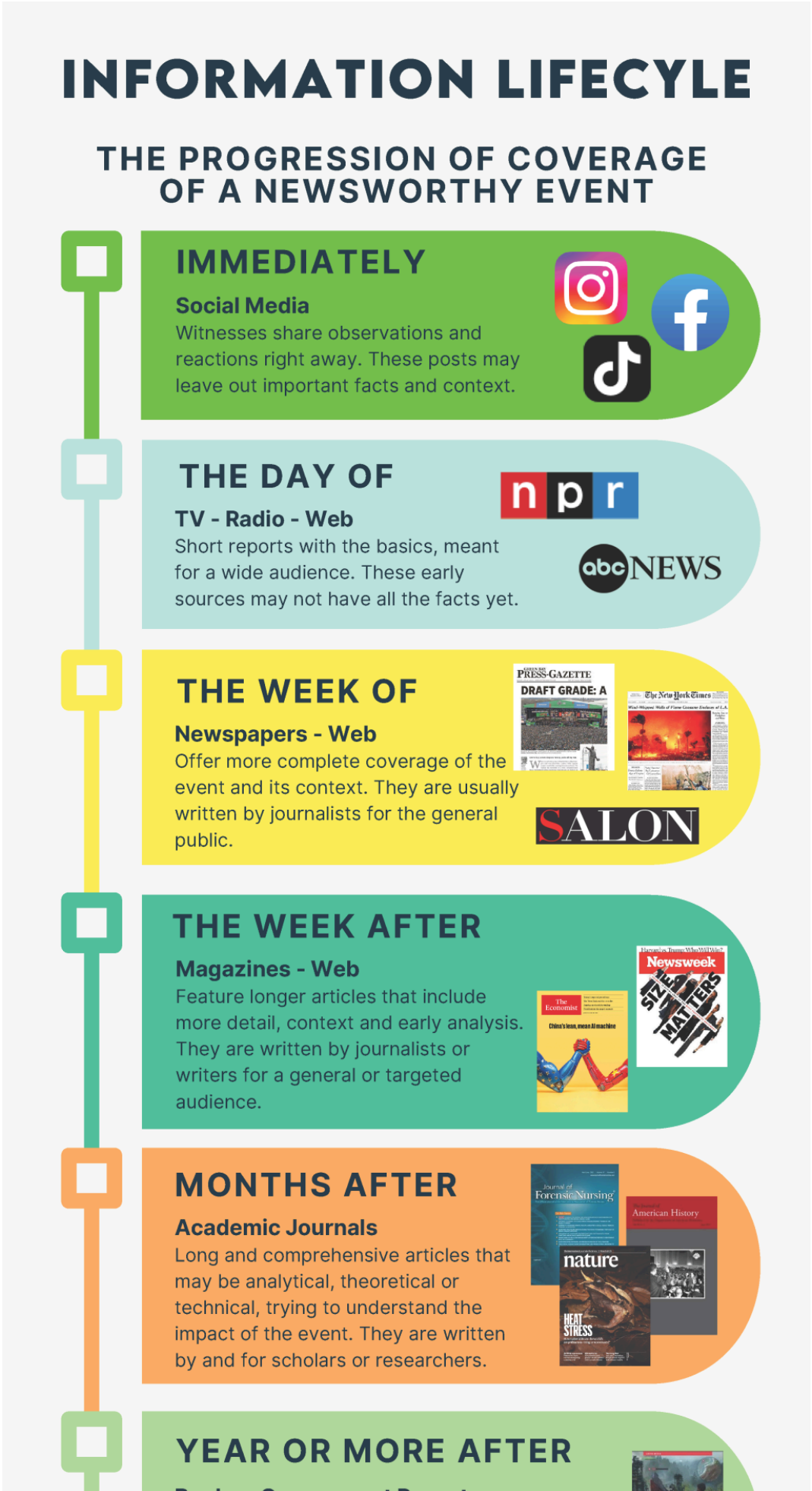
INFORMATION LIFECYCLE

Learning Objectives

- Select sources that are well-matched to the information need, based on their placement in the information lifecycle.
- Critically evaluate how the information lifecycle influences the credibility of a source.

Today, most people get their information online—from social media, news sites, or even pop-up ads. While it's easier than ever to access information, the way that information is organized still follows patterns rooted in history. We call the model of how information is created and shared the "**information lifecycle**."

The information lifecycle maps how information develops over time in response to an event. We can think of it as a timeline with milestones such as "day of" or "months after" the event. Understanding where a source fits in this timeline helps us know what kind of information is available at different stages and how useful it might be as evidence or research material.



This infographic describes the general pattern of the information lifecycle.

Text-only version of infographic (click to open)

Information Cycle:

The progression of coverage of a newsworthy event

Immediately

Social Media: Witnesses share observations and reactions right away. These posts may leave out important facts and context.

Examples: Instagram, TikTok, and Facebook

The Day Of:

TV, Radio, and the Web: Short reports with the basics, meant for a wide audience. These early sources may not have all the facts yet.

Examples: NPR and ABC News

The Week Of:

Newspapers and the Web: Offer more complete coverage of the event and its context. They are usually written by journalists for the general public.

Examples: *The New York Times*, *Salon*, and *Green Bay Press-Gazette*

The Week After:

Magazines and the Web: Feature longer articles that include more detail, context, and early analysis. They are written by journalists or writers for a general or targeted audience.

Examples: *The Economist* and *Newsweek*

Months After:

Academic Journals: Long and comprehensive articles that may be analytical, theoretical, or technical, trying to understand the impact of the event. They are written by and for scholars or researchers.

Examples: *Nature*, *The Journal of American History*, and *Journal of Forensic Nursing*

Year or More After:

Books and Government reports: Lengthy sources that take a long time to write and edit. They are typically very in-depth and factual, although some books may include individuals' perspectives and opinions.

Examples: *Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling – Report to the President (BP Oil Spill Commission Report)* and *Ecogames: Playful Perspectives on the Climate Crisis* by Laura op de Beke

We often categorize sources by their publication format because different formats take different amounts of time and effort to produce. Some sources simply can't exist right away. It takes time for people to research, reflect, and respond. That's why sources created later in the information lifecycle can look quite different from those produced early on. In many cases, later sources may offer more valid and reliable information, especially once there's time to verify facts and gather new insights.

Let's use the information cycle for the release of Beyoncé's 2016 concept album *Lemonade* as an example. Imagine you're researching its cultural impact. You gather sources from the day of the release through the years that follow. The earliest sources were produced the day of and are very brief due to the limited amount of information available at the time. As time passes, writers have more space to analyze and reflect, so later sources tend to be more detailed and thoughtful. For other events, such as a natural disaster, you'll often see that the reliability of the sources increases over time because facts can be verified and new facts can be discovered.

Click through the timeline below. If you need a text-only version of the timeline, find that option below the interactive timeline.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=35#h5p-11

Text-only version of timeline (click to open)

Beyoncé's *Lemonade* Album

Imagine you are doing a research paper on the cultural significance of Beyoncé's 2016 concept album *Lemonade*.

Understanding the information lifecycle can help you to recognize what type of information you are likely to find in different types of sources.

Album Released

April 23, 2016

Tweet by BEYONCÉ (@Beyonce)

#LEMONADE the Visual Album. http://BEYONCE.TIDAL.COM

Beyoncé tweets that the album is released.

Social Media

April 23, 2016

Tweet by Phillip Iscove (@pmiscove)

"I never experienced anything quite like #LEMONADE. To have a communal appreciation of art at the same time was truly incredible."

Phillip Iscove, Beyoncé fan and film industry professional, tweets a reaction to the album, commenting on the cultural experience of viewing the album at the same time as many others.

Television News Story

April 23, 2016

Story by ABC News

Beyonce Drops New Album During HBO 'World Premiere Event' Titled 'Lemonade'

This very brief news story only announces that the album was released and recaps some prior social media posts from Beyoncé relating to *Lemonade*. It was published online on the night of the album release.

Newspaper Article

April 24, 2016

New York Times article

Beyoncé's 'Lemonade' Comes to iTunes by Ben Sisario

This article from *The New York Times* provides basic details about the release of the new album, first on Tidal and then on iTunes and other platforms. It was published the day after the album release.

Online Magazine Article

April 26, 2016

Pitchfork album review

Albums: *Lemonade* by Beyoncé – 2016

8.5 – Best New Music

Pitchfork is a digital magazine that covers the music industry. A few days after the album was released, they published their review in a medium-length article.

Peer-Reviewed Scholarly Journal

2019

Article in *Feminist Media Studies*

Edgar, A. N., & Toone, A. (2019). "She invited other people to that space": Audience habitus, place, and social justice in Beyoncé's *Lemonade*. *Feminist Media Studies*, *19*(1), 87–101. https://doi.org/10.1080/14680777.2017.1377276

The researchers in this study interviewed 35 listeners/viewers of the album and analyzed their responses in order to write and publish this article. It was published about three years after the album release.

Academic Book

2021

Beyoncé in the World: Making Meaning with Queen Bey in Troubled Times

Baade, C. L., & McGee, K. A. (Eds.). (2021). *Beyoncé in the world: Making meaning with Queen Bey in troubled times*. Wesleyan University Press.

This book is an interdisciplinary collection about the context and significance of the *Lemonade* album, where each chapter is written by a different author or authors. It includes chapters by scholars in the fields of gender and ethnic studies, communication and cultural studies, music, religion, history, and literature. Notice that this book is published by a university press and came out about five years after the album release.

The short video below explains the concept in more detail:

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If you prefer to read the text of the video, click on the CC option on the video, or read the transcript of the information cycle video.

Here's the key takeaway about the information lifecycle: WHEN we come across a piece of information matters. Timing affects both the amount of information available and how reliable it might be.

If you're looking for coverage of the 2025 Grammy Awards, you'll likely find immediate reactions on social media, news websites, or entertainment magazines. But if you're interested in how scholars have analyzed the

Grammys and their impact on the music industry, you'll want to look for academic books or journal articles. Just keep in mind that scholarly analysis of the most recent ceremonies may not exist yet—it takes time to research, write, and publish. Background sources like Wikipedia can help fill in the gaps by summarizing both current information and long-term scholarship. The information lifecycle shows how information-sharing and technology work together (or sometimes not!) to create and disseminate new knowledge.

Technology has also changed what audiences expect. For example, although Wikipedia can be updated right away, fully updating a traditional print encyclopedia could take years. People now assume that information should appear instantly. But behind the scenes, the systems that support publishing and research often move more slowly—even when digital tools are involved. That's why being a smart researcher and consumer of information means understanding how information is produced, both in the past and present. Even in a fast-paced digital world, creating high-quality information still takes time.

Activity: The Information Lifecycle & Your Information Need

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=35#h5p-53

Reflection

- Why do you think that the types of sources created later in the information lifecycle are often the types that professors ask you to use in your college assignments?
- Can you think of time when a source created early in the information lifecycle would be more reliable or credible than a source created later in the cycle?

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- “Understanding the Information Cycle.” by Northern Illinois University Libraries, used under a CC BY 4.0 license

INFORMATION PURPOSE

Learning Objectives

- Match different types of sources to specific research needs, such as gaining background information, supporting an argument, or understanding different perspectives.
- Create a basic research plan that includes identifying information needs and selecting appropriate source types to sufficiently support those needs.
- Recognize how a thoughtful selection of diverse sources can enhance the depth and credibility of a research project, including the use of conflicting viewpoints.

Types of Information Sources

Information sources are everywhere, and you'll often have many sources to choose from. In today's information-rich world, nearly anything that provides information can serve as a potential source. The real challenge isn't finding sources; it's selecting the right ones for your needs. In this chapter, we will discuss common types of sources, their purpose or intent, and how best to use them. We will mainly focus on resources that have undergone a publishing process. It is important to remember that non-published sources like interviews, personal communication, lectures, and lived experience can also be useful for research or fulfilling an information need.

In the chart below, each of these types of sources has different content, is written by people with varying levels of expertise, and is written for different audiences. And each of these types of sources will have a different value for you, depending on the context and requirements of your research need. The next chapters in this section go in-depth on several of these source types.

Table 1: Information comes in a variety of formats, which are listed and defined below.

Type	Icon	Content and purpose
Websites		Are versatile! Many categories of content can appear on websites.
Social media		Allows anyone to share updates, opinions, and personal commentary.
News		Provide up-to-date coverage on current events, editorials and opinions, and commentary for a general audience.
Magazines		Offer feature stories, commentary, and long-form reporting on current events and general interest topics.
Government and NGO reports		Include data, standards, statistics, and analysis from official agencies or organizations, often targeting policymakers or researchers.
Scholarly articles		Present new research or analysis by scholars and written for an academic audience.
Scholarly books		Explore academic topics in-depth, written by experts, generally for an academic audience.
Trade publications		Report on industry news, trends, and products for practitioners and specialists in a field.
Multimedia sources		Include films, TV, radio, podcasts, and more; often aimed at a general audience for entertainment or information.

The Role of Sources in Research

Sources help you gain credibility with your audience and provide data, perspectives, and expert support. Even disagreeing sources can strengthen your project by showcasing well-rounded research.

Along with sometimes collecting your own data, meeting information needs through source collection is how you complete your project. Here are some of those needs:

- To learn more background information about your topic and research question
- To develop your research question(s)
- To describe the context surrounding your research question for your audience and explain why it's important
- To report what others have said about your question, including any different answers to your research question
- To answer your research question(s)
- To convince your audience that your answer is correct or, at least, the most reasonable answer

Each need requires thoughtful source selection. Planning ahead ensures you gather the right materials and avoid last-minute stress.

Author's Purpose

Understanding why an author created a source is key to critically evaluating the content. The author's purpose determines what information is included, how it is presented, and what effect it aims to have on the audience. Staying mindful of the author's intent not only sharpens your analytical thinking but also strengthens your academic writing by ensuring it is supported by credible, well-evaluated evidence. This insight can help you judge the reliability and usefulness of a source for your research.

Authors generally write with one or more of the following goals in mind:

- To Inform or Educate: These sources aim to explain facts, processes, or concepts. Examples include textbooks, academic articles, encyclopedias, and news reports.
- To Persuade: The goal is to influence readers' beliefs or opinions, often through argumentation or emotional appeal. Think of opinion editorials, political speeches, advocacy websites, or advertising.
- To Sell Products or Services: These sources are designed to promote or market something. This includes commercials, sponsored blog posts, product descriptions, or infomercials.
- To Entertain: Entertainment-focused content seeks to amuse, engage, or provoke thought. This purpose is typical in novels, satire, personal blogs, and social-media content.

Most sources are not created with a single, pure purpose. For instance, a retailer's blog post may aim to inform readers about skincare routines while subtly promoting their own products. Similarly, a political cartoon might entertain while also attempting to persuade viewers toward a particular viewpoint, and a documentary film can both inform and persuade by presenting facts through a specific lens. Recognizing these mixed motives is essential, as it helps you stay alert to potential bias or manipulation, even in sources that appear objective. Learn more about recognizing bias in the "Evaluating Sources" chapter of this book.

Informative or Educational Sources Typically Include:

- Well-researched facts and data
- Multiple viewpoints or balanced coverage
- Citations and references to credible sources
- Objective tone with minimal emotional or biased language

These are ideal for academic research, especially when building strong, evidence-based arguments. Prioritize sources that are informative and balanced, as they are most reliable for building a strong foundation in your work. Examples of informative or education sources include academic books and articles, journalism and reporting published in reputable sources, and government publications.

Persuasive-Only Sources May:

- Rely heavily on emotional language or loaded terms
- Present one-sided arguments with little room for alternative views
- Lack supporting evidence or proper citation
- Use cherry-picked data or misleading statistics

Such sources are less reliable for scholarly work, though they can be valuable for analyzing opinions, rhetorical strategies, or social influence. While persuasive or entertainment-based sources can be valuable, they should be used sparingly and always approached with a critical eye. Examples of persuasive only sources include advertising, editorials, political propaganda or campaign materials, and opinion pieces.

Be Aware! Content Marketing

You probably come across search-based content marketing all the time—even if you don't realize it. Here's how to spot it and think about it critically.

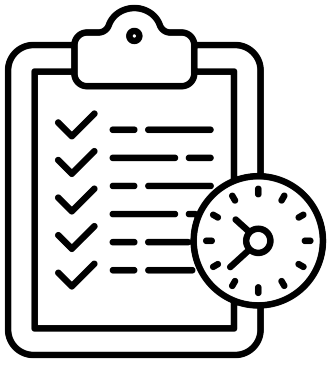
Content marketing often looks like a regular article you'd find on a trusted news site, but it's created to promote a product or service. These pieces usually live on a company's own website and are designed to look informative while also encouraging you to buy something.

To identify this kind of content, check the website name first. Does it sound familiar and trustworthy? Take a look at the navigation bar—if you see options like "Pricing" or "Features," you're likely on a company site rather than a news outlet. If the article recommends a product, double-check whether you're on that product's own site. It's easy to mistake a marketing piece for an objective review.

This kind of advertising also shows up in online newspapers and magazines. It might appear as a typical story, infographic, or video, but it's actually sponsored content. Because it's designed to match the look and feel of the rest of the site, it can be easy to miss. Look for labels like "Sponsored," "Promoted," or "Ad" to tell the difference.

Final Tip: Make a Research Plan

Before diving into research, identify your information needs and think about what types of sources might meet them. Instead of randomly searching for sources, create a source checklist to stay focused and efficient. Having a plan helps you choose sources that truly meet your information needs. It saves time, reduces last-minute stress, and leads to better research. A clear plan also helps you know when you've found enough sources by checking if all your information needs are covered.



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Reflection

- What types of information sources have you used recently (books, articles, websites, videos, etc.)? How did their content, purpose, and audience differ?
- How can you tell the difference between a source meant to inform and one meant to persuade or entertain? Why does this distinction matter when doing research?
- How does understanding an author's intent help you decide whether or not to trust or use a source in your own research?

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- Pot, J. (2022 April 9). How to spot content marketing in search results. *Wired*.

https://www.wired.com/story/how-to-spot-content-marketing-search/

SOCIAL MEDIA

Learning Objectives

- Identify appropriate research contexts in which social media can be a valuable source of information (e.g., real-time public opinion and cultural reactions).
- Begin to apply critical thinking skills to verify claims found on social media.

Photo by Mariia Shalabaieva on Unsplash

Overview

In the United States, it would be difficult to find an individual that doesn't interact with at least one form of social media. While there are several different platforms, **social media** is defined as the "websites and applications which enable users to create and share content or to participate in social networking."[1]

Though you might not think to immediately turn to social media when doing research, there are some cases in which it can be useful. This chapter will discuss how social media might be used in academic research and how to engage social media with a critical eye.

Social media might be useful to you if...

- You are researching public perception of or reactions to current events
- You need information about current trends

Social media might be less useful if...

- You need credible and in-depth information on a topic
- Your research needs information older than ~20 years

Social Media as an Information Source

Social media can be a useful tool for getting various perspectives on events as they are occurring. In some cases, social media even plays an important role in how the event takes place and how we understand it afterward. One famous example is the use of social media during the Arab Spring anti-government uprisings and protests of the early 2010s. When local news reporters were being censored, social media allowed for those who participated in the protests to share their experiences with outside reporters. Social-media posts also became an important way for historians and social scientists to understand what occurred during the protests and how social media was used as an organizational tool.

"We use Facebook to schedule the protests, Twitter to coordinate, and YouTube to tell the world." #egypt #jan25

1. Oxford University Press. (n.d.). Social media, n. In the *Oxford English Dictionary*. Retrieved June 26, 2025, from https://doi.org/10.1093/OED/5718206998

— Fawaz Rashed (@FawazRashed) March 18, 2011

In your own research, you might use social media as a source in a similar way. Let's say you are researching the cultural impact of the show *Game of Thrones* and you want to understand public perception of the series finale. Using social-media posts would be a great way to understand what audiences thought about the finale and demonstrate how that connects to its overall cultural impact. In this case, social media would be a primary source, which is an item or document that provides a first-hand account of an event or time period.

So this was very underwhelming. #gameofthrones pic.twitter.com/BpYmoloAXI
— Something like a Tyrant 🤠 (@TheASMLife) May 20, 2019

Posts from verified social-media accounts, such as those run by newspapers or journalists, can be a helpful and accessible way to engage with news content. For instance, a journalist or researcher might create a TikTok video summarizing their latest article, offering a quick and digestible overview of the key points without requiring you to read the full piece.

While you likely wouldn't cite the TikTok summary of an article in an academic paper, it can serve as a useful starting point. From there, you can use a search engine like Google to track down the original source and evaluate it more thoroughly.

Now, let's walk through an example of how to locate the original article based on a TikTok summary. Dr. Ryan Martin posted the following video about an article he wrote for HuffPost:

@angerprofessor

Working harder and more intentionally to address male anger. #greenscreen
♬ original sound – Ryan Martin

To find the original article, we can search for the title displayed in the video, or we can use search terms like "Ryan Martin Huffpost." When we do that, we find the original article from January 2025, titled "I've Studied Anger for Decades. Then an Encounter with a Man After Trump Won Changed Everything."

Caution: Social Media is Usually Just the First Stop!

While we did initially discover Dr. Martin's article through TikTok, in academic research it's important to cite the article and **not** the TikTok video. In this case, social media is acting as a way to discover information.

If your research requires you to use **primary sources**, such as the example with *Game of Thrones*, then citing the social media post would be appropriate. We will cover citing further in the "Citation Basics" chapter.

Activity: Using Social Media as a Source

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=90#h5p-26

Blogs

You are probably familiar with other types of content that are created by users, such as blogs, YouTube videos, and podcasts. While we will cover videos and podcasts in our "Multimedia" chapter, let's briefly discuss blogs.

A blog (short for weblog) is a space online where people write posts about various topics, depending on their interests. Blogs can range from purely opinion-based to research-based posts that rival some journal articles. Both individuals with little expertise and highly reputable groups can publish blogs. With such high variability in quality, evaluating the author or publisher is crucial (to find out how to evaluate a source, see our "Evaluating Sources" chapter).

Blog Characteristics

- **Updated**: Blogs are regularly updated. Some blogs are updated multiple times a day, whereas other blogs are updated weekly.
- **Order of posts**: Blog posts are shown in reverse chronological order, meaning that the most recent post is shown at the top of the webpage.
- **Comments**: Blogs have the capacity for people to comment on the posts; however, some blog authors turn off this function.

Engaging with a Critical Eye

Social media makes it easy to consume large amounts of information without much critical thought. Many platforms are designed to keep users engaged within their ecosystem, which can make it difficult to verify the information being shared or to conduct outside research.

For example, X (formerly Twitter) discourages users from linking to external sources by reducing the visibility of posts that include URLs. As a result, creators are often incentivized to omit source links in order to boost engagement. This design choice can unintentionally make it easier for misinformation to spread, as posts lacking context or citations are more likely to reach a wider audience. Other platforms, like TikTok and Instagram, make it difficult to attach links to posts within the caption. In our example above, Dr. Martin can't put a link to the article directly in the caption of the video. If Dr. Martin provided a link on his profile, it would open within the TikTok platform and be pretty difficult to navigate, rather than opening in your default browser. This is why it's important to move outside of the social-media platform to verify information.

We will cover evaluation methods in the "Evaluating Sources" chapter.

Reflection

- What types of research would benefit from using social-media posts as sources?
- Think about a time when you believed something on social media that ended up being exaggerated or untrue. What characteristics of the post made it believable?

Attribution

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NEWS

Learning Objectives

- Differentiate between various types of news sources.
- Identify the strengths and limitations of news sources depending on the research context (e.g., current events vs. scholarly analysis).

Overview

In the early 2000s, you or your parents probably got the news almost exclusively from TV broadcasts or printed newspapers. It required intentional effort, like sitting down at 5 p.m. to watch the news or picking up a newspaper each morning. At that time, the definition of "news" was relatively straightforward: it referred to any event deemed interesting or important enough to report, and those decisions were largely made by professional journalists.

In today's digital age, the definition of news has become increasingly ambiguous. News might appear to you on your "For You" page or as a quick scroll through the Apple News app. It no longer requires the same deliberate effort as sitting down to watch a broadcast or read a newspaper. As the ways we consume news have evolved, so has society's understanding of what qualifies as news. What one person views as newsworthy may not be seen the same way by someone else. Rather than journalists exclusively defining what is newsworthy, it is now partially up to the individual.

In its May 2025 report *What is News*, the Pew Research Center explored what Americans consider news to be. While no single definition earned universal agreement, several qualities stood out, with at least 65% of respondents or more agreeing that **news** should be:

- Factual, without commentary or opinion (85%)
- Timely or up to date (78%)
- Of societal importance (72%)

- Unbiased (68%)

This chapter will discuss news authorship, using news a source, and the various types of news resources that are available.

News Authorship

Journalists remain crucial players in investigating and creating the content that has traditionally been considered news. **Journalism** is "the activity of gathering, assessing, creating, and presenting news and information. It is also the product of these activities," according to the American Press Institute, a nonprofit that supports journalists. Formally trained journalists follow a set of ethical guidelines, which inform their work.

Journalism ethics are the cornerstone of all news writing.

News organizations across the U.S. have established ethical guidelines that they publicize and follow. Many use some version of the rules set by a national journalism organization called the Society of Professional Journalists.

According to its website, the SPJ is "the nation's most broad-based journalism organization, dedicated to encouraging the free practice of journalism and stimulating high standards of ethical behavior." It was founded in 1909 and promotes free journalism-related information to its 6,000 journalist members in professional development, ethics, and advocacy.

The SPJ's rules are as follows:

- Seek truth and report it
- Minimize harm
- Act independently
- Be accountable and transparent

News as a Source

News sources can provide insights that scholarly sources may not or that will take a long time to get into scholarly sources. For instance, news sources are excellent for finding out people's actions, reactions, opinions, and prevailing attitudes around the time of an event—as well as to find reports of what happened at the event itself. "News" is a strange term, because even when the information is old, it's still news. Some sources are great for breaking news, some are great for aggregated (or compiled) news, and others are great for historical news. We will look at a couple of examples below.

News must be brief because much of it gets reported only moments after an event happens and is meant to be consumed by the general population. Many stories might be labeled as "developing" and will be updated in real-time with the event. Slight inaccuracies are common in this type of reporting and should be updated as the reporters gain updated information. News reports occur early in the Information Lifecycle.

Not all news sources are created equal, and when you are first getting started with these sources, you must evaluate the publishers for both credibility and biases. As you continue to use these sources and practice evaluation methods, you will create an arsenal of news sources that you know you can continually trust.

Whether news sources are good for your assignment depends on what your research question is.

News sources might be useful to you if...

- You need up-to-date information on current events
- You need historical perspectives on an event, commonly called primary sources

News sources might be less useful if...

- You need very detailed analysis by experts.
- You need sources that must be scholarly or modern views on a historical topic.

Activity: Using News Effectively

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=58#h5p-2

Types of News Sources

Just as the definition of "news" has become less clear, so too has the distinction between different types of news

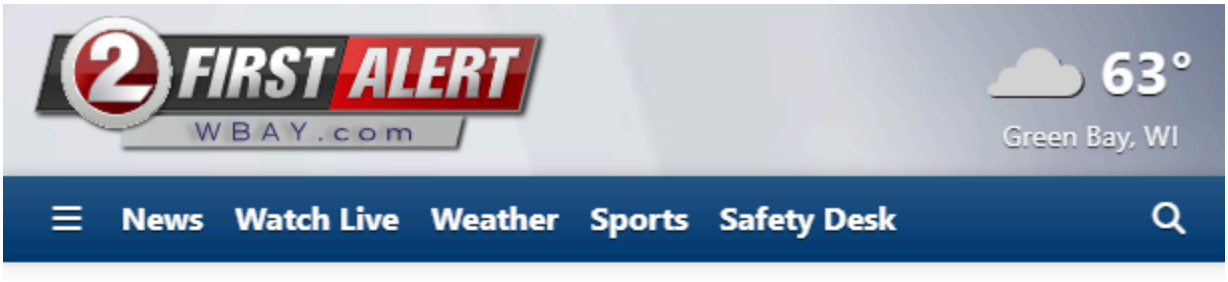
sources. Today, a single news outlet may distribute content across multiple platforms—websites, social media, and traditional formats like newspapers and TV broadcasts. For instance, ABC News has a television channel, an active presence on various social-media platforms, and a website.

As we explore the different ways people access the news, remember that one news source can span several categories. The lines between formats are often blurred in the digital media landscape.

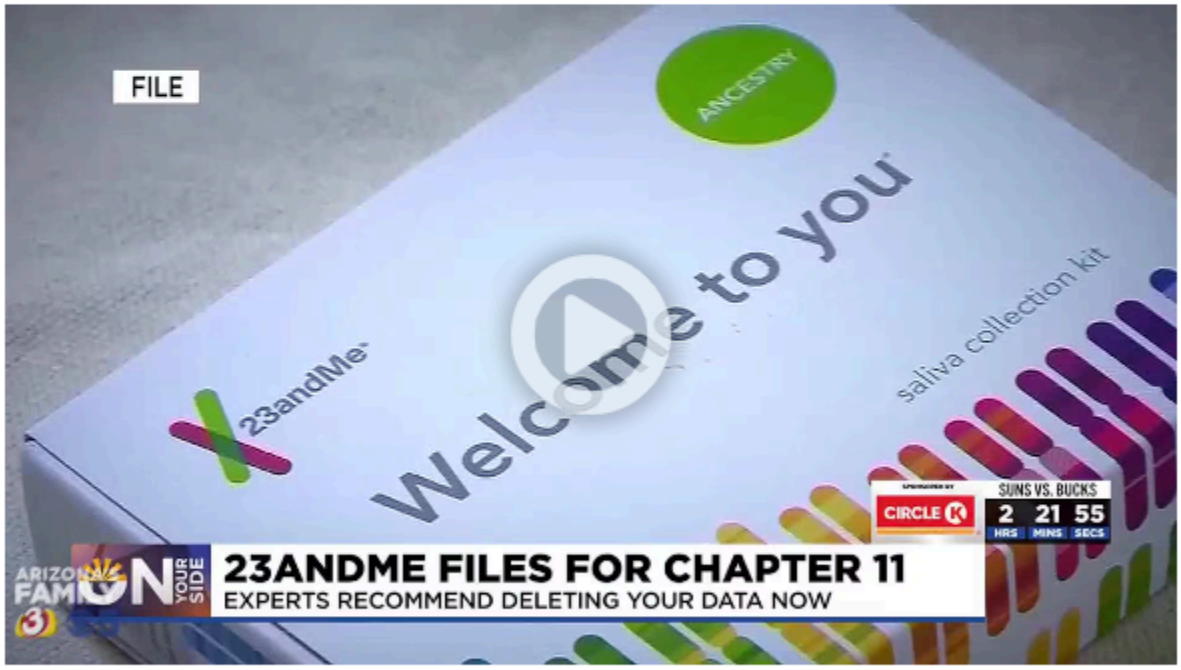
Newswires

Also known as news agencies, newswires have offices all around the world that provide international news coverage to subscribing news organizations around the world. The largest newswires are Agence France-Presse (AFP), the Associated Press (AP), and Reuters.

News outlets (print, broadcast, and online) get a lot of their news from these services, which make it unnecessary for individual outlets to send their own reporters everywhere. These services are so broadly used that you may have to look at several news outlets to get a different take on an event or situation.



Dozens of states sue to block the sale of 23andMe personal genetic data without customer consent



23andMe says it's filing for Chapter 11 bankruptcy protection and looking for a new owner. Here's what the means for its customers. Gary Harper reports.

By The Associated Press

Published: Jun. 10, 2025 at 1:53 AM CDT | Updated: 14 hours ago

WBAY, a local Green Bay news company, posts national and international stories written by the Associated Press

News Aggregators

Aggregators don't have reporters of their own but simply collect and transmit the news reported by others.

Some sources pull news from a variety of places and provide a single place to search for and view multiple stories. You can browse recent stories or search for news on a specific topic or event.

Aggregators tend to have current but not archival news. Some aggregators are often critiqued for replicating content that might otherwise be paid for by a subscriber, which undercuts the site's ability to profit from readers. This would be a good place to get a general sense of what the top headlines of the day are.

- Google News
- Apple News
- Yahoo! News

Newspapers

Physical newspapers remain a popular way for many to receive news. Many print newspapers also have their own websites. They vary as to how much news they provide for free.

In addition to the examples below, see the complete list of UW-Green Bay's newspaper databases. These databases provide staff and students with access to articles that might otherwise be paywalled.

- *Green Bay Press-Gazette*
- *USA Today*
- *The Times* of London
- *The New York Times*

Broadcast or Cable News

Although broadcast news (from radio and television) is generally consumed in real time, such organizations also offer archives of news stories on their websites. However, not all of their articles are provided by their own reporters: some originate from the newswires discussed previously, like Reuters and the AP.

    - ABC News
    - BBC
    - CNN
    - NPR News

Pink Slime

Pink slime journalism produces websites that appear to be local news outlets but are actually funded by

political groups to persuade readers by covering only certain perspectives. They are typically very low-quality and often computer-generated, but they deceptively appear as if they are created by local journalists.

- Green Bay Reporter
- The American Independent
- Wisconsin Catholic Tribune

News Influencers

A growing number of social-media influencers regularly post news stories. According to the Pew Research Center's report on news influencers from 2024, 77% of news influencers have no affiliation or background with a news organization, yet 37% of adults aged 18 to 29 say that they regularly get news from influencers. Informally trained news influencers are not beholden to the same journalistic ethics as news organizations.

News influencers are often critiqued for posting news items from journalists without giving proper credit. The TikTok below explains why this is an issue.

@webkinzarchive

#stitch with @Franchesca Ramsey This app runs on the work of journalists, writers, critics, photographers, etc! My previous video where i talk about my experience ⬇ @Mia Sato – tech reporter

♬ original sound – Mia Sato – tech reporter

Reflection

- Where do you typically get your news from? What kind of news source is it?
- How do you decide where to look for your news? What subjects do you consider to be news?

Attributions

This chapter contains materials adapted from:

- Broccoli and Chocolate: A Beginner's Guide to Journalism News Writing Copyright © 2024 by Erin Hiro is licensed under CC-BY 4.0, except where otherwise noted.
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MAGAZINES & TRADE PUBLICATIONS

Learning Objectives

- Describe the key characteristics and purposes of popular magazine articles, substantive popular (long-form) magazine articles, and trade publication articles, including audience, depth of content, and credibility
- Explain the value of magazine and trade publication articles for research and in which scenarios they would be most useful

Overview

Magazine and trade publications can be valuable sources for research, especially when you need information that's more detailed than a news article but less technical than a scholarly journal. They vary in audience, depth, and purpose, and learning to recognize these differences can help you choose sources that match your needs. This chapter will review the primary characteristics of magazines and trade publications.

Magazines

Magazines usually feature short to medium-length articles written by staff writers or journalists. Depending on the magazine, their purpose might be to inform, persuade, or entertain. Some magazines are geared toward a general audience, while others are written for people with a special interest in the topic. Most magazines also include advertisements, which appear alongside the content. When you are using magazines as a source type, focus on the medium-length articles, which are generally two-to-eight–pages long, rather than the short articles.

Magazine articles might be useful to you if...

- You need introductory information that you can understand without a lot of background knowledge
- You need information that is more in-depth than a brief news article but less overwhelming than a scholarly research article

Magazine articles might be less useful if...

- You need information on an event that just occurred (less than a week ago)
- You need in-depth research or scholarly analysis on a topic

Popular Magazine Articles

Many of us grew up flipping through magazines like *People*, *Sports Illustrated*, or *Vogue*. Whether at the grocery store or the newsstand, most of the magazines we see are considered "popular" publications. This category includes a wide range of titles, from *Popular Science* to *Rolling Stone*. What makes these publications "popular"? It largely comes down to their business model. Popular magazines rely on advertising revenue, and the more readers they have, the more they can charge for ad space. So, their success depends on appealing to a broad audience (i.e., being popular with readers.)

These magazines are written for the general public and are usually easy to find, either in print or online. Topics vary widely, from news and politics to health, music, shopping, and entertainment. The articles often have eye-catching titles, bold visuals, and plenty of advertisements, which can make them more engaging than scholarly articles. While some articles may cite sources or link to additional information, they typically don't include formal citations or reference lists.

These sources are published by both commercial and nonprofit publishers. They're written by journalists, staff writers, or enthusiasts, and reviewed by editors before publication. This editorial process is similar to what you'd find in a standards-based news organization. Plenty of experts and authorities write articles for popular publications, but it's important to remember that the goal of these publications is to attract and keep readers—not to contribute to academic research. Articles are fact-checked, but they don't go through the same rigorous peer-review process as scholarly journal articles.

Warning: Magazines Vary in Quality

There are some types of sources that look a lot like magazine articles but do not have the same editorial review process. An individual's blog may look very similar to a digital-only magazine, but there is no oversight process for the content of the blog. Zines (pronounced "zeenz") are DIY magazines that people create themselves in either digital or paper format and generally are not reviewed before publication. A formal editorial review process has a big effect on the level of authority and credibility that a source has.

Substantive Popular Magazine Articles

Most popular sources are easy to read and understand. But there's a category within them called "**substantive popular sources**" that take a bit more effort to work through. The effort is usually worth it in the end—these can be highly informative and useful sources! You will need to use your critical thinking skills to determine whether a source is a popular or substantive popular source.

Substantive popular sources are still written for a general audience, but they're aimed at readers who are already interested in or want a deeper understanding of a topic. They may be harder for a complete novice to understand.

Their creators are serious about their intent to inform and want to be thorough. These articles often focus on topics like current events, politics, health, science, and social issues—though they can cover just about anything, including entertainment, in a more serious and thoughtful way. This kind of writing is sometimes called "**long-form journalism**."

To identify a substantive popular source or long-form article, consider both the credibility of the author and publisher, as well as the complexity of the content. These articles are typically well-researched, analytical, written by professional journalists or subject-matter experts, and published by a credible publisher. Common examples of publications that regularly publish long-form or substantive popular articles are:

- *The Atlantic*
- *The New Yorker*
- *The Economist*

Timing also matters. For most news outlets, it's hard to publish in-depth pieces right away during breaking news. Substantive articles often come later in the information lifecycle once there's been time to research and reflect. See the "Information Lifecycle" chapter for more on this. To learn more about using different types of news sources, whether from newspapers, online news outlets, or beyond, see the "News" chapter.

When deciding if a source is substantive, think about who it's written for. If the content assumes some prior knowledge or delivers more analysis than summary, it's probably more than just a typical popular source. And if the author and publisher are reputable, you're likely looking at a strong, reliable source for deeper insight.

Trade Publications

Another source type that's similar to a popular magazine and will likely be quite useful is the **trade publication**. You might also hear them called "trade journals" or "trade magazines." These are written for people working in a specific trade, field, or industry, which is where they get their name. They rely on advertising dollars to stay in business, and they do not provide the same rigorous peer-review process that scholarly journals do.

Trade publications usually have short to medium-length articles, which report on industry news, trends, or products. For most research projects, the most useful articles tend to be the medium-length ones (typically two pages or more) since they provide more detailed and informative content.

Trade publication articles might be useful to you if...

- You want to know how people are dealing with a certain issue "on the ground" in a particular field or industry
- You need information that is more in-depth than a popular source aimed at novices to the topic but less overwhelming than a scholarly research article

Trade publication articles might be less useful if...

- You are a complete beginner with no background knowledge on the topic
- You need information on an event that just occurred (less than a week ago)
- You need in-depth research or scholarly analysis on a topic

Trade Publication Articles

The key difference between popular and trade publications is the audience. Popular publications are written

for a general audience. They use everyday language, avoid technical terms, and assume the reader has little or no background in the topic. In contrast, trade publications are written for professionals in a specific field. They're often distributed through professional organizations and assume readers already understand the industry's language and core concepts.

For example, *Advertising Age* is a trade publication for professionals in advertising and publishing, where it is considered an important source of current information on the state of the industry.

Additionally, they are:

- Written by staff writers or other professionals in the targeted field
- About trends and news from the targeted field, book reviews, and case studies
- Often less than 10 pages, some of which may contain footnotes and references
- Usually published by professional associations or commercial publishers
- Published after approval from an editor (not peer-reviewed)

Some trade publications use enticing visuals and catchy titles, making them look more like magazines, while others are plainer and more straightforward, making them visually closer to scholarly articles. If you have trouble deciding whether your source is a magazine, trade publication, or scholarly journal, you can ask a librarian for help.

As a way to learn about a new job field, or to stay current on new technologies and trends in your future professions, trade publications are an important go-to source.

Activity: Popular, Substantive Popular, or Trade?

For the questions below, take a look at each of these sources to decide what kind of source it is.

- *ProPublica*
- *Alcoholism & Drug Abuse Weekly*
- *Harper's Magazine*
- *American Libraries*
- *The Week*

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://wisconsin.pressbooks.pub/info-lit/?p=129#h5p-3

Reflection

- How might your approach to using magazine articles change as you progress through more advanced academic work? In what scenarios might you still use them and when might you choose a different source type?
- Think of a profession or industry you're interested in. What kind of information might a trade publication in that field provide that a popular magazine or scholarly journal might not?

Attributions

This chapter contains material adapted from:

- "Popular, Substantive Popular, Professional, & Scholarly" by Teaching & Learning, Ohio State University Libraries, in Choosing & Using Sources: A Guide to Academic Research, used under a CC BY 4.0 license
- "The Information Landscape – An Overview of Information Types and When They Appear in Publication" authored, remixed, and/or curated by David Hisle & Katy Webb, in LIBR 318: Library Research and Information Literacy (Wergeland), used under a CC BY-NC-SA license

SCHOLARLY RESEARCH ARTICLES

Learning Objectives

- Define scholarly research articles and describe their key characteristics, including purpose, structure, authorship, and use of discipline-specific language and citations.
- Explain the peer-review process and distinguish peer-reviewed articles from other scholarly and non-scholarly sources.
- Identify strategies and tools for determining whether a scholarly article is peer-reviewed and evaluate the suitability of different scholarly source types for specific research needs.

Overview

In this chapter, you'll learn how to recognize a scholarly research article, understand how it differs from other sources, and determine whether it has been peer-reviewed.

Scholarly research articles are written by experts and reviewed by other experts before being published. This process helps make sure the information is accurate and trustworthy.

If you've done peer review in a writing class, you already know the basic idea—someone reads your work and gives feedback before you turn it in. Scholarly peer review works the same way, but the reviewers are experts in the same field. Instead of checking grammar, they review the research, evidence, and conclusions to make sure everything meets high standards. If it doesn't, the article can be sent back for major changes or even rejected.

Peer-reviewed scholarly research articles might be useful to you if...

- You need reliable information about a topic that has been reviewed by experts in a field
- You are looking for facts and figures that can be cited related to a topic

Peer-reviewed scholarly research articles might be less useful if...

- You need foundational information about a topic
- Your need extremely recent information about a topic

Identifying Scholarly Research Articles

There are five main points to consider when trying to determine if an article is a scholarly research article.

- Purpose: The purpose of a scholarly research article is to advance knowledge in a field of study, often in the form of original research or analysis.
- Format: Scholarly research articles are usually five pages or longer.
- Authors: The authors of scholarly research articles are experts in the field, such as professors, scientists, etc.
- Language: Scholarly research articles are text-heavy, with advanced language and terminology from the discipline.
- Sources: Scholarly research articles Include citations and a bibliography, works cited, or references list.

The Peer-Review Process

A journal is a scholarly publication containing articles, letters to the editors, and book reviews written by researchers, professors, and other experts. Journals focus on a specific discipline or field of study and are published on a regular basis (monthly, quarterly, etc.). The intended reading audience is other experts and not the general public. The authors are considered experts because they have PhDs and have specialized in-depth knowledge of current and past theories and years of training in research and analysis.

When a professor writes a research article, they will submit it to a peer-reviewed journal to be published. However, before the journal will accept the article, it will be reviewed by experts in the same area of study, hence, their peers. If their peers deem their research lacking validity, they will be asked to make changes, or their article might be outright rejected. This is why assignments ask you to use articles published in peer-reviewed journals as they contain rigorous research and use a critical lens when picking what gets published.

It is also important to keep in mind that there are many theories or schools of thought within a discipline, and professors chose to conduct their research through one particular theory. An economics professor, for example, could write their article through a Marxist or a Neoliberal lens. You need to develop an awareness of the different theories in your subject area as this will help you identify what lens the author is using to conduct their research. This is also important if an assignment requires sources from different theories or if you must support your thesis with sources from one particular theory.

Experts like professors often publish their evidence-based research in non-peer-reviewed sources like books and newspapers. These sources are still considered authoritative and contain expert research and are often reviewed by editors for accuracy, but they do not count as peer-reviewed sources. It is important to know the difference if your professor specifically requests that you use articles from peer-reviewed journals. Not to worry, library databases are designed to help you locate peer-reviewed scholarly research articles.

It is also important to understand that even if a journal is peer-reviewed, not everything in the journal will have been peer-reviewed. For example, the scholarly research articles that appear in a peer-reviewed journal will be peer-reviewed, but things such as book reviews and letters to the editor will likely not have been peer-reviewed.

The above section is adopted from the "Scholarly Peer-Reviewed Sources" section of the Toronto Metropolitan University's *Write Here, Right Now: An Interactive Introduction to Academic Writing and Research.*

Figuring Out if a Scholarly Research Article was Peer-Reviewed

As mentioned at the beginning of this section, it can sometimes be tricky to determine if a scholarly research article was a peer-reviewed. When you search in the library's Search@UW and databases, scholarly research articles will often be labeled as being peer-reviewed (See image 1 below for an example of the peer-review label). Additionally, when searching in Search@UW, you can limit your search results so that you will only see scholarly research articles that are marked as being peer-reviewed. Most databases will also let you limit your search results to only scholarly research articles that have been marked as being peer-reviewed. To learn how to do this, see the "Search@UW as a Tool" chapter that goes over conducting searches in Search@UW and databases.

Image 1: An article record in the Academic Search Ultimate database.

However, even when a scholarly research article is labeled as being peer-reviewed in Search@UW or a database, you should still do a little digging to confirm that the article has actually been peer-reviewed. You can use the clues in the tip box below to help you determine if a scholarly research article has been peer-reviewed.

Tip: If You Already Have Determined That an Article Is Scholarly, You Can Check if It's Peer-Reviewed

Research the journal/publisher	Is the journal published by a scholarly society? A university press? Sometimes Googling the name of the source can help you determine if it is peer-reviewed.
Submission history	Look for dates when article was submitted, reviewed, revised, published, etc., on the first page of the article.

The above tip box is adopted from Indiana University's *Navigating Information Literacy*.

Types of Scholarly Sources

The table below lists some of the most common types of scholarly sources and offers brief descriptions of each type. Having a basic understanding of the different types of scholarly sources can help you identify what source type you might want to look at when completing your specific research project.

The table below lists different types of research articles along with their descriptions.

Source Type	Description
Empirical studies	Empirical studies describe original research completed by the author(s). This could be a new study or a new analysis of existing data. Look for sections of the article that describe methods, results, and an analysis or discussion of the results.
Case studies	Case studies report on information gathered while working with a specific individual or group. Case studies may describe a little-known or common condition or problem or reveal the need for more research in that area.
Meta-analyses	Meta-analyses are quantitative, statistical analyses of the results of two or more studies on the same topic or hypothesis. By combining the results of multiple studies, the author(s) of the meta-analysis hope to provide greater understanding of the topic.
Theoretical articles	Theoretical articles may present a new theory for understanding a field or area of knowledge, or they may refine or critique an existing theory. These articles may refer to empirical research but only in order to advance or show application of the theory.
Literature reviews	Literature reviews summarize and analyze previously published research on a given topic but do not contain original research themselves. They are useful in helping to understand a topic and the research that has already been done in that area. References included in the literature review can help you to find empirical research articles on your topic.
Caution! Other scholarly communication	Scholarly journals often publish other types of writing relating to communication between members of the field. These articles are usually short in length and are considered **not scholarly, meaning that they are not peer-reviewed.** Examples of this type of writing include book reviews, letters to the editor, comments on previously published articles, and obituaries.

An interactive H5P element has been excluded from this version of the text. You can view it

online here:
https://wisconsin.pressbooks.pub/info-lit/?p=40#h5p-40

Reflection

- Why do you think using peer-reviewed scholarly research articles will be useful when you are completing a research project?
- Is there a specific scholarly source type that you believe will be especially useful for your research project? Which type and why?

Attributions

This chapter contains material adapted from:

OTHER ACADEMIC CONTENT

Learning Objectives

- Differentiate between various types of academic content—including books, conference proceedings, theses/dissertations, and preprints— by identifying the key characteristics, purposes, and appropriate uses of each.
- Evaluate when and why to use alternative academic content types based on the research need and understand their limitations, particularly in relation to peer review.

Overview

Scholarly research articles are a common type of academic source for class papers and projects—but they're not the only option.

Depending on your topic or assignment, you might also find useful information in:

- Books written by experts
- Conference proceedings
- Theses or dissertations
- Preprints

In this chapter, you'll learn what each of these source types is, how to recognize them, and when they might be most helpful for your work.

Note: While these sources can be high-quality and valuable, they're not peer-reviewed. If your instructor requires peer-reviewed sources, you'll need to supplement these with peer-reviewed materials.

Other types of academic content might be useful to you if...

- You need cutting edge information or research

Other types of academic content might be less useful if...

- You need research that has been peer reviewed by experts in a field

Common Types of Academic Content

The table below lists different types of academic content, explains their purposes, and suggests when to use them.

Type	Purpose	When to Use
Books	Offer in-depth information on a specific topic	Can help identify leading voices and topics in different fields Books can also be used as sources in research projects Sources cited in books can be reviewed and used in research projects
Conference Proceedings	Give scholars and academics the chance to present new research and to present other recent news and happenings in different fields	Can give a glimpse of cutting-edge research and ideas Can provide ideas for what direction to take research projects in
Theses/ Dissertations	Normally completed to obtain a master's or doctorate degree Can be useful for finding sources and (assuming the thesis or dissertation is recent) up-to-date information on a topic and/or research	Sources cited in theses/ dissertations can be reviewed and used in research projects Can also provide ideas and inspiration for what direction to take a research project in
Preprints	Give researchers the opportunity to make their research available in their fields of study immediately without having to wait for the research to go through the peer-review process	Can be used to gauge what direction research in a particular field might go in

Books

Books can be a very broad category, but in this section, we are going to focus on books that contain academic content that are normally published by researchers and/or academics.

Books can be great sources to use for projects. They can be especially helpful for providing deep yet broad coverage of many different aspects of a topic. One thing to keep in mind, however, is that books are not normally peer-reviewed, even if the book contains information that might have been previously peer-reviewed or will be peer-reviewed in the future.

Quick Tip: Finding Books in Search@UW

When searching in Search@UW, you can limit your results to only books. To learn how, see the "Search@UW as a Tool" chapter.

For a more in-depth discussion for academic books, see the "Books" chapter.

Conference Proceedings

Conference proceedings are published records of conferences or other types of gatherings where research or other information is presented. Conference proceedings can provide access to recent research.

While content that is presented at a conference might have undergone some type of review process, it's important to keep in mind that the information being presented has not been peer reviewed. As such, it is important to carefully assess the quality of information obtained from conference proceedings.

Quick Tip: Finding Conference Proceedings in Search@UW

You can limit your Search@UW results to only conference proceedings. To learn how to do this, see the "Search@UW as a Tool" chapter.

Theses/Dissertations

Theses and dissertations are substantial research projects completed as part of a master's or doctoral degree. Some include original research conducted by the author, while others focus on reviewing and analyzing existing studies.

These documents can be valuable for your research because they often contain:

- Recent research that may not be published anywhere else
- Extensive bibliographies you can mine for additional sources

While theses and dissertations are reviewed by a faculty committee, they're not considered peer-reviewed. That means it's still important to evaluate the quality and credibility of the work.

Quick Tip: Finding Theses and Dissertations

You can use library resources to search for theses and dissertations in a specific field and theses and dissertations that have been completed at UW-Green Bay. For example, general theses and dissertations and some theses and dissertations that were completed at UW-Green Bay are available through Search@UW. When searching, try clicking the "Dissertations" box in the "Resource Type" column.

Additionally, theses and dissertations from UW-Green Bay completed between 1970 and 2022 should be available through UW-Green Bay Theses and Dissertations.

Preprints

Preprints are research articles shared publicly before they're formally published. Because the peer-review process can take months (or longer), preprints let researchers make their findings available right away. They're often posted when the information is timely or when a researcher wants to document that they were first to make a discovery.

Preprints can be made available on platforms such as Cornell University's arXiv. One thing to keep in mind, however, is that preprints have not been peer reviewed. In many cases, the only person who has reviewed the information being provided is the author or researcher. They're easy to spot—most will have a label or watermark noting they're a preprint, along with the date they were posted. For example, PDFs from arXiv include a label along the left side of the first page with the posting date.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=38#h5p-28

Reflection

- Have you used any of the types of academic content listed in this section for a research project before? Why or why not?
- Why do you think that so many people want you to use peer-reviewed sources when these other types of sources exist?

BOOKS

Learning Objectives

- Describe the key characteristics and purposes of different types of books (academic, reference, popular, and technical/trade) and explain how each type supports various information needs.
- Explain the value of academic books for research, especially for gaining in-depth understanding and identifying existing scholarship.
- Select relevant sections or chapters within academic books to support your research without reading the entire book.

Overview

Books have been a staple of both learning and entertainment since Gutenberg invented the printing press. Most books are produced by traditional publishers for a clear reason, including to entertain, inform, educate, or teach. This chapter offers a brief overview of book types, with a primary focus on academic books used for research.

Types of Books

While academic books are generally the best choice for research purposes, there are many types of books that fit a variety of information needs. This is a list of common book types and their characteristics:

Academic Books

Academic books are a great resource for research. They offer in-depth information and can help break down

complex topics into more manageable parts. Books often reflect years of research and can show you what's already been studied and where there's room for new ideas.

One of the biggest benefits of academic books is their bibliographies or works-cited pages. These can lead you to even more useful sources like journal articles, research studies, government reports, experts, or other books. Academic books also help you connect to how scholars in a field think about a topic, giving you a clearer picture of key theories, foundational knowledge, and important researchers.

The good news? You don't have to read the whole book. Focusing on one relevant chapter or section is usually enough. Many academic books are actually collections of essays or articles, so you can zero in on the parts that matter most for your research.

Academic books might be useful to you if you need...

- In-depth coverage of a subject
- An overview of a big topic
- Background information
- Lists of additional sources or bibliographies

Academic books might be less useful if...

- You need the most up-to-date research on an evolving topic
- Your topic is very recent/new
- Your information need is small or narrow

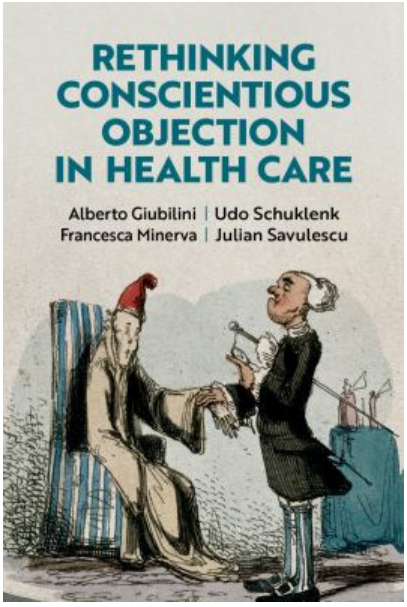
Structure & Content: Comprehensive works with chapters, tables of contents, indexes, and extensive references

Authorship: Written by scholars or experts and reviewed by field editors

Purpose: To inform, analyze, and provide an in-depth understanding

Audience: Primarily scholars, researchers, and educated readers

Example:



Giubilini, A., Schuklenk, U., Minerva, F., & Savulescu, J. (2025). *Rethinking conscientious objection in health care*. Oxford University Press.

Reference Books

Reference sources are useful because they provide quick, reliable overviews of topics, helping you understand key facts, definitions, and background information without needing to read lengthy texts. They are great for clarifying unfamiliar terms, getting context before deeper research, and finding starting points for more detailed exploration. Their concise, organized format makes it easy to locate specific information fast, making them especially helpful early in the research process.

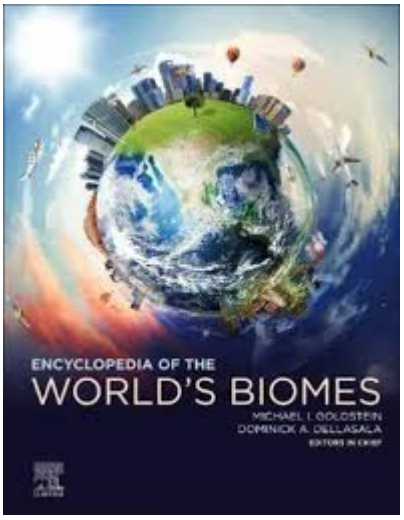
Structure & Content: Concise entries that may include references and author identification

Authorship: Compiled by experts and reviewed by editors

Purpose: To provide brief overviews of topics

Audience: From experts to the general public

Example:



Goldstein, M. I., & DellaSala, D. A. (2020). *Encyclopedia of the world's biomes*. Elsevier.

Popular Books

Popular books can provide insight into current trends, cultural perspectives, personal experiences, or practical advice in areas like health, relationships, or self-improvement. While they may not be scholarly, popular books can help you understand how a topic is viewed by the public and often serve as a starting point for further research or personal learning. Also, popular books can just be fun to read!

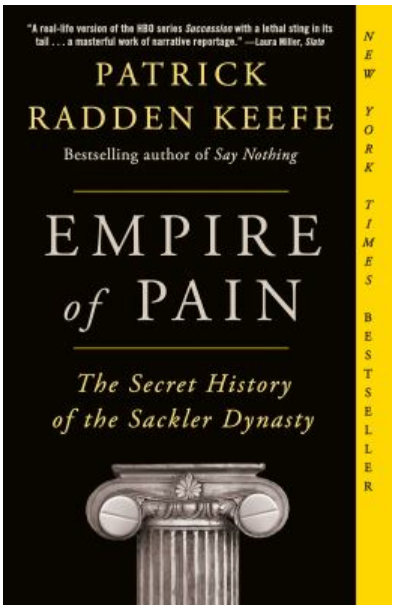
Structure & Content: Can include fiction, biography/autobiography, and non-fiction

Authorship: Written by novelists, biographers, journalists, and other professional writers

Purpose: To entertain, inform, or provide advice or self-improvement

Audience: General public

Example:



Keefe, P. R. (2021). *Empire of pain: The secret history of the Sackler dynasty*. Doubleday.

Technical Books & Trade Manuals

Technical books and trade manuals offer clear, practical information on specific skills, tools, processes, or industries. They are often written by expert practitioners and are designed to help readers solve problems, follow procedures, or understand how something works. These resources are especially valuable for professionals, students, and trainees who need step-by-step instructions, diagrams, or real-world guidance in fields like engineering, healthcare, technology, construction, and more.

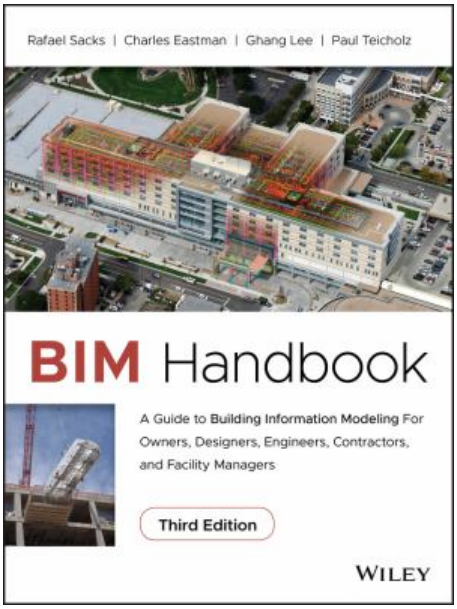
Structure & Content: Clearly organized and often include visuals like diagrams or photos to help explain the content

Authorship: Experts and practitioners in the related field, including technical writers

Purpose: Designed to provide instructions, guidance, or information on a specific topic, process, product, or industry

Audience: Primarily users of a product, employees of a company, or students in a related course

Example:



Eastman, C., Teicholz, P., Sacks, R., & Lee, G. (2018). *BIM handbook: A guide to building information modeling for owners, designers, engineers, contractors, and facility managers* (3rd ed.). Wiley.

Textbooks

Textbooks provide structured, comprehensive coverage of a subject, making them ideal for learning foundational concepts and building knowledge step by step. They are often written by subject experts and reviewed for accuracy, which ensures reliable and up-to-date content. Textbooks typically include explanations, examples, visuals, review questions, and references making them excellent tools for both classroom learning and independent study.

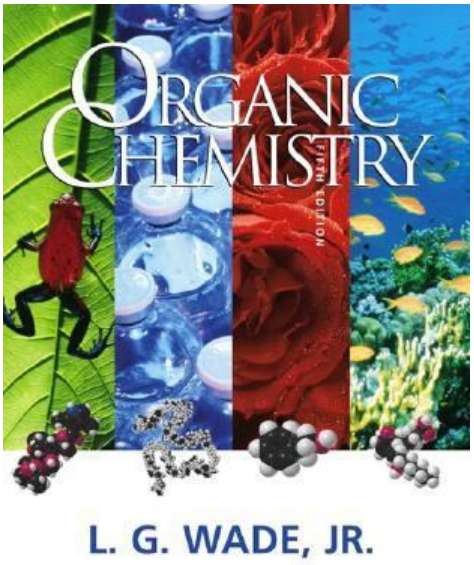
Structure & Content: Structured by units or chapters aligned with a course syllabus; often includes summaries, discussion questions, and learning objectives

Authorship: Written by subject experts, sometimes in collaboration with educators, and often reviewed or approved by academic institutions

Purpose: To teach foundational concepts and skills in a structured learning environment

Audience: Primarily students and instructors in academic courses from high school through college levels

Example:



Wade, L. G. (2003). *Organic chemistry* (5th ed.). Prentice Hall.

Keep in mind that books have differing levels of oversight and just because something is in a book format, does not automatically make it a reliable source. When looking for academic books to use in your research projects, look for publishers connected to universities (such as Oxford University Press or Harvard University Press) or reputable academic publishers (like Routledge, Wiley, Norton, or Macmillan). Always verify a publisher's credibility through trusted sources, more on verifying sources in the "Evaluating Information" section of this book.

A Note on Self-Publishing

Vanity presses offer authors the ability to publish their work by paying for the production costs. Unlike traditional publishers, these services typically skip formal editorial review processes, which can impact the content's quality and credibility. A similar model is Print-on-Demand or POD publishers; these publishers produce books only when orders are placed, helping authors avoid large upfront printing costs. While this model can be legitimate and cost-effective, it may lack the editorial standards and quality control typically found in traditional publishing.

Knowledge Check

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=63#h5p-9

Format & Access

Books come in many formats like print, audio, and e-books. What you use may be influenced by personal preference or what happens to be available. Use what works best for your needs. See the "Search@UW as a Tool" chapter of this book to learn more about finding books through the library.

Reflection

- Have you ever used just a chapter or section of a book for a project? How did that approach help (or not help) your research process?
- Which book format do you prefer (print, eBook, or audiobook), and why? How does your preferred format affect how you find and use information?

Attributions

This chapter contains material adapted from:

MULTIMEDIA

Learning Objectives

- Identify common types of multimedia sources and their characteristics.
- Explain when multimedia is a useful source of information and when it is not.

Overview

Multimedia content includes audio, visual, or a combination of formats, as opposed to traditional text-based print sources. They can provide more engaging and accessible ways to learn about a topic.

Like other types of information, multimedia is created by different people and organizations for various purposes. Many blur the lines between education and entertainment. That's why it's essential to consider the creator's intent, expertise, and reputation when evaluating credibility.

In this chapter, we'll explore common types of multimedia. Keep in mind that categories often overlap and content can be accessed in multiple ways.

Types of Multimedia Sources

Documentaries

Documentaries are nonfiction films that explore specific topics in depth. They may be journalistic, educational, or narrative in style. While they can be informative and compelling, documentaries often reflect

their creators' particular point of view and may include an advocacy message or specific perspective on the topic.

There are many places you can find documentaries, including the library, streaming services, and YouTube.

Example: *20 Days in Mariupol* is a Ukrainian documentary produced by PBS *Frontline* and the Associated Press.

TV Programs (News and Educational)

News and educational programming can be helpful when produced by reputable sources. News shows focus on current events, and educational programs often present information in a documentary-style format.

Example: *NOVA* is a popular science series that airs on PBS. Episodes focus on a particular topic and usually feature researchers.

Radio Programs

Radio programs can include news, interviews, and storytelling. Interviews with experts or eyewitnesses can be useful for current events or as historical primary sources. Of course, always consider the reliability of the speaker and the outlet. Today, many radio shows are archived online in audio or text formats.

Example: NPR's *All Things Considered* is a daily program that includes news, analysis, commentary, and interviews. It's available both live on the radio and online.

Podcasts

Podcasts are downloadable or streaming audio (and sometimes video) programs. They range widely in quality,

reliability, and purpose. Some informative podcasts are created by journalists and experts, while others are amateur productions. Because they are easy to produce and access, podcasts require critical evaluation.

Example: *The Wall Street Journal* publishes several podcasts with different areas of focus, like short news updates, technology, finance, and opinion.

Online Video Platforms (e.g., YouTube)

YouTube and similar platforms contain vast amounts of user-generated content in addition to professional productions. Educational videos often explain complex ideas with visuals and animations. Like podcasts, it's easy for anyone to upload content; always assess the credibility of the creator.

Example: *Crash Course* is an educational YouTube channel that creates series on topics like history and science. A production team reviews content for accuracy.

Finding and Using Multimedia

While many multimedia sources like YouTube videos and podcasts are available for free online, others require paid subscriptions. The library provides access to many documentaries and other videos through databases like Films on Demand, and you can access them for free with your student account.

You might want to use a multimedia source in your research when you're looking for a more engaging way to learn about a topic or want to see how people are talking about an issue in real life. For example, a documentary or podcast can give you personal stories, expert interviews, or a visual explanation that helps make a complex topic easier to understand. This can be especially helpful if you're just getting started or if you prefer learning by watching or listening. You may also want to incorporate multimedia in presentations or other creative assignments where visuals or audio might help you explain your ideas more effectively.

Be sure to give credit for any multimedia sources you use, just like you would for books or articles. For more information on citations, see the "Citation Basics" chapter.

Multimedia might be useful to you if...

- You want a general overview or engaging introduction to a topic
- You're looking for interviews, public reactions, or storytelling
- You like to learn from visual or audio content

Multimedia might be less useful if...

- You need peer-reviewed, in-depth, or highly specific academic research
- Your topic requires detailed scientific data or complex analysis

A Word of Caution: Sponsored Content and Advertising

Many multimedia platforms rely on advertisements or sponsorships for funding. This means that some content may be influenced by commercial interests. For example, a podcast episode might be sponsored by a company that is discussed in the episode, or a YouTuber might be paid for promoting a product in their video. Be cautious of:

- Product placements within videos or episodes
- Sponsorship disclosures
- Content that focuses heavily on a single brand or viewpoint without presenting alternatives

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=559#h5p-25

Reflection Questions

- Think about a time you watched or listened to a multimedia source that changed your perspective. What made it persuasive or trustworthy?
- How do you evaluate the credibility of multimedia sources compared to written ones?
- What are some potential benefits and drawbacks of using multimedia in a presentation? When might it enhance your message, and when could it become a distraction?

Attributions

GENERATIVE AI

Learning Objectives

- Describe in simple terms how generative AI works
- Explain the concept of hallucinations in generative AI
- Understand the limitations of using generative AI as a source of information

Overview

Artificial intelligence (AI) is a broad term for "a set of technologies that make computers do things that are thought to require intelligence when done by people." It includes things like facial recognition, product-recommendation algorithms, and self-driving cars. We're going to focus on one specific type of AI: generative AI.

Gen AI creates new content like text, images, audio, videos, and computer code. Popular tools include chatbots like ChatGPT from OpenAI, Google Gemini, Anthropic Claude, and Microsoft Copilot.

These programs are developed using an advanced form of machine learning. Computers analyze huge amounts of data (mostly from the internet) and recognize patterns in language. When a user asks a question or "prompts" gen AI, it generates a statistically likely response.

This chapter will discuss why gen AI is not a reliable source of information on its own. Later chapters will discuss gen AI in relation to searching and information ethics.

Plausible, Not Necessarily True

While gen AI tools can sound smart, it doesn't mean they're always correct. In fact, they can often produce false and misleading information. These errors are known as hallucinations.

For example, when prompted to describe the history of football at UW-Green Bay, ChatGPT produced a

lengthy history of the program's rise and fall. In reality, UW-Green Bay has never had a college football team. The entire response is false!

This screenshot shows an interaction with ChatGPT from June 2025. None of it is true!

To better understand why hallucinations happen, remember that gen AI tools are trained using the internet. That means they analyzed high-quality, reliable sources, as well as content that is inaccurate, fictional, biased, and offensive.

Gen AI doesn't know what's true; it just predicts a plausible-sounding response. Unless you fact-check, you might not notice when it's wrong.

Gen AI in Search Engines

Search engines like Google and Bing sometimes include AI-written summaries. You may see them at the top of the search results page. They are based on the concept of retrieval-augmented generation (RAG), which tries to ground chatbot responses in external data, like webpages. While this could theoretically improve the accuracy of AI responses, they don't always select reliable, relevant sources or interpret them correctly.

For example, researchers testing eight different gen AI search tools for finding news reported that the chatbots gave incorrect answers more than 60% of the time!

AI Overviews in Google and other search engines have not been reviewed or fact-checked by humans. Instead of relying on them, click through to the actual sources and investigate their credibility.

Glossary of AI Terms

You might see some of these terms used to describe different aspects of AI.

Algorithm

A sequence of instructions for solving a problem or performing a task. Algorithms define how an artificial intelligence system processes input data to recognize patterns, make decisions, and generate outputs.

Generative Artificial Intelligence (Gen AI)

A subfield of artificial intelligence, referring to models capable of generating content (such as language, images, or music). The output of gen AI models is based on patterns learned from extensive training datasets.

Large Language Model (LLM)

A type of generative AI model that works specifically with written language (both natural language and code). The models are trained on massive corpuses of text that have been taken from the Internet.

Machine Learning

A field of computer science in which a system learns patterns or trends from underlying data. Machine learning algorithms perform tasks like prediction or decision making.

Reinforcement Learning from Human Feedback (RLHF)
: A technique that trains a model directly from human feedback. RLHF is often used in tasks where it's difficult to define a clear, algorithmic solution but where humans can easily judge the quality of the model's output. With generative AI models, RLHF is one method used to identify and filter out problematic content like violence and hate speech.

Whether gen AI is useful for your assignment depends on your instructor's policy and what stage of the writing process you're at.

Gen AI might be helpful if...

- Your instructor explicitly permits you to use it *and* you want to draft an outline or revise your own writing

Gen AI might be less useful if...

- You need accurate information

Final Takeaway

Gen AI does not think. It does not know the difference between fact and fiction.

You may find gen AI to be useful for some tasks, but it is not a reliable source of information.

Knowledge Check

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=384#h5p-12

Reflection

- Why do you think some people are quick to trust what gen AI tools say, even when they aren't always accurate?
- Have you ever been given wrong or misleading information from a gen AI chatbot like ChatGPT? What happened, and how did you figure it out?

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CONCLUSION OF INFORMATION ECOSYSTEM UNIT

Unit Reflection

- What value do you see in including a diverse range of sources, including conflicting viewpoints, in your academic work? Reflect on how different perspectives can enhance depth, credibility, or critical insight.
- How do you think emerging technologies like generative AI are reshaping the way we access and interpret information? Think about both the opportunities and challenges that AI tools present in academic and real-world research.
- In what ways can understanding the information lifecycle help you become a more effective and ethical researcher? Consider how timing, publication type, and context influence the quality and purpose of the information you find.

Unit Review

As you finish this unit, you've explored the wide range of sources that make up today's information landscape, from scholarly journals and books to social media, multimedia, and emerging tools like generative AI. You've learned how to choose sources based on your research needs, how the information lifecycle affects credibility and context, and how to think critically about perspective and format. You've started to really understand that strong research always depends on critical thinking, especially with newer formats like AI-generated content.

It's okay if you're still unsure about when to trust a tweet, how to use a trade article in a paper, or whether an AI summary belongs in your citations. These are real challenges, and they'll keep changing as new tools and platforms emerge. Staying curious, skeptical, and open-minded will help you navigate them.

Now it's time to put these ideas into practice. Seek out a mix of sources in your next project, not

just academic voices, but also professional viewpoints, public perspectives, and even disagreements. The more thoughtfully you explore different types of information, the more credible and impactful your research will be.

SEARCHING FOR INFORMATION

Photo by MJ Duford on Unsplash

Unit Learning Objectives

- Develop a focused research question by identifying an information gap, refining broad topics,

and aligning the question with academic and assignment-specific goals.
- Design and implement an effective search strategy by selecting appropriate keywords, applying search operators, and choosing the right research tools (e.g., Search@UW, subject-specific databases, Google).

Unit Overview

This unit walks you through the basics of the research process, starting with how to identify what you need to know and turn that into a strong, research-ready question. You'll learn how to come up with useful keywords, build smart search strategies, and choose the right tools like Search@UW, subject-specific databases, and search engines like Google to find sources that fit your topic. The focus is on refining your question, thinking critically about your search results, and picking sources that truly support your work, not just the ones that are easiest to find. By using different search tools and techniques, you'll build the skills to do efficient, focused academic research.

This unit contains content that may help fulfill the UW-Green Bay Core Curriculum Learning Outcomes for Information Literacy, specifically:

IL 1: Students will use appropriate search strategies and tools to locate information relevant to their information need, refining strategies based on search results.

UNDERSTANDING YOUR INFORMATION NEED

Learning Objectives

- Identify an information need by assessing gaps in current knowledge and understanding how assignment requirements shape the research process.
- Apply the steps of developing a research question, to effectively move from a broad topic to a focused, researchable question aligned with academic goals.
- Evaluate and refine research questions to ensure they are specific, purposeful, and appropriate for the type of information being sought.

Overview

In this chapter, you'll learn how to identify what information you need and why you need it. Although we present the steps of the research process in a particular order, research itself is rarely linear. You'll often circle back to earlier stages as your understanding deepens. Developing the ability to recognize and clearly define your information needs is an essential skill that you'll rely on throughout your academic work and beyond.

Why Understanding Your Information Needs is Important

Being able to recognize when you need information—and what kind of information—is a key part of becoming an effective researcher. Cultivating a research mindset will help you to:

- Understand that new information is always emerging
- Form a habit of actively seeking out new knowledge
- See questions and opportunities as the result of curiosity and investigation

- Realize how vast and varied the world of published and unpublished information is

Developing research skills also helps you to:

- Recognize when you don't know enough about a topic
- Clearly define a topic or question using simple terms
- Use existing knowledge as a starting point
- Know when more information is needed and where the limits of that need are
- Take responsibility for managing your own research time and process

Before diving into your research, it's important to pause and consider the broader information landscape. New ideas, perspectives, and data are emerging constantly, and a wide range of experts, enthusiasts, and even influencers contribute to the conversation in different ways. Not all sources are equally reliable, so developing the ability to evaluate the quality of information is essential (we'll explore this more in the "Evaluating Information" section of this book). By taking time to understand this dynamic environment, you'll be better equipped to define your topic and see how your research connects to what others have already discovered or said.

Keep Your Assignment in Mind

In addition to understanding the broader information environment, it's important to consider how your assignment's requirements directly influence your information needs and the kinds of resources you'll need to find. College-level assignments often come with specific guidelines, such as the number and types of sources required, the length of the paper, the intended audience, or the need to take a particular stance on an issue. These parameters help define the scope and depth of your research.

For example, if your assignment requires peer-reviewed scholarly articles, you'll need to focus your search on academic databases rather than general web sources. If the topic must be current or controversial, you may need to include news articles, opinion pieces, or government reports to capture timely perspectives. A short reflection paper might only require a couple of credible web

sources to support your thoughts, while a research paper or literature review will likely demand a more comprehensive and critical look at existing scholarship.

Being aware of these requirements from the beginning can save you time and frustration. They help you narrow down which kinds of information are most useful, guide your choice of search tools, and ensure that you meet the expectations of your instructor. In short, your assignment shapes your research strategy and recognizing that early on helps you search more effectively and write more confidently.

Developing a Research Question

Developing a strong research question is a crucial step in fulfilling your information need because it gives your search clear direction and purpose. A well-crafted question helps you focus on what you're really trying to understand, which in turn shapes the types of sources you seek and the keywords you use. Without a focused question, it's easy to get overwhelmed by the sheer volume of information available or distracted by unrelated content. A strong research question acts as a guide, helping you stay on track and gather information that is relevant, credible, and aligned with your assignment's goals.

The steps for developing a research question, listed below, can help you organize your thoughts.

1. Pick a topic (or consider the one assigned to you).
2. Write a few narrower/smaller topics that are related to the first. You may need to do some background searching to come up with these smaller topics. A quick web search should help.
3. List some potential questions that could logically be asked in relation to the narrow topics.
4. Pick the question that you are most interested in.
5. If needed, change the question you're interested in so that it is more focused and specific.

Example: Developing a Research Question: College Students and Snapchat

Let's walk through how to develop a focused and meaningful research question using the topic "College students' use of social media." This is for a six-to-eight–page research paper for your writing class.

Step 1: Pick a Topic

You've been given (or chosen) the topic: "College students' use of social media."

This topic is broad and could lead in many directions, so let's begin by narrowing it down. You use Snapchat quite a bit, so you narrow the topic to "College students' use of Snapchat." After doing some background searching, you quickly realize that this is not narrow enough, so you further narrow the topic.

Step 2: Narrow the Topic

Ask yourself: What specific aspect of Snapchat use are you curious about?
Here are some possible narrower angles:

- Academic impact: Does Snapchat use affect study habits or academic performance?
- Social behavior: How does it influence communication or relationships among students?
- Mental health: Is Snapchat use linked to stress, anxiety, or self-esteem?
- Time management: How much time do students spend on the app, and how does that affect their daily routines?
- Privacy: How aware are students of data sharing and privacy issues related to Snapchat?

Pick one that interests you most. Let's say you choose:
"How Snapchat affects students' academic habits."

Step 3: Brainstorm Possible Research Questions

Turn that narrower topic into a few researchable questions:

- How does Snapchat use influence the way college students study?
- Why do college students use Snapchat during study sessions, and how does it affect their concentration?

- What is the relationship between Snapchat use and academic performance among college students?
- Does multitasking with Snapchat during lectures impact information retention?

Steps 4 & 5: Select and Refine the Question

Choose the question that feels most interesting and manageable.

Let's pick:
"What is the relationship between Snapchat use and academic performance among college students?"

Ask yourself:

- Is it logically related to the topic? Yes.
- Is it phrased as a question? Yes.
- Can it be answered with a quick Google search? Not really, it requires deeper research and data.
- Is it specific and focused? Fairly, but you could specify "frequency of use" or "academic performance measured how?"

Refined version:
"How does frequent Snapchat use relate to academic performance, such as GPA, among full-time college students?"

Now you have a clear, focused question that you can build your search around.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=528#h5p-24

Final Thoughts: Staying Flexible

As you find more information, your original question might evolve, and that's okay! Information literacy isn't just about finding facts, it's about staying curious, thinking critically, and adapting your understanding along the way.

Keep asking:

- What do I know?
- What do I need to find out?
- How does this new information affect my original question?

By staying open and reflective, you'll become a stronger, more confident researcher.

Reflections

- How might your interest in a topic influence your research-question process? How does your curiosity drive your desire to learn more?
- Discuss your ability to embrace discomfort when you don't know the answer or outcome of your research question. How do you handle uncertainty and use it to your advantage?
- How should a research question or strategy change as you learn more about a topic? What signs might help you realize a change is needed?

Attributions

This chapter contains material adapted from:

KEYWORDS

Learning Objectives

- Identify the main concepts in a research question that will lead to effective keywords.
- Generate alternative keywords, such as synonyms or related terms.
- Create an effective search strategy using keywords.

Identifying the Main Concepts

Your research question is the foundation for your research process. Once you've developed it, the next step is to identify the main concepts within your question. This step is important because most library databases, including Search@UW, don't respond well to full sentences, like Google does. Instead, they work best when you search using only the essential pieces of your question, which we call "**keywords**," "key terms," or "key phrases."

To find the main concepts, focus on the core ideas in your question. Skip words like "the," "why," "how," or "affect," along with most adjectives, adverbs, prepositions, and verbs. Keywords are almost always nouns. Ask yourself: what ideas or topics would need to appear in a source for it to be useful to me? Focusing on those core ideas will make your searches more efficient and help you find better, more relevant sources.

Example: Identifying Main Concepts

How can divorce affect a student's GPA in high school?

Main concepts: "divorce," "student," "GPA," and "high school"

If an information source includes **all** of the main concepts from your research question, then it is very likely to be relevant and useful to you. It is your job as a researcher to determine what is relevant to your research. (See the "Relevance" chapter.) Be aware that the main concepts from your research question serve as a base to launch your search for information, and the keywords selected to describe your main concepts are likely to evolve during the process.

Alert: Don't Stop After the First Try!

Searching is an iterative process. That means it involves trial and adjustment: we try keywords, take a look at what we found, and, if the results weren't good enough, edit our keywords and search again—often multiple times. Most of the time, the first keywords we try are not the best, even though Google may give us many results. It pays to search further for the sources that will help you the most. Be picky!

Examples: Identifying More Main Concepts

How are birds affected by wind turbines?

Main concepts: “birds” and “wind turbines”

Avoid terms like “affect” and “effect” as search terms, even when you’re looking for studies that report effects or effectiveness.

What lesson plans are available for teaching fractions?

Main concepts: “lesson plans” and “fractions”

Stick to what’s necessary. For instance, don’t include:

- Children (nothing in the research question suggests the lesson plans are for children)
- Teaching (not necessary because lesson plans imply teaching)
- Available (not necessary)

Does the use of mobile technologies by teachers and students in the classroom distract or enhance the educational experience?

Main concepts: “teaching methods” and “mobile technology”
Another possibility: “mobile technologies” and “education”

Watch out for overly broad terms. For example, don’t use:

- Educational experience (it misses mobile technology)
- Classroom distractions (too broad because there are distractions that have nothing to do with technology)
- Technology (too broad because the question is focused on mobile technology)

Sometimes your research question itself can seem complicated. Make sure you’ve stated the question as precisely as possible (as you learned in the “Developing a Research Question” section of the last chapter). Then apply our advice for identifying main concepts as usual.

Brainstorming Related Terms

Describing Main Concepts

There's often more than one way to describe a main concept—and not every source will use the same term for the same idea! For example, take the topic of "genetically modified food." Though "genetically modified food" is commonly used, terms like "GMO," "genetically modified organism," "genetic engineering," and "genetic modification" are often used by scientists to describe the same thing.

This is a good time to review your main concepts and ask: "**Are my keywords too broad or too narrow?**" Using a broad term like "genetic engineering" might bring up results that don't relate specifically to genetically modified food, giving you irrelevant results. Also consider the type of source you're searching for: scholarly articles often use technical or scientific terminology, while popular sources, like magazines or news articles, tend to use everyday language (e.g., "myocardial infarction" versus "heart attack").

Brainstorming Alternatives

It's often helpful to make a list of your keywords along with any **alternative** or **related terms** that might be useful during your search. Here are a few ways to find alternative terms:

- Revisit the reference sources you used for background research and see what terminology they use.
- Use a thesaurus to find synonyms.
- Try some initial searches—many databases suggest related terms that can help you refine or expand your search.

Keep in mind, you can always return to this step as your research progresses. It's common to find new and better keywords after you've done a few searches. That said, not every keyword will have alternatives. Some terms are unique and don't have good substitutes.

After you come up with your first main concept, try to come up with related words that you could use to convey a similar topic.

Main Concept/Keyword	Alternative/Related	Alternative/Related	Alternative/Related
divorce	separation	split up	parental conflict
student's GPA	grade point average	academic performance	academic achievement
high school	school	secondary school	teenage students

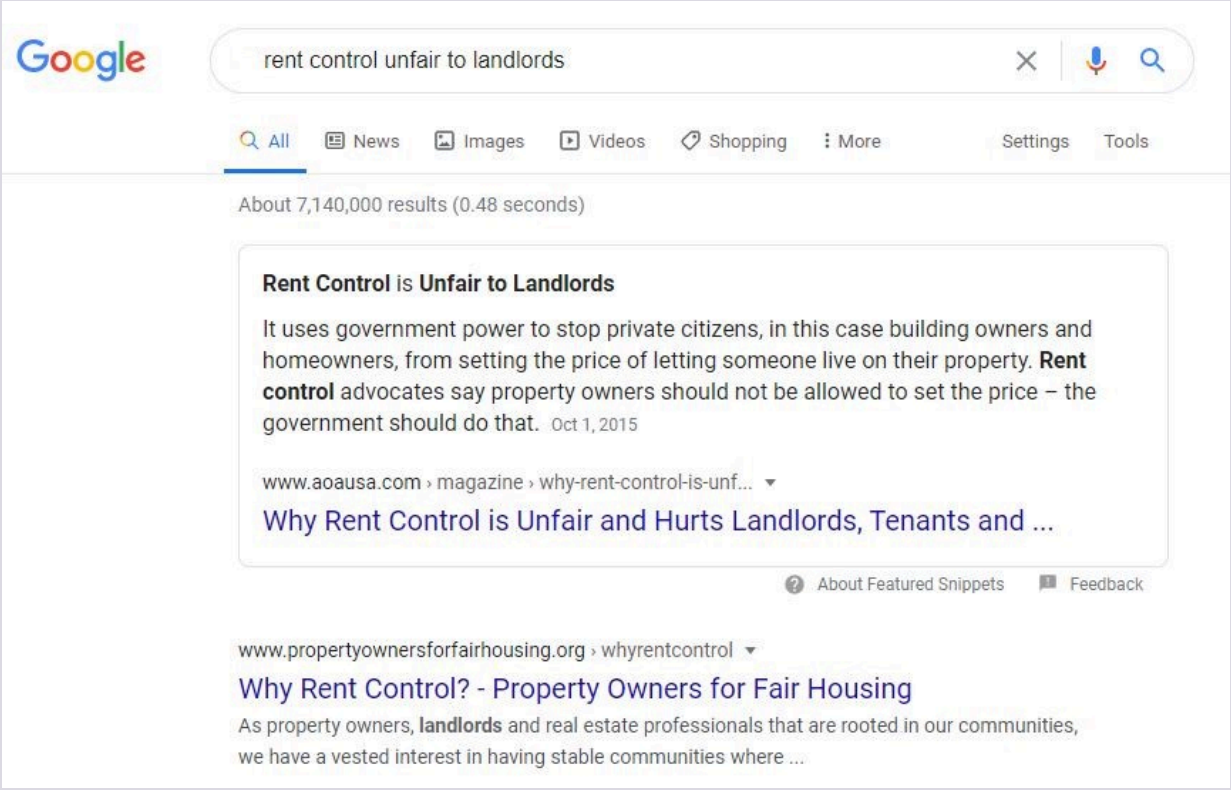
Avoiding Confirmation Bias

Confirmation bias is when we look for information that supports what we already believe and ignore anything that doesn't. It often shows up in how we search.

When choosing keywords, be careful not to build in your own assumptions. For example, searching "why video games make people violent" will lead to very different results than "video games and behavior." Try to use neutral, balanced terms so you get a full range of information, not just what confirms your opinion.

Example: Confirmation Bias in Search Results

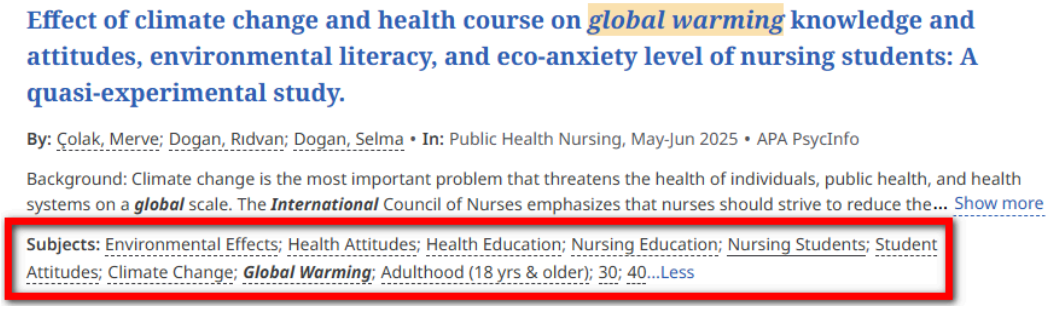
A search for "is rent control unfair to landlords" is likely to get results that describe rent control as unfair to landlords. A better search might be something like "rent control landlords"



The top results of this search for "rent control unfair to landlords" come from the Apartment Owners Association and Property Owners for Fair Housing, which may present a one-sided view of the issue.

Subject Headings as Keywords

All the searches we have talked about so far have been keyword searches, usually used in search engines. Most library databases also have special terms called "**subject headings**" that you can search with. Subject headings are standardized terms that are assigned by trained experts. This makes them a great place to get ideas for alternative terms to add to your list of keywords. You can also scan other fields in the database, such as the title or abstract, to get ideas for keywords. This is the language that experts use to talk about the subject. When you get to more advanced research-methods courses in your major, you may learn how to construct specialized searches that use subject headings *instead* of keywords.



The keyword used to find this article was "global warming" but the "Subjects" list shows that "climate change" and "environmental effects" might also be useful terms.

Combining Your Keywords

Once you've broken down your research question, identified the main concepts, and listed several keywords (synonyms, narrower terms, and broader terms), you're ready to start building a **search statement**. A search statement is a way of combining your keywords using different search strategies to get more precise results. Instead of typing your full research question or just a few random words into a search bar, a well-crafted search statement tells the system exactly what you're looking for. Think of it like giving a set of instructions to the tool you're using, whether it's a library database, Search@UW, or another search platform. The better your search statement, the more relevant and useful your results will be.

Activity: Main Concepts

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=678#h5p-29

Reflection

Complete this chart to develop keywords for a topic that you are researching in this class or another class. Add more columns if you have more ideas! Add more rows if necessary for your research questions, although most research questions will have two to three main concepts.

Main Concept/Keyword	Alternative/Related	Alternative/Related	Alternative/Related

Attributions

This chapter contains material adapted from:

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- "Avoiding Confirmation Bias" from Introduction to College Research by Walter D. Butler, Aloha Sargent and Kelsey Smith, used under a CC-BY 4.0 license
- "Why Precision Searching"; "Main Concepts" & "Related and Alternative Terms" in Choosing & Using Sources: A Guide to Academic Research by Teaching & Learning, Ohio State University Libraries, used under a CC-BY 4.0 license
- "Identifying the Main Concepts"; "Brainstorming Related Terms"; & "Creating a Search Statement" in Navigating Information Literacy by Julie Feighery, used under a CC-BY-NC-SA 4.0 license

SEARCH@UW AS A TOOL

Learning Objectives

- Describe Search@UW and its key features, including the types of sources it provides access to and how it differs from tools like Google and subject-specific databases.
- Explain when and why to use Search@UW in the research process, and distinguish situations where Search@UW is more appropriate than a specialized database.
- Use Search@UW to locate specific source types and filter search results, and to evaluate the effectiveness of these tools for meeting various research needs.

Overview

In this section, you'll learn what Search@UW is and how it can help you find books, articles, and other items for your research. You'll see when it's a better choice than Google and how to focus your searches on certain formats, like newspaper articles or books. You'll also learn how to use Search@UW to find exact citations for specific titles.

Search@UW might be useful to you if...

- You want to find a variety of information sources, such as books and articles, using one search
- You want to do a broad, multidisciplinary search
- You want books or media owned by UW-Green Bay or other libraries

Search@UW might be less useful if...

- You want to do a focused search in a particular discipline. In that case, choose a database instead. See the "Databases" chapter for more information on selecting a database.

What Search@UW Is

When you use Search@UW to search for things, it pulls content from existing resources into one convenient search interface. Search@UW contains millions of resources including all UW System Libraries collections, digital collections, database articles, and more. Here's a summary of what is available in Search@UW:

- Books: Print books and e-books
- Articles: You will find the majority of our articles from journals, magazines, and newspapers in Search@UW. However, Search@UW is not the only place to look. Try searching in our databases as well!
- Media: DVDs, streaming video, and CDs

When to Use Search@UW

Search@UW is a great place to begin when you're starting a project or brainstorming topic ideas. It gives you a broad overview of how much information is out there and what kinds of sources are available, like books, articles, newspapers, and more.

If you're looking for a specific article and have the title, try Search@UW first. It's often the quickest way to find out if the library provides access.

Search@UW is also helpful when you need just a few sources for a project.

But as your research gets more in-depth, you'll likely want to use databases that focus on your subject area. These are called "**subject-specific databases**." For example, **PsycInfo** is a subject-specific database for psychology. These tools can give you more targeted results by filtering out unrelated sources, helping you find relevant information more efficiently.

Be Aware: Why Use Search@UW Instead of Google

One advantage of using Search@UW instead of Google is that while you are a student at UW-Green Bay, you can access the sources that are available through Search@UW without being asked to pay; whereas, with Google, when you are searching, you will probably eventually hit a paywall where you will be asked to pay to read an article or access information.

Filtering Your Searches in Search@UW by Source Type

After you run your initial search with Search@UW, a number of options will appear on the left-hand side of the page that you can use to filter your search results. These options are helpful to use because your initial search will often yield more search results than you could realistically sift through. As such, the filter options can help you to limit your search results to sources that are more relevant to what you are actually looking for.

Some of the more common filters are peer-reviewed journals, date, and resource type.

When you know you need peer-reviewed or scholarly articles, checking the "Peer-reviewed journals" box can help a lot with refining your search results. However, not everything in a peer-reviewed journal has been peer reviewed. Editorials, for example, often appear in these journals but aren't typically peer reviewed, even if they're labeled that way. And sometimes peer-reviewed labels can be applied incorrectly. For help identifying peer-reviewed articles, check out the "Scholarly Research Articles" chapter.

Additionally, with the date filter, you can limit your searches to sources that are not older than a certain year. This option can be helpful if one of the requirements for your project is that you cannot use any sources that are over five years old.

Similarly, the resource-type filter is helpful if you know what type of source you need. For example, if you know you only need articles, then it would make sense to cut things like books and conference proceedings out of your search results.

It's also important to keep in mind that newspaper results are excluded from the default search in Search@UW, so if you want to search for newspapers, you will need to click the "Newspapers search" option at the bottom of the "Resource Type" list.

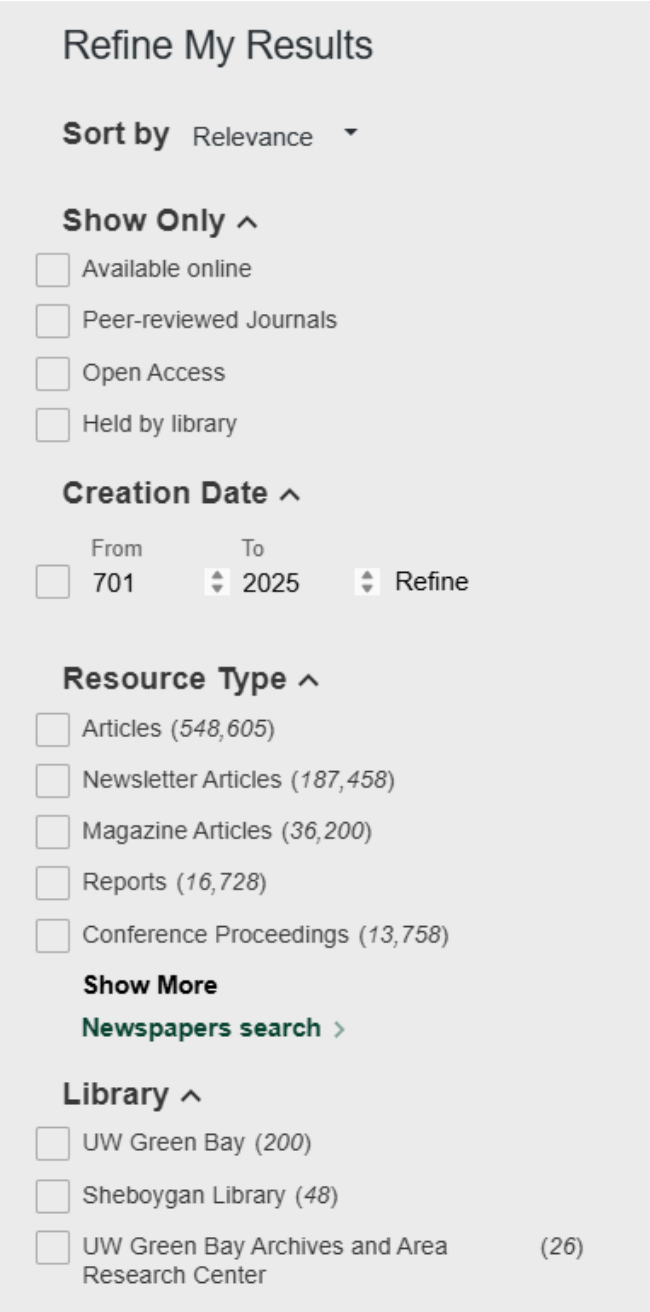


Image 1: Some of the filter options in Search@UW.

If you would like step-by-step instructions for using Search@UW to find articles (both newspaper articles and journal articles), take a look at the library's how-to guide that is titled "Find an article by topic," and if you would like more information on using Search@UW to find books and videos, you can take a look at the "Finding Books and Videos" guide.

Using Search@UW to Find a Specific Article

There are many possible reasons why you might need a specific article. Maybe you were searching on Google,

found an article you were interested in, but that article is behind a paywall. Or maybe you saw an article that sounded interesting or useful that was listed in the bibliography of another article.

As previously mentioned, Search@UW can also be used to find specific articles. Here are instructions for finding a specific article:

1. Search with the identifying information you have about the article, particularly the DOI or the title and author. You may also want to try the journal title.
2. Select the title of the article in the results list, then scroll down or select "**Details"** to verify that you found the right one.
3. If your article doesn't appear at the top of the list, try selecting "**Articles"** or "**Newspapers search"** under "**Resource Type**."

Image 2: Resource Type options

4. If you still don't see the article, click the little triangle on the right side of the search bar, select "**UWGB and Requestable Items**," and reenter the search. This will include articles that we don't have immediate access to, but you can request them at no charge.

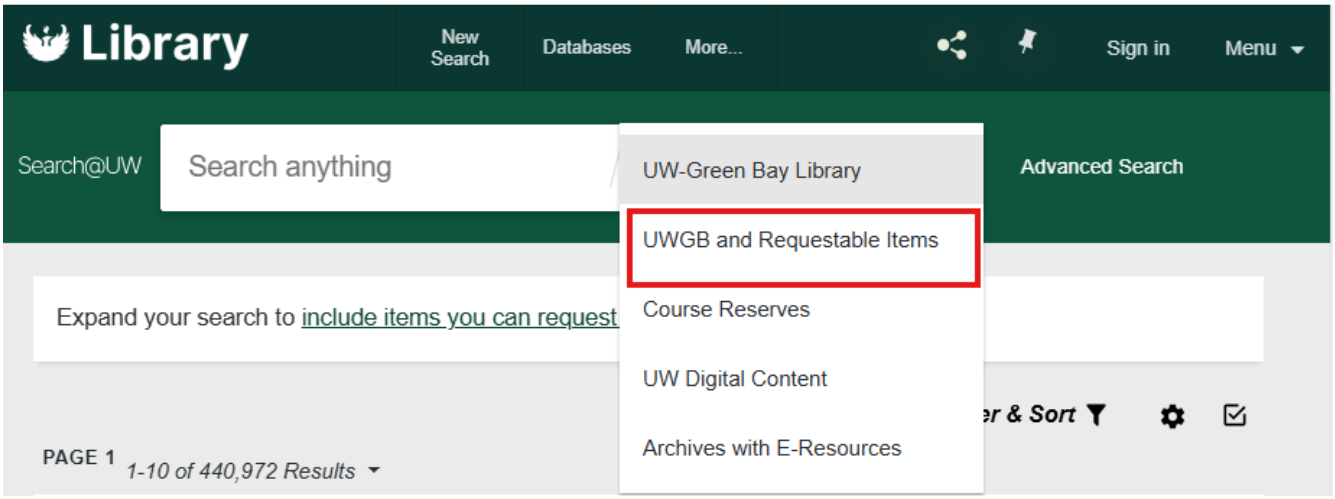


Image 3: UWGB and Requestable Items.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=468#h5p-50

Reflection

- Do you have an upcoming project that you might use Search@UW for? If so, what is the assignment and how do you plan to use Search@UW? If not, what might you use Search@UW for in the future?
- Think of a topic that you are going to use for an upcoming project. Do a search in Search@UW for your topic. Then, use a filter to cut your results down. What search terms did you use? How many results did you get with your initial search? And how many results

did you have after you applied the filter?

DATABASES

Learning Objectives

- Identify and select subject-specific databases using the A–Z Databases list filters (e.g., "Subjects" and "Types") to locate resources relevant to the research topic.
- Understand when to use a subject-specific database rather than Search@UW.

Overview

Search@UW is the best place to start your research if books or book chapters are what you need. Search@UW can help find some articles; however, if you find you need more results or highly specialized articles, the library has other tools that may be more effective.

If you need a solid set of articles on your topic, library databases are often the most efficient way to search, especially when you're focusing on a specific subject area. Subject-specific databases let you search within one discipline, so you're more likely to find articles that match your topic. Databases pull from hundreds of journals at once, which saves time if you're not looking for a specific journal. Some also include magazines, newspapers, book chapters, conference papers, dissertations, and other sources, giving you a wide range of material to explore.

In this chapter, we will discuss subject-specific databases, general databases, and their overall strengths and weaknesses.

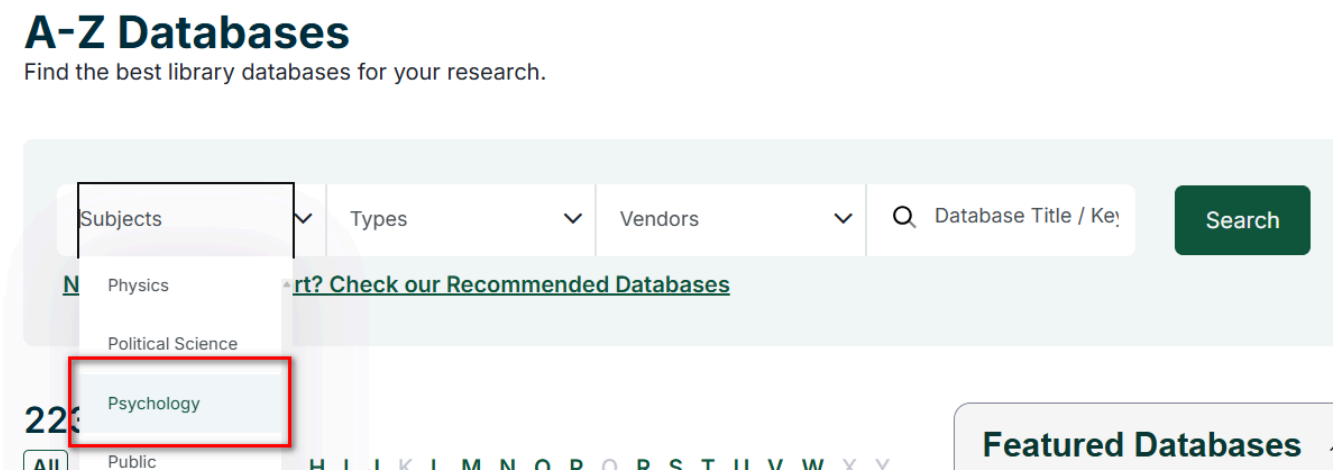
Which Database Should You Choose?

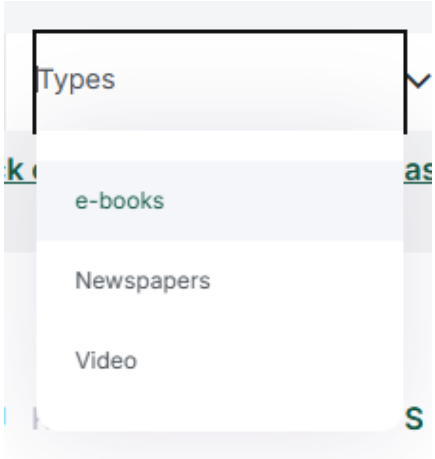
The UW-Green Bay Library subscribes to many databases that provide access to articles. The complete list of databases that the library subscribes to can be found on the A–Z Databases list. Each database is different in terms of:

- Subject(s) covered
- Types of materials included
- Whether materials are peer-reviewed
- Whether abstracts (brief summaries of content) or full-text materials are provided
- Dates included
- Languages included
- Overall design and search options

Subject-Specific Databases

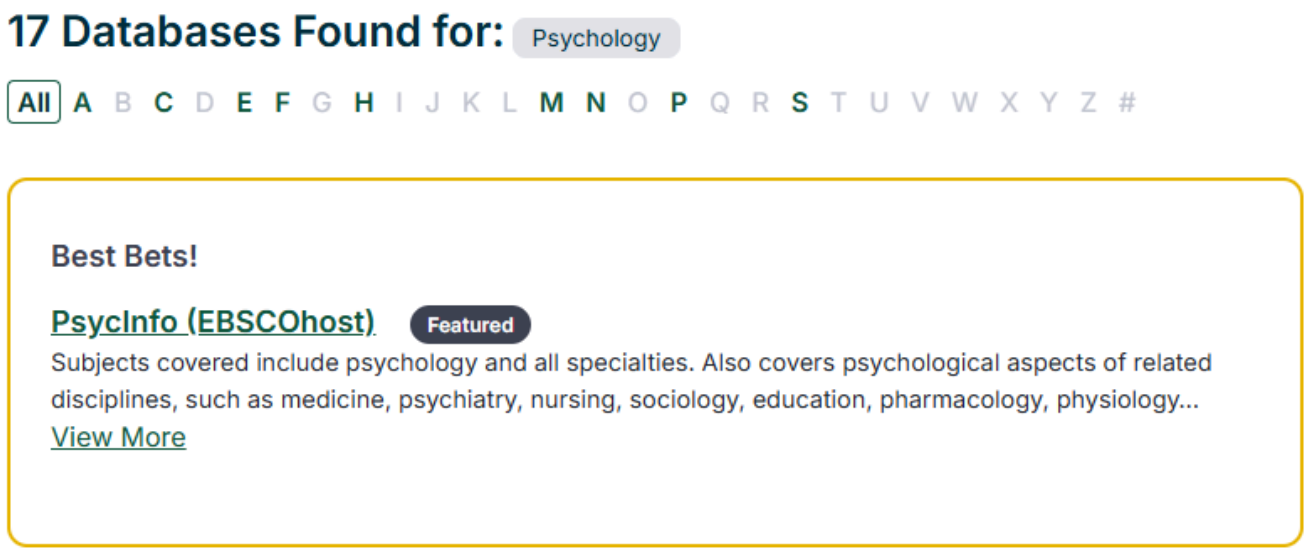
To find databases relevant to your research, use the "**Subjects"** drop-down menu on the library's A–Z Databases page. Below, we have highlighted psychology in the "Subjects" drop-down. You can choose the subject area that matches your course or the one that best fits your research topic. For instance, if you're writing a paper for a history class on the history of distance education in the U.S., you could explore databases under "History" or "Education," and most likely, both will be useful.





The "**Types"** drop-down is helpful when you're looking for a specific format of information, such as videos, newspapers, or e-books.

After you select a subject and click "**Search**," the list will update to show databases that match your topic. At the top of the page, you'll see a "**Best Bets!**" box, as shown below. These are the databases most widely used in that subject area. For example, in "Psychology," you see just one database highlighted, even though there are 17 databases total that might be relevant to the topic. While the "Best Bets!" are a great starting point, the others on the list can still be helpful for your research.



The "Best Bets!" box displays the most relevant databases for your subject

General Databases

You'll notice that several databases appear on the list for almost every subject, like Academic Search Ultimate and JSTOR. These databases are good for interdisciplinary research, or research across multiple subjects. They are useful when you are just beginning your research to help you get an idea of what research is being done in your area, or if your topic doesn't neatly fit into one specific subject.

Database Features

There are several search features in databases that work the same as Search@UW, like narrowing by date and filtering by source type. There are a couple of features, however, that are also unique to searching in databases.

- Find Full Text: Unlike Search@UW, which often gives you a direct link to the article or a way to request it, databases don't always *know* exactly where the full article is available. When you click "Find Full Text," a behind-the-scenes process kicks in to look for the article in other databases or connect you to it in Search@UW, where you can request it if needed.
- Use search filters that are particularly useful in a given field. Examples include:
  - Narrowing methodology to "empirical study" in PsycInfo
  - Searching by industry codes in Business Source Complete
  - Filtering by dates to find a primary source in JSTOR
- View or download PDF: While Search@UW will link you to various databases to view article PDFs, you can frequently view the PDF of an article directly within the database. Just keep in mind that the "PDF" button or viewing option might look different depending on which database you're using.

Strengths and Weaknesses of Databases

Using a library database isn't always the best fit for every research need. Like any search tool, databases have strengths and weaknesses, especially depending on the kind of source you're looking for.

Strengths

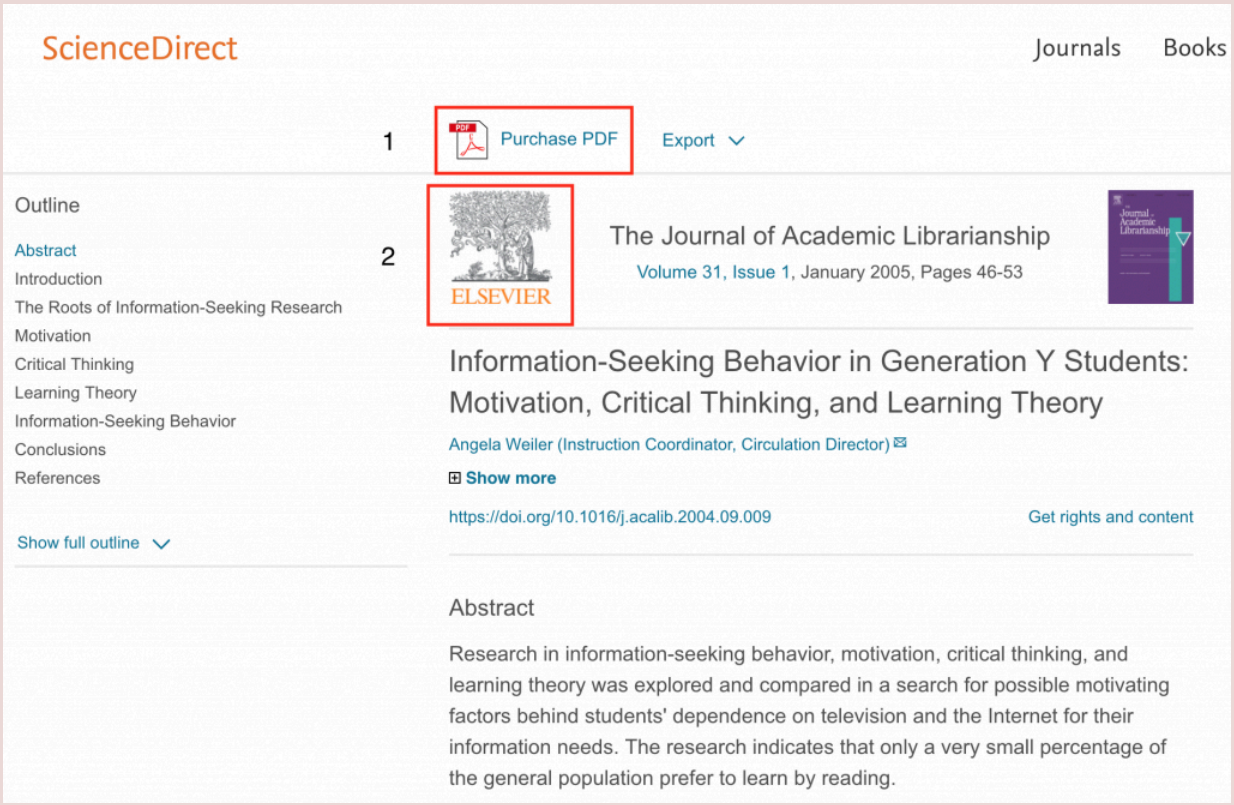
- Good for finding scholarly articles
- Can focus on specific types of media, like collections that only include videos
- Advanced search filters give you more control over your results
- Covers specific subjects and date ranges, clearly listed
- Links directly to full-text articles that would otherwise be behind a paywall
- Subject-specific databases offer deep coverage of a topic area
- Includes full citation information for easy referencing

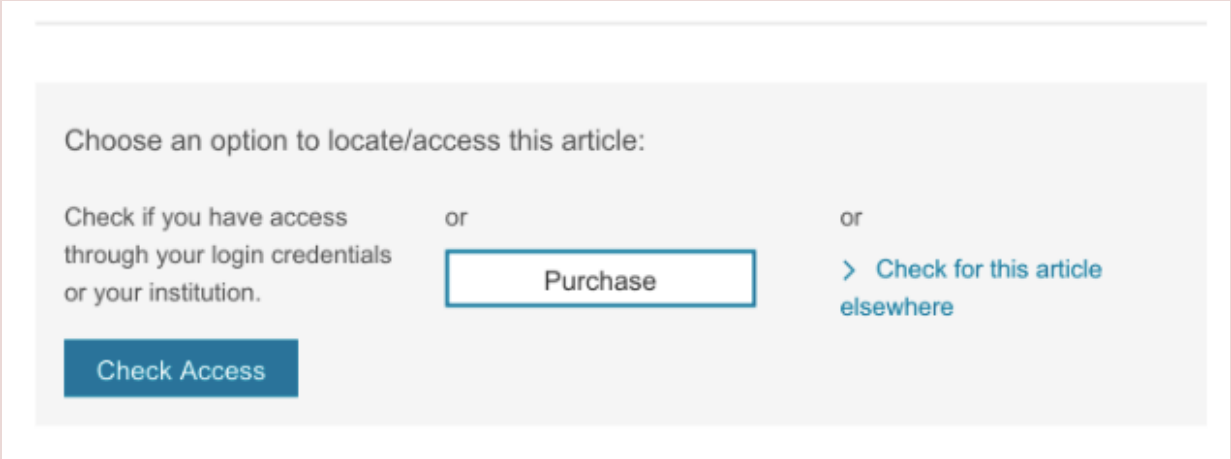
Weaknesses

- Not great for general or background info (try an encyclopedia or Wikipedia)
- Interfaces can be clunky or hard to use on mobile devices
- Not all results include full text, but you can often use the "Find It" button to locate access through the library, which may include the option to request a copy

Google and the Paywall Problem

Scholarly publishers' drive to make money is the reason why Googling usually doesn't work when looking for peer-reviewed research studies. Take a look at the screenshot below. Does it look familiar? If you found the following article through Google, rather than through one of the library's databases, you will be prompted to purchase the article.





It's a paywall. While you may be able to use Google to discover that this article exists, you won't be able to access the full article because it is hidden behind a wall that will come down only if you pay for it to do so. Access to this one article costs $35.95.

Fortunately, as a university student, you have the privilege of accessing these materials without having to pay $35.95 out of pocket. The answer to your problems is library databases; the library pays for these articles so you don't have to!

Activity: Choosing a Subject-Specific Database

For the questions below, read through each research scenario and choose one database that would best cover the subject.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=519#h5p-51

Reflection

- Visit the A–Z Databases list and use the subjects drop-down to select a topic related to your interests or your major. Which databases are highlighted? Have you ever used them in your academic research?

Attributions

This chapter contains materials adapted from:

GOOGLE AND OTHER SEARCH ENGINES

Learning Objectives

- Describe how search engines like Google gather, organize, and rank information.
- Evaluate search engine results critically by practicing click restraint.
- Use search operators, like quotation marks and site limits, to improve the relevance of your search results.

Overview

Do you need directions to a friend's new apartment? Want to find that website your adviser recommended? Looking to rent your textbooks for next semester? Our instinct is often to Google the information we need.

You're not alone if your preferred search engine is Google. As of 2025, Google holds about 87% of that market in the United States, followed by Bing, Yahoo!, and DuckDuckGo. Increasingly, many people also use social-media apps like TikTok and Instagram to search for information.

Technically speaking, search engines are computer programs that capture content on the open web and make it searchable through a user interface, listing results according to relevance determined by the system. Search engines like Google can be especially helpful at the start of a research project when you're exploring a new topic or looking for general background information.

In this chapter, we'll look at how search engines work, how to use them more effectively, and how to critically evaluate the results you get.

How Search Engines Work

Google and other search engines use computer programs called "**crawlers**," to scan and collect content from across the internet. These crawlers follow links from one page to another, building an index of what they find.

But because crawlers can only include what is publicly available, Google's index includes just a portion of the web.

Content that is available online but not indexed by search engines is known as the "**deep web**" (not to be confused with the "dark web," which is only accessible with special tools and is associated with illegal activity). Many scholarly articles exist behind paywalls and are not available in standard search results. Some social-media sites and posts, forums, and other password-protected content is also considered part of the deep web.

How Results Are Ranked

Google uses a proprietary ranking algorithm to determine the order of search results. While the exact details are not publicly available, we know that ranking is based on many factors, including:

- How well a page's text matches your search
- How many other websites link to the page
- How popular the page is with other users
- How recently it was updated
- Your location and language
- Your search and browsing history
- How fast the page loads

Because Google adjusts results based on both context and personalization, two people searching the exact same phrase may see different results. Context-based customization includes factors like your location, language, and device type. Personalization goes a step further and uses data from your Google account, such as your past searches and browsing history to tailor results.

This system often works well, but the top results may not be the best sites for your intended purpose. Google doesn't really know your search intent or how credible a page may be.

Advertising and Optimization

Website owners want their pages to be ranked highly and use search engine marketing techniques to drive traffic. They can use paid advertising to appear at the top of search results (sponsored links) or design their content to align with search engines' ranking factors (a process known as "search engine optimization" or "SEO" for short).

Sponsored links are advertisements that often appear at the top of your search results. This means that someone has paid to have their website appear at the top of a specific web search. Depending on the search engine you're using, it may not always be easy to identify these ads from regular (organic) search results. Look for the word "Sponsored" or "Ad" in small font. Advertisements are a chief source of revenue for Google and other web search engines, and they are placed prominently in your search results to generate income from advertisers.

Search engine optimization is a marketing strategy that includes "all measures that improve the visibility of certain documents or websites on the result pages of search engines." Some of the techniques include how pages are structured with HTML, strategically using likely search keywords and phrases, and ensuring fast page load time.

Sponsored or highly optimized content isn't necessarily bad, but some websites may be more focused on getting more traffic (and corresponding ad revenue) than producing high-quality information.

Review Search Results

Don't just click the first result! Use a strategy called "**click restraint**": scroll through the page and look at the titles, snippets, and URLs, and consider which might be most useful. Watch this video from iCivics and the Digital Inquiry Group for more on click restraint:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wisconsin.pressbooks.pub/info-lit/?p=736#oembed-1

Look at the following results page:

how to do seo

Sign in

AI Mode All Videos Images Forums Shopping Web More Tools

AI Overview

To perform SEO (Search Engine Optimization), you need to **optimize your website and its content to rank higher in search engine results pages (SERPs) for relevant keywords**. This involves a combination of on-page SEO, technical SEO, and off-page SEO strategies.

Here's a step-by-step guide:

1. Keyword Research:

- Identify relevant keywords: Determine the words

SEO Starter Guide: The Basics | Google Search...
Organize your site. Use descriptive URLs. Group...
Google for Developers

Search Engine Optimization - How-to D...
Step-by-Step Procedure: Enhancing Website Ranking...

Show more

Sponsored

forbes.com
https://www.forbes.com

Top 4 How To Optimize SEO of 2025

Best SEO Services of 2025 — Forbes™ Can Help You Find The Best SEO Companies For Your Website. Save Time And Money. Forbes™ Can Help You Find The Best SEO Services For Your Website. Save Time...

Sponsored

Boostability
https://digital.boostability.com

Easy SEO for Beginners

Beginners Guide: SEO Foundry — Quickly Master SEO Techniques. Begin Optimizing Today with Simple Steps. Unlock SEO Success Fast. Enhance Traffic with Ease for Your Business. Affordable SEO Solutions.

Sponsored

Semrush
https://www.semrush.com

SEO Optimization

Free SEO Assessment — Research your competitors, find traffic-driving keywords, build quality backlinks & more. Build a winning SEO strategy and save time for what matters most, your life! Start today.

Improve SEO & Get Free Reports · SEO Tools Others Do Not Have · Keyword Research Tool

Sponsored

Wix.com
https://www.wix.com

What is SEO? A beginner's guide to search engine optimization

Build a Standout Website With Wix's Comprehensive Website Creation Tools. Create Your Unique Online Presence with Wix's Versatile, Intuitive Website Builder. SEO Setup Checklist.

After the "AI Overview," the first four results are paid advertisements, indicated by the word "**Sponsored**." The first organic (non-paid) result is "SEO Starter Guide" on Google for Developers.

AI Overviews

Google and other search engines sometimes will include AI-generated summaries that try to answer your searches. Like other forms of generative AI, they can:

- Include incorrect or outdated information
- Misinterpret jokes, satire, or nuance
- Link to sources that don't actually support the AI summary

Treat AI overviews with caution. In many cases, you will be better served by selecting a promising link in the search results.

Search More Effectively

Search operators are simple tricks that help you narrow, broaden, or refine your search. They can filter out unrelated results or focus on specific sources. We'll explore a few of them.

Specify a Domain or Website

Use **site:** to search within a specific website or domain. A top-level domain is a group of websites whose URLs end in the same letters, such as ".edu," ".gov," ".org," and ".com."

Example: You could limit your results to government websites by adding **site:.gov** to your search. If you only wanted information from the Environmental Protection Agency, you could use **site:epa.gov**

Keep in mind that, despite common belief, ".org" websites are not automatically more trustworthy than ".com" sites. Anyone can make a ".org" website; it is not limited to non-profit organizations. It's important to evaluate who is behind a website, regardless of the top-level domain.

Specify a Document Type

The names of computer documents have specific filetype endings, like .docx for Word documents, .pptx for PowerPoint presentations, and .pdf for PDFs. You might guess where this is going: we can narrow down our searches to a specific filetype.

Example: Official documents, research reports, and forms often are saved as PDFs, so if you are looking for that kind of information, you could add **filetype:pdf** to your search.

Minus Sign

Use a minus sign to exclude words or phrases from your results.

Example: If you are looking for information about Green Bay, but not the football team, you might search **"Green Bay" -Packers**

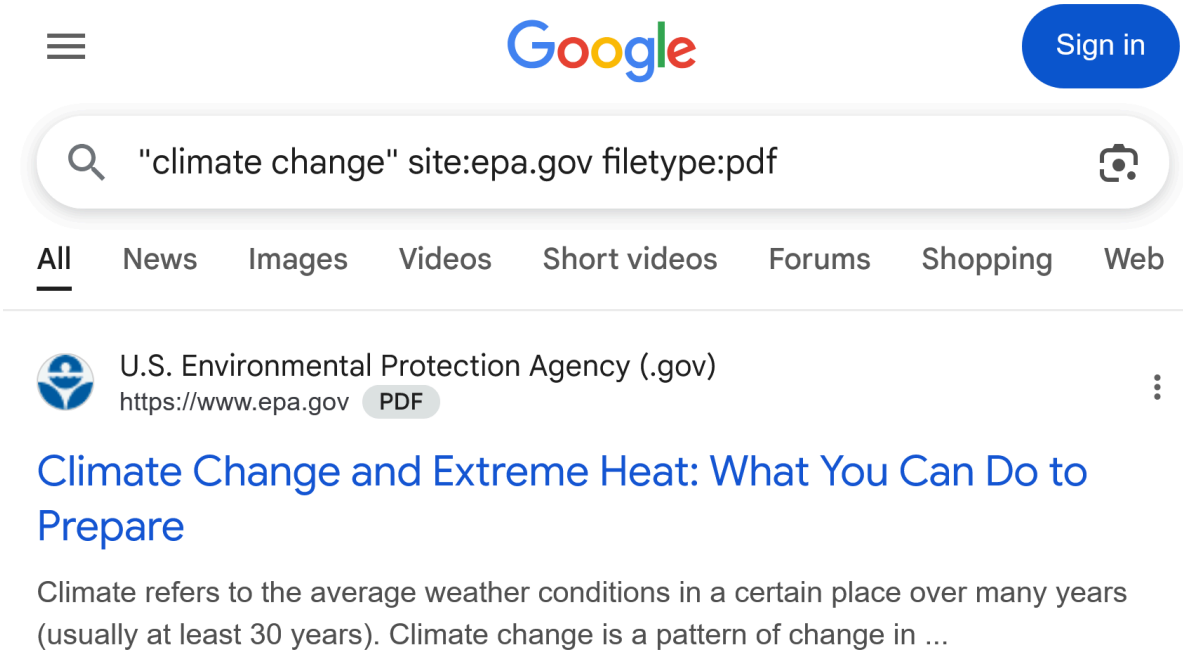
Quotation Marks

Quotation marks can help make your searches more precise, but they aren't always necessary. When you put quotation marks around a word or phrase, most search tools will look for that exact phrase in that exact order. It can be useful when you're searching for names of people, specific quotes, titles of works, and unique phrases.

Quotation marks are best used when you're confident about the wording and want to limit unrelated results. For broader topics or when you're still exploring, it's often better to leave quotation marks off.

Example: If you want to find information about the scholarly journal *Nature Medicine*, you might search "Nature Medicine" with the quotation marks. Without them, the search may be more likely to return unrelated content about natural remedies.

You can combine multiple search operators into a single search:



This screenshot shows a search for PDFs with the phrase “Climate change” on the U.S. Environmental Protection Agency website.

Google Scholar

Google Scholar is a free search tool designed to help you find academic sources like journal articles, books, theses, dissertations, and more. It looks a lot like regular Google but is focused on scholarly content across a wide range of subjects. This makes it a good place to start exploring a research topic and discovering work by experts in the field. One helpful feature is the ability to see how often a source has been cited and find related research. A high citation count can suggest that a source is influential.

The screenshot from Google Scholar search results shows an article’s title, authors, journal, year, publisher, and a snippet of the abstract. It also indicates that the article has been cited by 66 other papers.

That said, Google Scholar has some limitations. It doesn't offer the same search filters and organization as a library database, and not everything it includes is peer-reviewed or from reputable journals. Just like searching on Google, you should evaluate the credibility and relevance of the sources you find.

Many results may also require payment or a subscription to access the full text. To unlock more content, you can connect Google Scholar to your university library. At UW-Green Bay, our "Using Google Scholar" guide shows you how to set this up.

Summary

Search engines are powerful tools, but they're not neutral. Advertisements, SEO, and AI all affect what you see. With better search techniques and a critical eye, you can find more relevant and reliable information faster.

Knowledge Check

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=736#h5p-38

Reflection

- Think of a time you clicked a top search result that wasn't helpful. What would you do differently to find a better result?
- What are the pros and cons of using Google compared to a library database for research? In what situations would one be better than the other?

Attributions

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EVALUATING AND REFINING YOUR SEARCH STRATEGY

Learning Objectives

- Refine the search strategy based on previous search results and by using techniques, such as revising search terms and adjusting filters.
- Evaluate the usefulness of sources for a specific research question based on their titles and abstracts.
- Select sources that are well-matched to the information need rather than selecting the first or most convenient results.

As we have mentioned before, as you research, the steps of the research process will be repeated multiple times, ideally with improvements each time. To do that, you'll need to evaluate your search results so you can think about how to make them better. You should not plan to just take the first article that pops up in the first search that you do. Your first search is extremely unlikely to be your best search!

Refining Your Search Strategy

Sometimes, a quick scan of your search results will be all it takes to realize that your search needs refining. You might need to adjust your search terms, your filters, or both!

If You Got Too Few Results, You Might Try:

- Making your keywords broader, such as searching for "social media" instead of "Instagram"
- Using "OR" to link together several synonyms or related terms and grouping with parentheses
    - Examples: ("grade point average" OR "academic achievement"), (Hispanic OR Latino), and (dogs

OR canines)

- Removing some filters—only do this if the filters you remove weren't important to your information need
- Making your date range filter wider, such as including the past 10 to 20 years instead of the past 5 years
- Breaking your topic into pieces, knowing that you may never find one perfect source. View the video below to learn how to do this.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wisconsin.pressbooks.pub/info-lit/?p=803#oembed-1

If You Got Too Many Results, You Might Try:

- Making your keywords narrower, such as searching for "elementary school students" instead of "children"
- Using quotation marks around exact phrases, as described in the "Google and Other Search Engines" chapter
- Searching in a subject-specific database instead of Search@UW or Google
- Adding additional filters—only do this if the filters you select makes sense for your information need
- Refining your research question to be more precise (see the "Understanding Your Information Need" chapter for info on this)

If Your Results Just Aren't What You Expected:

- If your search results don't quite fit the topic you wanted, revisit the list of alternative keywords that you developed (in the "Keywords" chapter) and switch out your search terms for some of those. Sometimes the best keywords are terms that you hadn't thought of yet! Try skimming the titles in the results list to see if you can spot any good terms to try searching with.
- If your search results are mainly books, but you were expecting articles, you might need to make your research question more specific—see the "Understanding Your Information Need" chapter.
- If the sources seem outdated, try making your date-range filter narrower. For example, include the past 3 to 5 years instead of the past 10 years; but don't make it too narrow. It takes time to publish academic sources!
- If you can't figure out why your search results aren't what you expected, ask a librarian for help.

Selecting the Best Sources

After a couple rounds of using the above steps to improve your search, your search results should be looking pretty good! However, you still need to pick the most useful sources from the list. The algorithm that decides the order of the results won't know exactly which sources are best for you and your information need. That's why it's not safe to just assume that the first few sources in the list will be the best ones to select.

Evaluating the Titles of Your Sources

Up until the now, you have just been skimming the titles of the sources in your results list to get a general idea of whether they are on the right track. Now it's time to read the titles a little more carefully. Let's say that your research topic is about the Russian Revolution. Let's even say you specifically searched for information about the role of music in the Russian Revolution. Your search results included the articles:

- "'Like the beating of my heart': A discourse analysis of Muscovite musicians' letters during the Russian Revolution"
- "Garbage cans and metal pipes: Bolshevik music and the politics of proletariat propaganda"

The titles tell you about the subject matter of the article and about how the author approaches the subject matter. You might not know exactly what discourse analysis is, but you can guess that you can do it to letters and that you should pay particular attention to it when the author mentions it in the article. Looking at the other title, you would know to watch out for very different words and concepts. It is up to you to decide which of those articles would be more valuable to your research, or if it would be valuable to read both! Before making the final decision, you'll want to read the abstract, which we will cover in the next section.

Keep in mind that the convention within some academic disciplines to have a pretty long title separated by a colon usually follows a predictable pattern. The text to the left of the colon serves as a teaser, or as something to grab a reader's attention (remember that the author is likely not trying to grab *your* attention, so you may not find these teasers particularly effective—though it is probably packed with phrases that would entice someone who already studies the topic). The information to the right of the colon typically is a more straightforward explanation of what the article is about.

Evaluating the Abstracts of Your Sources

Once you have identified a number of source titles that sound good, it will be worth it to evaluate each source a little further to determine how useful it will be for your information need. This way, you will save yourself the time of reading an entire source that turns out to not be what you need.

Not all of your sources will come with abstracts, but when they do, pay close attention. An abstract is a

summary, usually one paragraph at the beginning of an article that serves to encapsulate the main points of the article. It's generally a pretty specialized summary that seeks to answer specific questions. These include:

- The main problem or question
- The approach (how did the author(s) do the work they write about in the article?)
- The shiny new thing that this article does (to be published in an academic journal you often need to argue that you are doing something that has not been done before)
- Why people who are already invested in this field should care (in other words, you should be able to figure out why another academic should find the article important)

The abstract often appears in database searches and helps scholars decide if they want to seek out the full article.

That's a whole lot to accomplish in one paragraph.

As a result, authors often use specialized jargon to convey complex ideas in few words, make assumptions of prior knowledge, and don't worry much about general readability. Thus, abstracts are generally dense, and it's not uncommon to read through an abstract and not have a clue about what you just read. This is a good place to reread, highlight, underline, and look up words that you don't know. You still may not have a firm grasp on everything in the abstract, but you should treat the key terms in the abstract like parts of a map when you see them in the main text, leading you to treasure: understanding the main argument. We will come back to this in the "Reading Scholarly Sources" chapter.

Final Thoughts

Is it worth it to spend time refining your search and evaluating your results? It's tempting to just declare your early search results to be "good enough." Understanding the complex vocabulary used in article titles and abstracts can be difficult and frustrating. We think it *is* worth it to pick the best sources rather than the "good enough" sources, because it will make your research project or paper much stronger. It will take some effort, but you can do it!

Activity: Evaluating search results

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=803#h5p-44

Reflection

- How do you decide which search terms (keywords) to use, and how do you know when it's time to try different ones?
- What is one thing you learned about how to make your results list better when you are not finding what you need?
- Why do you think it might be helpful to spend time choosing the best sources instead of just using the first ones you find?

Attributions

This chapter contains material adapted from:

- "One Perfect Source?" by North Carolina State University Libraries, used under a CC BY-NC-SA 3.0 US License
- Reading Games: Strategies for Reading Scholarly Sources by Karen Rosenberg, in Writing Spaces:

CONCLUSION OF SEARCHING FOR INFORMATION UNIT

Unit Reflection

- How can the skills you've learned in this unit support research and decision-making beyond academic assignments? Reflect on how being a more strategic and critical searcher might impact your personal, professional, or civic life.
- In what ways can refining your research question improve the quality of the sources you find? How does narrowing your focus lead to more useful, targeted information?
- What challenges do you still face when trying to find relevant, high-quality sources—and how might you address them? Think about barriers like overwhelming search results, vague topics, or unfamiliar interfaces.

Unit Review

As you wrap up this unit, you've started to build a solid foundation in the research process, from recognizing what you need to know to forming a focused academic research question. You've practiced creating and refining keywords, adjusting your search strategies, and choosing the right tools for your research, whether that's Search@UW, a subject database, or Google. Most importantly, you've learned to look closely at your search results and choose sources based on how well they support your goals, not just what's familiar or easy to find.

It's normal to still have questions about when to shift your research question, how to navigate databases, or how to tell if a source is worth your time. These are all part of becoming a more confident researcher, and they get easier with practice, curiosity, and a willingness to try different tools.

Your next step is to put these strategies to work. Start with a clear question, plan your search with intention, and stay open to refining your approach as you go. Try out new databases, tweak your keywords,

and ask for help when you need it. Purposeful searching isn't just about gathering information, it's about discovering ideas that help you think more clearly, ask better questions, and create stronger work.

EVALUATING INFORMATION

Photo by John Gibbons on Unsplash

Unit Learning Objectives

- Apply critical evaluation strategies to assess the credibility and reliability of information sources using frameworks such as the SIFT method and lateral reading.
- Analyze the concept of authority by distinguishing between different types (e.g., subject expertise, societal position, personal experience) and evaluating how authority, bias, and

context impact source credibility.
- Select appropriate and relevant sources by considering both credibility and alignment with specific research needs, including topic match, source type, and currency.

Unit Overview

This unit focuses on how to critically evaluate information, an essential part of doing solid academic research and making informed decisions. You'll learn the SIFT method (**S**top, **I**nvestigate the source, **F**ind better coverage, and **T**race claims), a simple way to check a source's credibility. We'll cover how to read laterally, spot an author's authority and possible bias, and understand different kinds of expertise, including academic, societal, and lived experience. You'll also learn how to judge a source's relevance by looking at things like how well it fits your topic, when it was published, and what kind of source it is. Together, credibility and relevance help you choose sources that support responsible, thoughtful research.

This unit contains content that may help fulfill the UW-Green Bay Core Curriculum Learning Outcomes for Information Literacy, specifically:

IL 2: Students will critically evaluate sources of information, considering both the expertise and credibility of the creators and the contextual factors that influence the information's creation, dissemination, and purpose.

Additionally, this content contributes to this learning outcome for First Year Seminars:

FYS 3: Students will critically evaluate information sources in various formats, recognizing the contextual nature of authority and its relation to credibility.

EVALUATING SOURCES

Using SIFT and Lateral Reading

Learning Objectives

- Explain why it is important to evaluate information sources, especially when conducting academic research or making decisions.
- Describe the four steps of the SIFT method (Stop, Investigate the source, Find better coverage, and Trace claims to the original context).
- Use lateral-reading strategies to help determine a source's credibility.

Overview

Whether you're writing a research paper, sharing a post online, or just trying to understand a topic, taking time to evaluate your sources helps you make informed decisions and avoid misinformation. This chapter introduces the **SIFT method**, a simple set of steps that can help you quickly determine whether a source is reliable.

You'll also learn about **lateral reading**, a strategy professional fact-checkers use to investigate unfamiliar sources by looking outside the source itself. Together, these tools will help you become a smarter, more critical, and more confident information user.

Introduction to SIFT

SIFT stands for:

1. Stop.
2. Investigate the source with lateral reading.

3. Find trusted coverage.
4. Trace claims, quotes, and media to the original source.

We'll look at each one.

Step 1: Stop

Before you read or watch something, **stop** and ask yourself: "Do I know and trust this source?"

If not, use the other SIFT steps to learn more about it.

Stopping can also be helpful during the investigation process. If you find yourself falling down an internet rabbit hole or feeling overwhelmed, pause and remind yourself of your goal. What do you really need to know? Are you getting closer to that goal or just clicking around aimlessly? Refocus if needed.

Step 2: Investigate the Source with Lateral Reading

If you're not already familiar with the author and publisher of a source, take a minute to **investigate**:

- Who wrote or published the source?
- What's their reputation?

This doesn't mean you need to do hours of research. A quick internet search can tell you whether you're reading an article by a respected scientist or watching a video sponsored by an industry group with a specific agenda. It's not that experts are always right or that organizations with interests are always wrong. But understanding the source's reputation and purpose helps you better judge the credibility of the information presented by the source.

One of the most effective ways to investigate a source is by using a method called "**lateral reading**."

Watch this brief introduction to lateral reading from iCivics and the Digital Inquiry Group:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wisconsin.pressbooks.pub/info-lit/?p=881#oembed-1

Lateral reading means leaving the page you're on to investigate the source using other, more trusted sources. It's one of the fastest and most effective ways to find out if a source is credible.

Here's how to do it:

1. Open a new tab or browser window.
2. Search for the name of the website, organization, or author.
3. Look for what well-known and reliable sources say about them.

Use sources like Wikipedia, established news outlets, or academic institutions to check:

- Does the source have a good reputation?
- Do experts or journalists reference it?
- Is it known for pushing biased or misleading content?

Lateral reading helps you answer important questions *before* you trust or share information. Rather than relying on what the site says about itself, you build a fuller picture from multiple outside sources. That context helps you decide if the original information is worth your time.

Step 3: Find Trusted Coverage

Sometimes you don't care about a particular article or post; you are interested in the claim it's making. You want to know whether it's true and if it represents a consensus viewpoint.

In those cases, your best strategy is to **find** other trusted reporting or analysis on the topic. Instead of trying to decide whether one article is accurate, check if reputable news organizations or subject experts are reporting the same thing. Understanding the broader context helps you think more critically about what you're reading.

Search for News Coverage

If you can't find the original quote or event directly, try searching for an article from an established news outlet that covers it in more detail. Try searching in a news aggregator like Google News.

Step 4: Trace Claims, Quotes, and Media Back to the Original Context

A lot of content online has been taken out of context: quotes, photos, videos, and even research studies.

Maybe someone shares a dramatic video clip, but you don't know what happened before or after it. Or you see a quote that seems shocking, but you don't know who said it or when. Or you read that a scientific study supports a claim, but no one links to the actual study.

In these cases, **trace** down the original source whenever you can.

- Find the full video, not just the short clip
- Look up the original article or research paper
- Check if a quote was used accurately and fairly

By seeing things in their full context, you'll be better able to decide if what you saw was accurately presented.

How to Trace Claims

Look for a Link or Citation

- Does the article or post link directly to the original source?
- Is there a title, author, or organization mentioned that you can search?

If so, open that source and read it yourself. Don't rely on someone else's summary; see what the original actually says.

Search for the Original

If the article doesn't link or cite its sources:

- Copy the claim, quote, or statistic
- Paste it into a search engine with details like the possible author, publication, or keywords

Reverse Image Search

If you're unsure about a photo, try a reverse image search to help figure out where it came from. This technique lets you upload a photo or paste a URL from an image you found online, and then it finds other websites where the image appears. You can often figure out when and where an image was originally posted.

Two popular reverse image search tools are:

- Google Images (click the camera icon to search by image)
- TinEye

SIFT in Action: A Step-by-Step Demonstration

Watch this demonstration from Vanderbilt Libraries to better understand what the SIFT process looks like in practice:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wisconsin.pressbooks.pub/info-lit/?p=881#oembed-2

Avoid Common Misconceptions About Online Credibility

There are a lot of outdated and inaccurate ideas about how to evaluate websites. You may have even been taught some in school!

Don't Rely on the Top-Level Domain Name Alone

Despite what you may have heard, websites ending in "**.org**" are *not* automatically better than those ending in "**.com**." Anyone can buy website domains with those endings for any reason.

Instead, do a quick search to learn who owns and operates the site and if it has a good reputation.

Good Design Doesn't Guarantee Trustworthiness

A clean, professional-looking site can still publish misleading or false information. Website templates and design tools make it easy to create impressive-looking pages with little effort.

Consider How Ads Are Used

Reputable sites often rely on advertising to stay in business. However, some websites blur the lines between content and advertising.

Watch for:

- Articles labeled "sponsored content," "partnered with," "paid post," or "presented by"
- Links to products that earn the site a commission
- Stories that feel more like ads than information

Be especially cautious when ads are disguised as articles or influence what's being recommended.

"About" Pages Offer Only One Side of the Story

An "About" section on a website is an opportunity for an organization to tell you *what they want you to know about them*. They are not always a true picture of that organization's mission or purpose. Use lateral reading to see how other trusted sources describe the organization or its authors.

Citations Can Be Misleading or Misused

Many sites use links or citations to show the sources of their information. However, some sites take advantage of the perceived authority of citing sources:

- The links might point to other pages on the same site
- The source may not actually support the claim
- The citation might take a quote or study out of context

If you're questioning a site's reputability, you can follow the links to check whether the original source is reliable and is being used accurately.

Final Takeaway

The SIFT method gives you a quick, practical way to evaluate information by looking beyond surface-level impressions and asking questions like:

- Who created it?
- What's their background or perspective?
- What do other trusted sources say about this topic?
- Is this claim accurate and presented in the right context?

Keep in mind that not every source will require every SIFT step. Sometimes a quick check will be enough, while other situations may require a deeper dive. You may also move between steps or use more than one at a time.

Even after you've determined that a source is credible, you still need to consider if it's useful for your purpose. A reliable source might not be the right fit for your topic or assignment. Learn more in the "Relevance" chapter.

Being a thoughtful information user helps you become a better student, a smarter citizen, and a more confident communicator.

Knowledge Check

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=881#h5p-43

Reflection

- Why is it important to evaluate sources even when you're not writing a paper or doing academic research?
- How could using lateral reading change the way you interact with information on social media?
- Choose a recent headline or viral claim you've seen. How might you use SIFT to evaluate it?

Attributions

This chapter contains material adapted from:

- Check, Please! Starter Course by Mike Caulfield, used under a CC BY 4.0 license
- Using SIFT to Evaluate Sources for Credibility Tutorial by Vanderbilt Libraries Teaching & Learning,

AUTHORITY

Learning Objectives

- Differentiate between various types of authority, including subject expertise, societal position, and personal experience, and recognize the value of or the reasons to seek each type of authority.
- Analyze how authority influences someone's credibility and understand how factors such as bias or conflict of interest can undermine someone's credibility.
- Evaluate the authority and expertise of a given author by researching their background, credentials, and publication history using reliable tools and criteria.

Overview

Authority—also called expertise—is about whether someone is a trustworthy source of information on a topic. Knowing how to recognize authority helps you choose the best sources for your research. In this section, you'll:

- Learn the main types of authority and how to tell them apart
- See how authority affects credibility—and how bias or conflicts of interest can weaken it
- Identify which types of authority matter most in your classes, in your field, and in the workplace
- Practice checking an author's authority by looking at their background, credentials, and publications

Defining Different Types of Authority

There's more than one way to be an authority on a topic. Here are three common types:

- Subject expertise: Someone who has done extensive research in a field—often a scientist or scholar—and

can provide evidence-based information.
- Societal position: Someone whose role gives them knowledge or influence, like the leader of the NAACP.
- Experience: Someone who has lived through something firsthand, such as a natural disaster survivor sharing their perspective.

These aren't the only kinds of authority. Education, job history, credentials, and other experiences can also contribute.

Context matters. The most relevant type of authority depends on your situation. For example, if you're researching Instagram's effects on young adults' mental health, a psychologist who has studied this topic would be a strong authority.

Journalists can also be authorities. They're trained to vet sources, work ethically, and often specialize in topics like politics or sports. This focus gives them insights that most people don't have. For more information on journalists' ethics, see the "News Authorship" section of the "News" chapter.

How Authority Impacts Credibility

Having authority doesn't always mean having credibility. Even experts can be biased or have conflicts of interest.

For example, a scientist might be highly knowledgeable about nutrition, but if they're being paid to promote a supplement, you should be cautious about trusting their claims without checking other sources.

Or imagine a lawmaker proposing rules to limit Instagram use. They may be an authority on how the law works but not on psychology or mental health. Even if they have a psychology background, their political role could influence what they say—so you'd still want to verify their statements.

Bottom line: Always look at both an author's expertise *and* their potential biases before deciding how credible they are.

What Types of Authority are Most Valuable for You

The most useful type of authority depends on your goal. Here's how it can change in different situations:

In Your Classes

You might draw from all three types of authority that were previously mentioned, so subject experts, people in key positions, and those with personal experience. For example, for a paper on new environmental laws,

you could use a politician to explain the law's details, a scientist to discuss environmental impacts, and a local resident affected by the law to share lived experience.

In Upper-Level Courses

You'll likely rely more on subject experts in your discipline. Knowing what the leading voices in your field are researching, and how they interpret their findings, will help you engage in deeper, more advanced discussions.

In an Academic Research Setting

If you're writing a focused research paper, seek out scholarly studies by recognized experts. But don't overlook personal accounts if they're relevant. For example, a study on Instagram's effects on mental health could be enriched by interviews with Instagram users.

In the Workplace

Subject experts remain valuable. Even if you're not doing original research, staying updated on new developments keeps your knowledge fresh. For example, a practicing psychologist might regularly read new studies to inform client care.

Key takeaway: The *best* authority depends on the context. Match the type of expertise to the questions you're asking.

Identifying the Authority/Expertise of a Given Author

The "Evaluating Sources" chapter explains this process in more detail, but here we'll cover a few quick ways to figure out if an author has real authority on a topic. Think of these steps as your "first pass"—a simple checklist to help you decide whether someone's expertise makes them a trustworthy source.

Search for the Author's Credentials

Start by searching the author's name online to see what credentials they have. A true subject expert often has an advanced degree in the field and has published their own research.

Be careful with sources where the author controls the narrative, like LinkedIn profiles or personal websites. Instead, check neutral or reputable sites—for example, Wikipedia or a faculty page on a university's website.

As you review their background, ask yourself: "Does their education, work history, and research experience genuinely support their authority on this specific topic?"

See Where They've Published

Once you know the author's background, check where their work appears. For example, if they're a journalist, do they publish in respected outlets like *The New York Times* or *The Washington Post*?

If you're not familiar with a publication, look it up. Wikipedia entries can help you see whether it's considered credible and independent. (For instance, in the Wikipedia entry for the *Washington Post*, it is described as a "newspaper of record" in the U.S., meaning it's widely regarded as an authoritative source.)

Remember: publishers themselves have authority. Some are more reliable than others, so evaluating them is just as important as evaluating the author. You can learn more about this in the "Step 2: Investigate the Source with Lateral Reading" section of the "Evaluating Sources" chapter.

See Who Else is Citing Them

Another way to check an author's authority is to see who else is citing their work. In academic research, frequent citations from other scholars often signal that the author's work is respected and influential.

You can find citation counts in many databases, and Google Scholar makes this especially easy:

1. Go to Google Scholar (no account needed).
2. Search for the article title.
3. Then, under the title result, look for the "Cited by" number (See image 1 below).

The "Cited by" number tells you how many other publications have referenced the source.

A high "Cited by" number can suggest strong influence, but keep in mind that new papers may not have many citations yet. Additionally, a citation doesn't always mean agreement—sometimes people cite work to challenge it.

Checking citations is like seeing how often an author's voice appears in the bigger scholarly conversation.

Image 1: A Google Scholar article listing.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=637#h5p-41

Reflection

- Can you think of a time when you assumed someone was an authority on a topic but later realized their credibility was questionable? What did you learn from that experience?
- When working on a research project, how do you decide which type of authority—such as subject expertise, personal experience, societal position, or some other type—is most relevant for your topic?
- How might your understanding of authority and credibility change depending on whether you're researching for a class assignment, professional work, or personal interest?

RELEVANCE

Learning Objectives

- Identify and apply relevance criteria, like topic match, source type, and currency, to select sources that fit specific research needs.
- Recognize the importance of evaluating for relevance in addition to evaluating for credibility.

Overview

An important step during your evaluation stage is making sure your sources are actually relevant to your research question. Something is **relevant** when it is closely connected to what is happening or being discussed. A relevant source should answer the following three questions:

- Is it about your topic?
- Is it in an appropriate format?
- Does it have a published date that matches the expectations of the subject matter?

That seems like a lot of boxes to check but will ultimately save you time when you go to use the source in your research. There are a couple of more in-depth questions you can ask yourself to determine if a source is relevant, which we will discuss below.

In the "Information Ecosystem" module, each source type has a shaded box that outlines situations where each type of source is relevant. Relevant sources are also the ones that help you answer your research question. You can usually figure out if a source is useful by skimming key sections. As you decide what's relevant, think about how up to date a source is. Sometimes it really matters, sometimes not so much. It depends on your topic and your field of study. For example, if you're researching something in the life sciences, newer is usually better. That field evolves quickly, so you'll want to stick with sources published in the last five years. In areas

like computer security, even more recent sources might be needed. But if you're doing historical research, you might actually seek out sources that are older to match the time period you are researching.

Time-Saving Tips

The most important tip for saving time is to recall and use the research plan that we discussed in the "Information Purpose" chapter. Having a plan will help you avoid conducting searches that won't be relevant to both your research need and assignment parameters.

Instead of thinking you must read every word of every source in order to figure out whether it's relevant, read or skim only parts of each source, like the abstract for an academic article or the first and last paragraphs of a news article. If you're looking at the right parts, that should give you enough information to make an educated guess about relevance and currency. If your searches don't give you relevant results, you might have to adjust your search. See the "Evaluating and Refining Your Search Strategy" chapter for more information on adjusting your search.

As you read or skim a source, it helps to know what you're looking for. A good place to start is by breaking down your research question into its main ideas. Think of this like picking out the keywords, something we talked about in the "Keywords" chapter. Once you know those key ideas, it's easier to spot when a source is actually helping you answer your question.

To be considered relevant to your research question, a source wouldn't necessarily have to cover all of your main concepts. You can synthesize and make connections between the concepts. For more info on synthesis, see the "Synthesizing Information" chapter.

Evaluating for Relevance

Below are some questions you can ask yourself as you review a potential source to help you decide if it is actually relevant for your research need. Remember, you don't need to read the entire article to make this judgment!

1. **What is it about?** The title will be your first clue. You can usually tell from the abstract or summary of the article whether an article is related to your topic. If there is not an abstract, read the introduction of the article, then scan the article headings.
2. **What is the subject-area focus?** Knowing the discipline of an article is an important clue in determining relevance. You may be able to tell from the title of the book/article or the journal title. If you are researching global warming activism for a political science class, an article on global warming from a chemistry journal will not be relevant.
3. **Are you looking for recent information?** If so, the publication date will be a critical clue as to

whether the article or book is relevant.

4. **Is it a book or an article?** Some results lists will tell you specifically what the item is, but you can also tell from the citation. If your professor only wants you to use a specific type of resource, like journal articles, it is important to follow the assignment parameters.
5. **Is it scholarly?** If you are required to use only scholarly sources, you will need to figure out whether the item is scholarly or not. For books, look at the publisher. Is it a university press or other scholarly press? For articles, look at the title of the journal, not the article title. In most databases, you can limit yourself to just scholarly articles. Unsure if something is scholarly? Refer to our "Scholarly Research Articles" and "Other Academic Content" chapters.
6. **What type of article is it?** Not every article in a scholarly journal will be appropriate for your research. In addition to research articles and feature articles, journals contain book reviews, editorials, and interviews. However, you may need to read the abstract or even the beginning of the article before you know for sure. When in doubt about whether something is appropriate, read your assignment instructions again or ask your instructor.
7. **If it is a research study, what type is it?** This may only be relevant in courses that require a specific type of research article, such as empirical research. The abstract usually contains clues about the type of study. Also, look in the article for a "Methods" section, which should describe the type of research.

ACTIVITY: Follow a Title's Clues for Relevance

Instructions: This quiz asks you to use logic, the titles of sources, and their publication dates to identify the source *most* likely to be relevant to each research question. Some titles and dates below are fictitious, but that doesn't affect their perceived relevance within the quiz.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=771#h5p-39

Reflections

- Are there any specific traits that make a source more relevant in your major? Think about how you might search to prioritize those traits.
- Can a source be relevant if it doesn't directly relate to your research question? How might you use it anyway?

Attributions

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- Evaluate & Choose Quality Sources: Are my Sources Relevant? by Portland State University Library (reuse with permission)
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CONCLUSION OF EVALUATING INFORMATION UNIT

Unit Reflection

- How can you use the evaluation skills from this chapter to become a more informed and responsible consumer of information outside the classroom? Think about how these habits might influence your decisions, opinions, or contributions to conversations in your community or online.
- How do you personally define authority, and how might that definition shift depending on the context or topic? Consider the roles of academic expertise, lived experience, and societal influence in shaping trustworthy information.
- Why is it important to evaluate for relevance, not just credibility, when selecting sources for a research project? Reflect on how aligning sources with your specific research goals can improve the quality of your work.

Unit Review

As you wrap up this chapter, you've explored essential tools for evaluating information with both credibility and relevance in mind. You've learned the SIFT method as a flexible, step-by-step strategy to critically assess sources, and you've practiced lateral reading to investigate authors, claims, and the origins of information. You've also examined how authority takes different forms and how bias or conflict of interest can influence the credibility of even seemingly reliable sources. Finally, you've seen why relevance matters just as much as credibility and how factors like timeliness, topic alignment, and source type shape the value of a source for your specific research needs.

While these evaluation skills are powerful, they take ongoing effort to fully integrate into your academic habits. You may still encounter uncertainty when faced with gray areas, such as navigating conflicting

viewpoints or deciding when personal experience constitutes valid authority. That's normal and it's also why critical thinking and practice are key.

Your next step is to apply what you've learned: the next time you encounter a source, whether it's an academic article, a news story, or a viral post on social media, pause and put your evaluation skills into action. Use SIFT. Ask hard questions. Be skeptical but open-minded. Responsible research starts with curiosity and a commitment to credibility.

USING INFORMATION

Photo by Lance Grandahl on Unsplash

Unit Learning Objectives

- Organize and manage sources effectively by recognizing citation components, applying tracking strategies, and using citation tools to support the research and writing process.
- Interpret and evaluate scholarly articles by identifying key sections, assessing relevance, and tracing citations to understand the broader academic conversation.
- Integrate sources into academic writing through appropriate use of summarizing, paraphrasing, and quoting, while distinguishing between these techniques and applying synthesis to support original arguments.

Unit Overview

This unit helps you build the skills you need to work with sources as you research and write. You'll learn how scholarly articles are structured and why they're useful, along with tips for reading them more efficiently. We'll show you how to follow citations to better understand your topic and see how scholars are talking about it. You'll also learn how to keep your sources organized, spot key parts of a citation, and use sources responsibly through summarizing, paraphrasing, and quoting. Plus, we'll talk about how to bring ideas together through synthesis and point you to campus resources, like the UW-Green Bay Learning Center and Library's Research Help services, for extra help with writing and citations.

This unit contains content that may help fulfill the UW-Green Bay Core Curriculum Learning Outcomes for Information Literacy, specifically:

IL 3: Students will give credit to the original ideas of others through proper attribution and citation and contribute to the scholarly conversation at an appropriate level.

INFORMATION ETHICS

Learning Objectives

- Apply citation practices to avoid plagiarism and uphold academic integrity in research and writing.
- Integrate sources ethically by paraphrasing accurately, quoting properly, and acknowledging all contributions.

Overview

When you contribute to the scholarly conversation through your own research or for a class assignment, you are responsible for doing so in a way that gives credit to the ideas and arguments of others. We call this "**academic integrity**." Working or writing with integrity requires accurately representing what you contributed, as well as acknowledging how others have influenced your work. It also includes acknowledgment of when you use artificial intelligence in your work, even if it's just to fix grammar. When you are a student, an accurate representation of your knowledge is important because it will allow both you and your professors to know the extent to which you have developed as a scholar. Part of that development is evidenced by how you apply the rules for acknowledging the work of others, typically through citations (for more info on citations, see the "Citation Basics" chapter).

Plagiarism occurs when you fail to acknowledge the ideas or work of others in your own writing. In academic settings, you're expected to both learn from existing sources and contribute your own thinking. This means combining others' knowledge with your own insights to create new work. To maintain academic integrity, you must clearly indicate which parts of your work are based on others' ideas by citing them properly. Failing to do so, intentionally or not, is considered plagiarism.

Plagiarism: Is It Really That Big of a Deal?

The consequences of plagiarism and upholding academic integrity are required to be included in every syllabus at UW-Green Bay. You might think to yourself, "But if I never get caught, what's the big deal?" Listen to the two songs below. Notice any similarities?

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Back in 1989, a rapper named Vanilla Ice released a song called "Ice Ice Baby." It became a huge hit and was the first hip hop song ever to reach the *Billboard* Hot 100. But there was a problem. The song's famous bass line wasn't his. It came from a track by David Bowie and Queen, recorded eight years earlier.

Vanilla Ice didn't ask for permission to use it. When people noticed, he said it was fine because he had changed one note. The original artists didn't buy it. He ended up paying them and listing them as co-writers on his song. His reputation took a hit, and his music career never really bounced back.

Plagiarism in academics works the same way. If you take someone else's work, change a few words, and pretend it's yours without giving credit, you're stealing their ideas. Whether it's in music or in your assignments, the rule is the same: always give credit where it's due.

Copyright Infringement and Plagiarism Are Not Exactly the Same

While the example above is plagiarism, it also breaks copyright law. **Copyright** exists to encourage

people to create and share new works. It does this by giving creators exclusive rights to their work for a limited time, which allows them to benefit (often financially) from what they've created.

Copyright protects anything fixed in a tangible form: something you can see, hear, or touch, like a written paper, a recorded song, or a photograph. Not everything is covered by copyright (for example, works in the public domain, which means the copyright protection has expired). But even if work isn't protected by copyright, you still need to cite it in your own work to give proper credit to the creator.

In college, you'll mostly deal with plagiarism. In the workplace, copyright infringement becomes a bigger issue because companies can face serious legal and financial consequences for using copyrighted material without permission.

Avoiding Accidental Plagiarism

Sometimes plagiarism is intentional. Most often, however, it is done accidentally and without malicious intent. In either scenario, your instructor would have no way of knowing whether you did it on purpose or not, so it's important to understand the scenarios when you do or do not need to cite your work. Below are some tips for writing with academic integrity, taken from the "Harvard Guide to Using Sources":

- **Keep track of your sources**. Use a citation organizer and download PDFs of electronic articles so you can easily refer back to a source and include citation information. For more information on organizing citations, see the "Citation Organization" chapter.
- **Use a research plan.** When you keep your research organized, you are less likely to plagiarize because you can use notes to indicate where you retrieved your information.
- **Paraphrase carefully and acknowledge your sources explicitly when paraphrasing.** It's not enough to just change a few words here and there when paraphrasing. It should be written in your own voice. Even when you rewrite an idea from another source, you still need to include a citation.
- **Don't leave your citations for later.** One of the most common mistakes that happens when writing a paper is thinking it will be easy to go through the paper and add citations after you've already written the paper. When you do this, you risk missing paraphrases or other ideas that require a citation.
- **Quote sources properly.** Always use quotation marks for any material that you quote directly, even for short phrases.
- **Don't reuse papers from other classes.** If your assignment does not explicitly state that you can reuse a previous assignment, doing so is considered academic dishonesty. In most cases, your instructors

expect that you are engaging with your coursework for each course and to present a previously written paper as one that you wrote for that particular class without disclosing is deceptive.

Using Sources Ethically

Students are often concerned with the details of correct citation, like when to include an author's name in parentheses, how to format a bibliography, or how to indicate a quotation within a quotation. While these are all important and helpful to know, what is equally important is understanding the larger ethical principles that guide choosing and using sources. Here are a few of these larger ideas to keep in mind as you select and synthesize your sources:

- **Represent the topic honestly**
  - If most sources agree on something, like the idea that the middle class in the U.S. is shrinking, it's misleading to highlight the one source that disagrees without noting it's a minority view.
- **Represent each source fairly**
  - If a source says a small segment of the middle class is growing but emphasizes that most of it is shrinking, don't twist the message to make it seem like the author's main point is that the middle class is growing.
- **Acknowledge bias**
  - Some sources may be credible but still have strong political or ideological leanings. It's important to note when a viewpoint is extreme or not widely accepted, rather than presenting it as mainstream.
- **Cite even the informal sources**
  - You may not think that you need to cite informal sources, like blogs, interviews with friends, or class notes. If you borrowed an idea or phrase from someone else, it always requires a citation, no matter how informal.
- **Paraphrase and summarize in your own words**
  - Don't just change a few words and call it your own. Think about how you'd feel if someone copied your work and said, "I just changed a few things." You'd still recognize your voice—and so would they. Respect others' work by truly rewriting and always citing.

Activity: Is This an Ethical Use of Information?

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https://wisconsin.pressbooks.pub/info-lit/?p=949#h5p-52

Reflection

- Take a look at the policy regarding plagiarism at UW-Green Bay. How do you feel about the potential consequences? Do you feel they are fitting?
- Can you think of a time when someone misrepresented a source or used it out of its original context? How did you know?

Attributions

CITATION BASICS

Learning Objectives

- Recognize the basic components of a citation (in-text citation and full reference entry).
- Identify resources for additional help and support with citations.

Overview

Citing your sources is an essential part of any research project. It helps you avoid plagiarism, gives credit to the original creators, and shows your readers where your information came from. In this section, we'll cover the basics of citations and where to go for more help.

You'll learn about three common citation styles: MLA (Modern Language Association), APA (American Psychological Association), and Chicago style. The style you use often depends on your academic discipline. Although we won't get into the details of any specific citation styles, we will share links to reliable resources for MLA, APA, and Chicago and explain the core parts that all citations have in common.

What Should You Cite?

You should always cite:

- Direct quotes from any published or unpublished sources (like lecture notes, emails, or interviews)
- Statistics, theories, or facts from any outside source

- Images, videos, or other media you didn't create

You *don't* need to cite:

- Your own opinions or experiences
- Common knowledge—An example of common knowledge is that Madison is the capital of Wisconsin.
- Images, videos, or other media you personally created

If you're not sure, cite it!

Resources for Citations

MLA Style

- The UW-Green Bay library guide on MLA Style: Offers examples of how to structure common citations, such as articles, books, book chapters, and webpages.
- *MLA Handbook*: Offers loads of information on MLA style.
- The MLA Style Center: The official companion to the *MLA Handbook*. Includes a quick guide to works cited, FAQs, sample papers, and tips for formatting your research paper.
- MLA Style: Excelsior College Online Writing Lab: Gives detailed information on the formatting of MLA papers, in-text citations, and works cited. Use the side menu to navigate to the information you need.

APA Style

- The UW-Green Bay library guide on APA Style: Offers examples of how to structure common citations, such as journal articles, books, book chapters, newspaper or magazine articles, and webpages.
- *Publication Manual of the American Psychological Association* (7th ed.): Offers loads of information on APA style.
- APA Style and Grammar Guidelines: From the official APA Style website, the guidelines cover in-text citations, references, paper format and more.
- APA Style: Excelsior College Online Writing Lab: Gives detailed information on the formatting of APA papers, in-text citations, and references. Use the side menu to navigate to the information you need.

Chicago Style

- The UW-Green Bay library guide on Chicago Style: Offers examples of how to structure common citations, such as articles, books, book chapters, and webpages.
- *The Chicago Manual of Style* (18th Edition): Offers loads of information on Chicago style.
- Notes and Bibliography Sample Citations: Chicago Manual of Style Online: The Chicago Manual of Style Online offers examples of notes and bibliography entries for many common formats.
- Chicago Style: Excelsior College Online Writing Lab: Gives detailed information on the formatting of Chicago style papers, footnotes/endnotes, and bibliography citations. Use the side menu to navigate to the information you need.

In-Text Citations and Reference Entries

When you cite a source in your writing, you're doing two things:

- Briefly pointing to the source in the body of your paper (called an "in-text citation")
- Giving full credit in a list at the end of your paper, where readers can find complete details about that source

These two steps work together: the in-text citation helps your reader locate the full reference at the end of your paper, and the full reference gives all the information needed to find the original source.

The way you format both parts depends on the citation style you're using (APA, MLA, Chicago, etc.).

The common elements of every citation style are author, title, and date. You can learn more about the common elements of citations with the following video:

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Citation Generators

A citation generator is a tool that automatically creates a citation for you. These tools can save you time, but they're not perfect—computers sometimes make small mistakes. Always give the citation a quick review to make sure it's accurate before you use it.

Where to Find Citation Generators

- **Search@UW**: After selecting a source, scroll to find the "**Citation"** button (See Image 1 below). Click the "Citation" button to view the citation and choose your preferred citation style.
- **Databases**: Most library databases also include a citation tool. The location of the button varies, so look for labels like "Cite" or "Citation."
- **Citation managers**: Programs like **NoodleTools** and **Zotero** can generate citations and help you store and organize them. You can learn more about these in the "Citation Organization" chapter.

Tip: Review Your Generated Citations

Even the best citation generators can miss details—like an author's name—or get punctuation wrong. Think of them as a starting point, then make any needed edits so your citations are correct and complete.

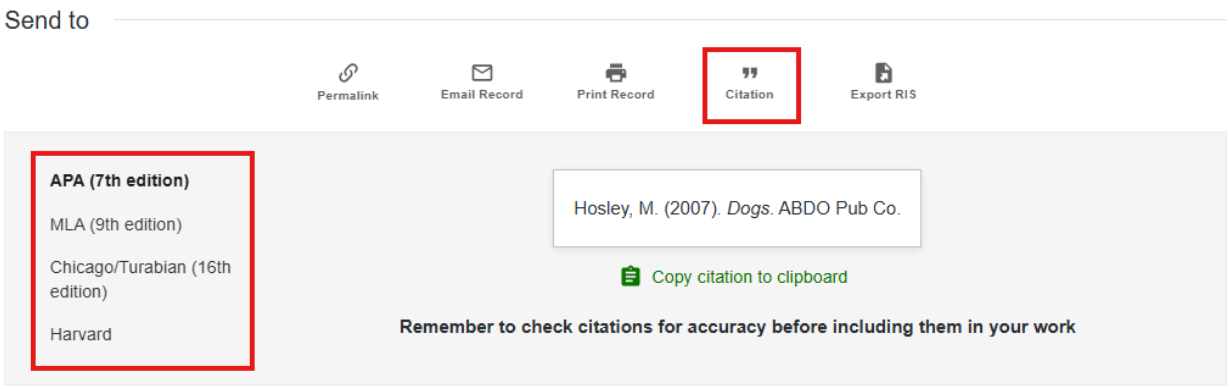

Image 1: Search@UW's citation generator

Be Sure to Review Generator Citations!

There are many free websites that will generate a citation if you paste in a source's URL. Use these tools with caution! They often get details like capitalization and punctuation wrong and sometimes

miss essential elements (like the author). If you want to use them, think of them as a starting point, and always double-check the results.

How to Get Help with Citations

Remember: if you need help with citations, you can always contact the library. We're happy to help!

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=916#h5p-46

Reflection

- What strategies or tools (e.g., citation generators, library resources, etc.) do you plan to use to ensure your citations are accurate and complete?
- Aside from avoiding plagiarism, why do you think including accurate citations in your work is important?

CITATION ORGANIZATION

Learning Objectives

- Understand the importance of citation management in the research process.
- Apply strategies for organizing and tracking sources throughout a research project.

Overview

Citing sources is a vital part of academic work. It shows respect for the original authors, helps readers trace your research path, and keeps you safe from plagiarism. But when you're working on a research project that involves multiple sources, keeping track of all your citations can get overwhelming. That's where **citation management** comes in.

Citation management is the process of collecting, organizing, and storing information about your sources so you can easily access, use, and cite them later. With proper citation management, you'll save time, stay organized, and be more confident that your work meets academic integrity standards.

Tracking Sources Throughout the Research Process

It might be tempting to think about citations as something you do when you're done writing a paper, but it's important to work on them throughout the entire research process. To accurately cite your sources (and avoid plagiarism), you need to know exactly where outside information is coming from. This workflow will help you stay organized.

Choose a Citation Style

Before you begin collecting sources, find out which citation style you need to use (e.g., APA, MLA, Chicago,

etc.). All styles require the same basic source elements like the title, author, and date, but they have different guidelines for how that information is presented.

Your assignment guidelines or course syllabus will likely indicate which style you should use. If you're not sure, ask your instructor.

Set Up a Place to Save Your Citations

Pick a method for organizing your sources that you'll stick with throughout the project. Some common options include:

- A Word file or Google Doc with a list of your sources
- A spreadsheet with columns like "Author," "Title," and "URL"
- A citation-management tool like NoodleTools or Zotero (described later in this chapter)

If you're working on a group project, you may want to decide on a method that all members will use.

Record Source Details as You Go

Don't wait until the end of your project to gather citation information! When you find a source that you think you'll use, save the full citation details, including where you found it (like the URL or database permalink).

Take Notes with Your Sources

When you read the sources you've found, take careful notes. Be sure to distinguish whether your notes are direct quotes (using quotation marks) or your own words (paraphrase).

You may want to include:

- A brief summary of the main idea of the source or what you plan to use.
- Key quotes or information that is relevant to your project. Put quotation marks around quotes and note the page number it appeared on, if applicable.
- Your thoughts on how the source connects to your research topic and any reactions you had while reading it.

Tracking your sources during your research and taking notes on them might feel like extra work at first, but it will save you time by speeding up your writing process later.

Citation-Management Tools

Citation-management tools are software programs that help you create and organize citations. They store the details of your sources (like author, title, and publication information) in your own personal collection or library. There are many options, including NoodleTools, Zotero, Mendeley, EndNote, and RefWorks. Some are available for free, while others have paid versions with additional features for advanced researchers like storing and annotating PDFs.

Not everyone needs to use a citation-management tool. Some researchers are comfortable formatting individual citations and use few references. Others may find that learning to use a new tool is too challenging, or that it does not meet their needs.

You may want to consider using a citation manager if you are:

- Working with many citations
- Easily frustrated by the nuances of specific citation styles
- Collaborating with others on a research project

We're going to briefly highlight two managers, NoodleTools and Zotero.

NoodleTools

NoodleTools is a user-friendly, web-based platform that is available for free to UW-Green Bay students. It helps students:

- Create citations by identifying necessary information
- Generate citations and bibliographies in MLA, APA, and Chicago
- Create notecards for each source

It's especially helpful for beginners, as it walks you through each step and explains what information is needed for each type of source.

Zotero

Zotero is a freely available citation-management tool that works best for students doing more advanced research. It can:

- Save sources from websites, articles, and books with one click
- Generate citations and bibliographies in many styles
- Store PDFs and notes for each source

Zotero is a powerful tool once you learn how to use it, and it works well for organizing large collections of sources.

Final Takeaway

Keeping track of your sources isn't just about convenience; it's a necessary piece of academic integrity. If you don't know where an idea or fact came from, you can't give proper credit, and that can lead to unintentional plagiarism.

Develop an organizational system that works for you, whether it's a Google Doc, NoodleTools, or something else. The good news is that once you build this habit, managing sources becomes easier and sets you up for success in all kinds of research projects.

Knowledge Check

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https://wisconsin.pressbooks.pub/info-lit/?p=998#h5p-48

Reflection

- What strategies have you used in the past to keep track of your sources? Were they effective?
- How might using a citation-management tool impact your research process?

Attributions

SCHOLARSHIP AS CONVERSATION

Learning Objectives

- Describe the concept of scholarly conversation and explain how individual research contributes to ongoing academic dialogue.
- Evaluate scholarly sources to determine current consensus and relevance in the context of a dynamic and evolving field of study.
- Apply citation-tracing techniques to discover related research articles that enhance understanding of a topic.

Overview

Have you ever walked into the middle of a conversation and you're not quite sure what it's about? You may find yourself listening for a bit before you catch on and join in and even then, it may take a few exchanges before you really feel confident participating? Doing library research is very similar. At first, you're catching up on an ongoing scholarly conversation. When you write a paper, give a presentation, or defend a thesis, you're adding your voice to that conversation. The more you contribute to the conversation, the better you understand it.

Depending on your topic, this scholarly discussion may have begun centuries ago. Fields like philosophy, science, education, agriculture, engineering, and drama have long and deep histories. No matter what you're studying, someone has likely explored aspects of your topic before. Your research will integrate the contributions, arguments, and findings of others. By doing so, your work becomes a part of the conversation, too.

Citations & the Scholarly Conversation

Research is an ongoing discussion among scholars, one built on questioning methods, evidence, and

conclusions. This kind of critical exchange is vital for progress, and citing sources is essential to keeping scholarly dialogue honest and transparent. It shows whose ideas you've drawn from, gives proper credit, and helps others trace the conversation.

When you read an article, you're stepping into that ongoing discussion. Its bibliography reveals earlier influences, and over time, you can also see who has cited it. A strong article can lead you to more valuable sources through its reference list of books, studies, or journal articles that may deepen your own work.

Understanding Change in Science

Scientific knowledge is always evolving, not because it's unreliable, but because it adapts to new evidence and ideas. This change might feel unsettling, but it's actually one of science's greatest strengths. Rather than sticking to rigid conclusions, science uses inductive reasoning and ongoing evaluation to build the most accurate understanding possible.

Consensus, or general agreement among experts, is a useful guide when you're doing research. It can point you toward what's currently accepted or best supported by evidence. But consensus doesn't mean every expert agrees, and that's a good thing. Science grows through debate, competing theories, and the testing of new ideas. Differing viewpoints challenge assumptions and drive progress. So, while consensus offers a snapshot of where understanding stands now, the conversation is always open and that's what keeps science moving forward.

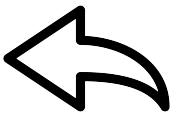
For example, scientists have long debated what caused the extinction of North American megafauna (large animals like mammoths and saber-toothed cats). Some researchers point to overhunting by early humans, while others highlight climate change or a combination of both. Over time, new discoveries, like improved dating methods and fossil evidence, have shifted the conversation and helped refine theories. There's still no single answer, but the evolving discussion shows how science works: building on evidence, weighing ideas, and adjusting as we learn more.

Follow the Conversation with Citation Tracing

Citation tracing is a smart way to explore how scholarly ideas grow and change over time. By looking at who a source cited (backward tracing) and who cited it later (forward tracing), you can follow the conversation in both directions. It's a great way to deepen your understanding of a topic and see how ideas connect across time.

Backward Citation Tracing

This means checking the references or works cited in a source to see which materials the author used. It helps you:

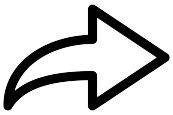


- Find important or foundational works in a field
- Understand the background or theories behind a current idea
- Spot key authors and journals that shape the conversation
- Build a strong foundation for your own research

Backward tracing is especially helpful when you're just getting started and want to ground yourself in the main literature.

Forward Citation Tracing

Forward tracing looks at who cited a source after it was published. Tools like Web of Science (use the "Cited Reference Search") and Google Scholar (click the "Cited by" number) can help. Use this approach to:



- See how an idea has influenced later research
- Find newer studies that build on or challenge the work
- Discover active researchers and current trends
- Keep up with recent developments in your field

Forward tracing is useful when you're expanding your research or looking for fresh perspectives.

Using both backward and forward citation tracing helps you place your work in the broader scholarly conversation. It allows you to see where ideas originated, how they've been discussed, and how they've evolved over time.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=859#h5p-42

Reflection

- When have you felt like you were joining a conversation that had already started, either in class, in reading, or in research? How did you catch up and begin contributing?
- Why do you think citing sources is important beyond just avoiding plagiarism? What does it say about your role in the academic community?
- Can you think of an example (in science or another field) where new evidence led to a change in understanding? How does that influence your trust in research?

Attributions

This chapter contains material adapted from:

READING SCHOLARLY SOURCES

Learning Objectives

- Identify the common structure of a scholarly article and recognize the purpose of each major section.
- Choose a reading strategy based on the information need, such as focusing on key sections determined by the purpose for reading.
- Interpret the abstract, introduction, and conclusion of a scholarly article to quickly assess its main points and relevance to the information need.

Overview

You might be wondering why there's a whole chapter just about reading scholarly articles. Isn't it just *reading* but with more technical vocabulary? Or maybe you've tried reading one before and found it confusing, and now you're skeptical that this chapter can actually help. The good news is that scholarly articles often follow a predictable structure. Once you get familiar with that organizational pattern, you'll be able to read more efficiently and understand more of what you're reading.

Purpose and Audience of a Scholarly Source

Before you begin reading a scholarly source, take a moment to think about the author's purpose and intended audience. We covered purpose and audience for all sources in the "Information Purpose" chapter. While scholarly sources usually aim to share new research and contribute to an ongoing scholarly conversation, a closer look at your specific source might reveal a more focused **purpose** that can help you understand it better.

Keep in mind that the primary **audience** of scholarly sources is typically other scholars, researchers, and experts, not college students. This doesn't mean that you shouldn't read scholarly articles! It just means you

might need to work a little harder to follow along. These articles often assume the reader already has a strong background in the subject, is comfortable with technical or dense language, and doesn't need to be enticed or hooked into the topic. Knowing this upfront can help you adjust your expectations and get the most out of each of the sections outlined below.

Parts of a Scholarly Article

Many research articles, especially in the sciences and social sciences, follow a structure known as "IMRAD." Articles in the humanities often follow a similar structure, but you will also see some variation from it. IMRAD stands for:

- Introduction
- Methods
- Results, and
- Discussion

They might not always label these sections the same way, but the content usually follows this order. That said, you shouldn't always read them in this order. Skipping around to targeted sections can save time and help you get more out of the article. The next sections follow the approach that we recommend taking for most scholarly articles. Before diving in, ask yourself:

- Why am I reading this?
- What do I hope to learn from it?
- How does it connect to my research question?

Your answers will help you decide which sections are most important to focus on and might change the order in which you want to read them.

Title

You've already learned how to evaluate a title in the "Evaluating and Refining Your Search Strategy" chapter. Now that you've chosen to read the article, take another look at the title. Titles often use a format where the part before the colon grabs attention and the part after the colon describes the study. Look up any unfamiliar terms—they'll likely show up again in the article.

Question This Section Helps Answer:

- What is this article about?

Abstract

The abstract is a summary of the author's research findings and tells what to expect when you read the full article. The "Evaluating and Refining Your Search Strategy" chapter also covered reading the abstract. Since it is so important, let's reread this paragraph from that chapter:

> Authors often use specialized jargon to convey complex ideas in few words, make assumptions of prior knowledge, and don't worry much about general readability. Thus, abstracts are generally dense, and it's not uncommon to read through an abstract and not have a clue about what you just read. This is a good place to reread, highlight, underline, and look up what you don't know. You still may not have a firm grasp on everything in the abstract, but you should treat the key terms in the abstract like parts of a map when you see them in the main text, leading you to treasure: understanding the main argument.

If you haven't already done those steps, do them now.

Questions This Section Helps Answer:

- What is this article about?
- What topic is the author studying?
- What are the main findings?

Section Headings

A section heading serves as a title for a particular part of an article. Take a quick scan of all the section headings

before reading in depth. This gives you a feel for the article's structure and helps you anticipate what's coming. Understanding the terms in these headings will also help you follow the author's main argument.

Discussion and Conclusion

After the abstract and section headings, jump to the "Discussion" and "Conclusion" sections (even though they come at the end of the article). The "Discussion" section is sometimes also called "**Analysis**."

When writing papers, you've likely heard the cliché "In the introduction, write what you will say, then say it, then write what you just said." With this formula, it would seem logical to gloss over the conclusion, because, essentially, you've read it already. However, this is not the case. Instead, pay close attention to the conclusion. It can help you make sure you understand the introduction.

Sometimes a slight re-phrasing can help you understand the author's arguments in an important, new way. In addition, the conclusion is often where authors indicate the limitations of their work, the unanswered questions, and the horizons left unexplored. And this is often the land of exam and essay questions . . . asking you to extend the author's analysis beyond its own shores.

Questions This Section Helps Answer:

- What were the author's overall findings?
- Why are these findings important?
- What limitations of the study do the author(s) identify (if any)?
- What suggestions for future research do the authors make (if any)?

Introduction

The introduction is more detailed than the abstract. It shows how the study fits into existing research and what the author hopes to add to the conversation. The l**iterature review**, where the author(s) cover all the research that has come before, might be part of this section or its own separate section.

If the author is doing their job well, the introduction will not only summarize the whole piece, present the main idea, and tell us why we should care, but it will also often offer a road map for the rest of the article. Sometimes, the introduction will be called "introduction," which makes things easy. Sometimes, it's not. Generally, treat the first section of an article as the introduction, regardless of whether it's explicitly called that or not.

Roadmaps included in the introduction are often surprisingly straightforward. They often are as simple as

"in the first section, we examine . . . in the second section we argue . . ." etc. Search for these maps. Underline them. Highlight them. Go back to them when you find your comprehension slipping.

Questions the Introduction Section Helps Answer:

- What is this article about?
- What is the author planning to do in the paper?
- Why should we care about this problem/study?
- What question or hypothesis is being tested?
- How does the author intend to contribute to the field?

Questions the Literature Review Section Helps Answer:

- What do we already know about this topic and what is left to discover?
- What are key past findings on this topic?
- How do past studies lead into this study?
- What are the research hypotheses?

Methods

This section explains how the research was conducted. It includes who participated, what they were asked to do, and how the data was collected and analyzed. In social science and science articles, you may see subsections like "**Materials**" or "**Procedure**."

Questions This Section Helps Answer:

- What data did the author use, and how was it analyzed?
- Who were the participants in this sample?
- Is the sample a good representation of the entire population? If not, how are they different?
- Is the study qualitative (based on interviews, ethnography, participant observation, or content analysis), quantitative (based on statistical analysis), or multi-method (includes both qualitative and quantitative analysis)?

Results

The "**Results**" section (sometimes also called "**Data"**) can be heavy on statistics and charts. If you're not planning to replicate or deeply analyze the study's methods, it's okay to skim this section. The main findings are usually explained in the "Discussion" section. Bottom line: you can likely move quickly through the data, unless you are a numbers person who enjoys it.

Question This Section Helps Answer:

- What did the author find?

Works Cited

Also called "**References**" or "**Bibliography**." This section lists all the sources used in the article. Always be sure to scroll through them. Good research usually cites many different kinds of sources (books, journal articles, etc.). Train yourself to notice the differences between source types in your field's citation style. As you read the Works Cited page, be sure to look for sources that might help you to answer your own research question. It's considered best practice—and a real time-saver—to do so. If you find a cited source you would like to read yourself, review the "Using Search@UW to Find a Specific Article" section of the "Search@UW as a Tool" chapter to learn how to track it down.

Questions This Section Helps Answer:

- What do we already know about this topic?
- Who are other key researchers studying this topic?
- How does this article join the scholarly conversation?

Other Tips

This IMRAD structure is common in science and social science articles. Research articles in the humanities, like history or literature, often have some of the same sections, but they might not name them outright. Use the content itself to figure out which section you're reading. For more help with reading articles in the humanities, check out the "How to Read a Secondary Source" and "'Predatory' Reading" chapters from *Reading, Writing,*

and Researching for History. Although these guides were written for students of history, the tips apply to other humanities fields as well.

The above reading strategy makes a good general plan, but sometimes you have a more specific purpose for your source. Are you reading it for a class discussion? Planning to use it in a term paper (if so, how much of it will be useful)? Do you need to write a critique or review? Maybe you're interested in the author's theoretical perspective, their findings, methods, or the data they used. Or maybe you just want an overview of what's been researched on a certain topic. Whatever the case, knowing your purpose will help you decide how to read and which parts to focus on.

Activity: Sections of a Scholarly Article

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=1016#h5p-49

Reflection

- Have you ever found yourself lost in an academic reading? How might your approach change after reading this chapter?
- How can identifying your purpose for reading an article change the way you read it?
- How can reviewing the article's references (Works Cited) help you with your own research process?

Attributions

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- Reading Games: Strategies for Reading Scholarly Sources by Karen Rosenberg, in Writing Spaces: Readings on Writing, Volume 2, used under a CC-BY-NC-SA 3.0 license
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SYNTHESIZING INFORMATION

Learning Objectives

- Define synthesis in the context of academic writing and explain how it differs from simply summarizing, paraphrasing, and quoting the ideas of others.
- Differentiate between summarizing, paraphrasing, and quoting, including when and how to use each technique appropriately in academic writing.
- Utilize campus resources such as the UW-Green Bay Learning Center to improve source-integration skills.

Synthesis Overview

Synthesis in academic writing is the process of blending ideas from various sources to generate a new, original insight. It involves not just repeating or evaluating others' viewpoints but actively thinking through them to reach a deeper understanding or unique conclusion. This intellectual engagement transforms reading into discovery, as you move from summarizing the resources you found while in the research process, to crafting a meaningful interpretation.

Synthesis involves listening to different perspectives through reading and research and thoughtfully combining them. In academic writing, this requires setting a purpose, organizing ideas from your sources, guiding the flow of their arguments, and then commenting on and interpreting these ideas to help readers follow your logic. The last step is to develop your own informed conclusion, which reflects a synthesis of the materials and answers your central research question.

Importantly, synthesis is not the same as summarizing every opinion, critiquing positions, or comparing texts unless specifically asked to. It is about showing your understanding of a topic by weaving together multiple viewpoints into a cohesive, nuanced perspective.

Many students struggle to synthesize their research because they structure their papers source by source. True synthesis means organizing your writing around ideas rather than individual sources. This video from

USU Libraries discusses how to bring together research from various sources and your own ideas to create a well-organized research paper:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://wisconsin.pressbooks.pub/info-lit/?p=924#oembed-1

Synthesis Power Tools: Summarizing, Paraphrasing, and Quoting

When incorporating someone else's ideas into your writing, you can do so by summarizing, paraphrasing, or quoting their work. Summarizing condenses key points, paraphrasing rewords the idea in your own voice, and quoting uses the author's exact words. However, using outside information requires more than just including it in your work. You must clearly indicate that the idea isn't your own by citing the source, typically through in-text citations like footnotes or parentheticals. Finally, to give full credit and help readers locate your sources, you must include a bibliography or works-cited page at the end of your paper listing all the materials you used. See the "Citation Basics" chapter for more on citation styles.

Summarizing

- Summaries allow you to describe general ideas from a source. You do not express detailed information as you would with a paraphrase.
- Summaries are shorter than the original text.
- Any summaries of the text should not include direct wording from the original source. All text should be in your words, though the ideas are those of the original author.
- A signal phrase should let your readers know where the summarized material begins.
- If you are offering a general summary of an entire article, there is no need to cite a specific page number.

Paraphrasing

- Paraphrases allow you to describe specific information from a source (ideas from a paragraph or several consecutive paragraphs) *in your own words*.
- Paraphrases are like translations of an author's original idea. You retain the detail of the original thought, but you express it in your own way.
- Paraphrases of the text should be expressed in your own words, with your own sentence structure, in

your own way. You should not simply word swap—that is, replace a few words from the original with synonyms.

- If you must use a few of the author's words within your paraphrase, they must have quotation marks around them.
- Paraphrases often include signal phrases to let your readers know where the paraphrased material begins.
- As with a quote, you need to explain to your reader why the paraphrased material is significant to the point you are making in your paper.

Directly Quoting

- Quoted material should be enclosed in quotation marks to set it off from the rest of the text. The exception to this is block quotes, which are longer and generally require different formatting. Always follow your specific citation style.
- Quoted material should be an accurate word-for-word reproduction from the author's original text. You cannot alter any wording or any spelling. If you must do so, you must use a bracket or an ellipsis.
- Direct quotes should be used when the author's words are especially effective and not as a substitute for paraphrasing and summary.
- A clear signal phrase should precede each quotation.

Signal Phrases

A signal phrase is used to seamlessly introduce quotations, summaries, and paraphrases into an essay, helping attribute ideas to their original authors and maintaining the flow of writing. Typically including the author's surname and a verb describing their action, signal phrases may also mention the author's credentials or source details. Guidelines vary by citation style. Signal phrases can also act as transitions between your ideas and your sources, enhancing both clarity and coherence. For example, in a direct quote, you might write: *Michael Pollan argues, "Americans today are having a national conversation about food and agriculture" (29).* In contrast, a paraphrase using a signal phrase could read: *Pollan suggests that public interest in food and farming began to rise significantly in the 1970s (29).*

Support Your Writing

For UW-Green Bay students, the Learning Center offers in-person, virtual, and asynchronous writing feedback. Find additional writing support with these resources:

- Harvard Guide to Using Sources: Summarizing, Paraphrasing, and Quoting
- UW-Madison Libraries Research Guides: Synthesizing Multiple Sources, APA (while this guide is specific to APA style, the overall intent applies to writing in general).
- MLA Style Center provides advice on many aspects of academic writing.
- APA Style and Grammar Guidelines provides guidelines that cover in-text citations, references, paper format, and more.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://wisconsin.pressbooks.pub/info-lit/?p=924#h5p-47

Reflection

- In your own words, what does it mean to synthesize ideas in academic writing? How is this different from simply summarizing multiple sources?
- Among summarizing, paraphrasing, and quoting, which do you feel most confident using and which do you want to practice more?
- Think of a time you had to form an opinion or write an argument based on different

perspectives; how did you approach blending those views?

Attributions

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CONCLUSION OF USING INFORMATION UNIT

Unit Reflection

- How has your understanding of scholarly research and academic writing evolved after exploring this chapter? Consider how your approach to reading, citing, or integrating sources might change going forward.
- How do you see yourself contributing to the larger academic conversation within your field or discipline?
  Think about how your research and writing can build on others' work and offer something original.
- What are your next steps in improving your confidence and skill with scholarly sources? Identify one or two specific actions, like using a citation manager, visiting the Learning Center, or practicing paraphrasing that will help you move forward.

Unit Review

By completing this unit, you've started to build foundational skills in citations, source management, scholarly reading, and integrating research into your writing. You now understand how to identify key parts of a scholarly article, distinguish between summary, paraphrase, and quotation, and contribute to academic conversations through thoughtful synthesis. While these skills take time to master, help is always available through campus resources like the UW-Green Bay Library & Learning Center.

Now it's time to take the next step: put these skills into practice. Start organizing your sources, use active reading strategies with your next article, and challenge yourself to bring together ideas from different viewpoints in your writing. The more intentionally you engage with research, the more confident and capable you'll become.