

Writing an Effective Research Paper

Scarpati Applied Economics Conference
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Research Question



Paper Structure



Writing Tips



Resources

Outline



Research Question

- 1** What is a research question, and why is it important?
- 2** Tips for developing an effective research question
- 3** Evaluating your research question

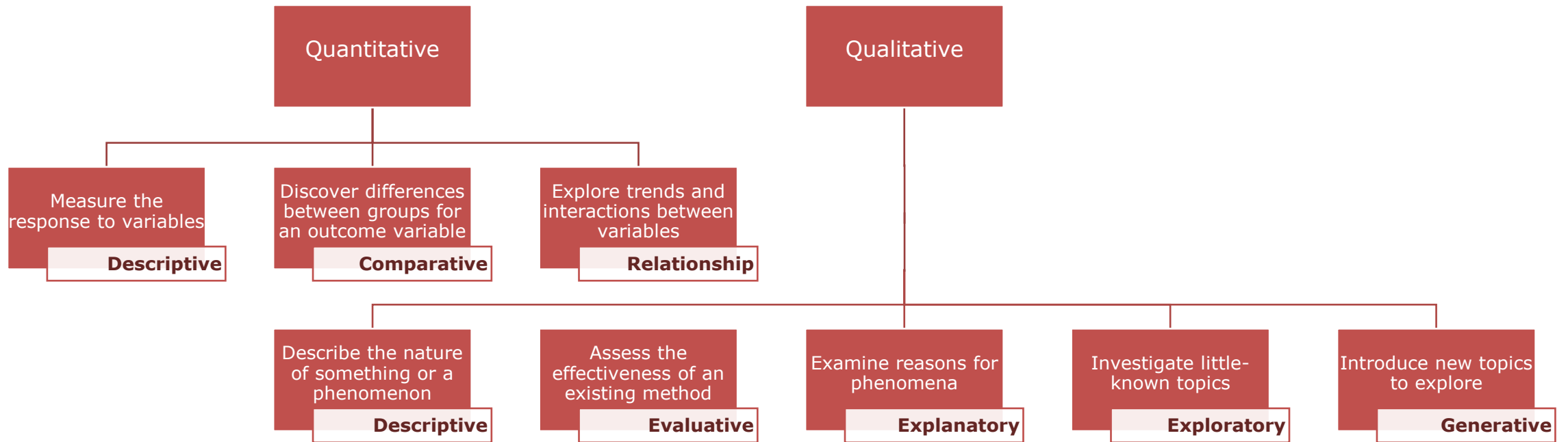
What is a research question, and why is it important?

- A research question articulates the issue or problem that will be investigated and how it will be analyzed
- Determining and clearly defining the research question is perhaps the most important step in conducting research
- Research questions
 - Define the scope of the study
 - Direct the line(s) of inquiry
 - Provide a framework for assessing work and progress



Types of Research Questions

(Bouchrika, 2004)



Tips for Developing an Effective Research Question (1)

The content of effective research statements

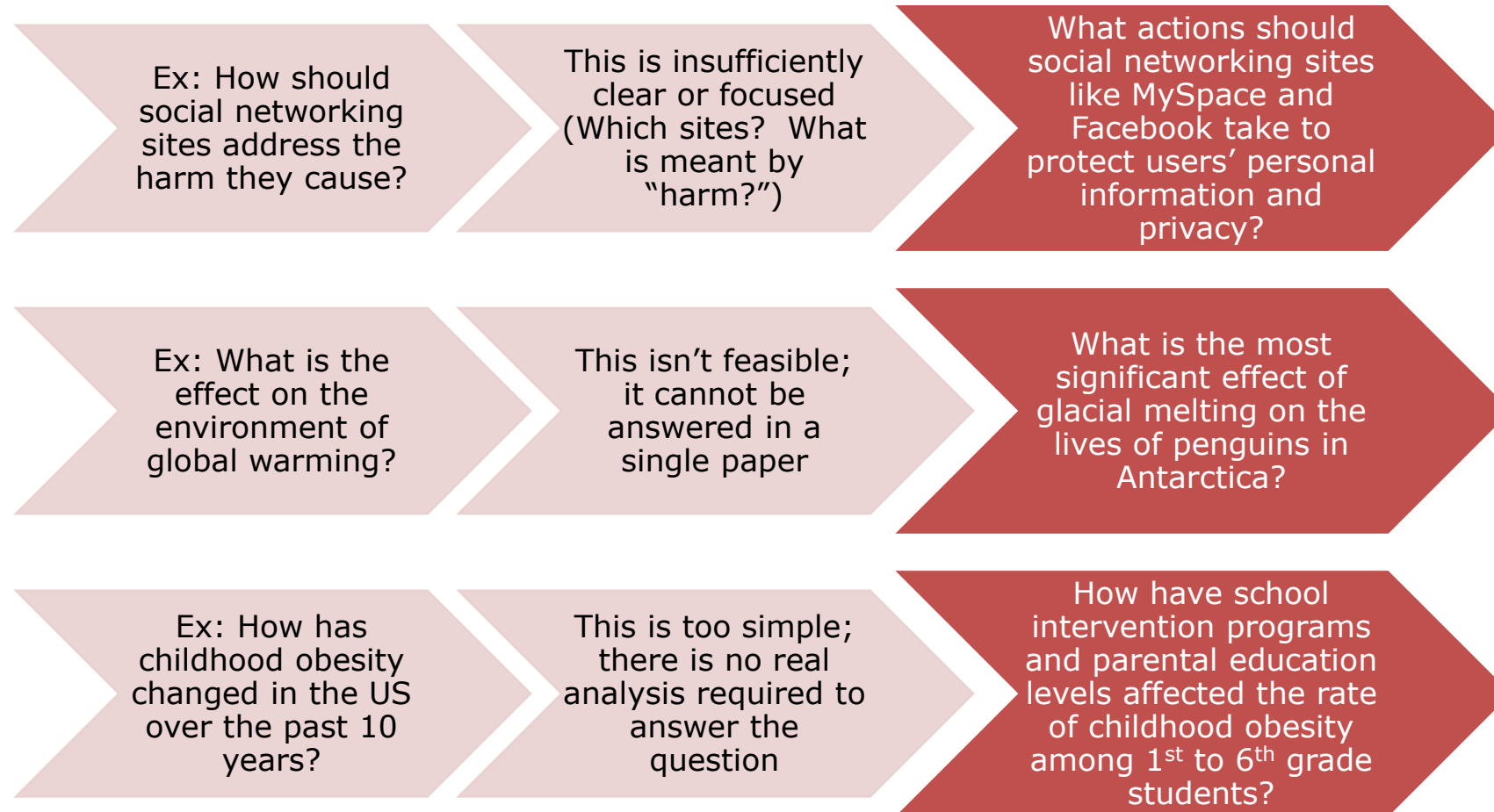
- **Feasible** – the question is within your ability to investigate
- **Interesting and novel** – you, and others, believe the question is worth studying, and studying the question will bring new insight
- **Relevant and appropriate** – the question meets the standards and expectations of the field and/or target audience
- **Systematic** – the question defines the scope and analytical process

The writing of effective research statements

- **Clear** – readers can understand the purpose of the project without additional explanation
- **Focused** – narrow enough to be answerable within the confines of the project
- **Concise** – expressed succinctly
- **Complex** – the answer requires synthesis and analysis (it is not a simple “yes” or “no” question)



Tips for Developing an Effective Research Question (2)



Tips for Developing an Effective Research Question (3)

- Example questions to ask yourself when writing an empirical research question:
 - What is the population being studied?
 - What is the exposure, intervention, or causal variable?
 - (Optional) What is the comparison group?
 - What is the outcome of interest?
 - What is the timeframe of interest?



Evaluating Your Research Question

Your research question:

	Effective	Progressing	Needs Work
<i>Research Question Content</i>			
Feasibility	Your question is comfortably within your ability to investigate	Your question is almost within your ability to investigate	Your question is not within your ability to investigate
Interest and novelty	Your question is worth studying and it will bring new insight to the field	It is apparent why others should be interest in your question, but the contribution to the field is not clear	It is not obvious why others should be interested in your question, or your question has been answered before
Relevance and appropriateness	Your question meets the standards and expectations of the target audience	Your question partially meets some of the standards and expectations of the target audience	Your question does not meet the standards and expectations of the target audience
Structure	Your question defines the scope and implies the analytical process of your paper	Your question partially defines the scope and/or partially implies the analytical process of your paper	Your question does not define the scope and/or imply analytical process of your paper
<i>Research Question Writing</i>			
Clarity	Readers can understand the purpose of the project without additional explanation	Readers can understand the general purpose of the project but need additional details and explanation	The question is vague, making it difficult for readers to understand the purpose of the project
Focus	Your question is sufficiently narrow to be answerable within the confines of the paper	Your question is slightly too broad to be fully answerable within the confines of the paper	Your question is too broad to be answerable within a paper
Conciseness	Your question is succinct	Your question is clear but could be made succinct	Your question is long and difficult to follow
Complexity	Answering your question requires synthesis and analysis to fully answer	Answering your question requires some analysis but could be summarized with facts or as "yes" or "no"	Your question can be answered with facts or is a "yes" or "no" question

Sources

- [“How to Write a Research Question”](#) (8 August 2018, George Mason University Writing Center, accessed 2 February 2024)
- [“How to Write a Research Question”](#) (Imed Bouchrika, 2 January 2024, Research.com, accessed 2 February 2024)





Paper Structure

- 1 Introduction
- 2 Background and Literature Review
- 3 Data and Analytical Approach
- 4 Results and Discussion
- 5 Conclusion
- 6 References and Citations

Introduction

- The introduction determines whether the reader continues
- General formula:
 - Motivation – Why your topic is worth investigating
 - Research question – What the paper will do
 - Contribution – How your work extends or adds to the literature
 - Method – How you will explore your research question
 - Preview of findings – What conclusions you draw
 - Roadmap of your paper



Background and Literature Review (1)

- You should assume that your readers are generally, but not specifically, knowledgeable
 - If your readers will not need much background or institutional knowledge to understand your argument, you may want to consider folding the background into your introduction
 - If your readers will need to be given considerable background or institutional knowledge to understand your argument, you may want to have a separate background section
- Try to limit the background section to only that which is necessary to answer the research question (you can use footnotes as necessary for everything else)



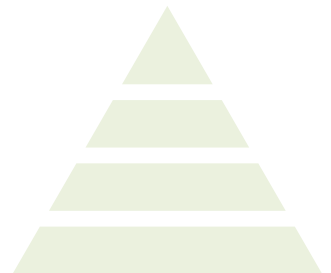
Background and Literature Review (2)

- A literature review serves to position your work within the broader literature
 - Your work should take priority and you should discuss how you add to other work (rather than being overly critical)
 - Try to structure your literature review thematically by content and/or method
- Try to limit the literature review to that which is directly relevant to your research question and analytical approach
- If the literature review is short, you can fold it into your introduction or background section



Data and Analytical Approach (1)

- The data section should have two parts:
 - Describe the data
 - Name and source of data sets;
 - Period covered and variables used
 - Panel, cross-section, or time series
 - Units of observation and how many observations used
 - Limitations of the data
 - Descriptive statistics of relevant data
 - Tables or plots with means and standard deviations
 - Other relevant summary statistics for different subgroups
 - Please be sure to make the names of your variables clear!
 - Interesting and relevant patterns and relationships from the data



Data and Analytical Approach (2)

- Empirical papers should discuss the identification strategy
 - You must explain how your empirical method will demonstrate the causal relationship that you posit in the data
 - Write out any regressions that you use
 - If you use a method that differs from that which is most frequently seen in the literature, explain why you have chosen this method and why it will lead to a more accurate understanding of the causal relationship you are examining
 - Explain why certain variables are included (or not)
 - Identify and defend the assumptions that you make
 - Explain how you handle common statistical issues (bias, missing data, imperfect instruments, etc.)
 - Explain any additional tests that you will perform and why



Data and Analytical Approach (3)

- Non-empirical papers should discuss the framework of analysis that will be used
 - If this is brief (e.g. a summary of the existing literature), this can go in the introduction
 - If it is a comparison of existing programs, the explanation should include the aspects being compared (which can also go in the introduction), and the literature review can be folded into the discussion/comparison
 - If analysis will be conducted using a particular approach (e.g. rational actor model or system-level analysis), this should be explained, though it can be explained in the introduction



Results and Discussion (1)

- Only report and discuss results that directly answer the research question (everything else can go in an appendix)
- When presenting tables
 - PLEASE rename the variables so that your readers know what they are!
 - Use the footnote of the table to provide information about the data or necessary explanation
 - Generally, standard errors go in parentheses with the estimate
 - Generally, asterisks are used to indicate significance



Results and Discussion (2)

Table 1: The Effect of Education on Wages (OLS)

	Dependent Variable: Log of Yearly Earnings			
	(1)	(2)	(3)	(4)
Education	0.091 (0.001)	0.031 (0.003)	0.086 (0.002)	0.027 (0.005)
Ability dummy		0.251 (0.010)		0.301 (0.010)
State FE	No	No	Yes	Yes
R ²	0.50	0.55	0.76	0.79
No. of Observations	35,001	35,001	19,505	19,505
No. of Persons	5,505	5,505	4,590	4,590

Notes: Standard errors are in parentheses. The analysis dataset covers the years 1985 to 1995. The shares of doctors and lawyers are taken from the Five Percent Public Use Micro Sample of the 1950 U.S. Census and are defined as the share of each profession among employed persons in the population aged 25–64. A “city” is defined as Standard Metropolitan Statistical Area; constant SMSA definitions are used from 1950 to 1990. Region dummies correspond to the 10 “major regions,” as defined by the Census Bureau.



Results and Discussion (3)

- Introduce, explain, summarize
 - Before showing results, provide context
 - After showing results, describe and discuss them
 - First sentence should be the main takeaway
 - Remainder of the paragraph should help the reader interpret the results in context and determine how they support your hypothesis
 - The last sentence should summarize what you have found and how it fits into the bigger picture (connect it back to the research question)
- Try to organize your results and discussion such that they tell a story (the story of how you are answering your research question)
- You may also wish to discuss the limitations of your research



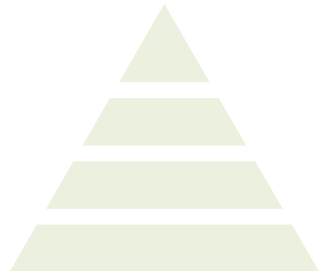
Conclusion

- Common components of conclusions:
 - Summary of main results
 - Potential mechanisms driving the results
 - Limitations of the analytical approach
 - Potential policy implications
- Some suggest including directions for future research; just be careful that these are not things that you should have covered given your research question!



References and Citations (1)

- Give credit where credit is due. **Always.**
 - If the idea, theory, fact, or evidence comes from someone else, it must be cited
 - Common knowledge (e.g. the sky is blue) does not need to be cited
- Economics papers typically use in-text citations (rather than footnote or endnote citations)
 - When citing the source of an idea, use the author last name(s) in the text, followed by the publication date in parentheses
 - “As argued by Smith (1776)...”
 - When citing the source of supporting evidence, put the author last name(s) and publication dates in parentheses, separated by a comma, with multiple sources separated by semicolons, listed by publication date
 - “Countries become wealthy by trading (Smith, 1776)...”
 - “Countries become wealthy by trading (Smith, 1776; Ricardo, 1817)...”



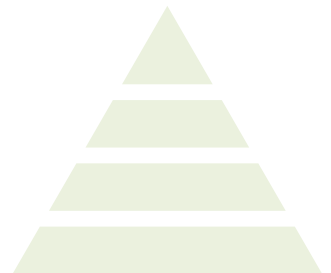
References and Citations (2)

- All references should be listed in a “References” section at the end of the paper
 - Many economics journals use the Chicago manual of style
 - Other fields (and sometimes economics) often use MLA style or APA style
 - Pick a manual of style and apply it consistently
- ChatGPT (and other large language models) are really good at predictive text, but not so good at economic theory
 - It can be useful in breaking through writer’s block, editing text, and even coming up with Stata, R, or Python code
 - Generative AI should be cited if used, even when used for editing



Sources

- [“Writing Tips for Economics Research Papers – 2021-2022 Edition”](#) (Plamen Nikolov, IZA Institute of Labor Economics, IZA DP No. 15057, January 2022)
- [“Academic Writing for Accounting and Economics PhDs”](#) (Dominika Langenmayr, WU Vienna, accessed 5 February 2024)

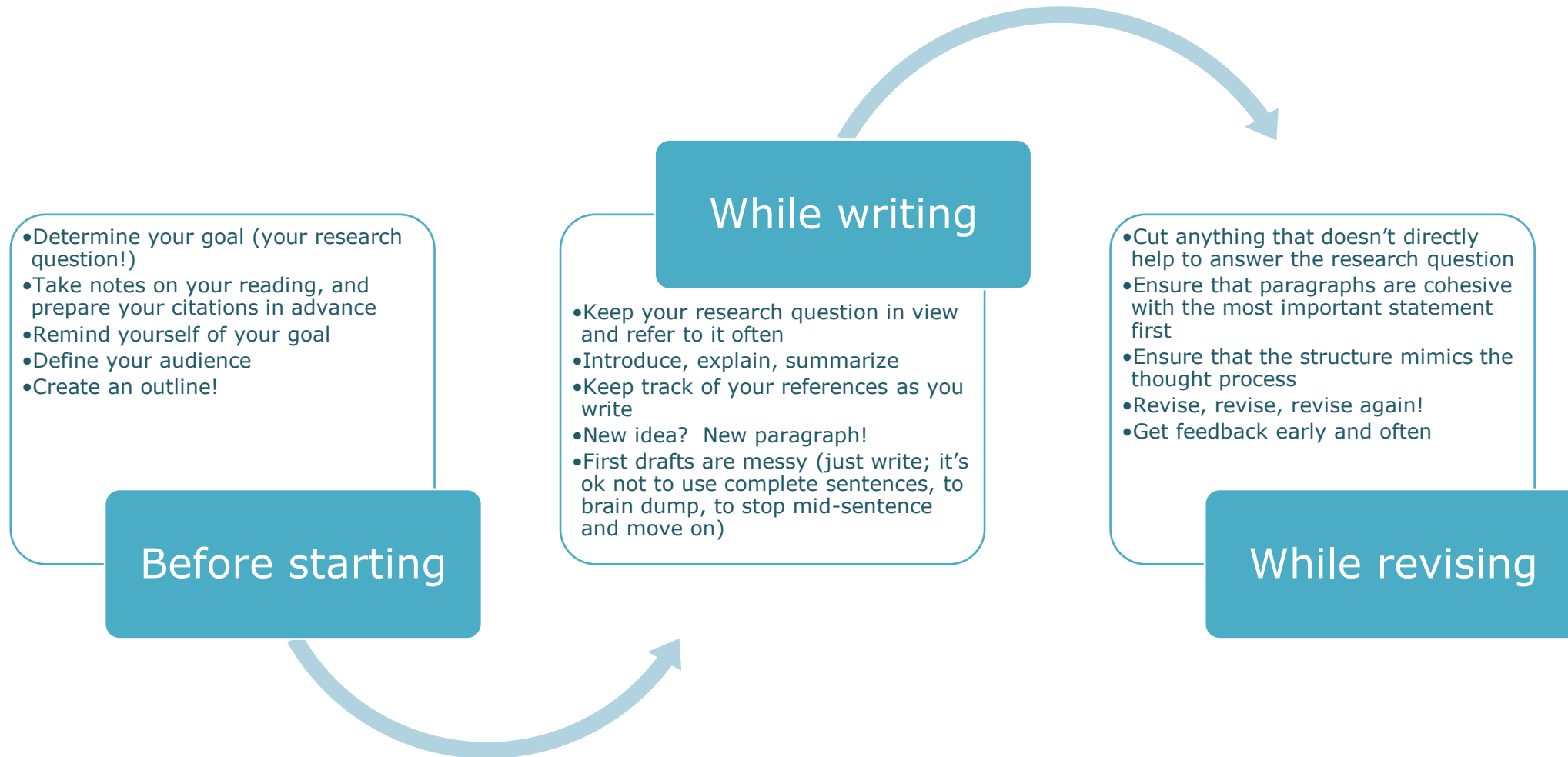




Writing Tips

- 1 Writing your research paper
- 2 Academic writing conventions
- 3 Revising and editing

Writing Your Research Paper



Outlining Your Research Paper

Suggestion for General Section Outline

- I. Section introduction (with clear thesis statement – what will you be doing in this section?)
- II. Paragraph main idea/thesis statement
 - A. Supporting detail
 1. Introduce, explain, summarize
 2. Connect back to section thesis
 - B. Supporting detail
 1. Introduce, explain, summarize
 2. Connect back to section thesis
 - C. Paragraph conclusion/summary
- III. Additional paragraphs (following structure above)
- IV. Conclusion (that summarizes what you have done in the section and connects back to research question)

Introduce, Explain, Summarize

- Your readers are knowledgeable, but they do not have the analysis in their heads like you do
- When writing, therefore, help them out!
- Introduce the evidence/model you are about to state
 - What is the evidence/model?
 - How does it help to support the paragraph/section/paper thesis statement?
- Explain the evidence/model
 - Do not assume that the readers have drawn the same conclusions that you did
 - Tell the readers what is happening and how they should interpret what you have shown them
- Summarize
 - Remind the readers what they just learned
 - Remind the readers how this supports the paragraph/section/paper thesis statement



Academic Writing Conventions (1)

- Prioritize being clear and easy to understand
 - Be precise and succinct
 - Lead with the main idea
 - Err on the side of explaining (rather than assuming that your reader knows what you are thinking)
 - Do not use uncommon or made-up abbreviations
- Use the active voice
 - Active voice: The subject does the action
 - Passive voice: The subject is acted upon



Academic Writing Conventions (2)

- Using “I” to talk about what you did is acceptable
- When talking about something that you and your readers might be expected to believe, it is fine to use “we”
- Try not to use extreme or overly dramatic language
- Try to avoid contractions
- Use in-text citations when referencing other literature
- Comments that you wish to include but that do not directly contribute to your analysis can go in footnotes



Tips for Revising and Editing

- Be careful when using Grammarly or Google Docs editing features – suggestions from these can be incorrect
- Try revising printed drafts and reading aloud
- Do not be afraid to delete
 - Is the word/sentence/paragraph/idea necessary to prove your point? If not, delete it!
 - Err on the side of being concise
- Seek (and accept) feedback from others
- Revise often – writing is rewriting!



Editing Checklist

Revising Paragraphs

- Each paragraph contains only one idea
- The first sentence in each paragraph states the main idea of the paragraph
- Paragraphs introduce, explain, and summarize
- Each paragraph ends with a summary that reminds the reader of the main idea of the paragraph
- There are clear transitions between paragraphs
- Each paragraph supports the goal of the section and the research question

Revising Sections

- Each section begins with an introduction that states the goal of the section and how it supports the research question
- The paragraphs are organized logically within sections, so that readers can understand the thought process
- Each section contains a conclusion that reminds the reader of the goal and how it supports the research question
- The sections are organized logically to help readers understand the thought process
- Each section supports answering the research question

Revising the Paper

- All extraneous information is deleted, i.e. everything directly supports answering the research question
- Language, grammar, style, and citations are consistent
- I have visited the Center for Excellence in Writing
- I have received feedback from a peer on the readability and understandability of the paper
- I have received feedback from a peer and/or faculty advisor on the content





Resources

- 1 Writing empirical research papers
- 2 References and citations
- 3 UB resources

Resources for Writing Empirical Research Papers

- Writing Tips for Economics Research Papers (Plamen Nikolov, IZA 2022)
- Academic Writing for Accounting and Economics PhDs (Dominika Langenmayr)
 - Structure of a Paper
 - Introduction
 - Main Body
 - Conclusion, List of References, and Appendix
- Writing a Research Paper (Purdue OWL)
- Tips and Tools for Writing (UNC)
- Writing Resources (UB)
- The Writing Process (Purdue OWL)
- Generative AI (e.g. ChatGPT)
 - Generative AI in Academic Writing (UNC)
 - Generative AI in the Writing Process (UMich)
- Plagiarism and Academic Scholarship (UB)



Resources for References and Citations

- Endnote (UB Libraries)
- Style and Formatting Guides (Purdue OWL)
 - MLA Style
 - APA Style
 - Chicago Style
- Using Citation Generators Responsibly (Purdue OWL)
- Avoiding Plagiarism (Purdue OWL)
- Citing Generative AI (UC San Diego)



UB Resources

- [UB Economics Librarian: Carolyn Klotzbach-Russell](#)
- [UB Center for Excellence in Writing](#)
- [UB Research Help](#)
- [UB Generative AI and Academic Integrity](#)

