

Part I: Research, Researchers, and Readers

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Reference:

- Wayne Booth, George Colomb, Joseph Williams, Joseph Bizup, and William FitzGerald, **The Craft of Research**, 4th Edition, The University of Chicago Press, 2016.

Outline

- **Prologue:** Becoming a Researcher
- 1. Thinking in Print:** The Uses of Research, Public and Private
 - 1.1 What Is Research?
 - 1.2 Why Write It Up?
 - 1.3 Why a Formal Paper?
 - 1.4 Writing Is Thinking
- 2. Connecting with Your Reader:** Creating a Role for Yourself and Your Readers
 - 2.1 Conversing with Your Readers
 - 2.2 Understanding Your Role
 - 2.3 Imagining Your Readers' Role

Prologue: Becoming a Researcher

a) Who needs Research?

- Everyone
- Essential for success in any profession
- *For sheer pleasure of solving a puzzle, of discovering something that no one else knows.*

Prologue: Becoming a Researcher

b) Starting a New Research Project

- How do I focus on a topic?
- Where do I find information on it?
- What do I do when I find it?
- *Experienced researchers know what lies ahead: hard work, but also pleasure; some frustration, but more satisfaction; periods of confusion, but confidence that, in the end, it will all come together and that the result is worth the effort.*
- The aim of this course is to help you find your way in research.

Prologue: Becoming a Researcher

c) Working With a Plan

- You need two kinds of plans:
 1. The first plan helps you to prepare and conduct your research.
 2. The second plan helps you to draft your paper.

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1.1 What is Research?

- Gathering information needed to answer a question
- In engineering, research is more than gathering information.
- *Research can help you and your community free us from ignorance, prejudice, and the half-baked ideas that so many charlatans try to impose on us.*
- *The research you do and the arguments you make using it can improve if not the whole world, then at least your corner of it.*
- Also, *Advancing Technology for Humanity*

1.2 Why Write It Up?

1. To remember
2. To understand
3. To test your thinking
4. To get credit (or blame)

1.3 Why a Formal Paper?

And learn new rules for presenting the information?

1. It will give you new ways of thinking.
2. Since it is more demanding to write for others, your ideas and connections among them will be clearer.
3. *You'll be better able to answer your community's predictable questions and understand what its members care about and why.*

1.4 Writing Is Thinking

- *Writing up your research is thinking with and for your readers.*
- *Thinking for others is more careful, more sustained, more insightful—in short, more thoughtful—than just about any other kind of thinking.*

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2.1 Conversing with Your Readers

- Research papers and *term* papers are conversations.
- You must be aware of your audience.
- What type of relationship do you want with them?
 1. Peer to knowledgeable colleagues
 2. Expert to readers who know little about the subject
- Create suitable *roles* for yourself and your reader.

2.2 Understanding Your Role

- You have to create a relationship that encourages your readers to see why it's in their interest to read yours.
- *Think of your reader as someone who doesn't know it but needs to and yourself as someone who will give her reason to want to know it.*
- Reasons you want to read my research:
 1. I've Found Some New and Interesting Information
 2. I've Found a Solution to an Important Practical Problem
 3. I've Found an Answer to an Important Question

2.3 Imagining Your Readers' Role

- Readers' roles:
 1. **Entertain Me:** Share whatever you think might interest them.
 2. **Help Me Solve My Practical Problem:** Help them solve a practical problem whose solution you base not on all your data.
 3. **Help Me Understand Something Better:** Convince them that they do not understand the subject as well as they thought and that your new data will improve their flawed understanding.

Summary

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