

## Sourcing, summarizing, and synthesizing: Skills for effective research writing

---



# *Sourcing, summarizing, and synthesizing: Skills for effective research writing*

---

WENDY L. MCBRIDE

University of Arkansas Libraries  
Fayetteville, AR



Sourcing, summarizing, and synthesizing: Skills for effective research writing Copyright © 2023 by Wendy L. McBride is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License, except where otherwise noted.

# Contents

About the Author	vii
The objective of a literature review	1
<b>PART 1 - ACADEMIC WRITING: MEANS AND OBJECTIVES</b>	
Matters of tone and style <i>Part 1: Chapter 1</i>	7
Raising the level <i>Part 1: Chapter 2</i>	11
Articles and nouns (grammar support) <i>Part 1: Chapter 3</i>	16
<b>PART 2 - RESEARCH FOUNDATIONS</b>	
Strong research questions <i>Part 2: Chapter 4</i>	23
Producing a workable thesis statement <i>Part 2: Chapter 5</i>	27
Identifying and deploying source material <i>Part 2: Chapter 6</i>	31
Question structure (grammar support) <i>Part 2: Chapter 7</i>	38
Paragraph and sentence structure (grammar support) <i>Part 2: Chapter 8</i>	41
<b>PART 3 - WRITING FOUNDATIONS</b>	
Paraphrasing and summarizing <i>Part 3: Chapter 9</i>	49
Summarizing and synthesizing <i>Part 3: Chapter 10</i>	54
Sentence strength and variety (grammar support) <i>Part 3: chapter 11</i>	62
Using parallel structures effectively (grammar support) <i>Part 3: Chapter 12</i>	68

## **PART 4 - FINAL PRODUCTS**

The annotated bibliography <i>Part 4: Chapter 13</i>	77
The literature review structure and function <i>Part 4: Chapter 14</i>	80
Producing effective abstracts <i>Part 4: Chapter 15</i>	84

## About the Author

Wendy L. McBride is an instructor with many years of teaching experience in adult education, job readiness training, GED preparation, community college English, and English as a Second Language programs in Arkansas, Illinois and Japan. She earned a B.A. in English and Psychology with a journalism focus from Augustana College (Rock Island, IL) and an M.S. in TESOL and Bilingual Education from Northern Illinois University (DeKalb, IL). Those degrees – and other supplemental educational experiences – include language training in French, Japanese and Russian. The result is in-depth empathy of the language learner and a loose grip on three “second” languages.

Off campus, Ms. McBride gardens, hikes, cooks, travels, and savors any time available in the chaos of her busy family. She is an avid reader and writer, and published *The Fishing Widow* (a novel) and *The American Amusement Park*, a historical and pictorial overview, as well as a variety of articles (under her former name: Wendy L. Yegoiants).

She has presented at several TESOL (Teachers of English to Speaker of Other Languages) International conventions and at SETESOL in Arkansas, and she continues to read and write fiction and material from the fields of education and language acquisition.



Are you using this textbook in your class? Tell us!

### Media Attributions

- wlmgc





## *The objective of a literature review*

### Questions to Consider

**A. What is the purpose of a literature review?**

**B. In some fields or contexts, a literature review is referred to as the introduction or the background; why is this true, and does it matter?**

#### The elements of a literature review

- The first step in scholarly research is determining the “state of the art” on a topic. This is accomplished by gathering academic research and making sense of it.
- The academic literature can be found in scholarly books and journals; the goal is to discover recurring themes, find the latest data, and identify any missing pieces.
- The resulting literature review organizes the research in such a way that tells a story about the topic or issue.

The literature review tells a story in which one well-paraphrased summary from a relevant source contributes to and connects with the next in a logical manner, developing and fulfilling the message of the author. It includes analysis of the arguments from the literature, as well as revealing consistent and inconsistent findings. How do varying author insights differ from or conform to previous arguments?

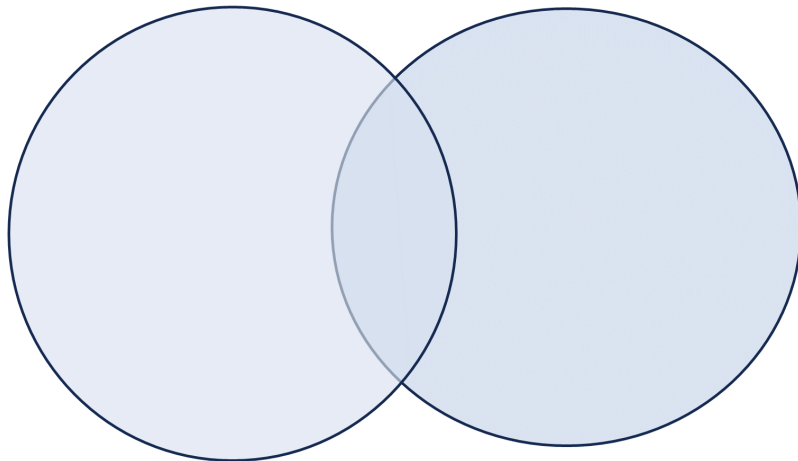
A literature review can be a stand-alone work (often called a “review article”) or it can be one part of a more substantial research paper. The focus of a literature review is to summarize and synthesize other authors’ arguments and ideas (with only moderate contribution from the author of the review). Research papers, however, are larger undertakings. Since the objective of a research paper is to develop a new perspective on a topic, these papers contain literature reviews to offer an explanation – to in fact *tell the backstory* – of the research issue. When students conduct their own original research (for a capstone paper, thesis, or dissertation), they write the literature review before proposing their own research questions, designing a methodology, and implementing out their own study (perhaps a survey, focus group, or content analysis). Literature reviews are crucial to the foundation of a more complex investigation.



### Language in Action

**A. How are the terms “critique” and “review” used in everyday life? How are they used in an academic context?**

**B. In a Venn Diagram with “critique” as the label for the left circle and “review” the label on the right, what information would fill the overlapping area in the center?**



In terms of content, a literature review is intended to:

- Set up a theoretical framework for further research
- Show a clear understanding of the key concepts/studies/models related to the topic
- Demonstrate knowledge about the history of the research area and any related controversies
- Clarify significant definitions and terminology
- Develop a space in the existing work for new research

The literature consists of the published works that document a scholarly conversation or progression on a problem or topic in a field of study. Among these are documents that explain the background and show the loose ends in the established research on which a proposed project is based. Although a literature review focuses on primary, peer-reviewed resources, it may begin with background subject information generally found in secondary and tertiary sources such as books and encyclopedias. Following that essential overview, the seminal literature of the field is explored. As a result, while a literature review may consist of research articles tightly focused on a topic with secondary and tertiary sources used more sparingly, all three types of information (primary, secondary, tertiary) are critical.

The literature review, often referred to as the Background or Introduction to a research paper that presents methods, materials, results and discussion, exists in every field and serves many functions in research writing.

Adapted from Frederiksen, L., & Phelps, S. F. (2017). Literature Reviews for Education and Nursing Graduate Students. Open Textbook Library

### **Review and Reinforce**

Two common approaches are simply outlined here. Which seems more common? Which more productive? Why?

A. Forward exploration

1. Sources on a topic or problem are gathered.
2. Salient themes are discovered.
3. Research gaps are considered for future research.

B. Backward exploration

1. Sources pertaining to an existing research project are gathered.
2. The justification of the research project's methods or materials are explained and supported based on previously documented research.

### **Media Attributions**

- 2589960988\_3eeca91ba4\_o © Untitled blue is licensed under a CC BY (Attribution) license

- venn

# **PART 1 - ACADEMIC WRITING: MEANS AND OBJECTIVES**



## Matters of tone and style

### Part 1: Chapter 1

#### Questions to consider

- A. How is academic language different from conversational language? How did these distinctions develop?**  
**B. Does impersonal, literal, and evidence-based language exclude some readers?**

While language in general is quite dynamic, changing under myriad influences such as current events and culture, media, and economics, what is written for professional and/or academic purposes tends to adhere more consistently to established conventions. This is true because writing must be durable and transcend the distance between writer and audience. To that end, effective academic writing is characterized by its impersonal and objective **tone** and **style**.

These **conventions** are apparent in academic literature. Researchers acknowledge the work of previous scholars and build upon what has previously been documented by citing sources and using references following a well-established and recognized system. The organization of material – for example, the typical introduction-methods-results-discussion pattern of many research papers – serves to both bridge the distance and pay homage to academic standards.

#### Language in Action

**A. How do conversations between these types of participants differ? Why is that?**

1. Professional (e.g. physician, lawyer, government official) and client
2. Student and instructor, professor or teaching assistant
3. Colleagues or academic peers

**B. When the communication between these participants is written, what forms are commonly used and in what way is this communication generally different from spoken communications?**

Precise language is simple and literal. Forms of **figurative language** like **clichés**, metaphors, figurative comparisons, figures of speech, and other “**slang**”, “poetic” or “literary” devices are subject to broad interpretation and weaken professional efforts to persuade readers.

In much research writing, the aims comprise observing, analyzing, and synthesizing facts. What is observed is

situated in context; information is structured as persuasion, using precise language, evidence, data, proofs, case studies, testimony, and logical reasoning to help the reader place ideas in the same context. Sometimes research writing involves solving a problem. Presenting the problem and possible solution(s) also tends to use a persuasive structure.

Objectivity, removing biases and preconceived notions from the reporting, is highly valued in research writing and supports the aim of persuasion. Successful research writing maintains an objective tone and academic voice through succinct vocabulary, accurate grammar structures and focus on message.

The third-person stance is preferred to maintain an objective focus. The use of the first-person style closes the distance between writers and readers; the result undermines the goal of persuasion with evidence. Similarly, the use of second-person referents (you, your, yours) is problematic because either it implies that the author is speaking directly to the reader, which closes the author/reader distance (in the same way “I” does), or it means something like “people in general,” which is less precise.<sup>1</sup>

In terms of content, research writing is marked by the presence of a clear, purposeful, and well-developed message; credible evidence; and a systematic presentation of that support. The following terms explain these common qualities of academic writing.

**Thesis:** Academic research projects are organized around a point or a “thesis” that members of the intended audience would not already accept as “common sense.” What an audience accepts as “common sense” depends a great deal on the audience, which is why what “counts” as academic research varies from field to field. In any case, readers want to learn something new: a genuine introduction or a unique interpretation of the issue or evidence.

**Evidence:** Academic research projects rely almost exclusively on evidence to support a point. While other means of persuasion, such as appeals to emotion and logic are deployed in writing for general consumption, readers of academic research writing are more likely to be persuaded by compelling evidence. The sources of this evidence include journal articles and books, newspapers, and many other kinds of documents; Internet references like web pages, information from databases, and other Internet-based forums; and field research (e.g., interviews, experiments, surveys).

**Citations:** Academic research deploys a systematic citation process that details the origins of the evidence.



### Review and Reinforce

Adopting the more formal **conventions** of academic writing, which contrast in many ways with conversational communication, places a writer in closer proximity to the scholarly community and promotes reader confidence.<sup>2</sup>

These methods elevate conversational or less academic language to a more professional level.

A. Glean from reading: scholars naturally emulate the style and conventions (including vocabulary and phrasing) of published authors in their field.

B. Systematically add sophisticated, documented evidence as support.



C. Minimize repetition of ideas, grammar structures and words by:

1. writing concisely;
2. eliminating the unnecessary use of helping verbs like “make”, “get”, “have” and “do”;
3. minimizing the use of “it” and “there” as main subjects;
4. avoiding the use of contractions and imperatives (and other forms of direct contact “with” the reader); and
5. deleting information classified as obvious or common knowledge.

### Exercise #1

Identify the informal or conversational language in each sentence; then revise it without compromising the message.

1. Everybody is pushed by the pressure to earn good grades, not by the need for edification or other types of self-improvement.
2. Sometimes personal opinions can be blended in with facts to come up with a mind-blowing argument.
3. A lot of people think climate change is a natural phenomenon but other people have evidence that it is a consequence of human activity.
4. International students don't make friends very easily on American university campuses because they might not be able or willing to adapt to the local culture.
5. As any one science develops, it relies more and more heavily on the things that are happening in other disciplines.
6. It is easier to learn a second language from television or radio than from reading something.
7. Most people are more concerned with making money when they finish school.
8. Physical exercise is the first thing students eliminate when they feel like they don't have enough time to do everything they need to do.
9. Good science is more impressive than good grammar or writing style.
10. Writers in my field generally don't cite references from earlier than ten years back.

### Media Attributions

- 51889760368\_1ccbe36340\_k © MyFWC Florida Fish and Wildlife is licensed under a CC BY-NC-ND (Attribution NonCommercial NoDerivatives) license

### Notes

1. Adapted from Poulter, S. Overview. (2020, May 18). Retrieved September 7, 2021, from <https://human.libretexts.org/@go/page/7124>

2. Adapted from Krause, S. (2021, March 23). The Process of Research Writing Retrieved June 2, 2021, from <https://human.libretexts.org/@go/page/646>

## Raising the level

### Part 1: Chapter 2

#### Questions to consider

- A. Why is using a dictionary and thesaurus important when writing?
- B. How can writers understand and use proper connotations?
- C. How can writers avoid using slang, clichés, and vague language?
- D. Is using the passive voice appropriate in academic writing?

Word choice – particularly formal and precise language – and the use of consistent, accurate grammar deliver written information with minimal confusion. This presentation of clear and comprehensible ideas builds trust between a writer and their audience and builds general credibility in an author or writing team. Accurate word choice combines with variety to produce effective writing: work that is interesting to read and that delivers a clear point.

#### Using a dictionary and thesaurus

Most writers clarify meaning, spelling, pronunciation, and use of particular words by using a dictionary. Like a dictionary, a thesaurus is another indispensable writing tool. A thesaurus provides a list of synonyms and antonyms for a given term.

#### Using proper connotations

A **denotation** is the dictionary definition of a word. A **connotation**, on the other hand, is the emotional or cultural meaning attached to a word. The connotation of a word can be positive, negative, or neutral. The connotative meaning should be considered when choosing a word.

Below are examples of the range of meanings that may be attached to specific words. Notice that all the words have a very similar denotation; however, the connotations of each word differ.

#### Examples

##### *Scrawny*

**Denotation:** Exceptionally thin and slight or meager in body or size.

in context: Although he was a premature baby and a scrawny child, Martin has developed into a strong man.

**Connotation:** (Negative) In this sentence the word scrawny may have a negative connotation in the readers' minds. They might find it to mean a weakness or a personal flaw; however, the word fits into the sentence appropriately.

##### *Skinny*

**Denotation:** Lacking sufficient flesh, very thin.

in context: Skinny jeans have become very fashionable in the past couple of years.

**Connotation:** (Positive) Based on cultural and personal impressions of what it means to be skinny, the reader may have positive connotations of the word skinny.

*Lean*

**Denotation:** Lacking or deficient in flesh; containing little or no fat.

in context: My brother has a lean figure, whereas I have a more muscular build.

**Connotation:** (Neutral) In this sentence, lean has a neutral connotation. It does not call to mind an overly skinny person like the word scrawny, nor does imply the positive cultural impressions of the word skinny. It is merely a neutral descriptive word.

### Avoiding slang

**Slang** describes informal words that are considered nonstandard English. Slang often changes with passing fads and may be used by or familiar to only a specific group of people. Most people use slang when they speak and in personal correspondence, such as e-mails, text messages, and instant messages. Slang is appropriate between friends in an informal context but should be avoided in formal academic writing.

#### Avoiding clichés

Clichés are descriptive expressions that have lost their effectiveness because they are overused. Logically then, writing that uses clichés often suffers from a lack of originality and insight. Avoiding clichés in formal writing produces original and fresh work.

Cliché: Whenever my brother and I get into an argument, he always says something that makes my blood boil.

Plain: Whenever my brother and I get into an argument, he always says something that makes me really angry.

Original: Whenever my brother and I get into an argument, he always says something that makes me want to go to the gym and punch the bag for a few hours.

#### Avoiding vague language

Specific words and images produce clear, interesting writing. To that end, particular nouns, verbs, and modifiers that convey details are optimal choices.

Vague: The teacher said that plagiarism is bad.

Specific: The teacher created a presentation detailing exactly how plagiarism is illegal and unethical.



### Language in Action

**A. When are clichés, slang and vague language commonly used? Why are they sometimes acceptable and appropriate?**

**B. Why is the use of clichés, slang and vague language discouraged in academic writing?**

### Passive voice

Passive constructions, which focus attention on the action and the outcome, are commonly used to maintain an impersonal, academic tone. While such expressions can be imprecise because the subject is implied rather than stated explicitly, they are still an effective tool in research writing.

*Active vs. Passive Voice Overview*

**Active:** I wrote the book.

What is the verb/action? ("wrote"). Who or what "wrote"? ("I" wrote). Since "I" – the actor – is stated, this is an active construction.

**Passive:** The book was written in 1972.

What is the verb/action? ("was written"). Who or what "wrote"? (not identified). Since the actor is implied, this is a type of passive construction. <sup>1</sup>

### Exercise #1

Each item contains three words with similar meanings. Categorize them as being positive, neutral or negative in the interactive drag and drop exercise below. (Note: The "answers" are not exclusively "correct". Connotations tend to be relative. Of the choices *cafe, diner, restaurant*, diner may be considered positive, neutral or negative. The objective is to begin to think carefully about word choice.)

1. curious, nosy, interested
2. lazy, relaxed, slow
3. courageous, foolhardy, assured
4. new, newfangled, modern
5. mansion, shack, residence
6. spinster, unmarried woman, career woman
7. giggle, laugh, cackle
8. boring, routine, prosaic
9. noted, notorious, famous
10. assertive, confident, pushy



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

<https://uark.pressbooks.pub/researchwriting/?p=112#h5p-3>

### Exercise #2

Edit the following paragraph by replacing the slang words and phrases with more formal language.

<sup>1</sup>I felt like such an airhead when I got up to give my speech. <sup>2</sup>As I walked toward the podium, I banged my knee on a chair. <sup>3</sup>Man, I felt like such a klutz. <sup>4</sup>On top of that, I kept saying “like” and “um,” and I could not stop fidgeting. <sup>5</sup>I was so stressed out about being up there. <sup>6</sup>I feel like I’ve been practicing this speech 24/7, and I still bombed. <sup>7</sup>It was ten minutes of me going off about how we sometimes have to do things we don’t enjoy doing. <sup>8</sup>Wow, did I ever prove my point. <sup>9</sup>My speech was so bad I’m surprised that people didn’t boo. <sup>10</sup>My teacher said not to sweat it, though. <sup>11</sup>Everyone gets nervous his or her first time speaking in public, and she said, with time, I would become a whiz at this speech giving stuff. <sup>12</sup>I wonder if I have the guts to do it again.

### Exercise #3

Replace the clichés in the sentences below with fresh, original descriptions.

1. She is writing a memoir in which she will air her family’s dirty laundry.
2. Beth had an ax to grind with Allen, and she planned to confront him at the party.
3. Mr. Nguyen was at his wit’s end with the rowdy class of seventh graders.
4. The bottom line is that Joel was fired because he missed too many days of work.
5. Sometimes it is hard to make ends meet with just one paycheck.
6. My brain is fried from pulling an all-nighter.
7. Maria left the dishes in the sink all week to give Jose a taste of his own medicine.
8. While they were at the carnival Janice exclaimed, “Time sure does fly when you are having fun!”
9. Jeremy became tongue-tied after the interviewer asked him where he saw himself in five years.
10. Jordan was dressed to the nines that night.

### Exercise #4

Revise the following sentences by replacing the overly general words with more precise and interesting language.

1. Adyam got into her car and drove off.
2. I would like to travel to outer space because it would be amazing.
3. Drashty came home after a bad day at the office.
4. I thought Mohamed’s essay was fascinating.
5. The dog walked up the street.
6. The coal miners were tired after a long day.
7. The tropical fish are pretty.
8. I sweat a lot after running.
9. The goalie blocked the shot.

10. I enjoyed my Mexican meal.

### Exercises 1-4<sup>2</sup>

#### Exercise #5

Identify the subject and verb in each of the following sentences. Then, where possible, put the sentences into a passive voice structure without changing the meaning.

1. The instructor randomly assigned topics for the final presentation.
2. Someone in the audience sneezed very loudly and disrupted the play.
3. Buying, selling, and transporting resources freely around the world sustain the global economy.
4. The lab supervisor monitors every experiment and tracks the use of all supplies.
5. Voters elect politicians they feel they can trust to represent them.
6. Painting and sculpting are visual arts while singing and dancing are performance arts.
7. There is evidence that personality types are driven by genetics.
8. Celebrities expand interest in social issues simply by taking a position or making a significant donation.
9. The instructor taught both the formulas and mnemonic devices to help students remember them.
10. Students sometimes misuse Internet resources, resulting in academic integrity issues.

### Media Attributions

- 7127238987\_7a146d0e3a\_h © Mikel Pierre is licensed under a CC BY-NC (Attribution NonCommercial) license

### Notes

1. Adapted from Poulter, S. Overview. Retrieved September 7, 2021, from <https://human.libretexts.org/@go/page/7124>
2. Hall, B., & Wallace, E. (2018). College ESL Writers: Applied Grammar and Composing Strategies for Success English Open Textbooks. 14.

## Articles and nouns (grammar support)

### Part 1: Chapter 3

#### Questions to consider

**A. What kinds of nouns are not countable? How does that characterization impact their use?**

**B. What meanings are conveyed with the use of definite articles? How are indefinite articles used differently?**

#### Count and noncount nouns

**Nouns** are words that name things, places, people, and ideas. Typical educational objects, desks, computers, and notebooks are countable nouns like most physical objects, people and places. A countable (or *count*, a shortened form) noun refers to people, places, and things that are separate units; regular nouns become plural by adding -s.

A **noncount noun** identifies a whole object or idea that cannot be separated and counted individually. Noncount nouns may refer to concrete or abstract objects. A concrete noun is an object that can be seen, tasted, touched, or counted. An abstract noun identifies an object that cannot be seen, touched, or counted. There are some exceptions, but most abstract nouns cannot be made plural, so they are noncount nouns. Abstractions (like joy); categories (like furniture); and specific forms or materials (liquids, e.g. water; gases, e.g. oxygen; and other substances, e.g. sugar and rice, too small to count) make up the majority of noncount nouns.

#### Examples: noncount nouns

**Incorrect:** five moneys, two researches, three sugars

**Correct:** some money, two pieces of furniture, two teaspoons of sugar

Some nouns are used as both countable and non- depending on the context. When using these words (e.g. light, paper, experience, time), it is important to consider the meaning of the noun.

#### Some contrasting usage illustrates nouns that can be both countable and non-countable

**Count:** There are not enough **lights** in the lab.

**Noncount:** There is not enough **light** in the lab.

**Count:** I needed to take the test four **times** to finish the test.

**Noncount:** I needed more **time** to finish the test.



### Definite and indefinite articles

The word **the** is a definite article. It refers to one (or more) specific person, place, object or idea; for example, *the woman* refers to not any woman but a particular woman. The definite article **the** is used before singular and plural count nouns.

The words **a** and **an** are indefinite articles. They refer to a single, nonspecific person, place, object or idea. For example, *a woman* refers to any woman, not a specific, particular woman. The indefinite article **a** or **an** is used before a singular count noun.

Examples: Definite articles (the) and indefinite articles (a/an) with count nouns

- I saw the concert. (singular; refers to a specific concert)
- I saw the concerts. (plural; refers to more than one specific concert)
- I saw the U2 concert last night. (singular; refers to a specific concert)
- I saw a concert. (singular; refers to any nonspecific concert)

### Two basic article rules

The following rules will help to determine when and what kind of article is required.

**Rule #1:** A singular count noun needs an article or a determiner.

Choose *a* or *an* if the noun is indefinite. Choose *the* if the noun is definite

**Rule #2:** A plural or noncount noun does not need an article unless it is definite.



### Language in Action

**A. What information is conveyed through the choice and use of articles in English?**

**B. In what situations are article always or never used?**

### Other count-noncount connections

Whether a noun is count or noncount also guides the use of some expressions of quantity.

universal: no, some, any, a lot of, plenty of, most, all

count nouns: both, a couple of, a few, several, many, number of

noncount nouns: a little, much, amount

Examples

**Incorrect:** the amount of people, a few information

**Correct:** the number of students, a little money

**Review and Reinforce**

Persistent errors undermine reader confidence in the information and overall message of writing because accurate use of nouns and their companion modifiers adds clarity to academic writing and contributes to the overall rhythm of written work.

**Exercise #1**

An interactive H5P element has been excluded from this version of the text. You can view it online here:  
<https://uark.pressbooks.pub/researchwriting/?p=78#h5p-4>

**Exercise #2**

Choose the correct article and modifier for each of the following sentences.

1. (A/An/The) camel can live for (little/any/a number of) days without water.
2. (Most/Little/Ø) American universities offer (a/an/the) degree in business.
3. I sampled (a/an/the) pastries at (all/no/much) of the bakeries in that neighborhood.
4. There is (no/many/few) scientific evidence of the long-term effects of some medications.
5. (A/An/The) politician spoke of (an amount of/many/much) important issues.
6. (A/The/Ø) research on compliance suggests (all/few/Ø) graduate students complete (a/an/the) assigned readings for every class.
7. They really enjoyed (a/an/the) actor's performance in (several/a few/no) plays.
8. (Some/Little/The) energy drinks contain (a/an/the) lengthy list of ingredients but have (few/little/much) nutritional value.
9. (A/An/The) goal I have is to run (one/a number of/a little) races this year.
10. (A/The/Ø) public libraries in (the/some/Ø) United States have rapidly adapted to (a/the/Ø) ongoing changes in information technology.

## Exercise #3

Correct the misused or missing articles.<sup>1</sup>

<sup>1</sup>Stars are large balls of the spinning hot gas. <sup>2</sup>The stars look tiny because they are far away. <sup>3</sup>Many of them are much larger than sun. <sup>4</sup>A Milky Way galaxy has between a two hundred billion and a four hundred billion stars in it. <sup>5</sup>Scientists estimate that there may be as many as five hundred billion galaxies in an entire universe. <sup>6</sup>Just like a human being, the star has a life cycle from the birth to death, but its lifespan is billions of years long. <sup>7</sup>The star is born in a cloud of cosmic gas and dust called nebula. <sup>8</sup>Sun was born in the nebula nearly five billion years ago. <sup>9</sup>Photographs of the star-forming nebulas are astonishing.

---

**Media Attributions**

- frenchducks © UNclimatechange is licensed under a CC BY (Attribution) license

---

**Notes**

- 
1. Adapted from Hall, B., & Wallace, E. (2018). College ESL Writers: Applied Grammar and Composing Strategies for Success English Open Textbooks. 14.<https://oer.galileo.usg.edu/english-textbooks/14>



## **PART 2 - RESEARCH FOUNDATIONS**



## Strong research questions

### Part 2: Chapter 4

#### Questions to consider

- A. What role does questioning play in advancing knowledge?**
- B. How can well-formulated questions support the development of a thesis?**
- C. What are the qualities of a strong research question?**

People look for information to answer implied or explicit questions every day. A research question prompts the questioner to do more than find an answer. Consider the differences between the standard and research questions below.

**Standard Question:** When and where is that movie showing on Friday?

**Research Question:** How do “sleeper” films end up having outstanding attendance figures?

**Standard Question:** How many children in the U.S. have allergies?

**Research Question:** How does his or her country of birth affect a child’s chances of developing asthma?

**Standard Question:** What year was metformin approved by the U.S. Food and Drug administration?

**Research Question:** Why are nanomedicines, such as doxorubicin, worth developing?

**Standard Question:** Can citizens register to vote at the public library?

**Research Question:** How do public libraries in the United States support democracy?

**Standard Question:** What is the Whorfian Hypothesis?

**Research Question:** Why are linguists interested in the Whorfian hypothesis?

#### Language in Action

- A. Explore “motivation” in a series of standard questions.**
- B. Extend the questions about “motivation” to those of a research nature.**
- C. What factors can be added to develop compelling and meaningful research on “motivation”?**

### The influences of research questions

Producing a research question prompts writers to

- define the scope of their interest;
- evaluate the feasibility of the inquiry;
- determine what sources will be of value; and
- establish potential conclusions.

For academic purposes, research questions can be developed for both large and small assignments. A smaller assignment may be research for a class discussion or a blog post; larger assignments may involve conducting research and then delivering it in a lab report, poster, term paper, or article. For large projects, the research question (or questions) will define or at least heavily influence

- the topic, in that research questions effectively narrow the subject;
- any hypotheses under consideration;
- which information sources are relevant; and
- resulting claims or conclusions.

#### *Influence on thesis*

Within an essay, poster, or term paper, the **thesis** is the researcher’s response to the research question(s). Developing research questions is effectively specifying that thesis. While perhaps many research questions emerge from the original topic, the primary question addresses those the thesis will answer. For example, a topic that starts out as “desert symbiosis” could eventually lead to “How does the diversity of bacteria in the gut of the Sonoran Desert termite contribute to the termite’s survival?” In turn, the researcher’s thesis will answer that particular research question instead of the numerous other questions that could have come from the desert symbiosis topic. Developing research questions is part of the process establishing clear parameters.

#### *Influence on hypothesis*

A study that predicts how variables are related will have at least one **hypothesis**. The research questions will contain the variables that later appear in the hypothesis(es). Despite the strength of their influence on the overall project, research questions do not always appear in the final products (papers or articles) of the research.

#### *Influence on resources*

The research questions help divide all information sources into two groups: those that are relevant and those that are not.

#### *Influence on research methods*

Research questions are vital in determining appropriate field research. For instance, when the research question





relates to describing the preferences of a group, survey methods may work well. In contrast, research questions that examine a laboratory practice will guide the development of a research method.

#### *Influence on claims or conclusions*

The research questions reflect whether the investigation is intended to describe a group or situation, to explain or predict outcomes, or to demonstrate cause-and-effect relationship(s) among variables. Those intentions and how comprehensive the inquiry is will determine what claims or conclusions can be made.<sup>1</sup>

#### Exercise #1

The question frames below provide a context through which to explore possible topics. Some are more appropriate for initial rather than in-depth exploration. Choose a few that work in your field; modify and complete them to suit your topic.<sup>2</sup>

1. What does \_\_\_ mean? (definition)
2. What are the various features of \_\_\_? (description)
3. What are the component parts of \_\_\_? (simple analysis)
4. How is \_\_\_ made or done? (process analysis)
5. How should \_\_\_ be made or done? (directional analysis)
6. What is the essential function of \_\_\_? (functional analysis)
7. What are the causes of \_\_\_? (causal analysis)
8. What are the consequences of \_\_\_? (causal analysis)
9. What are the types of \_\_\_? (classification)
10. How is \_\_\_ like or unlike \_\_\_? (comparison)
11. What is the present status of \_\_\_? (comparison)
12. What is the significance of \_\_\_? (interpretation)
13. What are the facts about \_\_\_? (reportage)
14. How did \_\_\_ happen? (narration)
15. What kind of person is \_\_\_? (characterization/profile)
16. What is the value of \_\_\_? (evaluation)
17. What are the essential major points or features of \_\_\_? (summary)
18. What case can be made for or against \_\_\_? (persuasion)
19. What is the relationship between \_\_\_ and the outcome of \_\_\_? (explorative)

#### **Review and Reinforce**

Research questions typically appear in standard question format and express a relationship between two or more variables; for example, how is A related to B? Research questions also imply possibilities for empirical testing; metaphysical questions are not measurable, and a variable that cannot be clearly defined cannot be tested.

#### Exercise #2

Identify the variables in these questions.

1. How does motivation affect participation in graduate level classes?
2. How does social isolation affect the academic performance of international graduate students?
3. What common demotivating factors influence the academic performance of international graduate students and how can they be mitigated?

#### Media Attributions

- indonesiacovid © USAID\_IMAGES is licensed under a CC BY-NC (Attribution NonCommercial) license

#### Notes

1. Adapted from Teaching & Learning, (2018). Choosing & using sources: a guide to academic research. The Ohio State University. <https://ohiostate.pressbooks.pub/choosingsources/>
2. Adapted from Frederiksen, L., & Phelps, S. F. (2017). Literature Reviews for Education and Nursing Graduate Students. Open Textbook Library

## Producing a workable thesis statement

### Part 2: Chapter 5

#### Questions to consider

**A. How are research questions and thesis statements related?**

**B. When does a hypothesis become a thesis statement?**

Writers need a hypothesis or thesis statement to provide a specific focus for their work and to organize the parameters of their writing. Just as a topic sentence summarizes a single paragraph, the thesis statement summarizes an entire paper, article or book. It conveys the work's overall point. Some writers begin with a thesis, based on their exploration of research questions; others discover their primary message in the course of the reading, writing, or even editing.

#### **Elements of a thesis statement**

The parallel with the topic sentence continues; there are both subject and controlling idea in a thesis statement. They are simply broader than (and supported by) those of the topic sentences. An explicit thesis statement is generally expressed in one sentence and appears toward the end of the introduction. It is specific and typically focuses on one to three points of a single idea—points that are extended, supported and demonstrated in the body of the work. The following qualities are common in strong thesis statements.

##### *Specificity*

A thesis statement must concentrate on a specific area within a general topic. For example, health care is a broad topic, but a proper thesis statement targets a specific area, such as the options for individuals without health care coverage or the challenges of a particular treatment, condition or illness.

##### *Precision*

A strong thesis statement must be precise enough to present a coherent argument and to remain focused on the topic. If the specific topic is *options for individuals without health care coverage*, the precise thesis statement must make an exact claim about it, such as that *limited options exist for those who are uninsured by their employers*.

##### *Ability to be argued*

A thesis statement must present a relevant and specific argument. A factual statement is not considered arguable. The thesis statement must include a point of view that can be supported with evidence.

##### *Ability to be demonstrated*

A claim in a thesis must be accompanied by relevant reasons, examples, or applications.

##### *Forcefulness*

A thesis statement that is forceful presents an effective persuasive element. The tone is assertive and commonly takes a stance on an issue with more than one side.

##### *Confidence*

In addition to force, the thesis statement must show confidence. Wording that is personal, like “I feel” and “we believe”, or softeners like ‘seem’ and ‘could’ actually weaken the message. Taking an authoritative stance on the matter persuades readers that the argument is legitimate and supported.

### **Language in Action**

**A. How does a weak thesis statement (or no real thesis statement) impair a writer?**

**B. How does a strong thesis statement influence the impact of the written work?**

**C. Which of the qualities of a strong thesis statement is most important? Which is most difficult to achieve? Why?**

### **Examples of appropriate thesis statements**

1. The societal and personal struggles of Troy Maxon in the play *Fences* symbolize the challenge of black males who lived through segregation and integration in the United States.
2. Closing all American borders for a period of five years is one solution that will tackle illegal immigration.
3. Shakespeare’s use of dramatic irony in *Romeo and Juliet* spoils the outcome for the audience and weakens the plot.
4. J. D. Salinger’s character in *Catcher in the Rye*, Holden Caulfield, is a confused rebel who voices his disgust with phonies, yet in an effort to protect himself, he acts like a phony on many occasions.
5. Compared to an absolute divorce, no-fault divorce is less expensive, promotes fairer settlements, and reflects a more realistic view of the causes for marital breakdown.
6. Exposing children from an early age to the dangers of drug abuse is a sure method of preventing future drug abuse.

### Common issues with thesis statements

A thesis is weak when it is simply a declaration of a subject or a description of what will be discussed.

Weak thesis statement: This paper will explain why imagination is more important than knowledge.

Unreasonable or outrageous claims or insults do not represent a strong thesis.

Weak thesis statement: Religious radicals across America are trying to legislate their Puritanical beliefs by banning required high school books.

Obvious facts and ideas that no one can disagree with or that cannot be extended do not serve as thesis statements.

Weak thesis statement: Advertising companies use sex to sell their products.

### Thesis statement revision

Thesis statements commonly evolve with the research and writing processes. Modification is thus part of the ongoing work. What begins as a working thesis statement, an early, indefinite statement on a topic used to plan and guide, is refined as the ideas are clarified. Working thesis statements solidify with additional supportive information, more definite theories or opinions, and reasons for those. Revision helps strengthen the thesis so that it aligns with the objectives and information in the body of the writing. Implementing a few revision strategies consistently will improve the overall message that the thesis is conveying.

1. Identify and replace all nonspecific words, such as people, everything, society, or life, with more precise words to reduce any vagueness.

Working thesis: Young people have to work hard to succeed in life.

Revised thesis: Recent college graduates must have discipline and persistence to find and maintain a stable job in which they can use and be appreciated for their talents.

The revised thesis makes a more specific statement about success and what it means to work hard. The original is too broad and does not specifically define success.

2. Clarify ideas that need explanation through questions aimed at narrowing the thesis.

Working thesis: The welfare system is a joke.

Revised thesis: The welfare system keeps a socioeconomic class from gaining employment by alluring members of that class with unearned income, instead of programs to improve their education and skill sets.

Joke is a poor word choice, as it is figurative language that carries numerous meanings. Readers bring various backgrounds and perspectives to the reading process and need concepts less subject to interpretation. Questions that lead to clarity include “What is funny about the welfare system? What is ironic about the welfare system? Who finds the welfare system laughable, and why?” By asking questions, a writer devises a precise and appropriate substitute for “joke”. Incorporating the answers to these questions into a thesis statement produces a more accurately conveyed stance.

3. Replace any linking verbs with action verbs. Linking verbs are forms of the verb *to be*, a verb that simply states that a situation exists.

Working thesis: Kansas City schoolteachers are underpaid.

Revised thesis: Kansas City's budget does not allocate sufficient salaries to educators, resulting in staffing issues and resignations in a district that needs highly qualified and dedicated teachers.

The linking verb in this working thesis statement is the word *are*. Thesis statements are often weak when they do not express action. Questions can be deployed here to explore appropriate action verbs, thus forming a stronger



thesis statement, one that takes a more definitive stance on the issue:

“Who is underpaying the teachers? What is considered ‘underpaying’? What is the problem? What are the results?”

4. Omit any general claims that are difficult to support.

Working thesis: Today’s teenage girls are too sexualized.

Revised thesis: Teenage girls who are captivated by the sexual images in the media are conditioned to believe that a woman’s worth depends on her sensuality, a feeling that harms their self-esteem and behavior.

It is true that some young women today are more sexualized than in the past, but that is not true for all girls. Many girls have strict parents, dress appropriately, and do not engage in sexual activity while in middle school and high school. This thesis is revised by considering “Which teenage girls are more sexualized? What constitutes ‘too’ sexualized? Where and at what age does this behavior typically emerge? What are the repercussions?”<sup>1</sup>

### Review and Reinforce

Strong writing expresses a message. A thesis statement is an author’s singular, formal message, supported and extended.

- A. What are some effective methods for producing strong thesis statements?
- B. How can writers use their well-developed thesis statement throughout the writing process?

### Exercise #1

1. Reconsider the standard and research questions from Chapter 4.
  - A. Explore “motivation” in a series of standard questions.
  - B. Extend the questions about “motivation” to those of a research nature.
  - C. What factors can be added to develop compelling and meaningful research on “motivation”?
2. Develop five to seven hypotheses that could realistically become thesis statements.

### Media Attributions

- School\_children\_in\_Louvre © Hu Totya is licensed under a CC BY-SA (Attribution ShareAlike) license

### Notes

1. Adapted from University of Minnesota Libraries Publishing. (2015). Writing for Success. <https://open.lib.umn.edu/writingforsuccess/chapter/11-5-critical-thinking-and-research-applications-3/>

## Identifying and deploying source material

### Part 2: Chapter 6

#### Questions to consider

- A. What are the objectives for incorporating outside source material into research writing?
- B. How do researchers determine that a source is appropriate to include?
- C. Why are there different systems for referencing outside source material?

Discovering and selecting relevant material continues from the development of solid research questions until final conclusions are drawn. This is accomplished by working with databases, subject terms, and keywords to produce a base of appropriate literature for review.

Keywords and subject terms denote the primary goals of the search.

**Keywords** are the natural terms related to a topic or the field specific usage of terminology. In contrast, **subject terms** denote the assigned vocabulary for a catalog or database.

#### The tools of discovery

Discovery is an iterative process in which there is not typically a straight, bright line from beginning to end. Gaps in the evidence and additional questions arise, prompting continual searching and reading.

The following resources that investigators often consult are ordered from more general and established information to more recent and specific. Although it is possible to find some resources by searching the open web using a search engine like Google or Google Scholar, this is not the most efficient or effective research method. Most of the resources described in this section are found within academic library catalogs and **databases**.

#### Databases

A **database** is an electronic system for organizing information. Journal databases organize and index scholarly articles. Anyone with an internet connection has free access to public databases such as PubMed and ERIC. Students can also search in library-subscribed general information databases (such as EBSCO's Academic Search Premier) or a specialized or subject specific database (for example, a ProQuest version of CINAHL for Nursing or ERIC for Education). Library databases store and display different types of information sets than a library catalog or Google Scholar.

There are different types of databases that include:

- Indexes – with **citations** only
- Abstract databases – with citations and **abstracts** only
- Full text databases – with citations and the full text of articles, reports, and other materials.

Why is searching a database more effective than Google Scholar or the library catalog? Both can lead to good articles; however, the content of a general search engine is wide-ranging but not necessarily as comprehensive or as current as a database that is updated daily. Google Scholar also does not disclose its criteria for how results

are deemed scholarly, and search results often vary in quality and availability. Neither gives as much control as a database.

#### *Books/ebooks*

North American academic libraries buy or subscribe to individual ebook titles as well as collections of ebooks. Ebooks appear on various publisher sites and platforms, such as Springer, Cambridge, ebrary (ProQuest), EBSCO, and Safari; access to these ebooks varies by platform and library.

While there is broad diversity regarding the look and feel of current integrated library systems, they operate in similar ways. Most catalogs are easily found from a library's home page or website. The process to efficiently find books and ebooks on a specific topic involves five steps.

1. Begin with the search box generally found on a library's home page;
2. search a book title, author name, or subject **keywords**;
3. explore titles and links to more details about the book on the results page;
4. use the "Advanced Search" option near the basic or single search box to further limit searches (by publication year, subject or peer review status, for example); and
5. check the "Format" list on the advanced search page screen for limiting format to Print Books or Ebooks.

OCLC WorldCat (<https://www.worldcat.org/>) is the world's largest network of library content, and it provides another way to search for books and ebooks. For students who do not have immediate access to an academic library catalog, WorldCat offers access to many library catalogs and can then locate a library that may own or subscribe to specific materials.

#### *Research articles*

While books and ebooks provide good background information on a topic, the main body of literature in a research area will typically be found in academic journals. Scholarly journals are the main forum for research publication. Unlike books and professional magazines that comment or summarize research findings, articles in scholarly journals are written by a researcher or investigative team. These authors report in detail original study findings and include the data used. Articles in academic journals also go through a screening or peer-review process before publication, implying a higher level of quality and reliability. For the most current, authoritative information on a topic, scholars and researchers look to the published, scholarly literature.

#### *The reference list: a less obvious source*

Mining the **bibliographies** of published books and articles is another way to find additional sources. This extends the reach of the scholarly conversation on a specific topic and enriches the literature search.

#### **Publication mode: Identifying primary, secondary and tertiary sources**

The continuing research process should include categorizing information based on publication mode, which is determining whether the information is

- firsthand (in its original form, not translated or published in another form);
- secondhand (a restatement, analysis, or interpretation); or
- thirdhand (a summary or repackaging of the original, often based on secondary sources that have been previously published).

The three labels for information sources in this category are, respectively, *primary sources*, *secondary sources*, and *tertiary sources*. The examples below illustrate the first-handedness, second-handedness, and third-handedness of information (distinguishing between primary, secondary, and tertiary sources by relating the





information itself to the context in which it was created). Understanding that relationship is an important skill in academic as well as workplace writing because the relationship between creation and context helps readers understand the “big picture” in which information operates and helps establish credibility.

Primary sources are the information that comes directly from its producer in its original form. Some examples of primary sources follow.

- Journal articles that report research for the first time (at least the parts about the new research, plus their data)
- Any literary work, including novels, plays, and poems
- Breaking news and eyewitness accounts, including photographs and recorded interviews
- Diaries
- Music and dance performances and works of art
- Data
- Autobiographical blog entries
- Artifacts such as tools, clothing, or other objects
- Original documents such as tax returns, marriage licenses, and transcripts of trials
- Correspondence, including email
- Records of organizations and government agencies

Secondary sources are materials that have been processed somehow: translated, repackaged, restated, analyzed, or interpreted. Thus, the information is secondhand, or modified by the application of at least one filter. Some examples of secondary sources include

- all nonfiction books and magazine articles except autobiographies;
- an article or website that critiques a novel, play, painting, or piece of music;
- an article or web site that synthesizes expert opinion and several eyewitness accounts for a new understanding of an event; and
- the literature review portion of a journal article.

Tertiary sources are those in which the original information has been further repackaged because those sources index, condense, or summarize the original. Typically, by the time tertiary sources are developed, there have been many secondary sources prepared on their subjects, and that information can be considered “thirdhand.”

Tertiary sources are usually publications that offer general information. What is commonly considered tertiary sources are

- almanacs;
- dictionaries;
- guide books;
- survey articles;
- timelines;
- bibliographies;
- encyclopedias, including Wikipedia; and
- most textbooks.

Tertiary sources are usually not acceptable in college or graduate school research projects because they are too broadly separated from firsthand information.<sup>1</sup>

### **Techniques in the search process**

#### *Effective use of search operators*

Literature review research often necessitates the use of Boolean operators to combine keywords. The operators – AND, OR, and NOT — are powerful tools for searching in a database or search engine. By using a combination of terms and **Boolean** operators, the results can be narrowed to a more specific area than a basic keyword search allows.

## Examples

**Truncation** (or wildcards)

Searching for the base (or trunk) of a term and a symbol (e.g. \* or ?) produces results that include documents containing variations of that term.

For example: light\* will retrieve light as well as lighting, lightning, lighters and lights.

Note that the truncation symbol varies depending on the database used in the search. The most common truncation symbols are the asterisk (\*) and question mark (?).

**Phrase searching**

Phrase searching is used to limit results to specific strings of language. For example “durable wood products” will retrieve more relevant documents than the same terms without quotation marks.

*Citation searching*

In the interest of developing a comprehensive knowledge base, researchers trace a research process through citations. In other words, as relevant sources are selected, the sources of that work are explored and sometimes incorporated.

From a document identified as particularly useful for a literature review, scholars often search citations forward or backward to gather additional resources. Cited reference searching and reference or bibliography mining are advanced search techniques that may also help generate new ideas as well as additional keywords and subject areas.

*Searching forward*

For cited reference searching, Google Scholar or library databases such as Web of Science or Scopus are effective. These tools trace citations forward to link to newly published books, journal articles, book chapters, and reports that were written later than that specific document.

*Searching backward*

Searching through cited references will locate works that have been cited numerous times, indicating what may be a seminal work in the field. In citation mining, reference or works-cited lists are used to identify other relevant publications, tracing citations backward to find significant books, journal articles, book chapters, and reports that were used in that specific document.<sup>2</sup>

**Why cite sources?**

In the process of integrating outside source material, citing shows the reader that the work in hand is based on what is already understood about the topic. It is also the practice of giving credit to those informing sources. Adherence to standards of academic integrity, academic misconduct and plagiarism provide further reasons for citing sources in academic research.

*To avoid **plagiarism** and maintain academic integrity*

Misrepresenting academic achievements by not giving credit to others indicates a lack of academic integrity. This is not only discouraged by the scholarly community, but it is also typically punished in American educational institutions. It may result in a failing grade or even expulsion.

*To acknowledge the work of others*

One major purpose of citations is to simply provide credit where it is due and to acknowledge both the hard work that has gone into producing research and the person(s) who performed that research.

*To provide credibility and context*

Accurate citations set ideas into an academic context and lend credibility and authority to presented claims. For example, work that is about sustainability and construction should cite experts in sustainability, construction, and sustainable construction. In addition, citing demonstrates the ways in which research is social. No one researches in a vacuum; most work is built on or supported by that of others.

*To provide easy access to sources*

Having accurate citations helps both reader and writer. Researchers need to keep track of the sources and information they may need to find again. Readers commonly investigate cited sources.

**Language in Action**

**A. What are the advantages of adopting and retaining a consistent approach to library research?**

**B. How does the systematic incorporation of existing research into a document influence the reader?**

**C. How does the systematic incorporation of existing research into a document benefit the writer?**

**How to cite references**

The use of supportive material requires two components. The full bibliographic entry on the *Bibliography, References, or Works Cited* page of the final product **AND** an indicator within the text, known as an in-text citation, that usually marks the beginning or end of imported material. These in-text **citations** are shorter forms of a full bibliographic entry in the complete reference list. These are produced and used according to one specific system or citation style. Style guides set rules for the presentation of in-text citations and their full bibliographic entries. There are numerous citation styles. Each requires much of the same publication information to be included in a citation, although the styles differ in formatting details such as capitalization, punctuation, order of publication information, and how the authors are listed.

*The process for citing and referencing sources*

Citation management software facilitates formatting and using reference information, and many scholars rely on them to collect, store, and organize the sources for multiple ongoing projects. Working in conjunction with many databases and search engines, these tools change or implement some of the steps described below and streamline the process of incorporating source material.

**Step 1: Choose a citation style**

Specific journals, university departments, even academic supervisory committees often demand a specific citation style. There are also field specific styles. The Purdue Online Writing Lab (OWL) or a basic internet search will provide information on many stylebooks/handbooks.

**Step 2: Create in-text citations**

Include the appropriate **integral** or **parenthetical** in-text citation information (minimally, the author(s) surname and date of publication) with any paraphrased or quoted material.

**Examples of in-text citations; APA 7th edition**

The excerpt below from *A Study of Graduate Students' Achievement Motivation, Active Learning, and Active Confidence Based on Relevant Research* demonstrates the use of integral (sentence #1-2) and parenthetical (sentence #3) citations in APA 7th edition format.

<sup>1</sup>In addition, Retnowati et al. (2018) showed that one of the reasons learners choose to avoid problems with higher-

order thinking skills is because of low self-confidence and the belief that they cannot achieve the task.<sup>2</sup> Di Francesca (2020) pointed out that engaged learners in active learning environments may build confidence, and some scholars believe that active learning can enhance learners' responsiveness, confidence, and motivation (Robinson, 2017; Sibona & Pourrezajourshari, 2018).<sup>3</sup>

A few other important notes regarding integral and parenthetical citations.

1. Sentences **cannot** begin with a parenthetical citation.
2. Parenthetical citations facilitate combining multiple sources (see sentence #3 above), which are separated by a semicolon).
3. Parenthetical citations must be enclosed within a sentence (in other words, when they are at the end of a sentence, the period is outside and after the closing parenthesis).
4. A combination of parenthetical and integral citations is acceptable in some fields; in many science publications, integral citations are uncommon.
5. While the abbreviation *et al* is acceptable in integral citations, the ampersand (&) symbol is generally used in parentheses.
6. Citation styles change frequently and the task of using the most current and accepted format is the job of the research writer.

### Step 3: Create the accompanying full bibliographic entry

A full bibliographic entry that will appear on the References or **Bibliography** page can often be produced within word processing software, can be generated manually, or can be created through an integrated citation manager. Persistent and thorough management of reference information is essential to incorporating source material without plagiarizing.<sup>4</sup>

Citation managers are software packages, such as EndNote or Zotero, used to create personalized databases of citations and notes. Tasks that citation management tools can be used to complete include

- importing citations from databases, websites, and library catalogs;
- creating bibliographies;
- formatting citations in a variety of styles (e.g. APA, MLA, Chicago);
- managing, categorizing, and organizing citations and documents; and
- attaching PDFs, images, and notes to citations in a collection.

Most current citation managers are similar and individual workflow may determine which tool to use. For example, researchers working from multiple computers and locations opt for web-based tools like RefWorks and Mendeley. In making a selection, it is advisable to

- find a detailed and updated comparison chart of citation management tools to determine if any is clearly ideal;
- talk to colleagues to learn if there is a discipline-oriented or department preference for one tool or if access to a specific tool is provided;
- consult a university subject librarian; and
- critically assess the required technology skills and interests.

Although all the tools advertise ease of use, there is a learning curve. It is advantageous to achieve some degree of mastery before embarking on a complex research project.<sup>5</sup>

**Review and Reinforce**

Research writing follows the conventions of a specific field, acknowledging and crediting the work of previous scholars by systematically and thoroughly presenting complete source information.

- A. How does gleaned information about primary sources support research for a literature review?
- B. What information can be gathered from looking at citations and reference entries while researching the background of a field or laboratory research project?

**Exercise #1**

Open this article: <https://doi.org/10.1186/s40359-021-00665-9> to complete the exercise below.



An interactive H5P element has been excluded from this version of the text. You can view it online here:  
<https://uark.pressbooks.pub/researchwriting/?p=73#h5p-5>

**Media Attributions**

- gopropollinator © Irosengreen is licensed under a CC BY-NC-ND (Attribution NonCommercial NoDerivatives) license

**Notes**

1. Adapted from Teaching & Learning, (2018). Choosing & using sources: a guide to academic research. The Ohio State University. <https://ohiostate.pressbooks.pub/choosingsources/>
2. Adapted from Frederiksen, L., & Phelps, S. F. (2017). Literature Reviews for Education and Nursing Graduate Students. Open Textbook Library
3. Chang, J.-C., Wu, Y.-T., & Ye, J.-N. (2022). A Study of Graduate Students' Achievement Motivation, Active Learning, and Active Confidence Based on Relevant Research. *Frontiers in Psychology*, 13, 915770–915770. <https://doi.org/10.3389/fpsyg.2022.915770>
4. Adapted from Teaching & Learning, (2018). Choosing & using sources: a guide to academic research. The Ohio State University. <https://ohiostate.pressbooks.pub/choosingsources/>
5. Adapted from Frederiksen, L., & Phelps, S. F. (2017). Literature Reviews for Education and Nursing Graduate Students. Open Textbook Library.

## Question structure (grammar support)

### Part 2: Chapter 7

#### Questions to consider

- A. How does the structure of a question impact its meaning and comprehensibility?
- B. How are structurally sound questions used in research writing?

Useful, interesting questions are structured using subjects and verbs. *How to compare the variables?* is not a complete question as there is neither subject nor main verb. Some well-developed versions of this inquiry are

How can the variables be compared?  
How are the variables related?

#### The structure of questions

English speakers rely on the following two common ways to structure questions.

1. Begin with a question word.
  - A. **Where** has climate change been documented?
  - B. **When** were theories of climate change first developed?
  - C. **Who** documented climate change?

Unlike that of a statement, question word order typically follows a verb-subject pattern. Statement versions of questions #A and #B above illustrate this change in word order.

Statement: *Climate change has been documented around the world.*

A. *Where has climate change been documented?*

Statement: *Theories of climate change were first developed in the early 20th century.*

B. *When were theories of climate change first developed?*

**Note:** When the subject is unknown, as with “who” questions, the word order does not change.

Statement: *Climate change has been documented by scientists.*

C. *Who documented climate change?*

2. Begin with an **auxiliary verb** (do, have) or the verb “to be”.

A. **Do** scientists agree on the causes of climate change?

B. **Has** measurable proof of climate change been documented?

C. **Are** solutions to the problems of climate change under consideration?

A comparison of these questions and their statement forms illustrates the changes in word order.



Statement: *Scientists agree on the causes of climate change.*

A. *Do scientists agree on the causes of climate change?* (begin with form of auxiliary “do”)

Statement: *Measurable proof of climate change has been documented.*

B. *Has measurable proof of climate change been documented?* (begin with form of auxiliary “have”)

Statement: *Solutions to the problems of climate change are under consideration.*

C. *Are solutions to the problems of climate change under consideration?* (begin with form of “be”)

The auxiliary and “be” verb forms provide tense (explaining *when* the action happened) and agreement (singular forms with singular subjects, plural with plural).<sup>1</sup>

#### Examples

1. Did scientists agree on the causes of climate change? (past tense)
2. Will scientists agree on the causes of climate change? (future tense)
3. Does that scientist agree on the causes of climate change? (singular subject)
4. Has measurable proof of climate change been documented? (present perfect tense)
5. Had measurable proof of climate change been documented? (past tense)
6. Have measurable effects of climate change been documented? (plural subject)
7. Are solutions to the problems of climate change under consideration? (plural subject)
8. Were solutions to the problems of climate change under consideration? (past tense)
9. Is a solution to the problems of climate change under consideration? (singular subject)

#### Language in Action

**A. How do questions and answers between these types of speakers differ? Why is that?**

1. Professional (e.g. physician, lawyer, government official) and client
2. Student and instructor, professor or teaching assistant
3. Colleagues or academic peers

**B. When are questions deployed in writing? How are rhetorical questions different from research questions?**

#### Exercise #1

Choose the strongest version of each question.



An interactive H5P element has been excluded from this version of the text. You can view it online here:  
<https://uark.pressbooks.pub/researchwriting/?p=89#h5p-6>

## Media Attributions

---

- glacier is licensed under a Public Domain license

## Notes

---

1. Adapted from Hall, B., & Wallace, E. (2018). College ESL Writers: Applied Grammar and Composing Strategies for Success English Open Textbooks. 14. <https://oer.galileo.usg.edu/english-textbooks/14>



## Paragraph and sentence structure (grammar support)

### Part 2: Chapter 8

#### Questions to consider

- A. What elements of writing impact how clear and compelling the final work will be?**
- B. How are the boundaries of sentences and paragraphs determined?**
- C. How does punctuation affect meaning and readability?**

As sentences combine to form paragraphs, well-developed and organized paragraphs interact to deliver information. Writers who are deliberate at every level, from spelling and punctuation to structure and content, produce work that is accurate, clear and interesting.

#### **A foundation built on purpose**

Academic writing commonly fulfills four main purposes: to summarize, to analyze, to synthesize, and to evaluate.

##### *Summary*

A summary, an accurate representation of other work, condenses a larger amount of information by extracting only vital information. It is comprised of paraphrased material, not quotations or language borrowed from the original.

##### *Analysis*

An analysis separates the different elements of complex materials and studies how the parts relate to one another. The analysis of simple table salt, for example, would require a deconstruction of its parts—the elements sodium (Na) and chloride (Cl). Then, scientists would study how the two elements interact to create the compound NaCl, sodium chloride or simple table salt.

An analysis in academic writing fulfills the same objective. Instead of deconstructing chemical compounds, academic analysis paragraphs typically deconstruct documents, processes or events. An analysis dissects the primary source, examining individual aspects and identifying how they relate to one another.

##### *Synthesis*

The purpose of an academic synthesis is to blend individual documents into a new document. An academic synthesis considers the main points from multiple pieces of writing and links the main points together to create an original point.

##### *Evaluation*

An evaluation judges the value of something and determines its worth. An academic evaluation communicates the writer's opinion and justifications of a document or a topic.

### Language in Action

**A. What is the relationship between the main message of an individual body paragraph and the thesis statement of the paper?**

**B. How can writers strengthen the connection between sections, paragraphs, and thesis statements?**

### Paragraph structure

Paragraphs separate ideas into logical, manageable chunks. An individual paragraph focuses on only one main idea and presents coherent concepts to support that point. Because all the sentences in one paragraph support the same point, a paragraph should be logical and comprehensible when read separately from other paragraphs or sections of the work it originates in. The structure and content together deliver the message with precision. To that end, a complete paragraph is comprised of the following key elements.

- A **topic sentence** – implied or stated directly; strong topic sentences contain both a main idea and a controlling idea, are clear and easy to follow, and use engaging vocabulary. They may be placed at the beginning, middle, or end of a paragraph.
- **Supporting sentences** (which comprise the “body” of the paragraph) extend, prove, or enhance the topic sentence by offering facts, reasons, statistics, quotations, or examples.
- **Concluding sentences** summarize the key points in a paragraph, reiterate the main idea and sometimes provide a signal of the fulfillment of the message or a connection to a subsequent paragraph.
- **Transitional words** and phrases, properly applied, organize ideas and show their relationship to one another. Their use should be limited. Because the contents of a unified, coherent paragraph themselves are related, excessive reliance on connectors results in boring work and distracts the reader from the message.

### Sentence structure and variety

Some writers reuse a few sentence patterns throughout their work. Like any repetitive task, reading a text that contains too many sentences with the same length and structure can become monotonous. Experienced writers mitigate this possibility by varying sentence patterns, rhythms, and lengths. The basic subject-verb-object pattern is flexible; an important set of strategies for developing variety in sentence structure involves combining sentences.

#### Using an -ing Modifier

Sometimes it is possible to combine two sentences by converting one of them into a modifier using the *-ing* verb form—singing, dancing, swimming. A **modifier** is a word or phrase that qualifies the meaning of another element in the sentence.

Original sentences: *Steve checked the computer system. He discovered a virus.*

Revised sentence: *Checking the computer system, Steve discovered a virus.*

To connect two sentences using an *-ing* modifier, add *-ing* to one of the verbs in the sentences (checking) and delete the subject (Steve). A comma separates the modifier from the subject of the sentence. The main idea must



be in the main clause, not in the modifier. Here, the main idea is that Steve discovered a virus, not that he checked the computer system.

The *-ing* modifier often indicates that two actions are occurring at the same time:

Original sentences: *She noticed the police car. She shifted gears and slowed down.*

Revised sentence: *Noticing the police car, she shifted gears and slowed down.*

This means that she slowed down at the same time she noticed the police car.

Original sentences: *The dog barked loudly. The dog ran across the driveway.*

Revised sentence: *Barking loudly, the dog ran across the driveway.*

This means that the dog barked as it ran across the driveway.

#### Using an *-ed* Modifier

Sentences can sometimes be combined using an *-ed* verb form. To use this method, one of the sentences must contain a form of “*be*” as a helping verb in addition to the *-ed* verb form.

Original sentences: *The Ramirez family was delayed by a traffic jam. They arrived several hours after the party started.*

Revised sentence: *Delayed by a traffic jam, the Ramirez family arrived several hours after the party started.*

#### Using a Relative Clause

A **relative clause** is a group of words that contains a subject and a verb and describes a noun. Relative clauses function as adjectives by answering questions such as *which one?* or *what kind?* They also begin with a **relative pronoun** (e.g. *who*, *whose*, *whom*, *which*, or *that*).

Original sentences: *The managing director is visiting the company next week. He lives in Seattle.*

Revised sentence: *The managing director, who lives in Seattle, is visiting the company next week.*

To connect two sentences using a relative clause, change the subject of one of the sentences (in the above example, *he*) to the appropriate relative pronoun (*who*). The relative clause (*who lives in Seattle*) is placed next to the noun it describes (the managing director). The main clause is always the most important material.

While grammatically accurate, reversing the main clause and subordinate clause in the preceding sentence emphasizes where the managing director lives, not the fact that he is visiting the company.

Revised sentence: *The managing director, who is visiting the company next week, lives in Seattle.*

#### Examples of strong relative pronoun use

While “*that*” is versatile, it can become quickly overused. Here is a quick guide to the use of *who*, *whom*, *whose*, and *which*.

Use *who* or *whom* for people; *who* as subject and *whom* as object.

The students *who* participate actively retain the information (students/*who* = subject).

The students *whom* the lab assistant liked the most were the ones *who* stayed to help clean up (students/*whom* = object of the verb “liked”).

Use *whose* to show possession or close connection.

The student *whose* laptop is missing submitted a report to the campus police (student possession/*whose* = subject of “is missing”).

Do not use *which* for people.

The laptop *which* is missing contains all the data (laptop/*which* = subject).

#### Using an Appositive

An **appositive** is a word or group of words that describes or renames a noun or pronoun.

Original sentences: *Harland Sanders began serving food for hungry travelers in 1930. He is Colonel Sanders or*

*“the Colonel.”*

Revised sentence: *Harland Sanders, “the Colonel,” began serving food to hungry travelers in 1930.*

In the revised sentence, “the Colonel” renames Harland Sanders. To combine two sentences using an appositive, drop the subject and verb from the sentence that renames the noun and turn it into a phrase. Note that in the previous example, the appositive is positioned immediately after the noun it describes. An appositive may be placed anywhere in a sentence, but it must come directly before or after the noun to which it refers.

Appositive after noun: *Scott, a poorly trained athlete, was not expected to win the race.*

Appositive before noun: *A poorly trained athlete, Scott was not expected to win the race.*

Appositives are always punctuated by a comma or a set of commas.

### Review and Reinforce

A. By what means can writers support readers?

B. How can writers offer both consistency and variety in their material? Why is this important?

### Exercise #1

Compare the two paragraphs below. Evaluate the differences and resulting strengths and weaknesses.

A. <sup>1</sup>During my time in office I have achieved several goals. <sup>2</sup>I have helped increase funding for local schools. <sup>3</sup>I have reduced crime rates in the neighborhood. <sup>4</sup>I have encouraged young people to get involved in their community. <sup>5</sup>My competitor argues that she is the better choice in the upcoming election. <sup>6</sup>I argue that it is ridiculous to fix something that isn't broken. <sup>7</sup>If you reelect me this year, I promise to continue to serve this community.

B. <sup>1</sup>During my time in office, I prioritized increasing funding for local schools, reducing crime rates in the neighborhood, and encouraging young people to get involved in their community. <sup>2</sup>Why fix what isn't broken? <sup>3</sup>My competitor argues that she is the better choice, but by electing me, the community will be assured of ongoing achievements. <sup>4</sup>Don't take a chance on someone unknown; vote for the candidate you know has proven success.

### Exercise #2

Identify the functional parts of the paragraph (topic sentence, supporting sentences, and concluding sentence).<sup>1</sup>

<sup>1</sup>The desert provides a harsh environment in which few mammals are able to adapt. <sup>2</sup>Of these hardy creatures, the kangaroo rat is possibly the most fascinating. <sup>3</sup>Able to live in some of the most arid parts of the southwest, the kangaroo rat neither sweats nor pants to keep cool. <sup>4</sup>Its specialized kidneys enable it to survive on a miniscule amount of water. <sup>5</sup>Unlike other desert creatures, the kangaroo rat does not store water in its body but instead is able to convert the dry seeds it eats into moisture. <sup>6</sup>Its ability to adapt to such a hostile environment makes the kangaroo rat a truly amazing creature.

### Media Attributions

- balloons © John Englart (Takver) is licensed under a CC BY-SA (Attribution ShareAlike) license

## Notes

---

1. Adapted from Hand, L., Ryan, E., & Sichler, K., (2019). Introduction to Communication Research: Becoming a Scholar. Communication Open Textbooks. 3.<https://oer.galileo.usg.edu/communication-textbooks/3>



## **PART 3 - WRITING FOUNDATIONS**





## Paraphrasing and summarizing

### Part 3: Chapter 9

#### Questions to consider

- A. What are the qualities of a strong summary?
- B. What, when, and why do scholars summarize?

A **summary** is a condensed version of a longer text. Summaries of different lengths are useful in research writing because they provide readers with an explanation of supporting material. The first step in writing a good summary is to do a thorough reading of the text. Even the strongest readers sometimes find very new, very complex, or very dense work difficult to process.

Read for comprehension by remaining engaged. Continuously ask and answer a few basic questions.

- A. What is the unique point here?
- B. Which ideas come from the author; which material is support cited from other sources?
- C. How are the ideas connected (e.g. cause and effect? chronologically?)
- D. What is the likely conclusion?

#### Three steps to producing a strong summary

1. Read for main ideas;
2. articulate the primary message without relying too heavily on the original language (including vocabulary and sentence structure); then,
3. draft a paraphrase that includes a citation giving credit to the source in the appropriate format.

#### Other summarizing guidelines

A **quote** is a direct restatement of the exact words from the original source. Using three or more words exactly as they appear in the original source is a quote. In contrast, a **paraphrase** is a restatement of the information or point of the original source. Paraphrases and quotes must always accompanied by a proper citation of the source.

Long and direct quotations are discouraged in research writing, especially in the STEM fields. Material

incorporated from an outside source should be paraphrased in almost all situations. The use of direct quotes should be limited to when

- the exact words of the source are important, particularly with technical language, terms, or very specific word choices; or
- the author or speaker of the original language is uniquely powerful.

In higher level summaries, source information is generally restricted to the citation; it is not necessary to mention the author or their credentials, the article title, or the publication name in the summary. This is contrary to what many students learn in earlier writing instruction.

Following the order of the original source information is often tempting, as it seems well organized and effective (indeed, it has been published). However, summary writers may omit what they do not need and reorganize material to suit their purposes. These efforts can contribute to the freshness of the paraphrase when they are implemented well.

Finally, research writers must only summarize from an original source (the **primary source**) and NOT the reference material (the **secondary sources**) included for support.

#### Exercise #1 – Practice Summary

Read this discussion section from *Does international work experience pay off? The relationship between international work experience, employability and career success: A 30-country, multi-industry study* and then respond to the questions below.

<sup>1</sup>Adopting a HCT perspective (Becker, 1993, 2008; Tan, 2014), we proposed and found that IWE, as an investment in human capital, is associated with higher perceived external employability, which in turn is positively related to promotions and subjective financial success. <sup>2</sup>Although this mediated relationship was not moderated by economic freedom as hypothesised, supplementary analyses that differentiated between short-term and long-term IWE however showed that, in countries with low economic freedom, the indirect relationships between short-term IWE and career success indicators through perceived external employability were more pronounced. <sup>3</sup>The present study thus highlights the role of perceived external employability as a core mediator underlying the IWE-career success link. <sup>4</sup>Including promotions and subjective financial success as indicators of both OCS and SCS provides a more nuanced picture of how IWE relates to career success. <sup>5</sup>Although the study focuses on specific indicators of OCS and SCS, the empirical findings have greater generalisability compared to much of research that precedes our study given that our results hold across a large-scale sample of employees in four broad occupational groups from 30 countries and more than 20 industries. <sup>6</sup>While empirical evidence overrepresents countries from the Anglo, Latin European and/or Germanic European clusters, our study incorporates a sample that includes countries from all GLOBE clusters (House et al., 2004) and thus many countries that have never been researched with respect to international assignments and career outcomes.<sup>1</sup>

HCT: human capital theory suggests education and training contribute to a person's earning power

IWE: international work experience

OCS: objective career success

SCS: subjective career success

1. What is the main idea here? Is there only one?
2. What language (words or phrases) cannot be paraphrased without compromising meaning?
3. What material should not be included in the summary? Why?
4. Draft two versions of a complete summary of this material including a citation in an appropriate format. Strive to make them grammatically distinct from each other and from the original.

The opinions or interpretation of the summary writer do not belong in a summary. When the assignment is an evaluative review, the author may inject information beyond the main idea of the summarized material.

Writers quote and paraphrase from research in order to support their points and to persuade their readers. A quote or a paraphrase from a piece of evidence in support of a point answers the reader's question, "*Says who?*" This is especially true in academic writing since scholarly readers are most persuaded by effective research and documented evidence. For example, readers of an article about a new cancer medication published in a medical journal will be most interested in the research and statistics that demonstrate the effectiveness of the treatment. Conversely, they will not be as persuaded by emotional stories from individual patients about how a new cancer medication improved the quality of their lives. The real art to research writing is using evidence effectively to support the point. Certain rules of style are applied as prescribed by academic departments and publication editors, including which citation system to use.

#### Language in Action

**A. How common are direct quotations in scholarly publications found in academic journals? Are they more or less common in publications meant for general consumption, like newspapers or internet blogs?**

**B. What is the strongest incentive for including and citing material from other sources?**

#### Plagiarism awareness

**Plagiarism** is the unauthorized or uncredited use of the writings or ideas of another. While it might not be as tangible as stealing a car or robbing a bank, plagiarism is still a form of theft. The use of artificial intelligence programs (like *Chat GPT*) does not produce original writing a researcher can call their own. As these resources become increasingly available, it is important for writers to focus on producing their own sentences, paragraphs, theses and ideas that they can explain and defend.

In the academic world, plagiarism is a serious matter because ideas in the forms of research, creative work, and original thought are highly valued. As it is a form of academic dishonesty, most schools have strict rules about what happens when someone is caught plagiarizing.

Like theft, plagiarism can take several different forms. The most well-known, purposeful plagiarism is submitting work written by someone else or material copied word for word from a source.

A much more common and less understood phenomenon is accidental plagiarism. Accidental plagiarism is the result of insufficient paraphrasing, summarizing, quoting, or citing in academic writing. This occurs when writers simply do not know or fail to follow the rules for giving credit to the ideas of others in their writing.

Both purposeful and accidental plagiarism are wrong, violate established rules, and often result in harsh punishments. Ignoring or not knowing the rules of how to properly cite evidence might be explanations, but they are not acceptable excuses.

Here are examples that use quotations and paraphrases from this original text from *Cyberculture* as translated by Robert Bononno:



<sup>1</sup>Those who denounce cyberculture today strangely resemble those who criticized rock music during the fifties and sixties. <sup>2</sup>Rock started out as an Anglo-American phenomenon and has become an industry. <sup>3</sup>Nonetheless, it was able to capture the hopes of young people around the world and provided enjoyment to those of us who listened to or played rock. <sup>4</sup>Sixties pop was the conscience of one or two generations that helped bring the war in Vietnam to a close. <sup>5</sup>Obviously, neither rock nor pop has solved global poverty or hunger. <sup>6</sup>But is this a reason to be “against” them? (ix).

Source: Lévy, P. (2001). *Cyberculture*. Minneapolis, Minn.: University of Minnesota Press.

#### Examples of plagiarized work

First, an obvious example of plagiarism from that article.

<sup>1</sup>Those who denounce cyberculture today strangely resemble those who criticized rock music during the fifties and sixties.

The writer has literally taken one of Lévy’s sentences and represented it as her own.

Another example:

<sup>1</sup>The people who criticize cyberculture are the same kind of people who criticized rock and roll music back in the fifties and sixties. But both cyberculture and rock music inspire and entertain young people.

While these aren’t Lévy’s exact words, they are certainly close enough to constitute a form of plagiarism.

#### Examples of acceptable paraphrasing

These are stronger paraphrases, although the use of a direct quotation is not ideal.

<sup>1</sup>Pierre Lévy suggests that people who criticize cyberculture are the same kind of people who criticized rock and roll music back in the fifties and sixties. But both cyberculture and rock music inspire and entertain young people (ix).

<sup>1</sup>In the introduction of his book *Cyberculture*, Pierre Lévy observes that “Those who denounce cyberculture today strangely resemble those who criticized rock music during the fifties and sixties” (ix).

Note that changing these passages from examples of plagiarism to acceptable examples of a quotation and a paraphrase is only achieved by properly citing the source.

Often, students are unclear as to whether they need to cite a piece of evidence because they believe it to be common knowledge or because they are not sure about the source of information. What is common knowledge in a field is typically seen without a citation in a range of publications (from journal articles to dissertations and textbooks).<sup>2</sup>

#### Review and Reinforce

A. How does the research of others influence readers?

B. How much material from outside sources is required to support a message or thesis statement?

<sup>1</sup>In Taiwan, the delayed graduation of graduate students has become an important educational issue of social concern (Ho et al., 2020). <sup>2</sup>Gardner (2009) found that the reasons for the low graduation rate of doctoral students include being unable to complete their degree theses, among others. <sup>3</sup>The completion of the degree thesis is an important milestone and the biggest obstacle for graduate students (Blum, 2010). <sup>4</sup>Muszynski (1990) found that graduate students who fail to graduate in time may be uninterested in the research topic, have low academic confidence, or have too many research papers to complete. <sup>5</sup>Spaulding and Rockinson-Szapkiw (2012) interviewed 76 doctoral graduates and found that motivation, persistence factors, and completion strategies were necessary to complete their dissertations.<sup>3</sup>

1. Consider the above opening paragraph from *A Study of Graduate Students' Achievement Motivation, Active Learning, and Active Confidence Based on Relevant Research*.

2. Then look at a paragraph from one of its primary sources (sentence #4 above), *Hearing their Voices: Factors Doctoral Candidates Attribute to their Persistence*.

<sup>1</sup>When participants were interviewed, they worked in different states and professional settings across the United States and earned their degrees from varying institutions across the span of five decades (Participant 3 – 1976; Participant 36 – 2011); however, each participant shared one common experience—doctoral persistence, evidenced by the completion of an educational doctorate. <sup>2</sup>Though the contexts differed and motivations for pursuing the degree varied, participants all cited various personal sacrifices along the way, often found their completion expectations to be unrealistic due to a myriad of intervening factors, and largely found the dissertation to be the most challenging aspect of the degree completion process. <sup>3</sup>However, because they were both personally and professionally motivated to begin the degree, had compelling reasons to persist, developed an array of resilience mechanisms, and generated strategies for dissertation completion, these participants evaded becoming an attrition statistic, unlike presumably half of their peers (Ivankova & Stick, 2007; Nettles & Millet, 2006), and currently hold a terminal degree in their discipline.<sup>4</sup>

3. Evaluate how and why the supporting material was incorporated.

## Media Attributions

- masks © Edmonton Economic Development Corporation is licensed under a CC BY-NC-SA (Attribution NonCommercial ShareAlike) license

## Notes

1. Andresen, M., Lazarova, M., Apospori, E., Cotton, R., Bosak, J., Dickmann, M., Kaše, R., & Smale, A. (2022). Does international work experience pay off? The relationship between international work experience, employability and career success: A 30-country, multi-industry study. *Human Resource Management Journal*, 32(3), 698–721. <https://doi.org/10.1111/1748-8583.12423>
2. Adapted from Krause, S. (2021, March 23). The Process of Research Writing Retrieved June 2, 2021, from <https://human.libretexts.org/@go/page/6460>
3. Chang, J.-C., Wu, Y.-T., & Ye, J.-N. (2022). A Study of Graduate Students' Achievement Motivation, Active Learning, and Active Confidence Based on Relevant Research. *Frontiers in Psychology*, 13, 915770–915770. <https://doi.org/10.3389/fpsyg.2022.915770>
4. Spaulding, L. S., & Rockinson-Szapkiw, A. (2012). Hearing their Voices: Factors Doctoral Candidates Attribute to their Persistence. *International Journal of Doctoral Studies*, 7, 199–219. <https://doi.org/10.28945/1589>

## Summarizing and synthesizing

### Part 3: Chapter 10

#### Questions to consider

- A. What distinguishes a synthesis from a summary?
- B. How much “author voice” is present relative to source material?
- C. What is the nature of the material contributed to a synthesis by the author?

#### The purpose of synthesizing

Combining separate elements into a whole is the basic dictionary definition of **synthesis**. It is a way to make connections between numerous and varied source materials. A literature review presents a synthesis of material, grouped by topic, to create a broad and comprehensive view of the literature relevant to a research question. Here, the research questions are often modified to the realities of the information, or information may be selected or rejected based on relevance. This organizational approach helps in understanding the information and structuring the review.

Because research is an iterative process, it is not unusual to go back and search information sources for more material while remaining within the parameters of the topic and research questions. It can be difficult to cope with “everything” on a topic; the need to carefully select based on relevancy is ongoing.

The synthesis must demonstrate a critical analysis of the papers assembled as well as an integration of the analytical results. All included sources must be directly relevant and the synthesis writer should make a significant contribution. As part of an introduction or literature review, the syntheses not only illustrate the evolution of research on an issue, but the writer’s own commentary on *what this information means*.

Many writers begin the synthesis process by creating a grid, table, or an outline organizing summaries of the source material to discover or extend common themes with the collection. The summary grid or outline provides a researcher an overview to compare, contrast and otherwise investigate the relationships and potential deficiencies.<sup>1</sup>

#### Language in Action

1. **How many different sources are used in the synthesis (excerpted from “Does international work experience pay off? The relationship between international work experience, employability and career success: A 30-country, multi-industry study”) that follows? (IWE: international work experience)**
2. **How do the sources contribute to the message of the paragraph?**
3. **What are the elements of a strong synthesis?**
4. **What information is contributed by the authors themselves?**

<sup>1</sup>Taking stock of the literature, several characteristics stand out that limit our understanding of the IWE–career success relationship. <sup>2</sup>First, many studies focus on individuals soon after their return from an IWE or while they are still expatriates (Kraimer et al., 2016). <sup>3</sup>These findings may therefore report results pertaining to a short-lived career phase. <sup>4</sup>Given that careers develop over time, and success, especially in the form of promotions and salary increases, may take some time to materialise, it is perhaps not surprising that findings have been mixed. <sup>5</sup>Some authors note that there are short-term, career-related costs of IWE and the career ‘payoff’ occurs after a time lag for which cross-sectional studies may not account (Benson & Pattie, 2008; Biemann & Braakmann, 2013). <sup>6</sup>Second, the majority of studies use samples consisting only of individuals with IWE (Jokinen et al., 2008; Stahl et al., 2009; Suutari et al., 2018). <sup>7</sup>Large samples that include both individuals with and without IWE are needed to provide the variance needed to identify the influence of IWE on career success (e.g., Andresen & Biemann, 2013). <sup>8</sup>Third, studies tend to focus on the baseline question of whether IWE or IWE-specific characteristics (e.g., host country, developmental nature of assignment) are related to a particular career success variable (e.g., Bücker et al., 2016; Jokinen et al., 2008; Stahl et al., 2009). <sup>9</sup>Yet there may be an indirect relationship between IWE and career success (Zhu et al., 2016). <sup>10</sup>More complex models that examine the possible impact of mediating variables are thus needed (Mayrhofer et al., 2012). <sup>11</sup>Lastly, while studies acknowledge that findings from specific countries/nationalities, industries, organisations or occupational roles may not be transferable to all individuals with IWE (Biemann & Braakmann, 2013; Schmid & Wurster, 2017; Suutari et al., 2018), the specific role of national context is rarely considered. <sup>12</sup>However, careers do not develop in a vacuum. <sup>13</sup>Contextual factors play an important role in moderating the career impact of various career experiences such as IWE (Shen et al., 2015).<sup>2</sup>

## Organizing the material

Beginning the synthesis process by creating a grid, table, or an outline for summaries of sources offers an overview of the material along with findings and common themes. The summary, grid, or outline will allow quick comparison of the material and reveal gaps in information.<sup>3</sup>



### Summarizing

The process of building a “library” from which to draw information is critical in developing the defense, argument or justification of a research study. While field and laboratory research is often engaging and interesting, understanding the backstory and presenting it as an explanation of a proposed method or approach is essential in obtaining funding and/or the necessary committee approval.

Returning to the foundational skill of producing a **summary**, and combining that with the maintenance of a system to manage source material and details, an **annotated bibliography** can be both an intellectual structure that reveals connections among sources and a means to initiating – on a manageable level – the arduous writing.



#### Example – Two entries from an annotated bibliography

Nafisi, A. (2003). *Reading Lolita in Tehran: A Memoir in Books*. New York: Random House.

A brave teacher in Iran met with seven of her most committed female students to discuss forbidden Western classics over the course of a couple of years, while Islamic morality squads staged raids, universities fell under the control of fundamentalists, and artistic expression was suppressed. This powerful memoir weaves the stories of these women with those of the characters of Jane Austen, F. Scott Fitzgerald, Henry James, and Vladimir Nabokov and extols the liberating power of literature.

Obama, B. (2007). *Dreams from My Father*. New York: Random House.

This autobiography extends from a childhood in numerous locations with a variety of caregivers (a single parent, grandparents, boarding school) to an exploration of individual heritage and family in Africa, revealing a broken/blended family, abandonment and reconnection, and unresolved endings. Obama describes his existence on the margins of society, the racial tension within his biracial family, and his own identity conflict and turmoil.

### Using a chart or grid

Below is a model of a basic table for organizing source material.



source	detail #1	detail #2	detail #3	notes
#1				
#2				
#3				

## Exercise #1

1. Read the excerpts from three sources below. Determine the common topic and themes.
2. Complete a table like the one above using information from these three sources.

## Source #1

<sup>1</sup>Completion of a dissertation is an intense activity. <sup>2</sup>For both groups [completers and non-], the advisor and the student's family and spouse served as the major source of emotional support and are most heavily invested in the dissertation. <sup>3</sup>Other students and the balance of the dissertation committee were rated as providing little support. <sup>4</sup>Since work on the dissertation is highly individual and there are no College organized groups of students working on the dissertation that meet regularly, the process can be a lonely one. <sup>5</sup>Great independence and a strong sense of direction is required. <sup>6</sup>Although many students rated themselves as having little experience with research, students are dependent on their own resources and on those closest to them. <sup>7</sup>It was noted that graduates rated emotional support from all sources more highly than students rated it. <sup>8</sup>This may be a significant factor associated with dissertation completion.

<sup>9</sup>The scales and checklists suggest that there are identifiable differences between the two groups. <sup>10</sup>Since the differences are not great, the implications are that with some modification of procedures, a greater proportion of students can become graduates. <sup>11</sup>Emotional support, financial support, experience with research, familiarity with university and college dissertation requirements, and ready access to university resources and advisors may be factors to build into a modified system to achieve a greater proportion of graduates.

Cluever, R., Green, K. E., Lenz, K., Miller, M. M., & Katz, E. (1995). Graduates and ABDs in colleges of education: Characteristics and implications for the structure of doctoral programs. In *Annual Meeting of the American Educational Research Association*. San Francisco, CA. Retrieved from the ERIC database.

## Source #2

<sup>1</sup>In this writing group, students evaluated their goal achievement, reflected on the obstacles before them, and set new targets. <sup>2</sup>This process encouraged them to achieve their goals, and they could modify or start a new target instead of giving up. <sup>3</sup>The students also received positive feedback and support from other members of the group. <sup>4</sup>This positive environment helped the students view failure as part of the nature of writing a thesis.

<sup>5</sup>On the other hand, daily monitoring encouraged the students to focus more on the process and less on the outcome; therefore, they experienced daily success instead of feeling a failure when the goals were not achievable.

Patria, B., & Laili, L. (2021). Writing group program reduces academic procrastination: a quasi-experimental study. *BMC Psychology*, 9(1), 1–157. <https://doi.org/10.1186/s40359-021-00665-9>

## Source #3

<sup>1</sup>The promotion of awareness of the tension between core qualities and ideals, and inner obstacles, in particular limiting thoughts, in combination with guidelines for overcoming the tension by being aware of one's ideals and character strengths is characteristic of the core reflection approach and appears to have a strong potential for diminishing academic procrastination behavior. <sup>2</sup>These results make clear that a positive psychological approach focusing on strengths can be beneficial for diminishing students' academic procrastination. <sup>3</sup>In particular, supporting and regenerating character strengths can be an effective approach for overcoming academic procrastination.

Visser, L., Schoonenboom, J., & Korthagen, F. A. J. (2017). A Field Experimental Design of a Strengths-Based Training to Overcome Academic Procrastination: Short- and Long-Term Effect. *Frontiers in Psychology*, 8, 1949–1949. <https://doi.org/10.3389/fpsyg.2017.01949>

A topical outline is another tool writers may use to organize their material. It begins as a simple list of facts gleaned from various sources and arranged by category.<sup>4</sup>

A topical outline might look like this:

1. causes
  - a. fact #1/source #1
  - b. fact #2/source #1
2. effects
  - a. fact #3/source #1
  - b. fact #4/source #2

#### Exercise #2

Identify relevant facts presented by the three sources in Exercise #1. Determine the relationships between them. Consider how to categorize and arrange them in order to support or extend a related concept.

#### Exercise #3



An interactive H5P element has been excluded from this version of the text. You can view it online here:  
<https://uark.pressbooks.pub/researchwriting/?p=63#h5p-1>

#### A word about primary sources

**Primary source** material is information conveyed by the author(s) of the publication. The information they use to support or extend their ideas – their source material – is **secondary source** material for their readers. Anything considered for inclusion in research writing should be derived from primary sources. When writers find very valuable material cited, they retrieve the original work rather than paraphrase what has already been paraphrased.

Example – Synthesis

The excerpted synthesis below is the work of Joellen E. Coryell, Maria Cinque, Monica Fedeli, Angelina Lapina Salazar, and Concetta Tino. The two primary sources they use in the paragraph were authored by Niehaus and Williams (2016), and Urban, Navarro, and Borron (2017). Because research writers are urged to only use primary sources, further investigation into the paper of Niehaus and Williams would be required in order to use their work as a source. As discussed in *Identifying and deploying source material*, an effective strategy in finding useful sources is to explore the references of particularly valuable articles or papers.

*University Teaching in Global Times: Perspectives of Italian University Faculty on Teaching International Graduate Students*

<sup>1</sup>Other researchers (Niehaus & Williams, 2016; Urban et al., 2017) offered analyses of faculty's experiences participating in various training programs for internationalization of their courses. <sup>2</sup>Niehaus and Williams (2016) studied a 4-year global faculty development program aimed at transforming faculty perspectives and internationalizing the curriculum. <sup>3</sup>Findings indicated that participants integrated international and comparative topics to support their learners' development of global perspectives. <sup>4</sup>They worked to integrate international students' viewpoints on research, and participants reported professional and personal gains defined by expanded professional networks of faculty members and higher standing that comes with teaching international students. <sup>5</sup>Similarly, Urban et al. (2017) reported findings from a training program that assisted teaching staff to internationalize their courses. <sup>6</sup>The program included a 12-day field trip to a different country. <sup>7</sup>Semi-structured interviews with faculty members, 6 years after participating in the program, affirmed updated course content, new and broader perspectives, and a supportive environment for implementing the internationalized courses and teaching activities.

Primary source:

Coryell, J. E., Cinque, M., Fedeli, M., Lapina Salazar, A., & Tino, C. (2022). University Teaching in Global Times: Perspectives of Italian University Faculty on Teaching International Graduate Students. *Journal of Studies in International Education*, 26(3), 369–389. <https://doi.org/10.1177/1028315321990749>

Secondary sources:

Niehaus, E., & Williams, L. (2016). Faculty Transformation in Curriculum Transformation: The Role of Faculty Development in Campus Internationalization. *Innovative Higher Education*, 41(1), 59–74. <https://doi.org/10.1007/s10755-015-9334-7>

Urban, E., Navarro, M., & Borron, A. (2017). Long-term Impacts of a Faculty Development Program for the Internationalization of Curriculum in Higher Education. *Journal of Agricultural Education*, 58(3), 219–238. <https://doi.org/10.5032/jae.2017.03219>

### **Two common approaches to the synthesis-producing process**

Experienced researchers often have a strong hypothesis and search for evidence that supports or extends this. However, students often learn about their topic during the research process and formulate a hypothesis as they learn what is established in the field on their topic. Both approaches are acceptable, as is a hybrid.

#### *Discovery phase*

Researchers typically begin by paraphrasing any important facts or arguments, tracking their discoveries in a table, outline or spreadsheet. Some good examples include definitions of concepts, statistics regarding relevance, and empirical evidence about the key variables in the research question. The original source information (citations in the appropriate style and format) is as important as the content under consideration. As shown in the model syntheses here, multiple sources often support a common finding.

#### *Evaluation and analysis phase*

A strong synthesis must demonstrate a critical analysis of the papers as well as an integration of analytical results; this is the voice of the synthesis writer, interpreting the relationships of the cited works as they are



assembled. Each paper under consideration should be critically evaluated according to its relevancy to the topic and the quality of its content.

Writers first establish relationships between cited concepts and facts by continuously considering these questions:

- A. Where are the similarities within each topic or subtopic?
- B. Where are the differences?
- C. Are the differences methodological or theoretical in nature?

The answers will produce general conclusions for each topic or subtopic as the entire group of studies relate to it.

As the material is organized logically using a grid, table or outline, the most logical order must be determined. That order might be from general to specific, sequential or chronological, or from cause to result.<sup>5</sup>

### Review and Reinforce

Summarizing and synthesizing are key building blocks in research writing. Read with an awareness of

- A. what information has been added for support;
- B. what the source of that information is; and
- C. how the information was incorporated (quotations or summaries) and documented (integral or parenthetical citations) into the material.

Research writing is a process itself that synthesizes new information, stylistic tendencies, and established conventions with the background knowledge of the researcher.

### Media Attributions

- chameleon © Frontierofficial is licensed under a CC BY (Attribution) license
- 5182866555\_18ae623262\_c © rarebeasts is licensed under a CC BY (Attribution) license

### Notes

1. Adapted from Frederiksen, L., & Phelps, S. F. (2017). *Literature Reviews for Education and Nursing Graduate Students*. Open Textbook Library.
2. Andresen, M., Lazarova, M., Apospori, E., Cotton, R., Bosak, J., Dickmann, M., Kaše, R., & Smale, A. (2022). Does international work experience pay off? The relationship between international work experience, employability and career success: A 30-country, multi-industry study. *Human Resource Management Journal*, 32(3), 698–721. <https://doi.org/10.1111/1748-8583.12423>
3. Adapted from DeCarlo, M. (2018). *Scientific Inquiry in Social Work*. Open Textbook Library.
4. Adapted from DeCarlo, M. (2018). *Scientific Inquiry in Social Work*. Open Textbook Library.
5. Adapted from Frederiksen, L., & Phelps, S. F. (2017). *Literature Reviews for Education and Nursing Graduate Students*. Open Textbook Library.

## Sentence strength and variety (grammar support)

### Part 3: chapter 11

#### Questions to consider

**A. What elements make writing more interesting and accessible to readers?**

**B. How do writers improve the quality of their work beyond presenting strong content?**

Variety in writing is critical in maintaining the interest and attention of the reader, especially when the audience is broader than one's own department. As writers produce sentences and combine them into paragraphs, they must determine the relationships between the ideas. Specifically, research writers consider whether their ideas are of equal importance and what type of emphasis they need on particular information.

#### **Sentence combining through coordination**

Connecting sentences with coordinate or subordinate clauses creates more coherent paragraphs, and in turn, produces more effective writing. A compound sentence can join two independent clauses that contain related ideas of equal importance.

Simple sentences: *I spent my entire paycheck last week. I am staying home this weekend.*

In their current form, these sentences contain two separate ideas that may or may not be related. Am I staying home this week because I spent my paycheck, or is there another reason for my lack of enthusiasm to leave the house? To indicate a relationship between the two ideas, we can use the coordinating conjunction *so*.

Compound sentence: *I spent my entire paycheck last week, so I am staying home this weekend.*

The revised sentence illustrates that a cause connects the two ideas. Notice that the sentence retains two independent clauses (I spent my entire paycheck; I am staying home this weekend), each can stand alone as a complete idea.

#### *Coordinating Conjunctions*

A **coordinating conjunction** is a word that joins two independent clauses. The most common coordinating conjunctions are *for*, *and*, *nor*, *but*, *or*, *yet*, and *so*. Note that a comma precedes the coordinating conjunction when joining two clauses.

Independent Clause	Coordinating Conjunction	Independent Clause	Revised Sentence
I will not be attending the dance.	for (indicates a reason or cause)	I have no one to go with.	I will not be attending the dance, for I have no one to go with.
I plan to stay home.	and (joins two ideas)	I will complete an essay for class.	I plan to stay home, and I will complete an essay for class.
Jessie isn't going to be at the dance.	nor (indicates a negative)	Tom won't be there either.	Jessie isn't going to be at the dance, nor will Tom be there.
The fundraisers are hoping for a record-breaking attendance.	but (indicates a contrast)	I don't think many people are going.	The fundraisers are hoping for a record-breaking attendance, but I don't think many people are going.
I might go to the next fundraising event.	or (offers an alternative)	I might donate some money to the cause.	I might go to the next fundraising event, or I might donate some money to the cause.
My parents are worried that I am antisocial.	yet (indicates a reason)	I have many friends at school.	My parents are worried that I am antisocial, yet I have many friends at school.
Buying a new dress is expensive.	so (indicates a result)	By staying home I will save money.	Buying a new dress is expensive, so by staying home I will save money.

#### Extension: relationships between ideas

Build better, more interesting sentences with:

**coordination** – joining two related ideas of equal importance; and

**subordination** – joining two related ideas of unequal importance.

#### Conjunctive Adverbs

Another method of joining two independent clauses with related and equal ideas is to use a conjunctive adverb

and semicolon. A **conjunctive adverb** is a linking word or phrase that demonstrates a relationship between two clauses. An example and its revision:

Original sentences: *Bridget wants to take part in the next Olympics. She trains every day.*

Revised sentence: *Bridget wants to take part in the next Olympics; therefore, she trains every day.*

The revised sentence explains the relationship between Bridget's desire to take part in the next Olympics and her daily training. Notice that the conjunctive adverb comes after a semicolon that separates the two clauses and is followed by a comma.

Review the following chart of some common academic conjunctive adverbs with examples of how they are used:

Function	Conjunctive Adverb	Example
Addition	also, furthermore, moreover, in addition	Alicia was late for class and stuck in traffic; furthermore, her shoe heel had broken and she had forgotten her lunch.
Comparison	similarly, likewise	Recycling aluminum cans is beneficial to the environment; similarly, reusing plastic bags and switching off lights reduces waste.
Contrast	instead, however, conversely	Most people do not walk to work; instead, they drive or take the train.
Emphasis	namely, certainly, indeed	The Siberian tiger is a rare creature; indeed, there are fewer than five hundred left in the wild.
Cause and effect	accordingly, consequently, hence, thus	I missed my train this morning; consequently, I was late for my meeting.
Time	finally, next, subsequently, then	Tim crossed the barrier, jumped over the wall, and pushed through the hole in the fence; finally, he made it to the station.

#### Exercise #1

Create two sentences from each pair using first a coordinating conjunction and then a conjunctive adverb.

- Pets are not allowed in Ms. Wallace's building. She owns several cats and a parrot.
- New legislation prevents drivers from sending or reading text messages while driving. Many people continue to use their phones illegally.
- Many students try to take class notes on a tablet or other device. A great deal of research suggests that taking notes by hand rather than with a keyboard enhances learning and retention.
- The coroner concluded that the young man had taken a lethal concoction of drugs. By the time his relatives found him, nothing could be done.



5. The human eyes are drawn to the screens of modern technology. An open laptop can distract classmates as far as 8 feet away.
6. Amphibians are vertebrates that live on land and in the water. Flatworms are invertebrates that live only in water.
7. Many students, particularly those in competitive graduate programs, struggle to find time to exercise. Research shows that people who exercise are exponentially more productive than those who do not.
8. Emmett carefully fed and watered his tomato plants all summer. The tomatoes grew juicy and ripe.
9. Many instructors allocate a percentage of the total grade to participation points. Students who participate actively in class generally achieve better grades than students who remain silent.
10. When he lost his car key, Oscar attempted to open the door with a wire hanger, a credit card, and a paper clip. He called the manufacturer for advice.

### Sentence combining through subordination

Subordination is used to join two sentences with related ideas by merging them into a main clause (a complete sentence) and a dependent clause (a construction that relies on the main clause to complete its meaning). This creates a *complex sentence*. Coordination allows a writer to give equal weight to the two ideas that are being combined, and subordination enables a writer to emphasize one idea over the other. An example and its revision follows:

Original sentences: Farnaz stopped to help the injured man. She would be late for work.

Revised sentence: Even though Farnaz would be late for work, she stopped to help the injured man.

In the revised version, the independent clause (*she stopped to help the injured man*) stands as a complete sentence and the dependent clause (*even though Farnaz would be late for work*) is subordinate to the main clause. Notice that the revised sentence emphasizes the fact that Farnaz stopped to help the injured man, rather than the fact she would be late for work. An alternative version is also possible.

Revised sentence: Farnaz stopped to help the injured man even though she would be late for work.

The meaning remains the same in both sentences, with the subordinating conjunction *even though* introducing the dependent clause.

#### *Subordinating Conjunctions*

A subordinating conjunction is a word that joins a subordinate (dependent) clause to a main (independent) clause.



#### Punctuation note

If a subordinate/dependent clause precedes the main clause, close it with a comma. If the subordinate clause follows the main cause, no punctuation is generally required.

Some common subordinating conjunctions and examples of how they are used follow.

Function	Subordinating Conjunction	Example
Concession	although, while, though, whereas, even though	Sarah completed her report even though she had to stay late to get it done.
Condition	if, unless, until	Until we know what is causing the problem, we will not be able to fix it.
Manner	as if, as, though	Everyone in the conference room stopped talking at once, as though they had been stunned into silence.
Place	where, wherever	Rita is in San Jose where she has several important client meetings.
Reason	because, since, so that, in order that	Because the air conditioning was turned up so high, everyone in the office wore sweaters.
Time	after, before, while, once, when	After the meeting had finished, we all went to lunch.

## Exercise #2

*Combine each sentence pair into a single sentence using a subordinating conjunction.*

1. Iana is going to Mexico. There are beautiful beaches in Mexico.
2. The top students will be chosen. The scholarship will be offered to the top students.
3. A snowstorm disrupted traffic all over the east coast. There will be long delivery delays this week.
4. Artificial intelligence programs are sometimes used to complete class assignments. Using excessive material produced by an artificial intelligence program is considered a violation of academic integrity in many institutions.
5. My neighbor had his television volume turned up too high. I banged on his door and asked him to keep the noise down.
6. Poor time-management skills cause stress and frustration for many students. Learning time-management skills is rarely a priority.
7. Jessica prepared the potato salad and the sauteed vegetables. Natalia marinated the chicken.
8. Parking passes are very costly. The university hope to discourage the use of vehicles on campus.
9. Shakespeare wrote tragedies, comedies, history plays and poetry. Some of his most renowned work is rather dark and violent.
10. Romeo poisons himself. Juliet awakes to find Romeo dead and stabs herself with a dagger.

## Exercise#3

Create two sentences from each group: first a compound sentence (using a coordinating conjunction) and then a complex sentence (using a subordinating conjunction).

1. Heroin is an extremely addictive drug. Thousands of heroin addicts die each year.
2. Many high schools and colleges invest heavily in athletic programs. Some stakeholders believe the focus of schools should be academic.
3. Shakespeare's writing is still relevant today. He wrote about timeless themes. These themes include love, hate, jealousy, death, and destiny.
4. Some societies are very mobile. There are people who have never traveled more than a couple of hours from their birthplace.
5. Originally, gay marriage was legal in only six states: Iowa, Massachusetts, Connecticut, Vermont, New Hampshire, and Maine. The Supreme Court ruled it was legal in all states.
6. Issues of climate change are impacting populations around the world. The economic status of a country affects its ability to participate in efforts to reduce global warming.
7. Prewriting is a vital stage of the writing process. Prewriting helps you organize your ideas. Types of prewriting include outlining, brainstorming, and idea mapping.
8. Research writing is ongoing. A draft may be revised multiple times while the writer continues to learn about the topic. New information may impact a research article up to the point of publication.
9. Ernest Hemingway is a famous writer. He also served on the local school board. His house is in Key West, Florida.
10. Plagiarism is not difficult to discover. Instructors often use copy-and-paste mechanisms to detect plagiarism that are similar to those used by plagiarists.

**Review and Reinforce**

Combining and expanding simple sentences to create complex and compound sentences will produce more interesting writing.

- A. How much variety appears in the research writing in the science fields?
- B. What happens when a writer relies on just a few simple sentence structures?

Adapted from Hall, B., & Wallace, E. (2018). College ESL Writers: Applied Grammar and Composing Strategies for Success English Open Textbooks. 14. ch. 3.1. p. 77-78.<https://oer.galileo.usg.edu/english-textbooks/14>

**Media Attributions**

- 27353731971\_ecab6023d2\_k © GlacierNPS is licensed under a Public Domain license

## *Using parallel structures effectively (grammar support)*

### Part 3: Chapter 12

#### Questions to consider

- A. What is the advantage of using parallel structures in research writing?
- B. What are the parameters for creating parallel structures?

Using a mixture of sentence lengths and patterns is an important writing technique. However, it is equally important to avoid introducing variation within individual sentences. A strong sentence is composed of balanced parts that all have the same structure. This supports the reader because a predictable rhythm is established. Implementing **parallelism**, or parallel structures, is a reliable strategy for creating a balanced sentence structure.

#### Using parallelism

Parallelism is the use of similar structure in related words, clauses, or phrases. It creates a rhythm and a sense of balance within a sentence. Readers often unconsciously correct faulty parallelism—a lack of parallel structure—because an unbalanced and poorly constructed sentence is less reader-friendly; problems arise when readers inadvertently alter the meaning.

#### Examples: Faulty parallelism

- Kelly had to iron, did laundry, and shopping before her parents arrived.
- Driving a car requires coordinating actions, patience, and to have good eyesight.
- Ali prefers jeans to wearing a suit.

The faulty parallelism in the example sentences in the box above is clunky and confusing. In the first example, three different verb forms are used. In the second and third examples, the writer begins each series by using a noun (coordination, jeans), but ends with a phrase (to have good eyesight, wearing a suit)

#### Examples: Strong parallelism

- Kelly had to wash and iron the clothes and finish the shopping before her parents arrived.
- Driving a car requires coordination, patience, and good eyesight.
- Ali prefers wearing jeans to wearing suits.

Repetition of grammatical construction also minimizes the amount of work the reader has to do to decode the sentence. This enables the reader to focus on the content and to not be distracted by the structural weakness.

### Language in Action

A. Where does parallelism appear in research writing?

B. In published work and professional speeches, parallelism is common. Look at the examples below from *A field experimental design of a strengths-based training to overcome academic procrastination: short- and long-term effect* and analyze them for quality (*how strictly parallel are the structures?*) and length (*are the items simple nouns, phrases, or even complex clauses?*).

1. *Consequences of academic procrastination for students are under-performance, low grades on tests and final exams (Steel et al., 2001), and an increased risk of dropping out (Wesley, 1994).*
2. *Various predisposing, causing, and maintaining factors can influence a person's procrastination (Van Eerde, 2003; Steel, 2007; Klingsieck, 2013; Egan et al., 2014; Rozental and Carlbring, 2014; Steel and Klingsieck, 2016).*
3. *Procrastination can also be understood as a phenomenon evoked by situational features (Klingsieck, 2013). These features can be task characteristics, such as task difficulty and attractiveness, plausibility of the assignment, autonomy, and teachers' characteristics (Ackerman and Gross, 2005, 2007).<sup>1</sup>*

C. How do reader and writer benefit from these patterns?

### Common parallel structures

When connecting two clauses using a **coordinating conjunction** (for, and, nor, but, or, yet, so), parallelism is achieved by using the same grammatical structure on each side of the conjunction.

Faulty parallelism: *He completed an internship, but his work is substandard and his position is being eliminated.*

Correct parallelism: *He completed an internship, but his work was substandard and his position was eliminated.*

The first sentence uses three different verb tenses for no clear reason. In the second sentence, the grammatical constructions on each side of the coordinating conjunctions (but, and) are the same, creating a parallel sentence.



Comma use is standard with coordinating conjunctions when there is a subject on both sides (e.g. She was a graduate student, and he was an undergrad).

Commas are also used to separate simple items in a list (e.g. The buffet included roast chicken, smoked salmon, and grilled pork chops).

The same technique should be used for joining items or in a series:

Faulty parallelism: *This committee needs to decide whether the company should reduce its workforce, cut benefits, or lowering wages.*

Correct parallelism: *This committee needs to decide whether the company should reduce its workforce, cut its benefits, or lower wages.*

The first sentence contains two items that use the same verb construction (infinites: reduce, cut), but only one noun has a possessive pronoun (its), and the third item uses a different verb form (gerund: lowering). The second sentence uses the same verb construction and a possessive device in all three items, creating a parallel structure.

#### Exercise #1

Revise each of the following to create one sentence with parallel structure using coordinating conjunctions or items in a series.

1. Every student takes the introductory survey course. All new graduate students attend orientation.
2. Mr. Koirala enjoys reading, and he likes to play his guitar on weekends.
3. Newer technology has reduced the relevance of some television programming and radio programming. More people watch movies at home instead of going to a cinema.
4. The doctor told Mrs. Hall that she should either eat less or to increase the frequency and duration of her exercise.
5. Breaking out of the prison compound, the escapees moved carefully, quietly, and were quick on their feet.
6. The building is old. The equipment is out-of-date. The broken-down furniture is not safe.
7. She is reading the book, but her roommate watches a few episodes of the series on her tablet every night.
8. The students in the basic chemistry class have weak math skills. Most of the basic chemistry students are struggling.
9. Deal with a full inbox first thing in the morning, or by setting aside short periods of time in which to answer e-mail queries.
10. There are many places to take a nap on campus but classrooms cannot be one of them.

#### Creating Parallelism Using *Than* or *As*

Comparisons frequently use the words *than* or *as*, and the items on each side of these comparison words should be parallel. This supports the reader and clarifies the comparison.

Faulty parallelism: *Swimming in the ocean is much tougher than a pool.*

Correct parallelism: *Swimming in the ocean is much tougher than swimming in a pool.*

In the first sentence, the elements before the comparison word (*than*) are not equal to the elements after the comparison word. It appears that the writer is comparing an action (swimming) with a noun (a pool). In the second sentence, the writer uses the same grammatical construction to create a parallel structure. This clarifies that an action is being compared with another action.

To correct some instances of faulty parallelism, it may be necessary to add or delete words in a sentence.

Faulty parallelism: *A brisk walk is as beneficial to your health as going for a run.*

Correct parallelism: *Going for a brisk walk is as beneficial to your health as going for a run.*

In this example, it is necessary to add the verb phrase *going for* to the sentence in order to clarify that the act of walking is being compared to the act of running. A more economical version would eliminate the repetition and use simple nouns:

Correct parallelism: *A brisk walk is as beneficial to your health as a run.*

## Exercise #2

Revise each of the following to create one sentence with parallel structure using *than* or *as*.

1. I would rather work at a second job to pay for a new car than a loan.
2. He wondered whether being honest was as important as responsibility.
3. She likes ice cream more than her husband.
4. The old textbook has more detailed instruction than the few exercises in the new one.
5. How you look in the workplace is just as important as your behavior.
6. Because of their endowment, the engineering school can sponsor more international students.
7. The firefighter spoke more of his childhood than he talked about his job.
8. The department has to reallocate their resources so as much funding is given to teaching as there is support for research and development.
9. Indian cuisine is spicier and so much tastier than the Great Britain's palate.
10. Accidentally plagiarizing or forgetting to cite a source is as serious as a student's purposeful copy-and-paste of another student's work.

## Creating parallelism using correlative conjunctions

A correlative conjunction is a paired conjunction that connects two equal parts of a sentence and shows the relationship between them. Common correlative conjunctions include the following:

either...or	neither...nor	whether...or
not only...but also	both...and	rather...than

## Punctuation note

Commas are not generally used with correlative conjunctions (unless it has a purpose other than separating parts of the correlation):

The trip will be long, whether she buys a car, which she cannot afford, or borrows a bike.

The commas after *car* and *afford* enclose a nonrestrictive adjective clause.



**Correlative conjunctions** should implement the same grammatical structures using parallelism to improve readability and rhythm. In other words, when using a correlative conjunction, the words, phrases, or clauses following each part should be parallel. Take a look at the following example:

Faulty parallelism: *We can neither wait for something to happen nor are we able to take evasive action.*

Correct parallelism: *We can neither wait for something to happen nor take evasive action.*

In the first sentence, the construction of the second part of the sentence does not match the construction of the first part. In the second sentence, omitting needless words and matching verb constructions create a parallel structure. Sometimes, rearranging a sentence corrects faulty parallelism.

Faulty parallelism: *It was both a long movie and poorly written.*

Correct parallelism: *The movie was both long and poorly written.*

Remember if a sentence begins with *not only*, which is a possible structure and is illustrated in the box below, the word order will resemble that of a question. A comma will often also be necessary, as *but* will “double” as a **coordinating conjunction**.

Examples: not only and nor

Not only did they test positive for COVID-19, but they also suffered from serious symptoms.

The professor neither has the time to complete the project, nor does he see the value in it.

This is also true of clauses that follow *nor*. A comma will often also be necessary, as *nor* will “double” as a **coordinating conjunction**.

### Exercise #3

Revise each of the following to create one sentence with parallel structure using a correlative conjunction.

1. The thief did not steal the valuables. The thief did not steal the passports.
2. The cyclist owns both a mountain bike and he also has a racing bike.
3. He will spend 30 or 40 minutes looking for a parking place rather than to walk or take a bus from a remote location.
4. The exam will be in class or it will be an online exam.
5. The movie not only contained lots of action but also it offered an important lesson.
6. My current job is neither exciting nor is it meaningful.
7. The person elected president will be the leader of the country and the commander of the military.
8. Antonio would rather listen to his father than be taking advice from me.
9. Getting a job offer greatly depends on whether she has publication credits or ever presents at a conference.
10. We are neither interested in buying a vacuum cleaner nor want to utilize your carpet cleaning service.



**Review and Reinforce**

- A. What are some of the benefits writers gain by using parallel structures?
- B. In what specific ways do readers benefit when writers use parallel structures effectively?

Adapted from Hall, B., & Wallace, E. (2018). College ESL Writers: Applied Grammar and Composing Strategies for Success English Open Textbooks. 14. ch. 2.4. p. 60-63

**Media Attributions**

---

- snake release © MyFWC Florida Fish and Wildlife is licensed under a CC BY-NC-ND (Attribution NonCommercial NoDerivatives) license

**Notes**

---

1. Visser, L., Schoonenboom, J., & Korthagen, F. A. (2017). A field experimental design of a strengths-based training to overcome academic procrastination: short-and long-term effect. *Frontiers in psychology*, 8, 1949.



## **PART 4 - FINAL PRODUCTS**



## The annotated bibliography

### Part 4: Chapter 13

#### Questions to consider

**A. How can an annotated bibliography evolve into a research overview?**

**B. How can the annotations and citation management system elements support the development of a thesis?**

In the ongoing processes of developing a working thesis for a research project and of collecting evidence, writers need a system for keeping track of everything. A document that may fulfill this is an **annotated bibliography**, which is a list of sources on a particular topic, adhering to the field specific format, and including a brief summary of each reference. This is not an uncommon assignment in graduate school – separate from a thesis or dissertation – and can also function as an ongoing writing ‘structure’ (or personal database) that student researchers “build” as they discover new relevant evidence for various research projects.

#### An example of an entry from an annotated bibliography in MLA style follows:

Parsons, Matt. “Protecting Children on the Electronic Frontier: A Law Enforcement Challenge.” *FBI Law Enforcement Bulletin* 69.10 (2000): 22-26.

This article describes an educational program used by the U.S. Navy focusing on some of the hazards of the Internet that are potentially dangerous to children. Parsons reports on the efficacy on the educational program amongst U.S. Navy personnel and their families.

Annotated bibliography entries have two parts. The first is the **reference entry**. It begins with author identification, in this case “Parsons, Matt”; it then lists the publication specifics including where the evidence appeared and the date of publication. The objective is to provide comprehensive information on the source.

The second part of is the **annotation** of the evidence being cited. A strong annotation offers enough information in a sentence or two to help the writer (and potentially readers as well) understand the relevant points of the research from an unbiased perspective. While it is a common assignment in graduate programs, it is commonly a more valuable tool for the writer than the reader.

The annotation is generally limited to simple facts. As with any strong summary, the material should only contain ideas from the sources; the summary writer’s opinion is not appropriate. These summaries can be challenging to write, especially when condensing longer and more complicated sources of research. It is valuable for researchers to

- write concisely (the annotations are not “complete” summaries but provide the highlights of the

evidence);

- paraphrase thoroughly (processing the material into original summaries allows for more complete retention and stronger comprehension); and
- go beyond the database abstracts (although most periodical indexes include abstracts of articles, these do not necessarily contain specifically relevant material any one researcher will use).

Different writers will inevitably produce slightly different summaries of the same evidence. Variation among writers' summaries of a same piece of evidence results from unique interpretations of what is important in the research.

Producing the annotated bibliography allows writers to see the relationships between primary ideas from a variety of sources. When the annotations are carefully and thoroughly written, they can be extended and incorporated into other materials for broader purposes like a literature review or other section of a research project.

Two sample entries of an annotated bibliography from a research project on pharmaceutical advertising:

Siegel, Marc. "Fighting the Drug (ad) Wars." *The Nation* 17 June 2002: 21.

Siegel, himself a physician, writes about how drug advertising has undermined the communication between doctors and patients. He documents the way ads have driven up the costs of prescription drugs, particularly popular medicines like those for cholesterol.

Wechsler, Jill. "Minority Docs See DTC Ads as Way to Address 'Race Gap.'" *Pharmaceutical Executive* May 2002: 32, 34.

WilsonSelect Database. Eastern Michigan University Halle Library. 20 October 2002. <<http://www.emich.edu/halle>>.

This reports the results of a study revealing that African-American doctors viewed the commercial promotion of prescription drugs as a way to educate their patients. The ads were seen as useful because they focus on diseases that affect African-Americans.

The relationship between these articles is clear despite the brevity of the annotations. Both articles establish a connection between the doctor/patient relationship and drug advertising. A contrast is also obvious. The newspaper article is from *The Nation*, in many ways similar to an academic journal and also known for its liberal views. The second article is from a trade journal (also similar to academic journals in many ways) that is clearly an advocate for the pharmaceutical industry.

Again, the process of compiling an annotated bibliography reveals some comparisons between the source material. This often leads to the refinement of research questions and further solidification of the thesis.

Inevitably, students working on research projects ask how many sources they need. Considered abstractly, this question is an effort to establish the scope of the investigation. Longer, more advanced and more in-depth research projects tend to have evidence from many different sources. The goal is not to satisfy a simple requirement but to amass the required information to support and extend a thesis. The 'big picture' view offered by an annotated bibliography allows writers to see where they have a surplus of information and where there is a dearth.



Adapted from Krause, S. (2021, March 23). *The Process of Research Writing* Retrieved June 2, 2021, from <https://human.libretexts.org/@go/page/6460>

**Review and Reinforce**

As previously mentioned, research writing is iterative. Discovery leads to refinement and revision, which often prompts more reading and analyzing. Developing the habit of selecting and paraphrasing the most relevant material and using a citation management system to record and track sources spares research writers a great deal of frustration and makes the background research more efficient.

**Media Attributions**

---

- chinaweatherstation © World Meteorological Organization is licensed under a CC BY-NC-ND (Attribution NonCommercial NoDerivatives) license

## *The literature review structure and function*

### Part 4: Chapter 14

#### Questions to consider

- A. Why is a literature review also referred to as the background or introduction of a paper?**
- B. What are the functions of a literature review?**
- C. What is the primary objective of a literature review?**

No matter how the literature review is organized (e.g. chronologically, thematically), it follows a standard format: introduction, body, conclusion. The introduction to the literature review contains a statement or statements about the overall topic of consideration. This might be a paragraph or section that lets the reader know what the literature review will address. Occasionally, writers describe how the literature review will be organized (for example, what main points are going to be dealt with and in what order). Like a methods section, search criteria (keywords, databases, journals) are sometimes identified in this section; they may be discussed in the conclusion as well or not attended to.

#### **An introduction to an introduction**

The purpose of the introduction to the literature review is to lead the reader through the body and the main points to the ultimate message of the work. The introduction will achieve several goals.

- Define or identify the general topic, issue, or area of concern thereby providing an appropriate context and a historical frame of reference for the remainder of the review.
- Indicate overall trends in what has been previously published on the topic; refer to a landmark or seminal study; or reveal conflicts in theory, methodology, evidence, conclusions, or gaps in research and scholarship.
- Establish the objective for reviewing this research (point of view); explain the criteria used to select the reviewed material; the organization of the review (sequence); and – if necessary – why certain literature either is or is not included (scope).
- Demonstrate how ensuing research either closes a gap in the literature, extends earlier work, or replicates an important study thereby contributing new knowledge to the field.

#### **The body of the literature review**



Written information is commonly presented logically, from general to specific, showing how past research relates to a proposed project (for literature reviews that serve as the background or introduction to a research proposal or paper). Information should be deliberately organized following an obvious progression of ideas (e.g. chronologically, following the development of a research topic) with consistent support from acceptable sources.

This is where a strong synthesis works to illustrate the value of the writer's contribution and to persuade the reader. To that end, citing two or more sources for a single point demonstrates its strength or general acceptability.

The use of a formal academic voice should be consistently maintained, and the content should be focused and objective. Author contribution should illustrate important strengths and weaknesses of research studies as well as contradictions and inconsistent findings. Implications and suggestions for further research, or where there are gaps in the current literature, should be specific, original and a logical conclusion based on the sources deployed as evidence.

### Strong conclusions

The conclusion often summarizes the major points of the literature review, discusses implications, and reveals an area for future or further research needed. This is where the proportion of writer contribution is often higher and there is relatively less cited source material.

The conclusion will often

- clearly define the topic or issue for an informed audience;
- provide a complete and exhaustive overview of relevant literature;
- be focused throughout;
- critically and consistently evaluate and synthesize extant information;
- present information logically and accurately;
- be relevant and objective; and
- accurately cite all references using one citation style or system.

### Documenting the support

The reference list of publications used in a literature review serves two purposes. First, it provides the reader with a means to evaluate the quality of the research. Second, accurately and correctly citing all the sources used protects the author from possible accusations of plagiarism. Using the words or ideas of others without referencing the source is a very serious academic offense.

The reference list reflects the thoroughness of the review. It also allows others to retrieve the cited publications. Errors made in authors' names, journal or article titles, page numbers and dates present barriers to retrieval of articles and prevent attributing credit to authors for their work. Each reference should be checked carefully for errors. Every in-text citation must have a listing in the references and every title in the reference list should connect to an in-text citation.<sup>1</sup>



*Tribute to Commonwealth of Virginia Student Activists — Civil Rights Interpretive Trail at the Dorothy Hamm Middle School, Arlington (VA) June 2021*

## Exercise #1

Read the following brief literature review from *Attending lectures in person, hybrid or online—how do students choose, and what about the outcome?* and complete an simple inventory of it by answering these questions:

1. What is the topic and how is it relevant?
2. How many unique sources are used?
3. How many citations are there?
4. What ideas do the authors contribute on this topic?
5. What can readers expect from the rest of the article?

## Introduction

<sup>1</sup>The COVID-19 pandemic has occasionally been viewed as one of the biggest experiments in education (Tomas & Rogers, 2020; Dunrong & Jin, 2020). <sup>2</sup>This might be a misnomer, since “experiment” implies some sort of controlled conditions, while arguably, educational settings were largely controlled by fluctuating, external factors. <sup>3</sup>“Disruption” might be a more fitting characterization of what was essentially an emergency response, and in the aftermath of this disruption, increased flexibility in attendance and delivery modes of education will become the “new normal” (Kortemeyer, 2020; Schapiro, 2021; Hofer et al., 2021). <sup>4</sup>The educational experiment starts now, as the impact of this flexibility can be investigated in more controlled settings. <sup>5</sup>A preliminary “finding” of this experiment is that many faculty members report that live-lecture attendance has decreased—some faculty members even go so far as to demand that streaming, video conferencing, and recording should be discontinued, “now that the pandemic is over,” to force students to return to campus. <sup>6</sup>There might be some justification for that: both students and faculty who knew the university before COVID-19 bemoan the loss of campus culture, and there are certainly cross-disciplinary and social competencies that were implicit in higher education, such as scientific discourse, self-presentation, teamwork, conflict resolution, etc., which may not be fostered anymore when purely focusing on the explicit curriculum of teaching and transmitting facts, methods, and concepts. <sup>7</sup>There are also serious concerns about loneliness, depression, anxiety, and procrastination that need to be addressed (Wang et al., 2020; Pelikan et al., 2021; Copeland et al., 2021; Tasso et al., 2021; Amendola et al., 2021; Buizza et al., 2022), which are consistent with a survey on student well-being conducted at ETH Zurich at the height of the pandemic. <sup>8</sup>The problems and their solutions are likely more complex and reaching deeper—the pandemic may have simply brought some existing inconsistencies in the 21st-century higher-education system to the surface, particularly when it comes to lecturing (Vlachopoulos & Jan, 2020).

<sup>9</sup>An immediate question is how student choices regarding attendance may have influenced performance in the subsequent exam session. <sup>10</sup>Finally, throughout the whole pandemic, high-stake exams were conducted in-person on-site at ETH Zurich, and another question is how the students’ perception of these physical exam settings may be connected to their potentially completely virtual attendance during the learning phase.<sup>2</sup>

**Review and Reinforce**

The goal of the literature review is to present an argument defending the relevance and value of a research question. To that end, a literature review must be balanced. For example, in proposing a new

theory, both findings that are consistent with that theory and contradictory evidence must be discussed. It is acceptable to argue that the balance of the research supports the existence of a phenomenon or is consistent with a theory, but it is not acceptable to ignore contradictory evidence. What makes a research question interesting is often the uncertainty about its answer.

### Media Attributions

---

- activist art © Ron Cogswell is licensed under a CC BY (Attribution) license

### Notes

---

1. Adapted from Frederiksen, L., & Phelps, S. F. (2017). Literature Reviews for Education and Nursing Graduate Students. Open Textbook Library.
2. Kortemeyer, G., Dittmann-Domenichini, N., Schlienger, C., Spilling, E., Yaroshchuk, A., & Dissertori, G. (2023). Attending lectures in person, hybrid or online—how do students choose, and what about the outcome?: Revista de Universidad y Sociedad del Conocimiento. *International Journal of Educational Technology in Higher Education*, 20(1), 19. <https://doi.org/10.1186/s41239-023-00387-5>.

## Producing effective abstracts

### Part 4: Chapter 15

#### Questions to consider

- A. What are some ways readers “use” research abstracts?**
- B. What benefits will writers receive from producing a strong abstract?**

In many academic and professional settings, there is a disproportionate amount of reading to be done relative to how much time people can dedicate to reading. This puts pressure on abstracts to appeal to readers both in terms of content and quality of writing.

As the “first impression” of a longer article or presentation, abstracts must convey the broad ideas and relevant details within the confines of a sometimes restrictive word-count limit. They are the basis on which many readers will decide to “download” or not. Unlike basic summaries, which accurately represent a longer body of work, abstracts focus on the contributions the article authors are making in their field of study or on their topic. This is an important distinction.

#### Language in Action

1. **Consider the abstract that follows from *Writing abstracts in the university context: combining genre-based and process-oriented approaches*. How long is it (in terms of approximate word count)?**
2. **What information corresponds to the typical sections of a research article (introduction, methods, results, discussion)?**
3. **What material qualifies as “contributions” to the field of study or topic investigation?**

<sup>1</sup> Abstracts play an essential role in the academic field since they are the first section of a research article



readers have at their disposal to determine its relevancy.<sup>2</sup> Their main goal is to give a concise view of the articles that accompany them.<sup>3</sup> Grounded on recent theoretical studies, this paper discusses the principles of a pedagogical learning cycle that can assist students in the development of their academic writing literacies in English.<sup>4</sup> This cycle combines two methodologies traditionally used to develop writing literacies, the process-oriented approach and the genre-based one.<sup>5</sup> Additionally, it presents classroom practices developed for the university context regarding the teaching of the academic genre “abstract” to undergraduates taking English at a Faculty of Letters in a public university of Minas Gerais.<sup>6</sup> The participants were freshmen who were taking English One, in their first term in the context of higher education.<sup>7</sup> The classes took place in September of 2017 and ran for one third of a sixty-hour mandatory course.<sup>8</sup> They were aimed at discussing the stages of the learning cycle to help students’ understanding of how to write abstracts in English.<sup>9</sup> The learning activities are thoroughly explained to demonstrate how the stages can be pedagogically applied to teaching practices.<sup>10</sup> A brief analysis of one of the abstracts written by a participating group is given to show that the learning cycle can work well in assisting university students to adequately write abstracts.<sup>11</sup> In a world where English is the major means of sharing scientific knowledge among members of academia, this writing pedagogy may be useful to learners in the process of composing abstracts in English as well as to professors teaching writing in the university context.<sup>1</sup>

### Opening an abstract

The condensed nature of the abstract can create an abruptness in the style; it is not a context where beautiful language is the standard or focus. Nevertheless, strong writing delivered through accurate grammar, precise word choice and compelling content combine to develop in potential readers an interest in the larger work.

Research articles commonly open with a generalization that introduces both topic and relevance, or with statements concerning the goals or actions of the researcher or research team.

#### Exercise #1

Evaluate the opening sentences below. Determine the topic and relevance and whether they focus on a generalization or researcher goals or actions.

1. Abstracts play an essential role in the academic field since they are the first section of a research article readers have at their disposal to determine its relevancy.<sup>2</sup>
2. Graduate students’ failure to graduate is of great concern, with the failure to graduate due to the dissertation being the most influential factor.<sup>3</sup>
3. Procrastination is a common problem in higher education.<sup>4</sup>
4. The purpose of this phenomenological inquiry was to examine persistence factors associated with the successful completion of a doctoral degree in the field of education.<sup>5</sup>
5. Writing successful academic conference abstracts is essential for PhD students to enable them to access world-class conferences for the presentation of their research.<sup>6</sup>
6. This paper reports the findings of an Australian qualitative study (N = 45) concerned with the way that

employers, academics and students perceived connections between international experience and graduate employability.<sup>7</sup>

7. This study reports on the effect of a newly developed 4-week strengths-based training approach to overcome academic procrastination, given to first-year elementary teacher education students (N = 54).<sup>8</sup>
8. The scientific and educational community is becoming increasingly aware of the impact of current academic working conditions on graduate students' mental health and how this is affecting scientific progress and ultimately society as a whole.<sup>9</sup>
9. This study examines whether paternal part-time employment is related to greater involvement by fathers in child care and housework, both while fathers are working part-time and after they return to full-time employment.<sup>10</sup>
10. Recently, many Italian universities began offering graduate courses or entire programs in English to attract international students, assist domestic students with English language proficiency, and internationalize the learning experience for all.<sup>11</sup>

### Abstract form: unstructured versus structured

A structured abstract offers readers explicitly labeled information from the longer work. There are generally headings related to the parts of the research paper: introduction, methods, results, and discussion.

Example: A structured abstract of *Paternal Part-Time Employment and Fathers' Long-Term Involvement in Child Care and Housework*.

#### ABSTRACT

##### Objective

This study examines whether paternal part-time employment is related to greater involvement by fathers in child care and housework, both while fathers are working part-time and after they return to full-time employment.

##### Background

The study draws on four strands of theory—time availability, bargaining, gender ideology, and gender construction. It studies couples' division of labor in Germany, where policies increasingly support a dual-earner, dual-carer model.

##### Method

The study uses data from the German Socio-Economic Panel from 1991 to 2015 on employed adult fathers living together with at least one child younger than age 17 and the mother. The analytic sample comprises 51,230 observations on 8,915 fathers. Fixed effects regression techniques are used to estimate the effect of (previous) part-time employment on fathers' child-care hours, housework hours, and share of child care and housework.

##### Results

Fathers did more child care and housework while they worked part time. Yet, most fathers reverted to previous levels of

involvement after returning to full-time work. The only exception was fathers with partners in full-time employment, who spent more time doing child care and took on a greater share of housework after part-time employment than before.

### Conclusion

The findings are largely consistent with the time availability perspective, although the results for fathers with full-time employed partners indicate that the relative resources and gender ideology perspectives have some explanatory power as well.<sup>12</sup>

While this format is becoming more common, trends change continuously and writers are always advised to follow the style of their department, or the organization or journal to which they are proposing. The argument that structured abstracts are of a higher quality has also not been broadly substantiated.

### Exercise #2

1. Paraphrase and rewrite the abstract from the “Language in action” box; create an original structured abstract. Consider whether a generalization or a researcher action/objective opening works best.
2. Paraphrase and rewrite the abstract from the “example” box; create an original unstructured abstract. Consider whether a generalization or a researcher action/objective opening works best.

### Abstract content: summary versus results

Beyond the opening and format of an abstract, writers proceed variously depending on the contents and overall results of their longer work. Research that presents strong results is typically represented by an abstract that highlights this. Many valuable and interesting papers cannot assert such a claim; the abstracts of those papers summarize of the work without that focus on results.

### Exercise #3

1. Look at the abstract below of *A Study of Graduate Students' Achievement Motivation, Active Learning, and Active Confidence Based on Relevant Research*. It is a more general summary? or does it focus on results?

<sup>1</sup>Graduate students' failure to graduate is of great concern, with the failure to graduate due to the dissertation being the most influential factor. <sup>2</sup>However, there are many factors that influence the writing of a dissertation, and research on these factors that influence graduate students' learning through emotion and cognition is still quite rare. <sup>3</sup>A review of past research revealed that the main factor causing graduate students to drop out midway is not completing their thesis, followed by factors including insufficient achievement motivation, lack of learning strategy, and low confidence. <sup>4</sup>The graduation rate of graduate students has been emphasized by the academic community; therefore, this study investigated the correlation between graduate students' achievement motivation, active learning, and academic confidence in writing research. <sup>5</sup>The study invited graduated students from two universities of science and technology situated in the northern region of Taiwan to complete the questionnaire. <sup>6</sup>In this study, valid data for validation analysis were collected from 173 respondents, and the results showed that achievement motivation positively influenced active learning (higher-order learning, integrative learning, reflective learning) and that active learning (higher-order learning, integrative learning, reflective learning) positively influenced academic confidence. <sup>7</sup>From the



above findings, it can be seen that to help graduate students from University of Science and Technology to effectively complete their graduate studies, students should develop good motivation to adopt active learning strategies to enhance their academic self-confidence.<sup>13</sup>

2. Look at the abstract of *University Teaching in Global Times: Perspectives of Italian University Faculty on Teaching International Graduate Students* below. Is it a more general summary? or does it focus on results?

<sup>1</sup>Recently, many Italian universities began offering graduate courses or entire programs in English to attract international students, assist domestic students with English language proficiency, and internationalize the learning experience for all. <sup>2</sup>This research investigated Italian faculty's perspectives on their experiences of teaching international graduate students. <sup>3</sup>The article begins with an overview of European university internationalization and then reviews the literature on faculty perspectives on teaching international students and instructional professional development for internationalization of teaching and learning. <sup>4</sup>Findings include participant demographics and faculty perspectives on teaching international graduate students as compared with domestic students, their current and desired ways of learning how to teach international students, and their recommendations for faculty teaching in international programs/courses with English as the language of instruction. <sup>5</sup>Implications for instructional professional development, communities of instructional practice, and further research are offered.<sup>14</sup>

### Word count

Writers obviously must adhere to the word count limits imposed on abstracts submitted to departments for approval and to organizations and publications for acceptance. When the maximum is 150 words, 151 is too many. Editing down is a challenge and sometimes a fine art; it can result in more economical writing, which is valued when time constraints are a factor for the reader.

#### Exercise #4



An interactive H5P element has been excluded from this version of the text. You can view it online here:  
<https://uark.pressbooks.pub/researchwriting/?p=292#h5p-7>

15

### Review and Reinforce

Research writers who read for style and the conventions of their field *in addition to* content will more fluently absorb and emulate those features. Deliberately writing multiple versions (structured and un-, a



general summary and one that is results-based) will develop flexible and efficient skills and produce more varieties from which to build the strongest final abstract.

## Media Attributions

- 52278056249\_d80b934e19\_k © Julia Tulke aesthetics of crisis is licensed under a CC BY-NC-SA (Attribution NonCommercial ShareAlike) license

## Notes

1. Dias, R. (2020). Writing abstracts in the university context: combining genre-based and process-oriented approaches. *Trabalhos em Linguística Aplicada*, 59, 240-263.
2. Dias, R. (2020). Writing abstracts in the university context: combining genre-based and process-oriented approaches. *Trabalhos em Linguística Aplicada*, 59, 240-263.
3. Chang, J.-C., Wu, Y.-T., & Ye, J.-N. (2022). A Study of Graduate Students' Achievement Motivation, Active Learning, and Active Confidence Based on Relevant Research. *Frontiers in Psychology*, 13, 915770–915770. <https://doi.org/10.3389/fpsyg.2022.915770>
4. Patria, B., & Laili, L. (2021). Writing group program reduces academic procrastination: a quasi-experimental study. *BMC psychology*, 9, 1-7.
5. Spaulding, L. S., & Rockinson-Szapkiw, A. (2012). Hearing their Voices: Factors Doctoral Candidates Attribute to their Persistence. *International Journal of Doctoral Studies*, 7, 199-219. <https://doi.org/10.28945/1589>
6. Iorati-Uba, G. (2020). The impact of an instruction to improve L2 learners' academic conference abstract writing in multidisciplinary programmes. *Language Learning in Higher Education*, 10(1), 143-169.
7. Crossman, J., & Clarke, M. (2010). International experience and graduate employability: stakeholder perceptions on the connection. *Higher Education* (00181560), 59(5), 599–613. <https://doi.org/10.1007/s10734-009-9268-z>
8. Visser, L., Schoonenboom, J., & Korthagen, F. A. (2017). A field experimental design of a strengths-based training to overcome academic procrastination: short-and long-term effect. *Frontiers in psychology*, 8, 1949.
9. Gallea, J. I., Medrano, L. A., & Morera, L. P. (2021). Work-related mental health issues in graduate student population. *Frontiers in neuroscience*, 15, 593562.
10. Bünning, M. (2020). Paternal Part-Time Employment and Fathers' Long-Term Involvement in Child Care and Housework. *Journal of Marriage and Family*, 82(2), 566-586.
11. Coryell, J. E., Cinque, M., Fedeli, M., Lapina Salazar, A., & Tino, C. (2022). University Teaching in Global Times: Perspectives of Italian University Faculty on Teaching International Graduate Students. *Journal of Studies in International Education*, 26(3), 369–389. <https://doi.org/10.1177/1028315321990749>
12. Bünning, M. (2020). Paternal Part-Time Employment and Fathers' Long-Term Involvement in Child Care and Housework. *Journal of Marriage and Family*, 82(2), 566-586.
13. Chang, J.-C., Wu, Y.-T., & Ye, J.-N. (2022). A Study of Graduate Students' Achievement Motivation, Active Learning, and Active Confidence Based on Relevant Research. *Frontiers in Psychology*, 13, 915770–915770. <https://doi.org/10.3389/fpsyg.2022.915770>
14. Coryell, J. E., Cinque, M., Fedeli, M., Lapina Salazar, A., & Tino, C. (2022). University Teaching in Global Times: Perspectives of Italian University Faculty on Teaching International Graduate Students. *Journal of Studies in International Education*, 26(3), 369–389. <https://doi.org/10.1177/1028315321990749>

15. Dias, R. (2020). Writing abstracts in the university context: combining genre-based and process-oriented approaches. *Trabalhos em Linguística Aplicada*, 59, 240-263.