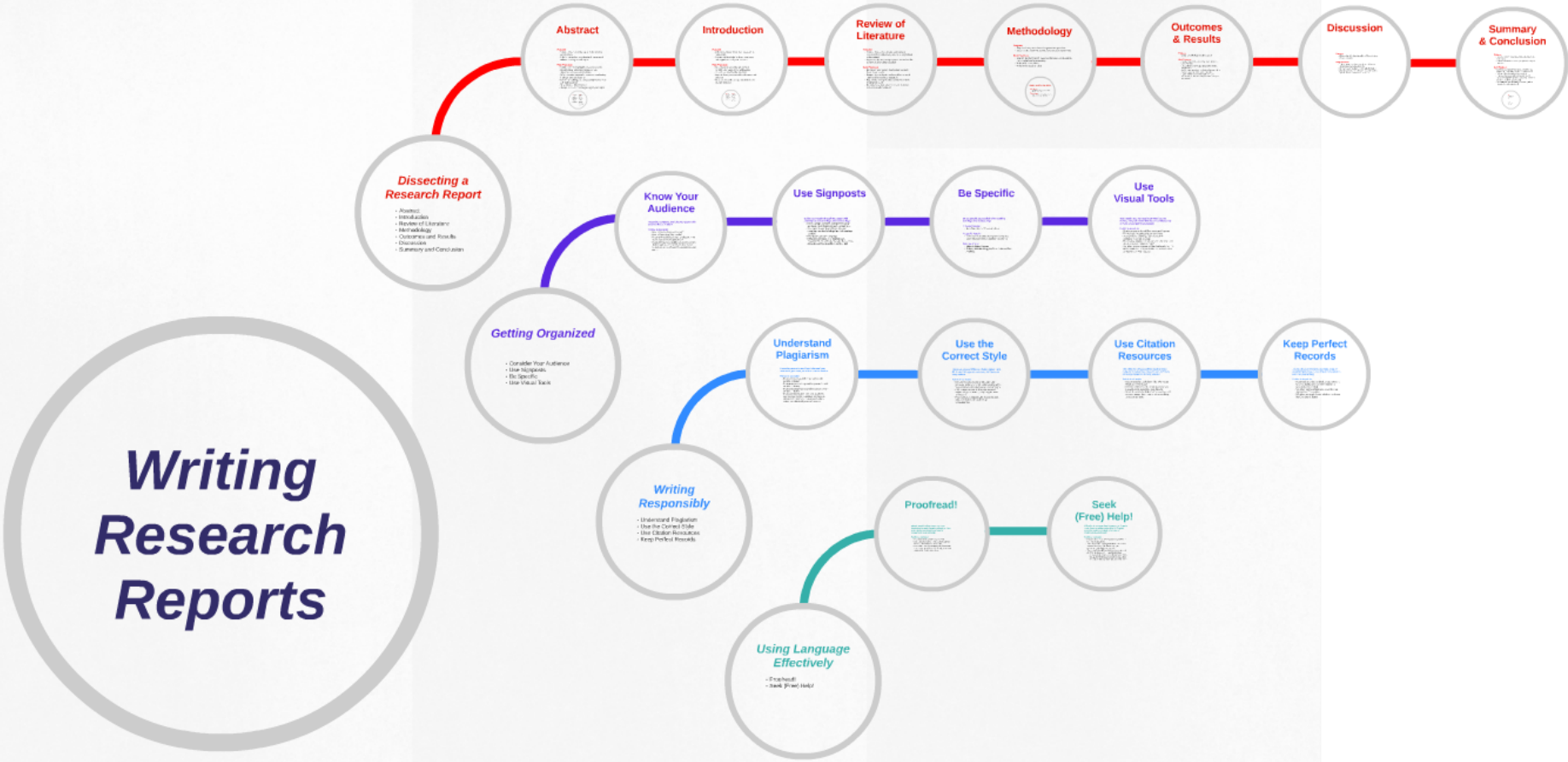
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Dissecting a Research Report
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Methodology
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Discussion
Summary & Conclusion
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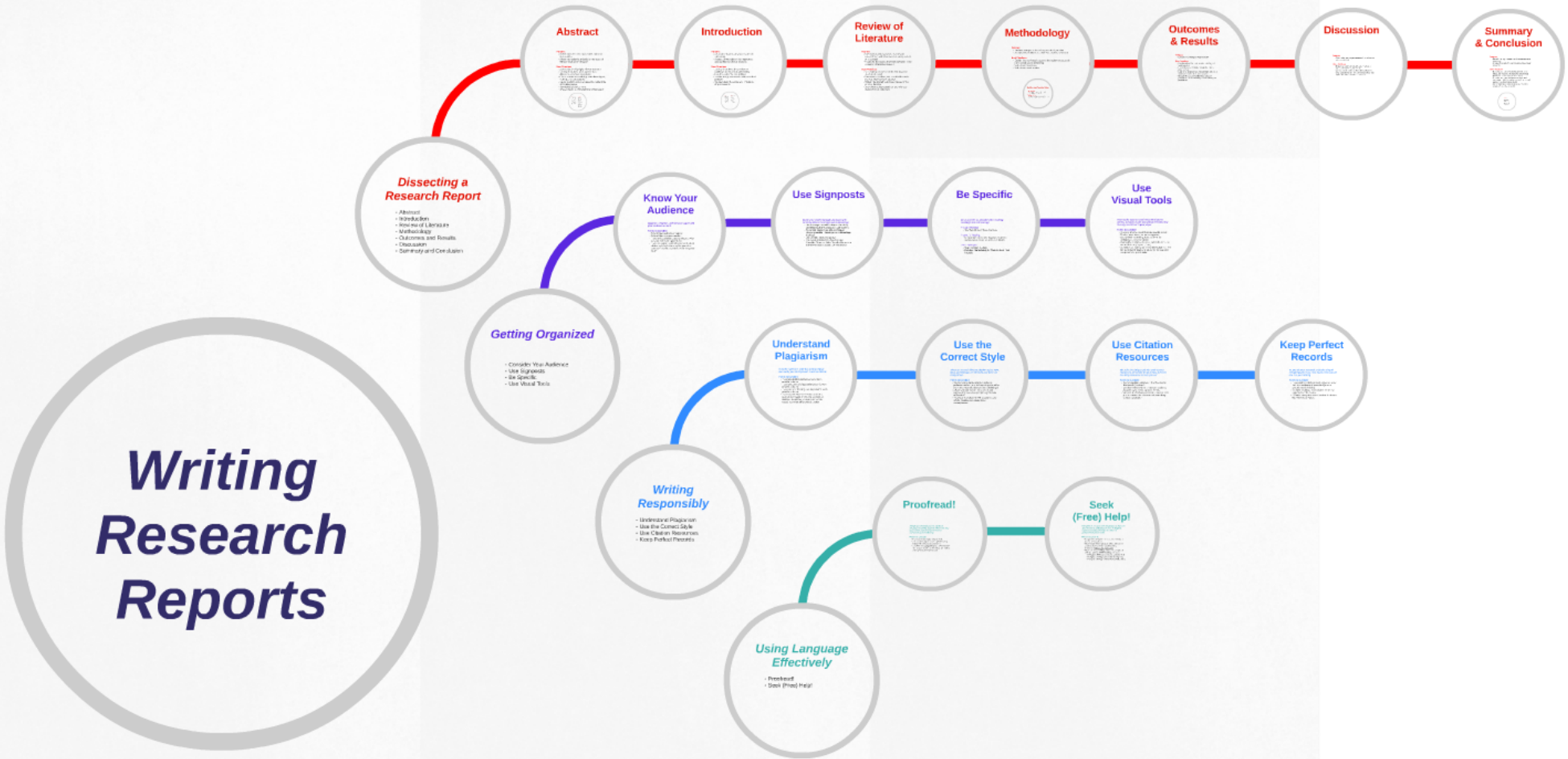
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Dissecting a Research Report

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Research Repo

- Abstract
- Introduction
- Review of Literature
- Methodology
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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 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.

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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

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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

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- Use Signposts
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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 you 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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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.)
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Understand Plagiarism

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

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- If you are summarizing another person's work, provide a citation
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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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The rules for citing academic work are too complex to remember on your own, but there are many resources to help you out

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

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- If you read an article or book, create an entry for it in a database of some kind (even a spreadsheet is helpful)
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Using Language Effectively

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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
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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/
- There are three writing centers on campus, all of which provide FREE tutoring services:
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