Scientific Work[1]

(How do I write a science-based paper?)

Scientific work means use of existing scientific knowledge and independent and self-responsible processing of a problem / topic

TIME MANAGEMENT

Time Plan: Enter the schedule in the calendar by the day and by the hour, which steps have to be completed at what time

1st phase: Gathering general information

- Recording the problem
- Defining the priorities of the topic

2nd phase: Objective of the work

- Formulation of central questions
- Rough structure

3rd phase: Targeted collection of information

- Targeted literature research → Weighting: 80% Books and Publications, 20% Internet
- Excerpts

4th phase: Detailed structure

- Logical focal points and structuring
- Detailed structure of the topic

5th phase: Reflection

- Leave literature work alone
- Pursue your own ideas and thoughts

6th phase: Writing a paper

- Create continuous text from notes

7th phase: Correction

- Content and formal testing

8th phase: Timely submission

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[1] This short guide was written by an anonymous author, probably a high school teacher in Brandenburg, Germany, who wanted to provide his/her 9th grade students with a handout for writing a scientific paper. Although it is addressed to high school students, the essential elements of scientific work and writing are excellently summarized here and can therefore also be used by university students. Thanks to Mark Grimm for the translation and Dr. Alexandra Raab for providing the text.

Prof. Dr. Thomas Raab
Brandenburg University of Technology Cottbus-Senftenberg
Geopedology and Landscape Development
Cottbus, June 2, 2022

Tips for time management:

- Start early
- Observe the work flow
- Calculate the available working time
- Remain realistic
- Build in a time buffer
- Create a balance

RESEARCH

Acquire → Procure → Process Step

1st step: General information collection

- Follow further sources → Snowball system
- Get an overview of the topic

2nd step: Systematic research

- Recent literature first → Journal articles, review papers
- "Old" literature second → Monographs, textbooks
- Detailed information on the subject

3rd step: Filtering/Structuring

- Filtering → According to relevance and topicality
- Structuring → Setting priorities

READING SCIENTIFIC TEXTS

Skimming → Marking → Summarizing

1. Reading

- Cursory, orienting reading (scrolling through the text) is used to establish, whether a text or the subject to be treated is useful
- Analytical, intensive reading occurs when the usefulness of a material has been recognized → complete, thorough editing of the entire text or individual sections and looking up unfamiliar terms
- Summaries of reading → checking and supplementing the notes

2. Techniques

- Color marking, underlining, marginal notes, marginal symbols, etc.

3. Summarize

- Summarizing excerpts of a text in your own words or quotations