

How to write a research paper?

In 10 steps

1 Make a planning

If you don't set a time frame for both research and writing, you will read and write endlessly...

- Figure half the time is for research
- The other half is for writing, rewriting and finding the right images/examples to illustrate your claims
- *How much time can you devote to it? (In what increments and over what period?)*
- Use your planning to exert control over your actions

2 Choose a topic

The more the topic interests you, the easier the research paper will be to write.

- Define what you are most interested in
- Let your ideas percolate for a while and see what sticks, what you keep going back to
- What is the subject or thrust of your research?
- Can you make it more focused, more specific?
(e.g. narrow it down from "Religion" to "World Religion" to "Buddhism")
- Write down everything you can think of about the topic
- What do you *not* want to investigate or what are the boundaries of the topic?
- How and when will you decide to include or exclude certain aspects?

3 Identify your goal

What do you intend to do in this paper?

- Analyze and describe how something is done?
- Understand and/or explain a (new) concept?
- Propose a solution or (product) improvement?
- Discover what happened at a specific time and place?
- Marshall evidence to persuade others on a particular point of view?

Generally speaking, there are two types of research paper:

- *An argumentative research paper*: takes a position on a contentious issue and argues for one point of view. The issue should be debatable with a logical counter argument;
- *An analytical research paper*: offers a fresh look at an important issue. The subject may or may not be controversial, but you must attempt to persuade your audience that your ideas have merit.

4 Ask the right questions

Knowing what questions to ask, is critical to doing good research:

- What do you need to know?
- How much do you need to know? (do you want to know a lot about a little, or a little about a lot?
In general, narrower papers are easier, broader ones are more difficult)
- Where can you find the right answers?
- Do you need answers from primary or from secondary sources?
 - Primary sources offer reliability, timeliness and real world relevance
 - Secondary sources can be less reliable or specific, but are sometimes more focused and/or less biased
- What kind of answers do you need?
 - Anecdotal information?
 - Historical background?
 - Statistical data?
 - Technical specifications?
 - Corroboration from multiple sources?
- How up-to-date must the information be?
- In most cases, the main question is the focus of your research

5 Use the right sources

Where to find what you are looking for?

- People, internet, encyclopaedias online (such as Britannica), library and other sources
- Take enough time to write down a list of interesting, relevant search commands
- Searching on the internet, use adjectives that will lead to less common search results (Eg.: 'spectacular', 'fascinating', 'extreme', 'high tech', etc.)
- Use 'Boolean' and other advanced search options
(See 'Google Advanced Search', also see: <http://www.searchcommands.com/>)
- Also, use social media, newsgroups and 'usenet' to find subject matter experts
- Verify that all the information you intend to use, is factual, up-to-date and correct
- If the (academic) credibility of a source could be questioned, do not use the source
- Opposing views should also be noted, if they help to support your point of view

6 Start writing

Writing the paper, is how you develop your ideas in the first place

- Write down your thoughts as you proceed (not just those of others)
- It doesn't matter which part you start writing, but start!
(It can be the beginning, the middle or the end, but they have to fit)
- Make yourself write some each day, if only a paragraph on some section of the paper
- Make sure you are (and keep) following your outline of the topic
- Do not include any information that is not relevant to your topic (or that you do not understand)
- Let it sit, read aloud, correct and rewrite
- Ask others to comment on your paper
- Always use a spell checker!
- Use simple/clear and direct language

Right:

Yearly

Find out

The garbage collector was really slow

Wrong:

On an annual basis

Endeavour to ascertain

It could be considered, that the speed of storage reclamation left something to be desired

Plagiarism is a very serious offense (plagiarism: using work from others, as if it is your own)

The purpose of any paper, is to show your own thinking: not to create a patchwork of borrowed ideas. So a paper full of others' work or citations, is not your paper!

- If you imply that an idea is yours, although it is not, then either:
 - You don't know that it's an old/existing idea (bad)
 - You do know, but are pretending it's yours (very bad)
- Giving credit to others, does not diminish the credit you get from your paper. But failing to give credit to others, can easily kill your paper!

Writing *really* is not that difficult!

- To begin; that's the hardest part!
- Impose your will on the subject and stay focused
- It usually turns out to be much more interesting and challenging than expected
- Persevere and get reinforcement from time to time
- Stay in touch with your teacher (that's me...) weekly
- Begin!

7 Select a title

- Find a *working title* (the 'working title', is the temporary name of your paper used during its development)
- Choose a suitable (*final*) title, only after you finished your paper
- The title should state the focus of the inquiry and show the boundaries of the topic
- A good title is descriptive and understandable. Preferably, it should consist of keywords for electronic search: therefore, it's better to avoid words that are too general
- Preferably, be clever, catchy and memorable

8 Provide a bibliography

A bibliography or 'works cited page', includes all of the sources cited in your paper.

- Save everything in your research (a crumpled note in the waste bin, might just be the insight you need)
- Key each bit of information to its source (including all relevant info like title/author, p. #, website, etc.)
- Annotate each source as to its value & focus
- Keep a master list of all sources consulted (internet, print, audio-visual, interviews etc.)
- Borrow ideas (words, findings, numbers, graphs, etc.) from a source whenever they will support, clarify, or enrich your meaning. But always give credit to the original author in your paper. (*Every time* you quote directly or you paraphrase from a source, you must acknowledge the author)
- Warmly acknowledge all people who have helped you

9 Structure your paper

Doing this allows you, to make your research as detailed and comprehensive as possible.

Organize all the information you have gathered according to your outline, e.g.:

a. *Abstract* (only 4 sentences)

Write the abstract after having completed the paper and after having chosen the final title. The abstract and the title are the most read parts of your article. So, to attract attention to your paper, they should be eye-catching and informative at the same time.

- State the problem/subject
- Explain why it's an interesting problem/subject
- Explain what your solution/research achieves
- Explain what follows from your solution/research

b. *Introduction* (max 1 page)

The introduction differs from the abstract telling about various points in brief. In the introduction you touch upon the subject, your tasks and objectives. You overview the context of your work and state its actuality and novelty. You introduce basic literature, methods and up to 80% of the key findings. While one paragraph with just the main idea is enough for the abstract, the introduction contains a few paragraphs or at least a few items.

c. Describe the *problem/subject* (max 1 page)

d. Your *idea/solution* (max 5 pages)

(here you also compare your point of view with that from others)

e. *Details* (max 5 pages)

f. *Related work* (1-2 pages)

g. *Conclusions* and further work (max 1 page)

You round off a successful argumentation with a short conclusion: here, your goal is to demonstrate a deeper understanding and impact of your work.

h. *Bibliography* (list of sources)

Organize the content of your paper in a logical order:

- Inductive (specific to general)
- Deductive (general to specific)
- Chronological (time sequence)
- Overview (assess all parts of a debate, dispute)
- Problem statement, assessment and recommendation
- Clarity and transparency work best (beware: all can be clear to you, but not to your reader);
- Be flexible (you may have a direction, but you don't know what you will find along the way)
- Leave lots of blank spaces around clusters or outline for later comments

Revise your outline and draft: critically analyze your research data and read your paper for any content, grammatical or punctuation errors. Arrange and rearrange ideas to follow your outline. Reorganize your outline if necessary, but always keep the purpose of your paper in mind.

10 Finalize your research paper

- Aim to have your final paper ready a day or two before the deadline. This gives you peace of mind, a chance to check again and time to get someone else to read it over.
- Before handing in your assignment for marking, ask yourself:
"Is this the very best that I can do?"