Writing Research Reports

Dissecting a Research Report
- Understand the purpose
- Recognize the main points
- Evaluate the authors
- Analyze the methodology

Know Your Audience
- Consider your audience
- Adapt your language
- Use appropriate terms

Use Signposts
- Introduce your thesis
- Support your claims
- Conclude your points

Be Specific
- Provide specific examples
- Use precise language
- Avoid vague terms

Use Visuals
- Include charts and graphs
- Use images effectively
- Enhance understanding

Getting Organized
- Organize your report
- Use a clear structure
- Maintain a logical flow

Understand Plagiarism
- Avoid plagiarism
- Cite sources properly
- Use quotation marks

Use the Correct Style
- Follow the required style
- Use consistent formatting
- Maintain accuracy

Use Citation Resources
- Include citations
- Use reference lists
- Acknowledge sources

Keep It Concise
- Avoid redundancy
- Maintain brevity
- Keep to the point

Writing Responsibly
- Avoid oversimplification
- Use accurate data
- Use caution

Proofread!
- Check for spelling errors
- Review for coherence
- Ensure clarity

Seek (Free) Help!
- Utilize free resources
- Ask for feedback
- Improve continuously

Using Language Effectively
- Avoid jargon
- Use simple language
- Maintain professionalism

Summary & Conclusion
- Summarize key points
- Reflect on findings
- Draw conclusions

Prezi
Dissecting a Research Report

- Abstract
- Introduction
- Review of Literature
- Methodology
- Outcomes and Results
- Discussion
- Summary and Conclusion
Abstract
Introduction
Review of Literature
Methodology
Outcomes and Results
Discussion
Summary and Conclusion
Abstract

**Purpose**
- Summarizes the entire paper in the briefest way possible
- Allows the reader to understand the research without reading the full paper

**Best Practices**
- Summarize the highlights of your research
- Be very clear about your paper's main objectives or research problems
- Give a concise account of your methodologies, findings, and conclusions
- Delete everything you can possibly delete while still making sense
- Now delete a little bit more
- Always place it at the beginning of your paper
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Introduction

Purpose
- Articulates the problem your research is addressing
- Argues convincingly for the importance and significance of your research

Best Practices
- Be very clear about the problem or conflict your research is addressing
- Give the context for the problem
- Explain how your research addresses that problem
- Be clear about the scope and limitations of your research
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Review of Literature

Purpose

- Summarizes and evaluates any relevant research that addresses your research problem or its context
- Argues for the necessity of your own work in the context of all existing research

Best Practices

- Be certain you haven’t overlooked any work (read, read, read)
- Summarize, evaluate, and cite all of the work that has informed your research
- Explain the strengths and weaknesses of the existing literature
- Be extremely clear about how and why your research is not redundant
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Methodology

**Purpose**
- Explains how you collected or generated your data
- Specifies the methods by which you analyzed your data

**Best Practices**
- Explain, but don't teach: assume the reader understands the material you're presenting
- Write in the past tense
- Write in the passive voice

**Active and Passive Voice**

**The Active Voice**
- I measured 300 items, then I determined that apricot trees were the tallest.

**The Passive Voice**
- There were 300 items measured, and apricot trees were determined to be the tallest.
Methodology

Purpose
- Explains how you collected or generated your data
- Specifies the methods by which you analyzed your data

Best Practices
- Explain, but don't teach: assume the reader understands the material you're presenting
- Write in the past tense
- Write in the passive voice
Active and Passive Voice

The Active Voice
• I measured 300 trees, then I determined that spruce trees were the tallest.

The Passive Voice
• Three-hundred trees were measured, and spruce trees were determined to be the tallest.
Outcomes & Results

Purpose
- Explains the findings of your research

Best Practices
- Be clear about the most important findings of your research
- Use both text and images (diagrams, charts, graphs, etc.)
- Look for and specify any relationships, trends, or connections you find in your research
- Explain where your results matched your predictions, and where they deviated from your predictions
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Discussion

Purpose
- Offers a big-picture perspective of the outcomes of your research

Best Practices
- Explain or comment on any abnormalities or unusual features of your results
- Compare your results to the existing literature
- Offer possibilities for how your research can be applied to other contexts or problems
Purpose

- Offers a big-picture perspective of the outcomes of your research

Best Practices

- Explain or comment on any abnormalities or unusual features of your results
- Compare your results to the existing literature
- Offer possibilities for how your research can be applied to other contexts or problems
Summary & Conclusion

**Purpose**
- Recalls the key moments and discoveries from your paper
- Shapes the reader's overall perspective of your research

**Best Practices**
- Be very clear about your project's outcomes (what your research revealed or discovered)
- Highlight the strengths of your project
- Propose any ways that your research and outcomes might be applied or used (in the real world or by other researchers)
- Recommend possible future research (what remains to be discovered?)
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Getting Organized

- Consider Your Audience
- Use Signposts
- Be Specific
- Use Visual Tools
• Consider Your Audience
• Use Signposts
• Be Specific
• Use Visual Tools
Know Your Audience

Organize, compose, and cite your paper with your audience in mind

Points to Consider
- Who will be reading your report?
- Who will be using your results?
- If your only audience is your professor, what are your professor’s guidelines?
- If you are hoping to publish your work, which citation style is preferred by the journal or conference to which you’ll be submitting your work?
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Use Signposts

Guide your reader through your paper with carefully chosen headings and subheadings:

- Use headings and subheadings to break up and keep track of your project's components.
- Since your reader may skim your paper, choosing excellent headings and subheadings is critical.
- Use specific, precise language.
- Keep your promises; if a heading says "Possible Chemical Risks," be sure the section below it describes possible chemical risks.
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Be Specific

Be as specific as possible when crafting headings and subheadings

A Vague Heading:
- How Two Kinds of Trees Are Used

A Specific Heading:
- Comparative Manufacturing Uses of Spruce and Redwood Trees in Northern California

Other Examples
- Major Collision Causes
- Statistical Methodology for Train Collision Risk Analysis
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A Specific Heading:
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Other Examples
  • Major Collision Causes
  • Statistical Methodology for Train Collision Risk Analysis
Use Visual Tools

Your reader may not read every word you've written, but your reader will almost certainly look at every visual tool in your paper.

Points to Consider
- Charts or graphs should illustrate specific points
- Think of each visual tool as an argument
- Clearly label everything; leave no room for ambiguity in a chart or graph
- Thoroughly explain each visual tool in the text, and use references ("Figure 1," etc.)
- Consider how your paper will be distributed (i.e., if it will be printed in black and white, do not use color components in your visuals)
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Writing Responsibly

- Understand Plagiarism
- Use the Correct Style
- Use Citation Resources
- Keep Perfect Records
Responsibly

- Understand Plagiarism
- Use the Correct Style
- Use Citation Resources
- Keep Perfect Records
Understand Plagiarism

*If another person’s work has informed your own work, you must provide a correct citation*

**Points to Consider**
- If you are quoting another person’s work, provide a citation
- If you are summarizing another person’s work, provide a citation
- If you are paraphrasing another person’s work, provide a citation
- If you use information from non-academic sources (textbooks, interviews, conference minutes, magazines, or even your lecture notes), you must still provide a citation
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Use the Correct Style

There are several different citation styles: APA, MLA, and Chicago are common, but there are many others.

Points to Consider
- Be sure you understand which style your professor prefers, or which style is preferred by the journal or publication you are submitting to.
- APA is very common in the sciences and engineering; see www.apastyle.org for more information.
- Proofread your citations with excessive care; simple mistakes can create huge consequences.
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Use Citation Resources

The rules for citing academic work are too complex to remember on your own, but there are many resources to help you out.

Points to Consider

- Buy an excellent style book, like The Pocket Wadsworth Handbook
- Use free online tools to create your citations; Easybib.org is especially user-friendly
- When in doubt about whether to a source, or if you are unsure about how to cite something, consult a professor
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Keep Perfect Records

As you do your research, maintain a log of everything you read, even if you never plan to use it in your writing.

Points to Consider
- If you read an article or book, create an entry for it in a database of some kind (even a spreadsheet is helpful).
- Consider making a brief notation of the key arguments of the source.
- Consider using web-based citation databases like EndNote or Zotero.
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Using Language Effectively

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- Seek (Free) Help!
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Simple proofreading errors can have disproportionately negative effects on how your reader perceives your level of competency and authority.

Points to Consider
- Proofread hard copies of your work
- Get a second opinion; trade proofreading favors with a friend or classmate
- Consider changing your paper’s font or text-size as you proofread; it will help you notice errors you might have missed
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Seek (Free) Help!

If English is not your first language, or if you're more fluent in mathematics than in English, consider seeking the help of a tutor or professional proofreader.

Points to Consider

- Rutgers has many free resources available to non-native speakers
- The Rutgers PALS program offers numerous courses and free web-based learning resources: [http://pals.rutgers.edu/](http://pals.rutgers.edu/)
- There are three writing centers on campus, all of which provide FREE tutoring services:
  - Livingston Writing Center (Lucy Stone Hall)
  - Douglass Writing Center (135 George St.)
  - Plangere Writing Center (Murray Hall, CAC)
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