

Online Guidelines for Academic Research and Writing

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Table Of Content

Online Guidelines for Academic Research and Writing	3
The academic research process	4
The purpose of academic research and writing	4
The process of academic research	5
Topic selection, posing problems and questions	8
Theory, hypothesis, and operationalization	10
Data collection and data analysis	11
Interpretation	12
Organization and project management	14
Basic principles of projects	14
The concept of phases	14
Time management	18
Literature research and application	20
Literature search	20
Searching in library catalogs	23
Search options in electronic journals	25
Search options in libraries and databases	26
Use of literature	28
Writing an academic paper	32
Requirements regarding academic papers	32
Formal structure of papers	35
Quotations and references	40
Creating a bibliography	45
Writing coaching	50
How do I create a good poster?	53
The poster-a special form of presentation	53
Advantages and disadvantages of posters	53
What should a good poster look like?	54
Structure and types of posters	56
Tools	59
Presenting posters	62
Assessment criteria for posters	63
Further reading	63
Presentation skills	65
Introduction: «Presentation skills»	65
Preparing for a presentation	65
General information on presentations	67
Discussion	70
Learning techniques and exam preparation	73
Introduction: «Learning techniques and exam preparation»	73
Learning approaches	73
Organization when learning	75

Online Guidelines for Academic Research and Writing

Attitude when taking an exam	80
Bibliography	81

Online Guidelines for Academic Research and Writing



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Introduction

These guidelines are meant as introductory stimulation for those who want or have to deal with a scientific subject in depth. Academic research and writing has been standardized due to the processes of globalization in more than one way. However, this doesn't apply when making quotations in scientific papers, which can vary quite much between disciplines and publications. With these guidelines we hope to contribute to a proper course of studies focused predominantly on the content of papers, lectures, and subject matters instead of any formal requirements. All information is optional and not exhaustive.

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Norman Backhaus and Rico Tuor

The academic research process

Learning objectives

At the end of this chapter you should have learned the following:

- You know the basic formal rule of scientific work.
- You know what you should consider when choosing a topic and know the difference between problem statement and research question.
- You know the different models of research processes.
- You know the difference between approach, theory and model.

The purpose of academic research and writing

Formal rules: Basic to scientific communication

Papers, lectures, and colloquia are essential elements of academic studies. Examinations as well as a bachelor's or master's thesis qualify for a degree. Surprisingly, there is not much of a difference between writing a paper and a thesis. In both cases students are required to demonstrate their ability to write scientifically and the basic rules for this are always the same (Krämer 1999: 184):

- Keep everything reproducible and comprehensible
- Don't mix opinions (yours and others) with facts
- Be eager to gain new insights

These basic rules are key to scientific communication and comprehension. On the one hand, these rules are restrictive but on the other hand, they provide a framework for academic research and writing that enables us to understand and evaluate the work of others. These rules shouldn't form an obstacle or restriction; they should on the contrary create the prerequisites to write papers that can then be understood as intended.

These guidelines serve as tools to avoid mistakes and spark interest in doing scientific work. After gaining experience these tools are no longer obstacles but provide efficient strategies when dealing with science in more depth.

Studying

Studying means thoroughly engaging in a subject for several years while developing your personality and world view (the statements in this chapter are based on Reusser (1997)). Studying also means educating yourself and comprises not only the long-term development of coherent and flexible know-how but also the forming of general, disciplinary, individual, and social skills regarding learning and thinking in particular.

Studying not only means learning contents to be reproduced afterwards during examinations. To engage in your own learning and thinking processes should also be part of your studies. It is therefore reasonable to reflect on your strengths and weaknesses as well as your way of approaching and solving problems; it makes sense to keep an open mind in view of any changes. You should accept new experiences, new ways of thinking and proceedings as challenges to be tested while any reorganization regarding your self-perception and world view should be embraced.

If possible, you should not completely separate the knowledge gained during your studies from the professional and experiential know-how. It is essential to integrate newly gained knowledge into everyday life since it will then be easier to comprehend, memorize, and incorporate it into your body of knowledge.

It is also important to mind complete learning processes. It is not advisable to passively attend as many courses as possible for an extended period of time in order to collect material and deal with it later on. Knowledge building should always be followed by phases of consolidation, which means working through learning matters before absorbing them. Only knowledge that has been processed, is structurally transparent and flexible can be used for solving problems and further learning.

During the course of your studies, it is equally important to develop and work on your techniques and learning skills, both personally and academically. Dealing with specialized literature and writing scientific texts and papers, belongs to the core competencies of students. Any intentional act of studying - such as actively listening and taking notes, processing data and texts, writing reviews and papers - contributes to cultivating and consolidating these basic competencies not necessarily related to a specific field. You should seize every opportunity to reflect on basic procedures and strategies before modifying them if necessary.

Studying is not just attending required courses. You should also use the opportunity to actively participate in research projects, trainings, or tutorials. Learning content will then be consolidated more efficiently while perceiving it from another perspective. Additionally, you realize what science can or can't do, e.g. how scientific findings are used and implemented in practice.

Studying is not only an individual task. Discussing learning matters with peers, exchanging learning strategies, difficulties, and experiences are also part of your studies as well as single pieces of work or your individual learning process. Teamwork and discussions promote social skills as well as the ability to accept other opinions and approaches. These aspects are not just concomitants when studying; they should be cultivated and promoted deliberately.

The process of academic research

There is a wide range of opinions on how to proceed when doing academic research. At this point, we would like to mention two common models for the research process: the linear and the circular model; both have proven to be useful for Geography students.

The linear model (fig. 1) is used when doing quantitative research since its main purpose is to discover causal relationships or attain numerical representativeness. In doing so, it is important to always collect data in the exact same manner to make sure that results are representative and statistically comparable. The circular model (fig. 2) is particularly used when doing qualitative research since it most notably deals with the reconstruction and comprehension of social processes.

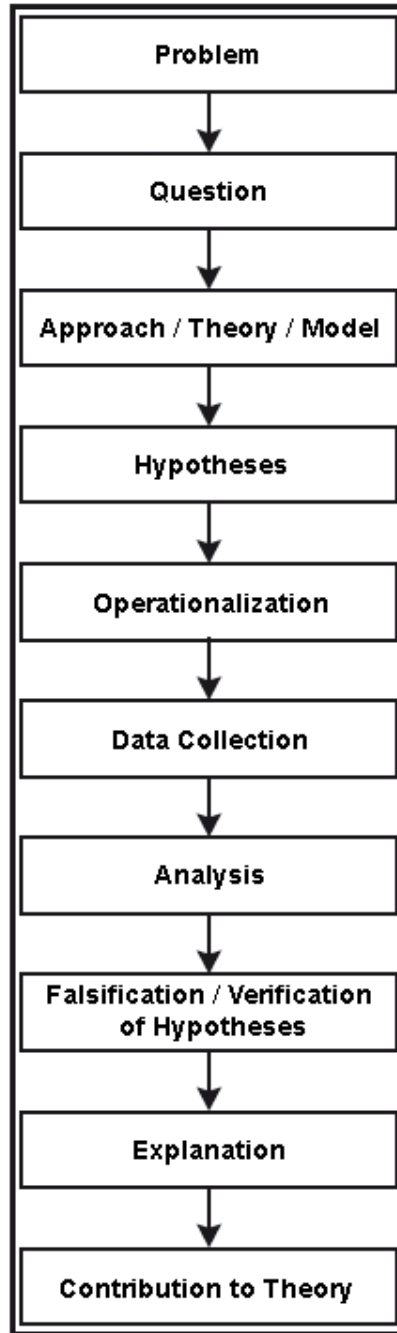


Fig. 1: Linear model of a research process. Source: Diagram by author based on Aerni et al. (1998) and Flick (1995: 61 und 83).

Quantitative results could be as follows: «62 % of the population is content with the government» or «45 % of the water runoff as regards the XY river is caused by melting water in summer.»

In contrast to doing quantitative research the general conditions of qualitative research are at first less definite. It is necessary to determine basic data (sampling) step by step (or from case to case) before collecting and analyzing them. Then these data have to be compared in order to provide further contributions to theory (Braun

et al. 1987; Speck 1980). Its advantage is the discovery and incorporation of new findings when doing research. Representativeness is not achieved by surveying as many cases as possible but by selecting a wide range of interesting and relevant cases before examining them in more depth.

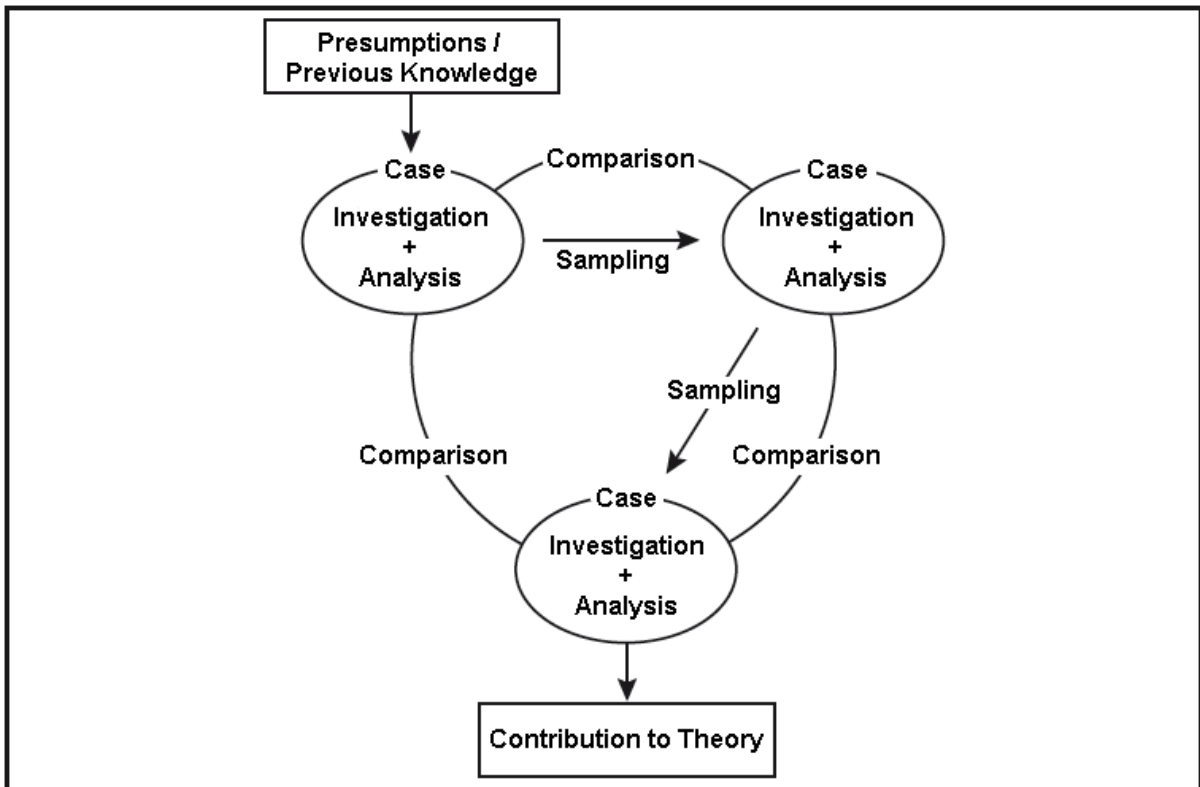


Fig. 2: Circular model of a research process. Source: Diagram by author based on Flick (1995: 61).

Results of qualitative research could be as follows: «Farmers fear official paternalism when it comes to new nature conservation projects while the tourism industry welcomes such projects as marketing tools.»

Similar to the circular model you can perceive research as a process focused on posing questions and being connected by various relations to other (cf. fig. 3). Posing questions is key to this research process and influences every step on the way. It is also clear that searching for good questions at the beginning of each and every project is of great importance.

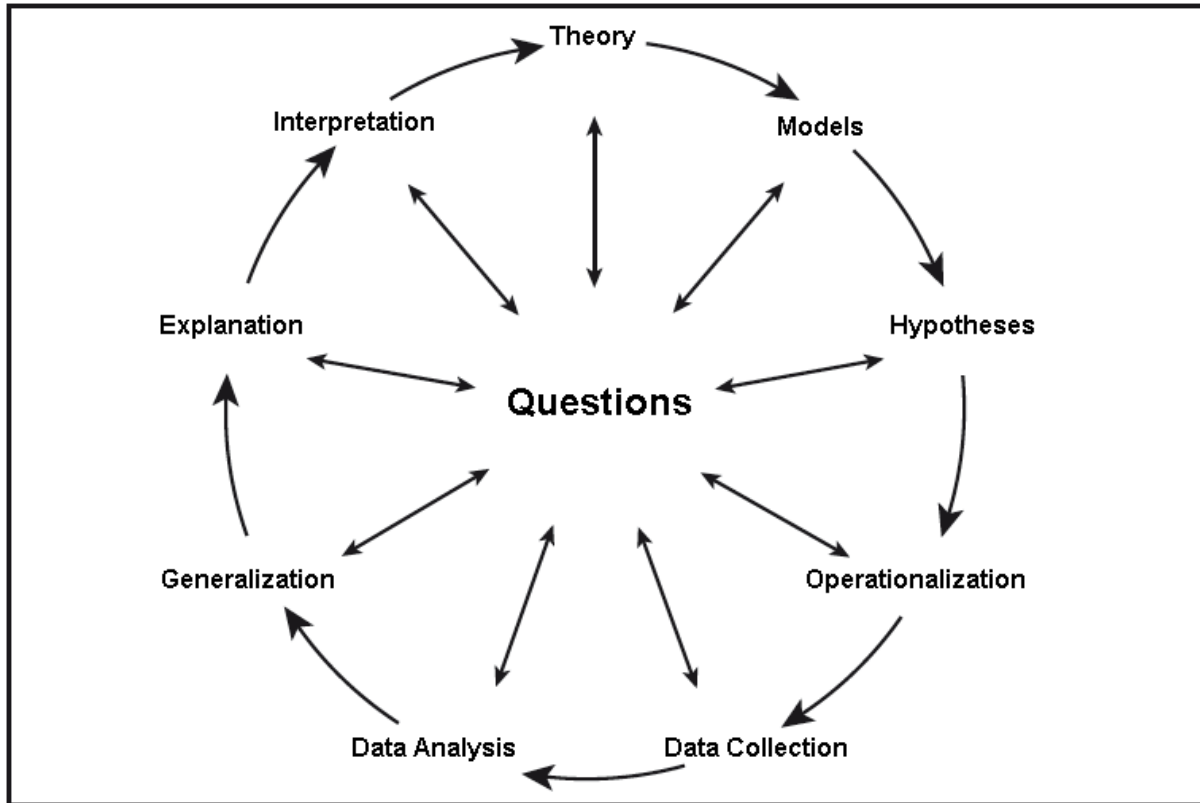


Fig. 3: Research process focusing on the question(s) posed. Source: Diagram by author based on Marshall & Rossmann (1995: 17). Draft: M. Kollmair.

Topic selection, posing problems and questions

Topic selection

Most of the time there are generally two possibilities when selecting a topic: you can apply for a topic advertised by supervisors or select one freely. Both options have their advantages and disadvantages. The advantage of choosing a topic already announced is that this topic is more likely to be integrated into the work of a research group resulting in close mentoring (Bopp et al. 2000: 57). However, your own ideas may not always be considered in this case.

If you choose a topic freely there will be much more room for creativity and personal contribution but perhaps also fewer opportunities to find peers in difficult times. When concentrating on writing a longer piece of work - such as a bachelor's or master's thesis - it is advisable to choose a topic that truly reflects your interests. This doesn't guarantee good questions or wise topic selections; however, you are more likely to keep up the good work and develop new ideas (Bänsch 1999: 33).

When choosing a topic freely you may spend more time with precedent clarifications or adaptations. You should make sure that the topic selected matches the department's and supervisor's line of research, is reasonable as regards its time frame, and is based on a sound literature review.

However, it is not wise to only choose a topic because there is a lot of further reading material. On the one hand, it is then difficult to focus on a particular subject and on the other hand, it isn't the quantity but the quality that counts (Bänsch 1999: 35).

When having a say in the matter you should seize the opportunity, consider your interests and abilities while asking yourself amongst other things:

- Where do my talents lie?
- Do I have an inclination towards practical or theoretical work?
- Do I plan to stay in academia or not?
- What kind of profession is interesting for me?
- Do I need a lot of mentoring or do I prefer to work on my own?

When writing a master's thesis it is not necessary to explore completely new intellectual spheres. You should choose a topic already discussed in lectures, seminars or even everyday life, one that can be tackled in a given period of time ([Krämer](#) 1999: 16–17).

Objectives

In addition to social sciences it is mainly geography that has turned out to be a problem-oriented branch of study when dealing with environmental change, globalization, statistical data processing, etc., and trying to find solutions to these problems academically. Even a lecture's or seminar's topic can be qualified as a problem that has to be described, analyzed, and finally solved.

However, in geography problem-oriented research and epistemological research continue to exist side by side. One doesn't only focus on a concrete problem but rather strives to get certain knowledge of a particular issue or e.g. a community. When doing academic research the way of posing a problem determines the superior framework or subject area, respectively. It defines the gist of the matter.

Example: «Tourism can cause social changes in so-called developing countries.»

Research questions

Posing a question (or even more than one) deals with that part of a problem that has to be explored first and in more detail. It precedes the research, is derived from the problem, and should therefore be solved during the course of your writing if possible. Posing a question should to some extent contribute to a problem's solution.

An academic paper focuses on the questions posed.

Trying to find good questions is one of the most challenging tasks when doing academic research. Without clearly defined questions you risk going overboard. It is therefore necessary to take your time and refer to these questions over and over again.

Example: «What effect does tourism have on children going to school in a region faced with poverty?»

The process of developing research questions is only completed after analyzing all relevant data. In general, a good question isn't determined from the very beginning but only becomes apparent after familiarizing yourself with the matter. It is also legitimate to make modifications or rephrasings. Theoretical pieces, models or methods applied on recent fields of research can be sources for good questions, as well as scientific papers or topics of public discourse, etc. ([Bopp](#) 2000: 57). When wanting to concretize a question it can be worthwhile to exchange views with fellow students in a similar situation. Preconceptions and fixed ideas can then be challenged while bearing in mind a wide range of aspects and issues.

Theory, hypothesis, and operationalization

Approach, theory, model

First, you have to determine the general state of knowledge (or state of the art) as regards a certain objective. Are there already relevant attempts of explanation (models, theories, approaches, debates)? Many times there are theories already existing that provide a basis for discussing or looking at a certain problem.

When choosing a certain approach to explain complex circumstances, specific aspects of your problem area will be highlighted more prominently. Deciding on an approach means considering which questions can then be answered best. After choosing an approach it is necessary to use its related methods consequently.

Examples for approaches: «Education is an important prerequisite for a society's economic development» or «Earnings from tourism support national economy.»

Hypotheses and presumptions

Hypotheses are assumptions that could explain reality or - in other words - that could be the answer to your question. Such an assumption is based on the current state of research; it therefore delivers an answer that is theoretically possible («proposed solution») and applies at least to some extent to the question posed. When dealing with complex topics it is sometimes easier to develop a number of subordinate working hypotheses from just a few main hypotheses.

Example for a hypothesis: «Tourism offers children the possibility to earn money instead of going to school» or «The more tourists the fewer the children are going to school.»

Not all research projects are conducted by means of methods to test hypotheses. In social research, for example, there are reconstructive or interpretive methods as well. Here you try to explain and understand people's actions based on their interpretation of certain issues (Bohnsack 2000: 12–13). However, also with such an approach researchers use hypotheses or presumptions to structure their work. The point is not to finally acknowledge or reject those hypotheses. You rather search for explanations that are plausible and comprehensible.

Example for a presumption: «In developing countries parents are skeptical about their children working for the tourism industry.»

However, most of the time one again acts on theses or presumptions. The point is not to finally acknowledge or reject those assumptions. One rather searches for explanations that are plausible and comprehensible.

Example for an explanation: «Parents don't worry about their children not going to school; they are afraid of losing their status when earning less than their children.»

Operationalization

It is necessary to operationalize the terms used in scientific research (that means particularly the central terms of a hypothesis). In order to guarantee the viability of a research method you have to define first which data will be collected by means of which methods. Research operations have to be specified to comprehend a subject matter in the first place (Bopp 2000: 21). In order to turn the operationalized term into something manageable you determine its exact meaning during a research process.

Example for an operationalization: «When compared to other areas, tourist destinations are areas where children are less likely to go to school.»

Data collection and data analysis

Data collection

There are a lot of methods, methodologies, proceedings, approaches, etc. which will not be discussed here in more detail (cf. [Atteslander \(2006\)](#), [Diekmann \(2008\)](#), [Flick \(2005\)](#), [Lamnek \(2005\)](#), [Reuber & Pfaffenbach \(2005\)](#)). The most useful method to collect data when studying is the evaluation of all kinds of texts (see fig. 4) as well as the empirical collection of so-called primary data. Collecting texts in libraries or doing research online (e.g. in library catalogs, data bases, online journals, and other portals) is also considered as data collection. There are numerous data sources («documents», «material») from which to choose.

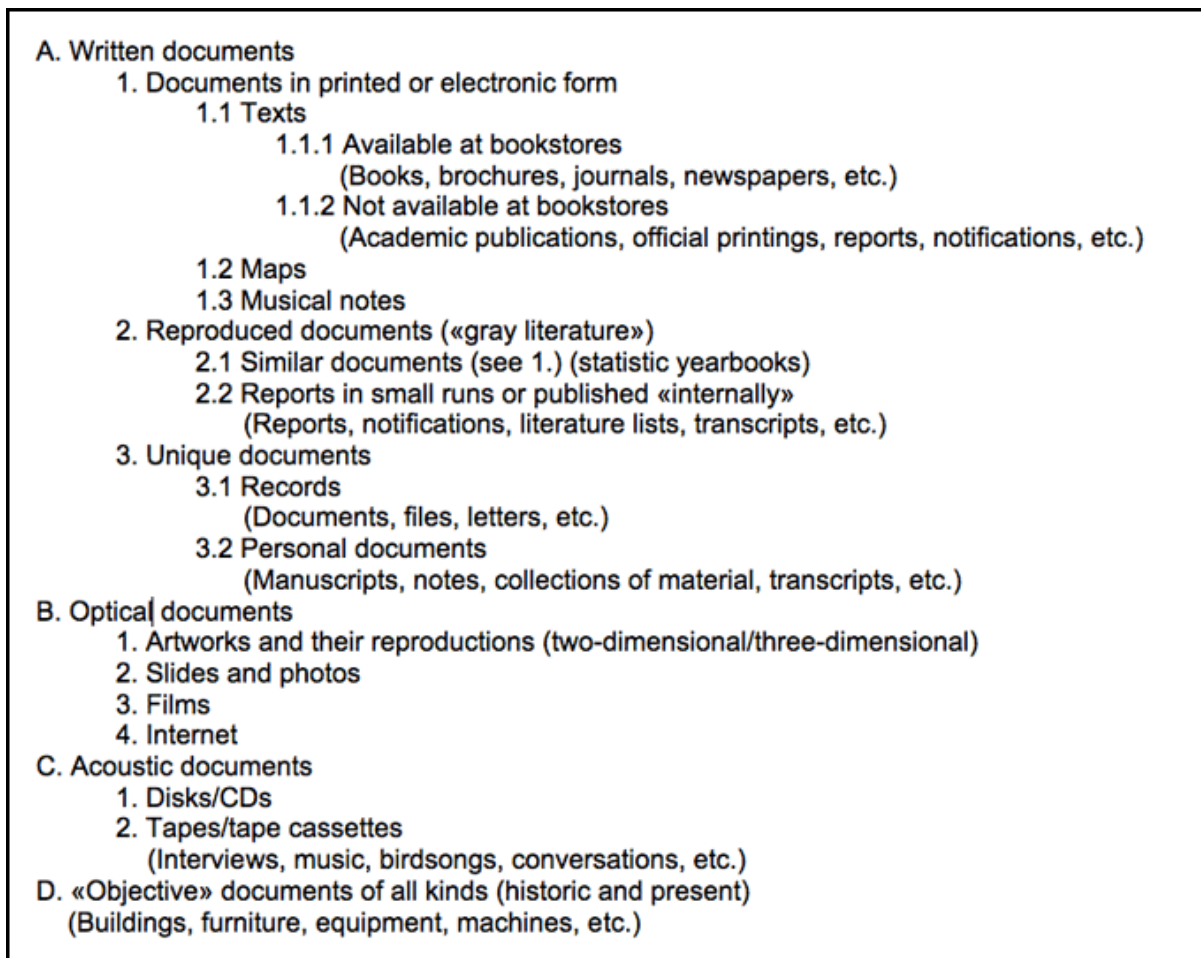


Fig. 4: Various data sources. Source: Diagram by author based on Seifert (1976: 18).

Example for data collections: «As regards tourism and school attendance, statistics already existing will be used.»

Other research findings already published in texts can also be used as data sources for further analysis. Here it is essential to apply formal criteria stringently (cf. «**Writing an academic paper**»). Without these criteria it is difficult to evaluate, for example, a research paper already existing before continuing to use it properly.

Data and data analysis

Data used for argumentation must be traceable as regards their origin since it is then possible to draw conclusions about the collection's circumstances or its primary purpose. It is also necessary to present any sources or acquisition methods clearly and precisely (e.g. author of quotation, circumstances of surveys, etc.).

Example: «Statistics will be checked for their plausibility; the number of tourists will be correlated with the one of school absences before checking these results for significance.»

We would like to point out that only listing data is not equal to producing results. Data require interpretation and are only of value after finding a relation between these data and the question posed during research or while writing a scientific paper.

Data without any analysis aren't results!

Interpretation

Verification and falsification of hypotheses

The data collected should help to elaborate on your working hypotheses. The main goal is to determine if an assumption of reality is right or wrong (under specific conditions, given sources, methods, operationalized terms, etc.).

Strictly speaking it is not possible to verify a hypothesis since it would be necessary to theoretically measure all imaginable data sets on this hypothesis. Additionally, it is not possible to know all about one object of research. Established facts can suddenly lose their validity due to scientific progress. Newton's mechanics have been falsified by Einstein's theory of relativity, for example. However, it is still in use since its error is not noticeable in everyday life. When writing a scientific paper you search for reasons to falsify a hypothesis. If this is not possible you can assume that this hypothesis is plausible (for the time being).

Example: «There is a statistical relation between tourism and school absences; the hypothesis will therefore not be falsified.»

Explanation

An additional goal is to deliver an explanation for your higher-level question. This explanation doesn't have to be extensive and can focus on one part of the question only. You declare, for example, why this hypothesis is not verified or with which reservations it could be valid nonetheless.

Example for an explanation: «The revealed statistical relation suggests that children do find means of income in the tourism industry, indeed.»

Online Guidelines for Academic Research and Writing

One often attempts to deliver an explanation by means of a theory previously presented as long as this theory is useful for the problem or question posed before. It is also possible to demonstrate, for example, why a certain theory is not suitable for the problem selected. This is particularly the case when other authors use that theory frequently or when it corresponds to the current opinion but it does not apply (or only partially) in one's own special case.

Research results will find their way back into theory.

Contribution to theory

Scientific research is only complete when its relation to the current state of the art is established. You have to indicate or at least estimate to which extent the insights gained can be generalized to contribute and explain a problem on a higher level. This leads to the differentiation or relativization of a theory that has then to be edited or replaced as the case may be.

Example: «Tourism contributes to a country's economic development but it also has some negative impact on social issues.»

Organization and project management

Learning objectives

At the end of this chapter you should have learned the following:

- You can set up a research process and divide it into sub-steps.
- You understand the concept of phases and can apply it.
- You know the basics of time management and can use them to establish your ideal work process.

Writing scientific papers or theses are tasks that require planning, organizing, and managing skills. When studying, a master's thesis is in general the largest project. Associated with this task are complex sub-steps such as data collection, reviews, evaluations, and a major expenditure of resources (time, for instance). It is therefore key to have good coordination and time management skills. The steps mentioned above are mainly intended for larger projects such as a master's thesis. However, this layout is also suited for bachelor's theses or term papers that require less time and possibly fewer steps. Courses and tutorials should therefore be seen as means of preparation for larger projects to follow.

Basic principles of projects

When planning a project it is advisable to consider the following basic principles (vgl. [Witschi 1999: 3](#)):

Partition project in stages: The purpose of outlining a project in stages is to present a clear step by step development of the solution to a problem stated. The risk of failure can be minimized by dividing the task into processes of planning, determining, and concretizing before including predefined milestones (e.g. meetings and discussions before important decisions).

From general to detail: It is advisable to begin with a broad perspective before narrowing it step by step. Especially when dealing with novel topics or re-conceptualizations, it is often more convenient to have a master plan first, since its frame will then serve as a guideline for further sub-steps.

Planning a seminar paper or master thesis as a project will make things easier.

See project management as a sequence of processes: It is not possible to schedule projects from A to Z. Many sub-processes cannot be determined right from the start since external influences are hardly predictable. In addition, you should leave room for new insights, findings, and even surprises when planning a project.

Consider alternative solutions: Project management should be flexible and take alternatives as well as discrepancies into account. Especially when writing a master's thesis where empirical work faces uncertainties, to develop a plan B can be helpful.

The concept of phases

Preliminary work

Initiation of project

The initiation of a project is the period of time between acknowledging a problem and deciding to do something about it. At this rather unstructured stage you collect literature and ideas; the questions posed can still be vague. However, it is already possible to concretize certain steps such as contacting and choosing your mentors or supervisors. In addition, we recommend a project agreement between student and mentor during this stage.

Both determine general objectives and expectations while identifying any potential conflicts. This agreement also contains specific requirements such as important milestones (e.g. presentation of concept and results), available resources, and deadlines (organization of empirical research, temporary submission date) (Witschi 1999: 1). A bar chart can be used as a visual aid for your timing, each sub-step relating to a limited period of time.

Project agreements determine general objectives.

Preliminary project

At this stage a provisional concept is prepared while concretizing further steps and timing (fig. 5). The problem, its limitations, and methods are defined more accurately while clarifying the current state of research. Under ideal conditions you can eventually present a concept during a seminar or colloquium.

Task	Year 1							Year 2				
	J	J	A	S	O	N	D	J	F	M	A	M
Initiation of Project (Start Master Thesis)												
Idea / Establishing Contacts												
Provisional Schedule												
Project Agreement		◆										
Preliminary Project												
Elaboration of Concept												
Problem Statement												
Objectives												
Clarifying Solutions												
Processing Current State of Research												
Concrete Schedule												
Intermediate Presentation							◆					
Main Project												
Compiling Theory												
Acquiring Methods												
Detailed Project												
Sampling												
Forming Categories												
Forming Hypotheses												
Making Pre-Test												
System Building												
Empiricism												
Analysis												
Review and Final Editing												
Submission and Assessment												
Examination												◆

Fig. 5: Schedule of a master's thesis including milestones. Source: Diagram by author.

Realization

Main project

At this stage you focus on developing a master plan. It is advisable to allow enough time for familiarizing yourself with all relevant theories, arguments, and methods. Afterwards we recommend a detailed review and possible revision, since you set important guidelines for the subsequent data collection at this point.

Detailed project

Here you determine the general conditions for empirical research when operationalizing terms, determining indicators, forming hypotheses, and creating a guide or questionnaire according to requirements. At the end of this stage, it is necessary to make a pretest in order to calibrate the following data collection.

If possible you should pretest the methods selected.

System building

System building in its broadest sense refers to «building» solutions. In relation to a master's thesis, these are the steps when collecting and analyzing data. According to your research model these steps are concurrent and interacting operations when e.g. including provisional results in your data collection.

After completing your project, it is common practice to review your work with a discussion or assessment. However, it is also worthwhile to think about the entire working process, its good as well as its problematic aspects. Usually during university studies you have to write only one or two larger text bodies, but having some experience in project planning is also of value after graduation. On a smaller scale, some of the steps mentioned above will be helpful when writing a term paper.

We recommend beginning to write early while planning some time for revisions.

Application

Realization

In case there is a possibility to make your paper or certain parts of it public, you should seize the opportunity. Turning the paper's or thesis's results into articles, workshops or talks grants access for a wider audience. Additionally, you can gain experience regarding the distribution of research results.

Milestones

It is important to have milestones since they set the course for the project's next steps. When looking at the figure regarding the concept of phases (cf. fig. 6), you realize that the milestones' size (symbolizing their importance) will decrease gradually. The bigger the progress of a project, the lower is the degree of probability to terminate or re-define. This means that you have to think long and hard about the feasibility of the project's next steps, especially at the very beginning.

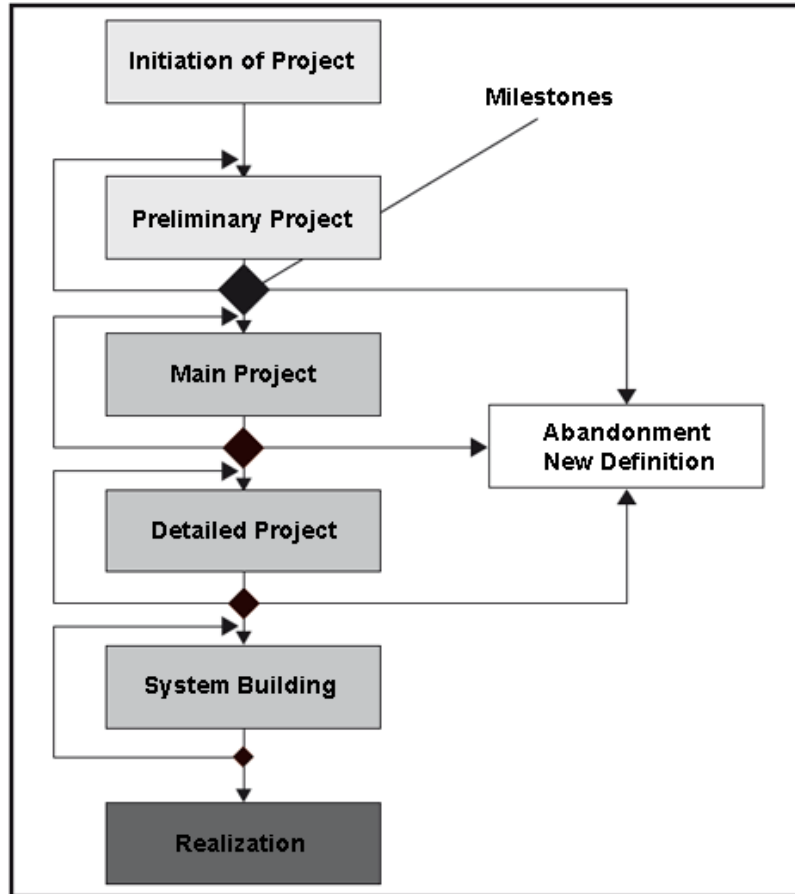


Fig. 6: Concept of phases in project management. Source: Diagram by author based on Witschi (1999).

Milestones will make it easier to structure your workload.

Time management

Reasonable time management is key when studying; particularly, when writing a thesis That requires a considerable amount of time. Most of the time, there are various steps to be taken simultaneously. It is therefore difficult to follow a chronological order. Nevertheless, writing processes, organizational tasks, literature search, and other sub-processes should be separated clearly and chronologically, as far as possible, since too many steps taken at once may cause loss of time. In addition, you tend to fritter away or do no more than what is absolutely necessary if the time management isn't well defined. It thus makes sense to keep the following in mind.

A proper time management makes it easier to study, learn, and do research more efficiently.

Specific targets are important: Without knowing what to do and when, you risk working inefficiently while getting lost in details (Haenni 1999: 2); or by starting to procrastinate (Rückert 2002).

If you tend to constantly postpone things it will be difficult to reach your goal (Rückert 2002).

Tasks are prioritized: It is possible, for instance, to differentiate between urgency (chronological qualification) and importance (qualification as regards content). When planning your daily routine, it is not advisable to schedule too many tasks of the highest priority. Generally speaking, it is better to do what is important while delegating urgent tasks when indicated. Two months before the deadline, a master's thesis is important but not urgent. If you procrastinate until important steps are really urgent, the paper's or thesis' quality will suffer and risks a poor assessment. It is additionally advisable to combine and complete less important tasks of top priority (calls, etc.) en bloc while scheduling important tasks of low priority ([Haenni 1999: 4](#)).

Finish important things before being pressured!

We recommend preparing a *schedule for each day and week* to better estimate the time needed for each single task. It is mandatory to allow extra time for any unforeseen events. Your everyday objective should be to perform all tasks of the first priority at least. It is appropriate to check and assess your schedule on a daily basis in order to optimize the following routines ([Haenni 1999: 5](#)).

Tasks of completely different qualities are separated from each other before dealing with them en bloc. When writing a master's thesis, it is advisable to include organizational and technical tasks (such as making copies or illustrations, searching for literature, etc.) explicitly into your schedule. First, it is quite an effort to switch from one task to another. Second, you tend to otherwise neglect the task of actually writing the thesis ([Kraas & Stadelbauer 2000: 132](#)).

You should pay attention to the *personal performance curve*. This curve varies on an individual basis and can be determined by daily reports in which you list time, consecutive activities, and comments (disturbances, good as well as bad phases, etc.). You should also list activities that are not project-related (such as breaks, meals, or sports), since this can influence your performance considerably. Individual moments of top performance should also be included in this schedule. It is best to perform important tasks during such periods of time without being distracted (by turning off the phone, reducing any noises, deactivating the e-mail application) (cf. [«Concentration»](#)) ([Kraas & Stadelbauer 2000: 133](#)).

After achieving all objectives, you can treat yourself to a good meal and finish early or go clubbing. Such rewards motivate to pursue further goals. Noting down your accomplishments not only results in realizing what still has to be done but also in appreciating what has already been completed, no matter how small the task. Sometimes it takes time to settle things. It is therefore advisable to e.g. finish your concept somewhat before its deadline. Looking this draft a few days later, things may cross your mind that need to be reconsidered, included, or corrected. In the end, this will result in a win-win situation.

People have a varying perception of time as well different ways of working. There are those who achieve best results when being pressured (by oneself or others) while others need more leeway since pressure doesn't agree well with them.

One cannot tell which way is best. However, it is important to know if your way of managing time is convenient as well as efficient. We therefore recommend exploring various approaches. Those who think that they can only achieve best results while under pressure, should try sometimes to deliberately start a project earlier than usual - just to see how they work when not being stressed. Doing this the other way around might bear some risk. However, people who usually cannot cope with stress are sometimes surprised at how well things go when there is only little time and one has to focus on the essentials.

Literature research and application

Learning objectives

At the end of this chapter you should have learned the following:

- You know where you can find scientific literature.
- You know how to search in a (virtual) library.
- You know the different ways to read literature and can apply them.

Literature search

Germane, good literature is essential for successfully writing a scientific paper. Such papers must rely on research already performed since it makes no sense to reinvent the wheel over and over again. We therefore recommend searching for literature in a systematically planned way. On the one hand, one limits the risk of only finding literature that is partial and hardly suitable; on the other hand, the expenditure of time is reduced or can at least be better estimated.

Especially when writing a bachelor's or master's thesis, it is worthwhile to first think about what exactly is searched for and how such a search can be structured. Searching in an uncoordinated, unfocused way only results in a loss of time and makes it difficult to get an overview of a new topic. Thanks to electronic journals and databases the days when one could say: «There is no literature available for my topic», are long gone.

Searching for literature without any focus is futile.

How to search for literature

Defining a topic

Before really searching for literature (cf. [Hart 2001: 23](#)) you should determine the main range of topics although it won't be possible at this stage to estimate the literature's amount or quality. It is necessary to consider which disciplines are involved, which access is available, and which kind of specific literature should be used.

Considering a topic's limits

It is advisable to already take a topic's limits into consideration when searching for literature. Otherwise, you are confronted with a lot of unfocused, widespread material whose review will take too much time.

Identifying the most important references

Abstracts, bibliographies, and other sources are of avail (dictionaries, almanacs, catalogs, etc.). Libraries grant access to bibliographies and databases relating to a lot of topics (e.g. specific bibliographies). One should aim for being always up-to-date.

Managing literature

Before reviewing literature or references, you should consider how to archive such material. Especially when writing a longer paper, we recommend using your own management system. From the very beginning it is important to pay attention to the references' completeness, even if the sources' quality or importance cannot be evaluated at first. It is cumbersome to go and look again for complete specifications and should therefore be avoided.

Your management system for literature does not have to be based on electronic devices; it is also possible to use file cards, especially when writing a paper of just a few pages (cf. fig. 7). There are various electronic management applications available (commercial ones and open-source applications), such as Mendeley, Zotero, EndNote, Citavi, or BibTex.

Haggett, Peter	1979
Geography, a modern synthesis	boundary issues environment/ecology disparity urban development
book	main library + department library
FR 4901	

Fig. 7: Example of a file card. Source: diagram by author. Draft: Helmut Flitter.

The card box of Niklas Luhmann, a sociologist, is legendary; many of his articles are written based on these cross-referenced file cards.

«Zotero» (<https://www.zotero.org/>), for example, is a free add-on of the Firefox browser and can be used for managing bibliographic resources. Zotero is user-friendly and helps to collect, organize, and cite bibliographic sources while being integrated in a web browser. This application automatically finds bibliographical references on a lot of websites before transferring them to one's own literature collection by means of just one mouse click. If Zotero cannot find these references automatically, it is also possible to enter them manually («Mendeley», <https://www.mendeley.com>), works in a similar way).

Listing sources to be searched for

It is best to list sources to be searched for in full detail and according to their relevance. We recommend starting with searching in e.g. encyclopedias, library catalogs, and general databases before looking for specific literature.

Archiving search results

It is advisable to thoroughly keep an account of your review results, even if there are sources that seem to be less relevant at first. You can save time when making notes on related topics, theories, and important terms. In case these sources will be needed later on, all relevant details are already worked out.

It is best to develop your own system of managing literature over time.

Sources

There are a number of possibilities to get scientific literature. In the age of global information exchange the internet has gained in importance; internet search engines are getting more and more relevant. However, you start usually by going into a library.

Libraries

Almost all libraries are public domains without any costs involved. In order to get access to the libraries of IDS (Swiss-German information network) and NEBIS (Swiss library and information network), you either need an IDS or NEBIS library card, or a student ID, either issued by the Zurich University or the ETH Zurich.

In addition to books that can be borrowed, there are a lot of libraries that manage a reference collection for non-circulating items.

Many times libraries lack space; therefore, they can grant access to only a small part of their inventory (open stacks). The main part of their inventory will be stored in depots from which you can then order the media required (Baade et al. 2005: 66).

Works of reference

Reference works, encyclopedias, dictionaries, etc. refer to certain keywords and often cite «classics» dealing with specific topics. They are therefore good sources for introducing a new subject. As a start, internet dictionaries such as Wikipedia are also an option, although their content is neither reviewed nor validated. Many institutions don't accept Wikipedia as an adequate source for academic papers. A list of online dictionaries and reference works can be found here: <https://www.hbz.uzh.ch/de/literatur-finden-nutzen/e-medien-wichtigste-titel.html?Geographie&Studierende&Nachschlagewerk>.

Scientific journals

scientific journals often provide recent approaches and the latest results in a specific field of research. They document the current state of research while offering a forum for discussion. It is also possible to publish research results at an early stage of assessment. A lot of journals provide annual catalogs ordered by subject areas or keywords. You can either have a look at such journals in situ or via bibliographies and databases (Baade et al. 2005: 71).

Bibliographies

Bibliographies are «books about books». Their organization is similar to library catalogs; nowadays, they are generally databases to be found via publications (Baade et al. 2005: 69). Bibliographies contain information on certain subject areas, providing a quick overview of the literature already available.

Library catalogs

A catalog is indexed alphabetically or thematically and refers to a library's media inventory. Library catalogs can be files, microfilms, or DP datasets. Alphabetical catalogs (or nominal, formal, author catalogs) index their inventory alphabetically as regards its authors. Subject catalogs can either be ordered by keywords or subject matter (system catalog). Due to data processing, there are more and more catalogs combining author names, keyword (generic term, not necessarily part of a title), and catchword (main term, part of a title). These new database structures make a differentiation between author catalogs and subject catalogs more and more redundant (cf. «Searching in library catalogs»).

Older literature is still not entirely archived electronically; therefore, card indexes must not be ignored.

«Pyramid scheme»

When using this scheme in literature lists, you search the latest comprehensive publications for authors, books, journals, etc. regarding a certain topic. Those mentioned more often are likely to contain trend-setting ideas. However, when using the pyramid scheme, you run the risk of getting into a «citation circle»: authors keep on citing each other while others are being ignored because of their controversial or perhaps even better ideas.

Publication lists

Universities as well as archives and libraries regularly publish lists of their new acquisitions (recently published or not). They can also be available online.

The pyramid scheme seems to be a quick method; however, you risk getting into a citation circle.

Newspaper archives

Newspaper archives (e.g. the NZZ archive) can often provide recent articles as regards a certain topic—but not always based on facts. Using such archives most of the time costs time and money. However, online databases become more important since a lot of daily and weekly newspapers tend to offer their archives online as well. This makes it easier to search for articles regarding a certain keyword (cf. «**Search options in libraries and databases**»).

Experts

Experts can often give information on main works, special literature, or new publications as regards certain disciplines, provided that they want to and have enough time. However, such meetings with experts only make sense if you have already read about a subject in more detail and knows what to ask for.

Interest groups

There are a lot of interest groups as regards certain subject areas providing literature lists for free as part of their public relations work. Most of the time, they additionally own a specialist library open to the public (perhaps on appointment) or they have their own website.

Bookstores

We recommend buying books only if you plan to use these heavily (e.g. textbooks, reference books); it all depends on your budget and available space.

Searching in library catalogs

Since the introduction of DP search systems the options have increased to a great extent. However, it requires a certain experience and some imagination to receive good search results. Most systems operate similarly, even if single commands may differ. You should also pay attention to e.g. the fact that book and journal catalogs are to some extent separated when using certain search modes.

Searching for literature electronically takes some practice.

In addition to combined catalogs, there are platforms searching in various catalogs, nationally as well as internationally. Such platforms pass on their queries to library catalogs such as KVK («Karlsruher Virtueller Katalog», the virtual catalog of Karlsruhe) <https://kvk.bibliothek.kit.edu>, or DigiBib («Digitale Bibliothek», digital library) <https://www.digibib.net/Digibib>, an internet portal searching through

large library catalogs and databases, all over the world and at the same time. Another example is «The European Library» <<https://www.theeuropeanlibrary.org>>, whose website allows searching through 32 of 47 national libraries simultaneously.

The following information is based on the search systems of the catalog IDS («Informationsverbund Deutschschweiz», Swiss-German information network), and NEBIS («Netzwerk von Bibliotheken und Informationsstellen in der Schweiz», Swiss library and information network), that are joined in the swissbib network, a part of IDS, since these catalogs are the most important ones in Zurich. Other systems operate similarly.

Further details and explanations can be found within these search systems, section «Hilfe / Suche» (Help / Search).

Combined word search and word search with filter

It is possible to combine a query when using DP-supported systems and having a large amount of data (Rechercheportal, Zurich University: section «Advanced Search»). On the one hand, you can search for an intersection set, such as only listing titles by a certain author containing the word required. On the other hand, it is possible to search for a set union, resulting in a list with terms containing either one of the two words required. Such a combined search can be used when looking for authors and titles or when searching thematically. You have to determine first where to search: with filter, in the entire network, in a subordinate library (e.g. Department of Geography), or in only one part of a library (e.g. journals, dissertations).

When dealing with large amounts of data, it is necessary to use combined search methods or filter the results gained.

Substring search (Boolean search)

You should use the substring search particularly when trying to limit large amounts of data. This will take some training; however, the results gained will be promising.

We recommend using Boolean operators (named after the British mathematician George Boole). These logic operations are called: «AND», «OR», or «NOT». If you enter various terms one after the other, the system will automatically use the Boolean operator «AND». The other two operators have to be entered explicitly. Search results archived in the search history can be combined in the same way. This entails rather precise intersection sets.

In the section «keyword search», you can abbreviate search terms by using «?» or «*» (on the left, right, or in the middle of a word). When entering «geogra?», the system will look for «Geographie», «geografie», «geographisch», «geography», etc. «!» is used to search for various ways of spelling where only one single letter is changed. When entering «Hydrox!d», the system will search for «Hydroxid» as well as «Hydroxyd». In case more than one letter changes, one uses «#». When entering «Geogra##ie», the system will search for «Geographie» and «Geografie». You will receive similar results when entering «Geographie OR Geografie».

Collecting datasets

Datasets found while searching can be collected in a «basket», either from the title list or the title's full screen. These datasets can then be sent via e-mail or stored on a PC. The basket's content will be deleted after ending a session.

Search options in electronic journals

Elektronische Zeitschriftenbibliothek (EZB) – electronic journals library

The Zurich University participates in the Electronic Journals Library (EZB) in Regensburg <<https://ezb.uni-regensburg.de/ezeit/index.phtml?lang=en>>, listing more than 20'000 scientific journals. This library is one of the best and most extensive catalogs regarding electronic journals. Titles are collected cooperatively while data are recorded in a shared central database. Each institution can manage its licensed journals on its own. Subscribed full-text journals are presented next to public electronic journals with a standardized interface, thus offering a fast and structured access to scientific full-text journals.

The EZB, on the one hand, offers an access that is thematically oriented (journals ordered by subject of study), on the other hand, it provides an alphabetic order as well as a search function.

Directory of Open Access Journals (DOAJ)

There are more and more public journals online. These journals are a valuable addition to other published forms of information as regards scientific expert knowledge. DOAJ <<https://www.doaj.org/>> is a comprehensive catalog of public online journals (full-text collection). These journals have been collected and ordered to facilitate the access to these media. DOAJ strives to collect all public online journals, regardless of their discipline, after passing a certain quality check (peer review, editorial). Scientists having a special expertise in the research topic selected make peer reviews of submitted articles. Generally, the double-blind method is used; reviewers don't know anything about the author and vice versa.

Electronic journals provided by the GIUZ library (or the Zentralbibliothek Zurich) are peer reviewed.

Web of Science and Scopus

Electronic journals found at the Web of Science or Scopus are also peer reviewed: <https://www.hbz.uzh.ch/en/fachinformationen/geographie-human/DB_humangeographie.html>. Most of the journals available at the GIUZ library are peer reviewed. Corresponding references can be found in the credit note or on the first or last pages. The following journals, designed (also) for teachers, are peer reviewed (only available in German): Geographische Rundschau, Geographie heute, Praxis Geographie.

JSTOR

JSTOR <<https://www.jstor.org/>> was established in 1995 to create an interdisciplinary, scientific archive, now containing more than 1'000 scientific journals in digital form. The JSTOR project's characteristic feature is the fact that all journals are digitalized retrospectively from their beginning. This means that these journals are available digitally from edition 1 onwards, some of them going back to the 19th century and beyond. JSTOR searches through journals in alphabetical order and via subject, title, or editor. Additionally, its database provides the options «basic search» and «advanced search», including animated search guidelines (both with full-text search).

ZORA

The *Zurich Open Repository and Archive* <<https://www.zora.uzh.ch/>> contains the entire academic output of members at the University of Zurich. Most publications can be accessed directly. Others are not public due to copyright laws; however, it is possible to make an inquiry which will then be forwarded to the author. In general, such an application will be allowed, especially if there is also a reasonable justification.

Other electronic journals

The GIUZ library provides a large compilation of links to electronic journals on its website <<https://www.netvibes.com/geobib#GIS%2FGIVA>>.

Search options in libraries and databases

Databases are collections of information objects and organized to be accessed easily. When doing research, databases are more and more important since many journals archive their published material by means of such media. There are bibliographic databases (e.g. ProQuest <<https://www.proquest.com/>>, Web of Science <<https://www.webofscience.com>>), reference books, and full-text collections (e.g. Science Direct <<https://www.sciencedirect.com/>>, ACM <<https://dl.acm.org/>>). The access to such databases is often limited (especially to full-text collections) and can only be established at certain locations. Databases with a campus license, that are subject to costs, can be accessed for free when being a University member (e.g. via VPN or Library PC). You should additionally know something about the databases' content as well as the research process itself. Databases are ordered alphabetically as well as technically (e.g. according to sciences). The research process differs depending on each single database; however, it is similar to a library catalog's structure (search for titles, authors, keywords; cf. the section «Internet research via search engines», further down).

The database «Web of Science» - established from the «Institute for Scientific Information (ISI)» - contains articles from more than 8'500 international scientific journals.

There is a compilation of important databases as regards Geography on the website of the GIUZ Library (Department of Geography at the University of Zurich) <https://www.hbz.uzh.ch/en/fachinformationen/geographie-human/DB_humangeographie.html>. In the FAQ section (frequently asked questions) you will get further details as regards databases.

Databases are especially useful when analyzing texts.

Internet search

There are a lot of possibilities when researching literature via the easily accessible Internet. Various journal articles can be used or ordered online when being a University member (ordering is often subject to costs). The Internet even provides access to library catalogs, most of the time via the universities' websites (**Baade et al.** 2005: 75). However, the large amount of unorganized data on the Internet can also cause problems. First, there is hardly time to deal with so many data. Second, the sheer quantity gives you the feeling that all relevant data can be found via the Internet (**Hart** 2001: 128). And third, it is problematic to use sources found on the Internet since websites only exist virtually and can be changed any time. Older versions may not always be available. If you take a piece of information from a certain website, it can be altered or even deleted the very next day. The whole page could be gone entirely. In addition, the information's origin and credibility is open to dispute. In print media, there are still editorial departments exerting control, but on the Internet things are published without a check being made. There is one exception: online journals. Similar to traditional journals, these journals do dispose of a review system guaranteeing that only high-quality articles will be published on the Internet. Even though online journals exist only virtually, they are not internet sources in the strict sense. This is because they have editors that review articles for their quality. Therefore, they can be handled like other journal articles. Noting an article's url helps the reader to find it.

It is therefore important to see the Internet as a complex search platform that cannot replace the conventional way of searching for literature. You can start an Internet research in two different ways:

- by means of a global keyword search via some search engine or
- via searching through Internet directories thematically (their content cannot always be detected via search engines since those are part of databases that cannot be combed through with search programs, even if they are public).

Internet sources have to be questioned since a lot of information (e.g. the content of books or journals) is not reviewed by an editorial staff.

Internet research via search engines

Another possibility is to use a conventional search engine such as «Google», «Yahoo», «Exalead», etc. However, this can result in endlessly searching for publications and certain keywords in piecemeal fashion. It is necessary to reasonably combine significant keywords before critically analyzing the search results (**Baade et al.** 2005: 75). We recommend familiarizing yourself with the operators of each search engine (e.g. «OR», «+», «-», «~», «*», etc. for Google). For more details you should have a look at the help function or online guidelines such as the Google Tutorial <http://www.googleguide.com>.

There are also special search engines for scientific literature. In contrast to commercial search engines, these ones also search through Internet sources of the «invisible web». Here are a few examples:

- BASE (Bielefeld Academic Search Engine):
<https://www.base-search.net/>
- Google Scholar:
<https://scholar.google.com/>
- Science Direct:
<https://www.sciencedirect.com/>

Other search engines can be found when using the following link of the GIUZ library: https://www.hbz.uzh.ch/en/fachinformationen/geographie-human/DB_humangeographie.html

Searching in internet directories

Internet directories (cf. **Lauber-Reymann** 2007) are edited search aids allowing access to selected resources (information and documents of any kind). These websites list collections of links intellectually created and lead to single sources or source books. Internet directories show single links that are hierarchically structured and allocated to various categories, similar to a library's systematic catalog. This is why Internet directories are also referred to as «virtual libraries» or «catalogs».

There is a broad variety of such directories, not only as regards their increasing amount but also in terms of quality, structure, and user interface.

In addition to general directories (commercial catalogs such as <https://suche.freenet.de>), there are others focusing on a single discipline or discipline clusters. Virtual libraries are often established by university departments or universities of applied sciences in order to pool, analyze, and professionally structure all the academic information available on the Internet. These directories are checked for their quality and generally don't pursue any commercial interests; under ideal circumstances, there are experts or specialists who select and systematize these sources.

There is a distinction between virtual public libraries (without any restrictions) and virtual specialist libraries (dealing with single scientific fields).

Within such a virtual library, in general there is a special search software for the keyword search in addition to the navigation. It must be pointed out that subscribed documents in a directory are often not available in their full-text version. It is therefore only possible to search through titles (indexing dataset), short abstracts, their respective categories or keywords.

Here is just a small selection of links:

- Virtuelle Allgemeinbibliothek (virtual public library):
<http://www.virtuelleallgemeinbibliothek.de>
- WWW Virtual Library:
<http://vlib.org>

Evaluation of results

It is mandatory to have a reasonable search structure, to select deliberate keywords, and to critically evaluate the results received. This is even more important when searching on the Internet instead of traditionally looking for appropriate literature. We recommend establishing criteria for evaluation before asking about:

- the purpose of publication (target group, objectivity)
- the source (authors, corporation)
- the URL's top level domain (.gov, .org, .edu, etc.)
- the timeliness of data (last update)
- the information's correctness and verifiability
- the references (links to other works)
- the style and functionality

In order to limit the fleetingness of virtual information it is best to locally archive or print important content. For further information on this subject we recommend the following websites:

<https://guides.library.ubc.ca/EvaluatingSources>

Use of literature

The use of literature sources is a necessity at various stages during your studies. This is important, not only when writing an academic paper but also when preparing for exams since there are also large amounts of literature to be worked through and structured. In order not to get lost, we recommend selecting literature in a fast and structured way, separating useful things from unnecessary ones.

Thinking

There are three ways of thinking:

1. *Cogitation*: Reflecting and applying things having read.
2. *Reasoning*: Drawing conclusions from requirements already given.
3. *Creative thinking*: Finding solutions by means of knowledge, principles, and ideas.

Thinking processes must form the basis of deliberately learning while reading (Spandl 1980: 25).

Reading

Skimming over a text or cursory reading

When searching for literature and selecting articles and books, it is best to skim over a text or give it a cursory reading which can be seen as a preliminary stage of actually reading it. The following *questions* should be posed at first:

- Should I read this at all?
- What is it about?

Approach:

- Reading the title, year of publication, edition, back of book, table of contents, bibliography, preface, abstract, introduction, and summary. Optionally: diagonal / vertical reading of single pages or chapters.
- *Vertical reading:* Your view vertically skims over a column of the text while catching the most important words (verbs and nouns).
- *Diagonal reading:* Determining the most important relations and arguments in a text (you should look out especially for nouns and verbs with adjectives and adverbs as well as signal words such as «finally», «first», «second», «the most important», «therefore», «thus», etc.).

Orienting reading

Orienting reading is useful when critically skimming over texts and preparing e.g. for a discussion: you can easily get information in a short period of time.

Questions:

- What **ideas** do the authors have, what is their approach?
- What **question(s)** do they want to answer?
- What **assumption** is at the bottom of their arguments?
- What **opinion** or theoretical approach do the authors represent?
- How is their **argumentation**, is it logical?
- What are the **facts** to support their arguments?
- Are the **sources of information** well-balanced?
- Do the authors have **other reasons** (individual concern, political attitude, self-interest, etc.) for their attitude?
- Is it **comprehensible** how they have gotten their results?
- Are their arguments and explanations based on the **facts specified** or rather on some undisclosed knowledge?

Approach:

- Read the text quickly. (Note: a single section usually contains *one* main idea; this should also be considered when writing your own text).
- Use markups and marginalia. The invention of an own system can be helpful, but there are also existing examples that are interchangeable.

Examples for markups:

- **Underlines**
The lines' strength equals their importance.
- **Highlighting texts in color**
Mark the most important passages with highlighter or crayon.
- **Overlaying separations / terms**
Central passages are highlighted generously or combined with titles. Causal and temporal relations are marked by lines or arrows.
- **Marginalia**
Important terms or relations are noted in the margin. A system of such notes highlights essential passages and super-ordinate relations. The adjacent examples are only meant as an illustration; they should therefore not be adopted one to one. It is best to create your own system of marginalia (except when there are teams working on the same text).

Some examples of marginalia:

⇨	Look up
!	Important
!!	Very important
?	Questionable
C	Copy
B	Example
><	Contradiction
1.,2.	Numbering

Selective reading

When reading selectively you focus on interesting chapters instead of an entire book or article.

Questions:

- What information, data, or statements in the text are important (for me and my topic)?
- What information, data, or statements have to be extracted (e.g. for a speech, a paper, a summary)?
- What passages can be omitted?
- What do I still have to learn?

Approach:

- A text that has already been read and marked should be examined a second, third, or fourth time selectively
- Selection of very important, important, and less important passages
- Exposition and structure of intellectual connections (creating logical correlations, writing a summary or mind map)
- Highlight certain passages to be learned or examined more carefully
- Make excerpts (see below)

Intelligent reading

Intelligent reading is especially advisable when preparing for exams.

Question:

- How do I acquire knowledge from a text in order to recall it at a later date?

Approach:

- Come to the decision to learn a text on purpose!
- Always try to sum up and think about important statements
- Grasp a text's content, don't just memorize it

You have to want to learn in order to be able to memorize a text.

Excerpts

Excerpting means extracting relevant information from a text. This is not only important when writing an academic paper but also when learning in general. Since it is not possible to learn the entire assessment load, it is necessary to focus on the essential.

Structural excerpts

Structural excerpts are suitable for creating a logical structure when dealing with a difficult text. Important ideas are noted on a (large) sheet of paper before relating them by means of arrows and connecting lines. We recommend using a pin board or fanfold paper when dealing with topics elaborately or when holding a group discussion (Zielke 1988: 185).

File cards

Information on certain topics is written on file cards before ordering them by keywords, catchwords, or fields of reference. It is essential to note all corresponding sources as well. This procedure is especially suited for works that can only be lent for a short period of time. There are also a number of useful computer programs when creating file cards, e.g. FileMaker, EndNote, Citavi, etc.

You should keep in mind that such a task takes a lot of time and is therefore generally used when writing larger papers. Such a file system is also only advisable when maintaining it in a consistent and complete way.

File cards that are well-organized contribute to remember things seen before.

Correlations

Creating correlations (cf. fig. 8) is useful when comparing works with similar structure or when your scientific analysis is based on a comprehensive oeuvre. Chapters or main topics are listed either next to each other or one below the other. The information of each book is then transferred to the table using keywords (incl. references!). At once it will be clear who has written what and when as regards a certain topic (Zielke 1988: 183). It pays to also note page numbers with the information copied from a text. Otherwise, you may have to spend unnecessary time to search for it.

	Book A	Book B	Journal A	Journal B
Subject 1			Statement / Page	
Subject 2	Statement / Page		Statement / Page	Statement / Page
Subject 3	Statement / Page	Statement / Page		
Subject 4	Statement / Page		Statement / Page	Statement / Page
Subject 5	Statement / Page	Statement / Page		Statement / Page
Subject 6	Statement / Page	Statement / Page		

Fig. 8: Example of a correlation. Source: Diagram by author based on Zielke (1988: 183).

Writing an academic paper

Learning objectives

At the end of this chapter you should have learned the following:

- You know what plagiarism is and how to avoid it.
- You have a basic idea about layout requirements for a document.
- You learned how to structure a scientific document.
- You know the difference between quote and reference.
- You know the different kinds of scientific publications and how they should be cited.
- You know what to do when you are stuck with writing.

Requirements regarding academic papers

Moral demands and plagiarism

Plagiarism: A breach of intellectual honesty

Academic writing requires observing certain rules such as the written as well as unwritten obligations to respect «intellectual honesty» (Baade et al. 2005: 27). You should refrain from falsifying data, results, and facts to convince others to adopt a particular opinion, whether intentionally or unintentionally.

Plagiarism is a severe breach of intellectual honesty. In this context, plagiarism is «to adorn oneself with borrowed plumes», to copy or adopt content of other studies or texts without any references to its origin or author.

Plagiarism is not a trivial offense but theft of intellectual property!

The obligation to respect intellectual honesty applies to any kind of academic writing (even when doing some exercises, a homework, or a term paper), and any kind of sources (especially when using the Internet). This also includes copying results and exercises from one another is considered a plagiarism. When publishing papers containing plagiarisms, you commit a crime according to civil law and is liable to prosecution. A breach of academic integrity (even if committed unintentionally since ignorance is no excuse) can end your (academic) career at the worst (Baade et al. 2005: 27–28).

The University of Zurich uses [PlagScan](#) to check academic papers, etc.

Including knowledge already existing

Students often think that adopting content of others is not satisfying since it detracts from their own contribution. However, collecting, assembling, and combining various sources is already an important and rather challenging part of your scientific work; it is therefore appreciated accordingly.

First, including knowledge already existing is welcome (reinventing the wheel is not necessary); second, chances are that you make progress just by assembling and comparing various sources. However, it is also important to comment on the sources' information already used. Your opinions, statements, and interpretations are a mandatory part of any paper (Petersen 1987: 19–32), but it is also necessary to see which part represents your own ideas and which one the comments of others.

It is mandatory to highlight what has been adopted from others.

Scientific requirements

Transparency

Research results have to be traceable. In fact, it is not possible to follow statements inter-subjectively at all times since you do not always get the exact same results, even if using the same methods. Insights are always related to a human subject, in exact science (such as natural science) as well (Bopp 2000: 36). When writing an academic paper, it is important to document your way of gaining knowledge. Terms have to be defined clearly while disclosing the origin of all data or methods used and revealing the basics of your investigations. If such information is inaccurate or not disclosed at all, it will no longer be possible to follow the arguments of an academic paper.

Reliability

Methods are reliable if results are repeatedly the same on equal terms. Especially in social sciences, it is often not possible to reproduce the same conditions since research in this field is generally not conducted under laboratory conditions. Additionally, social sciences deal with individuals not always reacting similarly, although having the same options. It is therefore necessary to document in detail how certain results have been gained before indicating why you have drawn which conclusions.

Validity

Methods are valid when measuring what they pretend to do. It sometimes happens that data are generalized improperly. It is not possible to find absolute truth; we can only research on the basis of the current state of scientific knowledge, which can very well be already outdated tomorrow. When writing a paper, you have to separate assumptions and opinions from facts. It is by all means possible to make assumptions; however, they always have to be evident.

Separate (reliable) facts from (unreliable) opinions and assumptions!

Stylistic requirements

Academic papers should be comprehensible and accessible to interested circles. You should avoid vexing writing styles, run-on or interlacing sentences, overblown diction, sequences of technical terms, gutter language, or slang. In case of doubt, it is advisable to translate foreign terms (Bänsch 1999: 20).

Answer the questions posed; and don't digress from the topic!

Papers should be read, not archived and filed away. In addition to a correct use of content and grammar, it is important to choose well as regards style and diction. Before the deadline, you should allow extra time for editing the paper and strive for an accurate, good style of expression. It is preferable to use correct, short, and distinct phrasings, an exact or even surprising choice of words as well as an expressive style of writing. You should avoid insignificant titles (e.g.: 1. Geographical Overview; 2. Historical Overview; 3. Main Part; 4. Results; etc.), set phrases, and unnecessary filler sentences.

Complicated or overblown sentences are not a sign of good quality!

A text should be unique, neither emotive nor ingratiating. When writing a scientific paper, it is not suitable to use elaborate explanations or a bombastic style of writing. If at all, you should express dismay or consternation in a soberly way. This does not imply that you have to be indifferent to the topic of your paper or that you cannot be affected by it (cf. [Esselborn-Krumbiegel, 2004](#)).

There won't be top grades for a paper full of mistakes, even if it's brilliant as regards content!

Layout and length

There are a lot of layout options when using a common word-processing program. The most important things are readability and clarity. When writing a paper with more than one or two pages, we recommend using fonts with serifs instead of sans-serif ones (cf. fig. 9).

- This text is written with *serifs*.
(Font Type: Adobe Garamond, font size 11pt)
- This text is written with *serifs*.
(Font type: Times New Roman, font size 11pt)
- This text is written with *serifs* while using the same tracking (each character has the exact same width). (Font type: Courier, font size: 9pt)
- This text is written with sans-serifs.
(Font type: Frutiger 47 Light Condensed, font size 10pt)
- This text is written with *sans-serifs*.
(Font type: Helvetica, font size 10pt)
- This text is written with *sans-serifs*, having a *serif-like* appearance.
(Font type: Optima, font size 9pt)

Fig. 9: Examples of fonts with serifs and sans-serifs. Source: Diagram by author.

Most of the time, when writing seminar papers, exercises, a bachelor's or master's thesis, it is mandatory not to exceed a certain length. Before dealing with a topic in detail, this given number of pages appears to be a lot. However, on taking a closer look it becomes apparent that a topic can be dealt with in much more detail than expected; the maximum number of pages then appears to be insufficient. It is necessary though to pay attention to these requirements, more or less. On the one hand, it is not always convenient to correct thirty pages instead of the ten required. On the other hand, it is part of the assignment to cope with limiting factors such as time or length.

Almost all scientific journals have binding provisions as regards the length of texts. Authors must observe these rules if they want to get published. In addition, such a provision prevents a topic from escalating with regard to content. Most of the time, texts get better after shortening since it is then easier to concentrate on priorities. Before the age of DP there were more or less binding definitions as regards the number of keystrokes per page. The following rules applied:

- One line comprised 60 to 70 characters (the so-called «academic line»)
- The line pitch was medium (spacing 1.5)
- This resulted in approx. 35 lines or 2'100 to 2'500 characters per page for a running text without any heads or illustrations

When using word-processing programs, the number of keystrokes can vary strongly, depending on the font and its size. However, lines that contain more than 80 characters start to become a strain to the eye. Likewise more than 40 lines per page are considered as too dense (cf. fig. 10).

Character style and approximate number of characters per line (upper number, column on the right and page (lower number), 1.5 line spacing, 16 cm width, incl. spaces, on A4 format)	
Times New Roman 10 is at the lower end of readability when trying to read running texts on a page in A4 format.	100 4'300
Times New Roman 12 is used most of the time when using the A4 format.	85 2'900
Helvetica 10 is suited especially for tables and graphs; not suited for running text since it uses sanserifs.	95 3'700
Helvetica 12 (bold) is often used for sub-headings.	75 2'500
Helvetica Light 9 is not suited for running texts; it is used for tables with a lot of text or graphs.	125 4'800
Garamond 11 is often used as an alternative to Times 11 or 12 when using running texts on pages in A4 format.	100 3'500
Arial 10 is often used for shorter texts such as correspondences.	90 3'800

Fig. 10: Comparison of various fonts. Source: Diagram by author.

Formal structure of papers

An academic paper focuses on scientific research processes. Such a text should be structured in a logical and reader-friendly way. Every academic paper consists of (Sedlacek 1987):

Logical structures will help the reader to better understand a paper's content.

1. Title page
2. Table of contents
3. Actual text (introduction, main part, conclusion)
4. Bibliography

Depending on the paper's length (article, seminar paper, master's thesis, etc.), there are additional chapters. The arrangement and caption of a chapter serve as an orientation for the reader. Most of the time, it is the caption of a chapter that motivates the reader to go on (if the content meets the expectations). There should be a common thread through the arrangement of your chapters. It is advisable to pay specific attention to a reasoned subdivision (considering hierarchy levels: for example, avoiding the same level for «Social geography overview» und «Social geography in the 70s») (Bänsch 1999: 12).

Additionally, you should refrain from disrupting a line of argument or separating corresponding parts by sections (guideline: approx. half a page per section). When using a decimal system arrangement, we don't recommend providing more than three decimal places (e.g. «2.2.3»). You should also avoid chapter headings or sections without any reference to their content (e.g. the caption «Main part») (Bänsch 1999: 14).

A chapter's length should more or less correspond to its importance; to strive for balance is therefore key. Dealing with the actual question will take up more space than an introduction or a historical research review, for example. It is especially important to condense the presentation of natural landscapes or historical abstracts, provided that such a presentation is relevant at all (Kraas & Stadelbauer 2000: 48).

Cover sheet

- Title
- Author
- Optional: illustration or drawing

Shorter papers combine front and title page.

Title page

- Indication of course, departement, university
- Head and tutor
- Indication of semester (when writing a seminar paper or bachelor's thesis)
- Title of paper (equals its shortest summary)
- First and last name(s), address, phone number, e-mail address of author
- Author's number of semesters (when writing a seminar paper)
- Deadline

Acknowledgements, foreword, motto

- Acknowledgements = You thank people or institutions significantly contributing to a paper's presentation (in case a reference in the introduction is not enough).
- Foreword = Establishes a relation between author and topic, e.g. expectations and fears as regards the acceptance of opinions; most of the time this is part of the introduction of academic papers.
- Motto = Quotation, proverb, figure of speech, etc., preceding any part of a text (e.g. a chapter of a book).

Dedications are only common when writing larger texts.

Preamble

- Personalized; but not dripping with kitsch or overflowing with gratitude
- Individual reasons for choosing the topic
- Comments on the paper's development; thanks for help and encouragement
- Signature including first and last name, location, and date of composition (optional: month and year only)

Seminar papers usually don't contain a preface.

Table of contents

- Heading is «Table of Contents» (or better just «Contents») instead of «Directory»
- Is not a chapter per se
- Texts have to correspond to the chapters' headings
- Visually reflects a paper's structure and arrangement (cf. fig. 11). You should avoid using too many design elements (bold, italic, indented, various fonts); the layout will then be too busy
- Indication of page numbers

- When writing longer papers, it is not necessary to include all title hierarchies

At the university one tends to use the decimal system arrangement. It is optional to use more than three decimal places as regards the titles' hierarchy; however, most of the time there are less than three.

Index of figures

(When writing shorter texts we recommend combining the lists of figures and tables)

- Heading is «Figures»
- Include the number of pages

Index of tables

- Heading is «Tables»
- Include the number of pages

Index of abbreviations

- Only list unfamiliar abbreviations
- Can also be included in a glossary

Glossary

- Unfamiliar or technical terms
- Terms in a foreign language
- Currency conversions
- In alphabetic order

Summary

- Required especially when writing articles or longer texts
- Is often placed at the beginning
- Serves especially as a motivation to read on
- Includes the most important theoretical assumptions, methodic approaches, and results
- Sometimes it is required to additionally provide a German «Zusammenfassung» or a French «Résumé».

Decimal Arrangement	Alpha-Numeric Arrangement
2.2 Preliminary Work	A. Latin Capital Letters
2.2.1 Desk	I. Roman Numerals
2.2.2.1 Library	1. Arabic Numerals
2.2.1.2 Seminar Room	a. Latin Small Letters
2.2.1.3 Apartement	α. Grec Small Letters
2.2.2 Equipment	b. ---
2.2.3 Side Note: Desk Top Publishing	2. ---
2.2.4 Work Organisation	II. ---
2.3...	B. ---

Fig. 11: Different outlines of tables of contents. Source: Theisen (1989: 97 und 99).

«Abstract»

- Is similar to a summary
- However, it is often composed before writing the actual text
- When planning conferences or meetings, an abstract serves as motivation to invite its author before determining the speakers' order
- Compared to a summary, an abstract's phrasing is more vague since the actual text is still in the making
- Describes how you plan to proceed, how the text or speech is structured, and which results can be expected
- It is therefore necessary to know your plans before composing an abstract.

Introduction

- Thematically introducing the question posed by means of an example or occurrence
- Indicates the importance and significance of a topic within a wider context
- State of research
- Justification of topic
- Differentiation or classification of main question
- Information on the question posed and the paper's aim
- Phrasing of hypotheses or presumptions
- Definition of thematical terms
- Approach as regards the topic as well as the paper's content
- State of source material
- Methodological approach

Abstracts are usually submitted when applying for a conference and can be seen as an advance notice.

Main part

- Presentation and discussion of the data already existing for each hypothesis
- Presentation of results for each (hypo)thesis
- The argumentations of other authors must be critically analyzed before comparing or complementing them with other arguments, if possible
- Indication of sources via annotations or quotations
- Annotations are also used for thoughts not directly related to the topic, only emphasizing the arguments already mentioned
- Maintaining the relation to the question posed at the beginning

Coherence is important: Each chapter has to be related to the entire text. A common thread should be noticeable.

Conclusion

- Summary of all results
- No new ideas

- Making results manageable (e.g. by providing instructions)
- Indicates progress achieved while writing the paper
- Critical annotations as regards methodology
- Unsolved questions, academic voids
- Outlook on future developments, further research options
- Your own judgment and opinion

Bibliography

- Heading is «Bibliography» or «Literature» instead of «Sources»
- Works quoted or used while writing an academic paper; these have to be indicated entirely, clearly, and must be traceable without difficulty.
- A few sources quoted frequently can be listed right after the table of contents
- When using a lot of sources, you should differentiate between printed and unprinted sources.
- Sources: records, letters, gray literature, maps, aerial pictures, periodicals (if examined for a longer period of time; not when just using single articles), etc. (cf. «Sources») incl. location, shelfmark, denotation
- Literature: publications such as books or articles (sources as well)
- In alphabetic order

Appendix

- or «Annex»
- List of additional material of interest but going beyond the scope of the paper, for example:
 - large table
 - major map
 - original questionnaire
 - legal text
 - important original text
 - newspaper clippings, illustrations, excerpts, pictures, etc

An appendix shouldn't be too elaborate.

Footnotes

- Annotations of interest but not important enough for the main text or disturbing its run
- Indication of sources (as an alternative to listing them within the text). This is not common in all subject areas. It is therefore advisable to ask about special requirements before beginning to write a paper.
- Placed at the bottom of the page (reader-friendly and unproblematic when using EDP), at the end of a chapter, or at the end of your bibliography

There shouldn't be too many or extensive footnotes.

Quotations and references

What should be quoted and how?

As a basic principle, you have to indicate clearly where to find any references used in a paper, such as arguments, explanations, comments, points of view, illustrations, data, or other facts (Baade et al. 2005: 142). There aren't any general rules as to how much and what has to be quoted within an academic paper. It all depends on the field of study. However, it is safe to say that too many word-for-word quotations won't improve a text.

Quotations have to be interpreted; they aren't self-explanatory and serve as content to be integrated into your own argumentation (Esselborn-Krumbiegel 2004: 85–87).

There isn't a uniform system in literature on how to quote the sources used. Various publications and institutes therefore propagandize different methods of referencing. It is advisable to clarify in advance the respective conventions, for example during a seminar.

Use the same system for the entire paper!

You should also be aware that there will always be a gray area, despite all the rules regarding quotations. The general principle is: a reader has to know anytime if a thought has been adopted or if it is an interpretation of your own. In the first case, it is mandatory to indicate the source of that thought and where to find it (Theisen 1989: 131–153); (Sedlacek 1987).

General rule: No quotation or any other use of data without a proper reference!

References

A reference is a short record clearly referring to a title listed in the bibliography. It is directly associated with a quotation as regards content as well as form (Baade et al. 2005: 143f).

A reference specifies how a source can be found in your bibliography. Sometimes (especially in the humanities) sources are quoted entirely in footnotes, at least when mentioning them for the first time. When quoting the same source again, it is common to indicate author, year of publication and abbreviated title. More details of this source will then follow in said bibliography. When writing a master's thesis, you have to indicate at least: «Author», «year», «page» (when citing journals or shorter texts, page numbers are only necessary when using direct quotes).

Each quotation (either direct or indirect) requires a reference!

When dealing with references, you should note the following:

- Authors are referred to by their last name. If there are several authors you should either use the character «&» or «and» (two authors), or the expression «et al.» (lat. et alii (and others), if there are more than two authors).
- If listing the «Author» and «year» of publication doesn't clearly refer to one single title in the bibliography (in case you use several sources by an author published in the same year, for example), it is common practice to add a small letter to the date (and to the reference in the bibliography as well):
=> e.g. Meier 2005a: 95-101.

- The number of pages have to be specified exactly (34-87, 98f); they can be omitted if the work cited exclusively deals with a subject examined at that moment in the paper or if the source used (e.g. from the Internet) doesn't provide any page numbers at all (cf. «Internet sources in bibliographies»). Specifying pages by means of «32ff» (= «several pages following») is rather inaccurate and therefore not accepted by many journals.
- In case a quotation is very large (to be avoided, if possible), it should be separated from the main text and/or presented with indentation.
- There are also various options in literature when structuring your references.

Depending on your citation, it is possible to refer to sources in the running text, in a footnote, at the end of a chapter or paper. It doesn't really matter which option is preferred unless a certain way of quotation is explicitly required. We therefore recommend checking with your department for specific information first of all. However, the most important thing is to consistently apply the method adopted.

The GIUZ doesn't dictate an explicit doctrine (due to the broad levels of Geography one often follows the requirements of related disciplines; it is therefore possible to come across a lot of different ways of citation); however, it is common practice to refer to sources within the running text in the following way (called the Harvard system):

It is important to use references consistently.

- If the reference relates to a whole sentence this reference has to be placed at its end.
=> *In der Systemtheorie sind es nicht Akteure, die das Soziale ausmachen, sondern die Kommunikation (Treibsel 1998: 109).*
- If the reference relates to just a part of the sentence or a certain number this reference (or footnote number) has to be placed right next to it.
=> *Im Hitzesommer 2003 verloren die alpinen Gletscher 10% ihrer Masse (Meier 2004, S. 21), was den Wasserkraftwerksbetreiberinnen zunächst grosse Gewinne bescherte (Müller 2005, S. 2)*
- If the reference relates to a whole paragraph this reference has to be placed at its end. You should avoid a sequence of longer quotations or summaries of research contributions since your own point of view in relation to the topic might get lost.

Nachhaltige Entwicklung ist nicht etwas, das einfach geschieht. Vielmehr muss ausgehandelt und darüber abgestimmt werden, ob und wie sie erfolgen soll. In unseren beiden Fallstudien – der Unesco-Biosphäre Entlebuch und dem Weltnaturerbe Jungfrau-Aletsch-Bietschhorn – haben Stimmberechtigte entschieden, sich (finanziell) an der Errichtung und dem Management von Schutzgebieten und deren nachhaltiger Entwicklung zu beteiligen (Müller & Backhaus 2006: 2).

In general, you should refrain from ending a paragraph without a full stop or period. References relating to the entire paragraph therefore have to be placed in front of the period. In doing so, it is not clear if this reference relates to the paragraph or just its last sentence; however, this inaccuracy is tolerated to meet aesthetic requirements.

Two ways of referencing as follows:

References in the running text

⟨Name⟩ (⟨year⟩: ⟨page or pages⟩) or

⟨Name⟩ (⟨year⟩, p. ⟨page or pages⟩)

=> *Habermas (1998: 7) meint: «...»*

=> *Gemäss Habermas (1998, S. 7) sind...*

References confirming a statement

(⟨Name⟩ ⟨year⟩: ⟨page or pages⟩) *or*

(⟨Name⟩, ⟨year⟩, p. ⟨page or pages⟩)

=> «Der zeitdiagnostische Rückblick auf das kurze 20. Jahrhundert versucht, die gegenwärtig verbreitete Stimmung aufgeklärter Ratlosigkeit zu erklären» (Habermas 1998: 7).

=> Auf das kurze 20. Jahrhundert zurückblickend... (Habermas, 1998, S. 7).

Referencing secondary sources

Secondary sources quote sources used by other authors. Their names have to be mentioned but not their original work as a whole. The book citing this original work has to be put in parentheses before listing it in the bibliography.

⟨Name 1⟩ (⟨year⟩: ⟨page⟩, cit. in: ⟨Name 2⟩ ⟨year⟩: ⟨page⟩) *or*

⟨Name 1⟩ (⟨year⟩, p. ⟨page⟩, as cited in ⟨Name 2⟩, ⟨year⟩, p. ⟨page⟩)

=> Eine andere Meinung hat Luhmann (1984: 45, zit. in: Habermas 2002: 9)...

=> ... man kann dies auch Kommunikation nennen (Luhmann, 1984, S. 45, zit. nach Habermas, 2002, S. 9).

Referencing large passages In case you reference to only one single work when writing a paragraph or chapter, it is necessary to add a footnote right next to the heading or at the end of the section saying: «This paragraph/chapter is vastly based on ⟨Name⟩ (e.g. ⟨year⟩: ⟨pages⟩).» However, this should only be an exception when writing a paper.

Quotations

Direct quotations

Direct quotations repeat another author's words exactly and are used in case ([Esselborn-Krumbiegel 2004: 86f](#)):

- these words are followed by an interpretation,
- a technical term is used for the first time, or
- this quotation is the gist of the matter and supports your own arguments.

Direct quotations from other sources are put in quotation marks along with final characters, usually in their original language (cf. fig. 12). You should avoid longer direct quotations; these should be indented or rather summarized with your own words (= indirect quotation or reporting). When using translated text passages, you have to add «my own translation» or «translation by X» to the reference.

=> «Der zeitdiagnostische Rückblick auf das kurze 20. Jahrhundert versucht, die gegenwärtig verbreitete Stimmung aufgeklärter Ratlosigkeit zu erklären» (Habermas 1998: 7).

When modifying direct quotations (omissions, additions, comments, etc.), you are required to indicate this.

Omissions

When omitting one or several words, it is common practice to use three dots instead:

=> ...

=> «Der ... Rückblick auf das kurze 20. Jahrhundert versucht, die gegenwärtig verbreitete Stimmung aufgeklärter Ratlosigkeit zu erklären» (Habermas 1998: 7).

Omitting sentences, beginnings of sentences, paragraphs

Three dots in parentheses [sometimes also square brackets are used but never {curly ones}] are used when omitting more than one sentence or the beginning of a sentence:

=> (...)

In case entire sentences or the end of a sentence is omitted, one has to add a period as well:

=> (...).

In case whole paragraphs are omitted, this omission requires a section of its own:

=> (...).¶

Modifications

Modifications (such as additions) have to be put in squared brackets:

=> [...]

=> «Der zeitdiagnostische Rückblick auf das kurze 20. Jahrhundert versucht, die gegenwärtig verbreitete Stimmung aufgeklärter Ratlosigkeit [in Mitteleuropa] zu erklären.» (Habermas 1998: 7)

In case the one quoting assumes directly citing a misprint, you have to indicate this right next to the word in question:

=> [sic!], [sic] for lat. «so»; or simply [!]

Indirect quotation or reporting

When reporting, you use paraphrase and summary to acknowledge another author's ideas.

=> Habermas (1998: 7) meint, dass der Rückblick auf das kurze 20. Jahrhundert, die Stimmung aufgeklärter Ratlosigkeit zu erklären versucht.

=> Nach Habermas (1998: 7) versucht der...

In this text we are using "... a number of direct quotes that have to be put in quotation marks, believe it or not! (...) They are necessary to clearly state the authorship." (Smith 2014: 213; emphasis in the original).	Own thoughts (no marks)
If you do not comply with this, you may be accused of what is called 'plagiarism' (Miller 2012: 2).	<u>Direct quotation</u> (in quotation marks " ")
Therefore, "it must be emphasized that it [true scholarship] can only be guaranteed [sic] (...), if you work diligently." (North 2000: 5).	<u>Indirect quotation</u> (or reporting in one's own words; no marks)
We think that there is a need for constant reminder of what scientific work means (The Learner, accessed 30.10.2014).	<u>References</u>
This said, we believe that our students are well prepared for their studies.	<u>Omissions</u> ... one or several words (...) entire sentence (...) including end of record
	<u>Author's annotation</u> [Author's additions] [sic] original misprint

Fig. 12: Quotation examples. Source: Diagram by author; examples are fictitious (emphasis for illustration purposes).

Quotation within a quotation

If the material quoted already contains a quotation, use single quotation marks for the original quotation: «(text) <(original quotation)>(text)».

=> «Jacob Grimm (1847: 255) appelliert an das Gesetz, dass <nicht Flüsse, nicht Berge Völkerscheide bilden, sondern dass ein Volk, das über Berge und Ströme gedrungen ist, seine eigene Sprache allein die Grenze setzen kann>» (Habermas 1998: 22).

Avoid larger interlacings of quotations; it is better to use indirect quotations instead.

Oral Sources

Sometimes there is only information obtained verbally but nonetheless important for your work. Moreover, especially with qualitative research using interviews data are produced and statements are documented that are directly cited in texts. You should distinguish between an informant and an interviewee. Interviewees can be

seen as «research subjects» whose statements are part of your analysis. Depending on the study topic, their names often have to be kept anonymous; it is therefore necessary to avoid quoting them similarly to other sources. Their statements are to be treated as information that has to be analyzed and interpreted.

You should be careful with oral sources since such sources are difficult to verify.

Oral sources from informants

Informants and their statements are not to be seen as research objects and should therefore be quoted as a source, if possible. You should only use oral sources in case there aren't any written ones; additionally, they should be reliable as well. Oral statements aren't usually listed in a bibliography but mentioned within the text or a footnote.

=> *The unusual architecture of the Balinese Manuaba temple east of Ubud is the result of a compromise between rivaling priests in the 17th century (oral information by Ida Bagus Sudewa, Gianyar, 02/22/1996).*

Oral sources from interviews

As mentioned, data from interviews are systematically collected. Statements from interviewees will be cited if they accurately point out opinions and issues. If you have the approval of the persons you have interviewed to state their name, you can cite them with first and surname and the date of the interview.

=> *A fictitious example: «The Swiss system of nature protection is too complex!» (Maria Bernasconi, 28.02.2015).*

In many cases, however, interviewees want to remain anonymous. This means that no conclusion to this person's identity should be possible. If you want to still cite them, you can use a pseudonym (which you have to declare) or initials (better use non-conclusive ones; in the example above do not use M.B. for instance). Initials can also follow the logic of interviews, i.e. I1, I2 etc. or A1, R1 (= first person interviewed from the group A as in «administration» respectively R as in «researcher»).

These persons are not mentioned in the bibliography. They can be named in an appendix (if they consented to this).

For further information on data protection see [Kaspar & Müller-Böker \(2006\)](#). [Download PDF](#).

Audio-visual sources

Audio-visual material tends to get more and more accessible and can therefore also be used as a source. In case you cite an entire work, its reference is similar to the one of a written text. The question arises if it is necessary to indicate a movie's author (often unknown) or its title (cf. «**Audio-visual sources in bibliographies**»).

=> *Also in science fiction movies real existing landscapes are used as orientation (i.e. Avatar 2009).*

It is more complicated to indicate single scenes. If a DVD provides a list of scenes you can quote single scenes accordingly. If not, you can mention its time segment. The same applies to TV or radio programs; you only have to add a corresponding air date.

=> *The fact that migration is a complex endeavour becomes apparent by following the narration of a Kyrgyz grandmother whose daughter and grand child work abroad (The other silk road 2008, 4:55-9:22).*

Referencing sources from the internet

In case the author or creator of a website is known you can reference this source as usual (e.g. Name year: page/retrieved + access date). Sometimes the entire address of a document is indicated along with the date of access. However, it is important that the reference clearly relates to a source listed in the bibliography. If the author of a website is unknown you have to indicate the corporation hosting the website.

If your document is a HTML file, its traceability can be difficult since there aren't any page numbers. Passages from HTML documents are easy to quote in case the author has provided numbered paragraphs. However, this rarely happens. Instead, you can always indicate the chapter in which the quotation can be found.

=> «Eine wesentliche Rolle bei der Archivierung von Internetressourcen spielt das 1996 von Brewster Kahle gegründete Internet Archive. Als gemeinnützige Organisation hat es sich die Aufgabe gestellt, einen Beitrag zur Bewahrung unseres kulturellen Erbes – das sich zunehmend auch über die Internet Ressourcen [sic] manifestiert – zu leisten» (Baumgartner 2008b: Kap. Das Internet Archive, eine wichtige Initiative, retrieved 04/02/2009).

Creating a bibliography

References in a text are closely connected to its bibliography. All sources quoted in your paper have to be listed in the bibliography and vice versa: all references listed in the bibliography must be indicated within your text. There are various rules and accepted standards when creating a bibliography. Their differences especially refer to: the arrangement of author names, highlighting, position of date, omission or addition of publisher, and using the comma or period when separating the information. EndNote, a database program for literature, for example, indicates close to 1000 different styles to quote literary sources, relating to (slightly) different requirements defined by journals and publishers. Anyway, literary sources have to be referenced clearly and consistently in order to be able to retrieve them.

Scientific journals have different requirements as regards quotations and references.

GIUZ recommends the «Harvard style» of referencing.
[«Link to pdf of the Western Sydney University»](#)

General information

A bibliography comprises all the works used in your academic paper. Additionally, you can also list «further reading», not specifically used in the paper but perhaps of interest for the reader. There are some general rules when creating a bibliography:

- Sources have to be arranged by the author's name in alphabetic order. In case there are several authors sharing the same last name, you go by the first name.
- Last names are often highlighted (LARGE, **bold**, s p a c e d, *italic* or by indenting the following).
- First names can be listed completely or abbreviated. However, this could make finding those sources more complicated. If an author has more than one first name you have to indicate all names.
- In case there is certain information missing (such as author, date or place of publication), you have to use the following abbreviations: n.n. (lat. for «nomine nescio», name unknown), n.d. (no date of publication), and n.p. (no place of publication).
- Titles of nobility are placed right next to the first name and aren't separated by a comma. However, the Flemish «Van» is part of the last name and is therefore placed at the beginning («Schwarzenberg, Walter von»; «Soto, Hernando de»; but: «Van Wezemael, Joris E.»).
- If there are several authors their names are listed one after the other, separated by commas or semicolons; the last one of those is often replaced by «&». In general, all authors have to be specified in a bibliography and in contrast to references within a text (where in case there are more than two authors only the first person is named along with the addition «et al.»). In areas where there are a lot of people contributing to an article (e.g. there can be more than 50 contributors in Physics), there are special rules. We recommend looking at the requirements of relevant journals.

- If you use several works by one author it is necessary to list those chronologically.
- If you use several works by one author published in the same year you begin with listing the works published alone, followed by those published with others. Each section has to be ordered alphabetically by the work's title. When adding small letters right next to the date, you can clearly identify cross references (2005a; 2005b...).
- The date of publication is often placed after indicating the author (in parentheses or not), or at the end.
- It is not common usage to specify the publisher (often after indicating the place); however, this makes it easier when trying to find a source.
- The editor (or editors) is recognized by the abbreviation (ed.) (or (eds.), respectively), placed right after the name.

Use the same way of quoting for the entire paper.

In addition, the following rules apply to the examples further down. These are not general rules but options when creating a bibliography.

- When dealing with institutions, we recommend listing a common acronym first before specifying the full name in parentheses, e.g. «DFID (Department for International Development) 2000: 95». Its corresponding cross reference is therefore: (DFID 2000: 95).
- Reprints should be indicated by placing their publication date before or after the date of the original publication (e.g. «(1897 / 1993)» or «1993 [1897]»).
- Information on the edition can be placed after the title in parentheses; the publication date of the edition used in the paper is indicated as usual after the author's name. Editions can also be specified by putting it superscript next to the publication date (e.g. «(2007⁷)»). If there isn't any additional information, a first edition is used or the edition published at the date given.
- When listing a lot of sources it makes sense to section the bibliography by printed sources, unprinted ones, quoted literature, and literature not quoted. Another option is to order it by monographs, essays, articles, and internet sources.
- After indicating the date in parentheses, you specify the title (and subtitle), separated by a colon. Title and subtitle are separated by a period, if the original doesn't say otherwise. Using only capital letters in titles doesn't apply to bibliographies.
- When referring to essays, contributions in anthologies, magazines, journals, congresses, etc., the title is followed by the word «In» or «in». Then one specifies the publisher, the complete title of the anthology/magazine/journal, etc., (edition, series), place of publication, page number.

It is important to be consistent as regards quotations and bibliographies!

Printed or written sources

Scripts (no author)

Listed by location, signature, notation.

=> *Staatsarchiv Zürich. B II 6-58. Ratsmanuale 1484-1515.*

Printed sources (no author)

Listed by title, editor (ed.), date of publication, place of publication.

Periodicals are also considered as printed sources, if examined for a longer period of time.

=> *British Documents on the Origins of the War 1898-1914*. Ed. by G.P. Gooch et al., 1927, Vol. II, London.

=> *Neue Zürcher Zeitung*, März 1934 – Januar 1937.

=> *Tages-Anzeiger der Stadt Zürich* (2002): *Teures Studium*, 22.08.2002, S. 12. oder

=> N.N. (2002): *Teures Studium*. In: *Tages-Anzeiger der Stadt Zürich*, 22.08.2002, S. 12.

The most important thing when writing a bibliography is to use literature that can be found e.g. in a library.

Books

Last name (highlighted differently in the examples below), first name (year): title. Subtitle. Series, volume, edition, place of publication: publisher. Indicating the publisher is usually not necessary; however, it is getting more and more common since it is then easier to find a book, especially if it isn't available at public libraries.

=> Müller-Böker, Ulrike (1995): *Die Tharu in Chitawan. Kenntnis, Bewertung und Nutzung der natürlichen Umwelt im südlichen Nepal*. *Erdwissenschaftliche Forschung*, 33. Stuttgart: Steiner.

=> BACKHAUS, Norman (1999): *Zugänge zur Globalisierung – Konzepte, Prozesse, Visionen*. *Schriftenreihe Anthropogeographie*, Vol. 17. Zürich: Geographisches Institut der Universität Zürich.

=> UNDP (*United Development Programme* (2010): *Human Development Report 2010 The Real Wealth of Nations: Pathways to Human Development*. Human Development. New York.

=> Werlen Benno (1987): *Gesellschaft, Handlung, Raum*. Wiesbaden: Steiner.

University publications

Last name, first name (year): title. Subtitle. Specification of publication, university, (place of publication).

=> Fritschi, Astrid (2006): *Local perceptions of environmental changes. Case study in the Ayuquila Watershed, Western Mexico*. *Diplomarbeit*. Geographisches Institut der Universität Zürich.

=> Pronk, Marco (2005): *Making sense of the world in reach. A study on everyday geography-making in transcontextual lifeworlds. With empirical inquiries into consumption and communication in contemporary Bangkok*. *Dissertation*. Chemisch-Geowissenschaftliche Fakultät der Friedrich-Schiller-Universität Jena.

Essays, articles in books or journals

Last name, first name (year): title. Subtitle. In: last name, first name (ed.): title. Subtitle. Series, volume, edition, place of publication, page number(s).

=> Müller, Urs & Backhaus, Norman (2006): *Regionalisierung und die Methode der Bildanalyse*. In: Backhaus, Norman & Müller-Böker, Ulrike (eds.): *Gesellschaft und Raum – Konzepte und Kategorien*. *Schriftenreihe Humangeographie*, Bd. 22, Zürich, S. 31-51.

Last name, first name (year): title. Subtitle. In: journal / newspaper / special publication, (number,) date, place of publication, page number(s) («bk.» for book, «p.» for page, «vol.» for volume, or «nr.» for number. This information can also be omitted. If you avoid such abbreviations it is important to list all data consequently and clearly).

=> Steimann, Bernd (2008): «Niemand hier respektiert meine Grenzen» – Konflikte zwischen Hirten und Goldsuchern auf Kirgistans Weiden. In: *Neue Zürcher Zeitung*, Nr. 39, 16. / 17.2.2008, 9.

=> Thieme, Susan; Kollmair, Michael & Müller-Böker, Ulrike (2006): *Transnationale soziale Netzwerke und Migration: Nepalis aus Far West Nepal in Delhi*. *Geographische Rundschau*, Jg. 58, Nr. 10, 24-32.

Compendiums, dictionaries

Compendiums and dictionaries are often referred to as follows: Title (year): volume, edition, publisher. Place: publishing house.

=> *Diercke-Wörterbuch der allgemeinen Geographie (1993): Hrsg. Leser, H., (7. Auflage). München: Deutscher Taschenbuch-Verlag.*

However, the following quotation is correct as well: Publisher (year): title, volume, edition. Place: publishing house.

=> *Leser, Hartmut (ed.) (1993): Diercke-Wörterbuch der allgemeinen Geographie, 7. Auflage. München: Deutscher Taschenbuch-Verlag.*

The internet as a source

Problems

As already mentioned, sources from the Internet are controversial (cf. «**Internet research via search engines**»). There are also no generally accepted standards when citing online sources. In addition, it is obvious that online sources tend to be short-lived; they can be altered or even deleted the very next day. This tendency to fleetingness makes it difficult to guarantee a paper's traceability when using such sources.

Additionally, the online and print versions of Internet sources often differ as regards their pagination. This fact should be considered when quoting sources from the Internet. However, the Internet serves as a source of information that has become indispensable to people. There are possibilities to quote Internet sources despite their fleetingness, for example by archiving their URL by means of the service «WebCite®» (cf. «**Archiving websites via WebCite®**»).

Sources from the Internet can be very short-lived.

Internet sources in bibliographies

Internet sources generally contain the following information:

- Author / corporation: If it is not possible to identify neither author nor corporation you add the abbreviation «N.N.» (lat. *nomine nescio* = «name unknown»).
- Title
- URL / Internet address
- Date of last update (As at: <date>), followed by the date of access (access: <date>) (**Baade et al.** 2005: 160). The date of the last update is not always traceable. In that case it is mandatory to indicate the date of accessing that source. If there isn't any information on the date of publication you simply add «n.d.».

Author / corporation, (editor) (year): title. <Internet address> (as at: <date>) (access: <date>).

=> *SciDok (Der Wissenschaftsserver der Universität des Saarlandes (n.d.): Zitieren von Onlinequellen.*

<http://scidok.sulb.uni-saarland.de/doku/zitieren.php> (access: 21.5.2008)

=> *ISO 690-2 (Internationale Organisation für Normung) (1997): Excerpts from international Standard. Information and documentation – Bibliographic references – Part 2: Electronic documents or parts thereof.*

<http://www.collectionscanada.gc.ca/iso/tc46sc9/standard/690-2e.htm> (As at: 22.8.2002; access: 26.5.2008).

=> *GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit) (1998): Orientierungsrahmen: Bodenrecht und Bodenordnung.*

<http://www.mekonginfo.org/mrc/html/or/or_frm.htm> (As at: 1998; access: 21.5.2008)

According to (**Baade et al.** 2005), internet sources without any available information on author, date, or title should be regarded as not quotable.

Further rules and tips

- In bibliographies you usually avoid underlining Internet addresses. However, such addresses are often put in angle brackets (<URL>) or they are introduced by a short note: «Online on the Internet: <Internet address> or URL: <Internet address>», etc. It is important to indicate the exact address and not just the super-ordinate page. However, when quoting online journals and periodicals you often list their homepage, the date of appearance (journals), or volume and number (periodicals), since there is often only a limited amount of articles that can be accessed publicly.
- Hyphenating an URL should be avoided (by deactivating the automatic hyphenation when using a word-processing program).
=> *Willamowski, Marcus (2000): Zitierfähigkeit von Internetseiten. JurPC We- Dok, 78 / 2000.*
<<https://www.jurpc.de/aufsatz/20000078.htm>> (As at: 22.5.2000; access: 27.5.2008).
- A lot of documents from the Internet are also available in printed form. This should be indicated when referencing such a source, for example by adding a short note: «Also at: <URL>».
=> *Messer, Norman & Townsley, Philip (2003): Local institutions and livelihoods: Guidelines for analysis. Rural development division. Food and Agricultural Organization (FAO). Rome. Also at:*
<<https://www.fao.org/docrep/006/y5084e/y5084e00.htm>> (Date: 27.5.2008).
- Pagination can differ when using the print or online version of a source. In order to make things easier, you should add «[with differing page numbers]» when referencing such sources. In case there aren't any page numbers available when using the online version, you should mention this as well, for example with «[no page numbers]».
=> *Roger Williams University (2008): Citation style guide. Citing your sources. Bristol. [no page numbers]*
<<https://library.rwu.edu/help/citing.php#styleguides>> (access: 27.5.2008).
=> *NADEL (Nachdiplomstudium fu#r Entwicklungsländer, ETH Zürich) & SDC (Swiss Agency for Development and Cooperation) (2007): Working with a Sustainable Livelihoods Approach. [with differing page numbers]*
<<https://www.poverty-wellbeing.net/media/sla/index.htm>> (As at: 09.2.2007; access: 21.5.2008).

Archiving internet sources

As mentioned before, it is easy to modify information on the Internet at any time. It is therefore mandatory to indicate the exact date of access when quoting a source from the Internet. By means of the «Wayback Machine» (<<https://www.archive.org/index.php>>), it is possible to access (some) archived pages on this platform to retrieve information once quoted.

Archiving websites via WebCite®

The service «WebCite®» (<<https://www.webcitation.org/>>) is for free and makes it easy to archive websites, if necessary. You can then reference this «frozen» version when writing a paper (**Baumgartner** 2008a: n.p.). You proceed as follows when archiving an URL via WebCite®:

1. Open the page to be archived, then go top the WebCite page:
<<https://www.webcitation.org/archive>>
2. Fill in a form and indicate e-mail address. After archiving you will receive a confirmation along with a corresponding archiving URL.
3. The note «(Archived via WebCite® as <archiving URL>)» should be added to the usual information of a reference.

=> Baumgartner, Peter (2008): WebCite® – Zitieren von Internetquellen. [no page numbers]
<<https://peter.baumgartner.name/2008/03/30/webcite-zitieren-von-internetquellen/>> (As at:
30.3.2008; access: 28.5.2008) (archived at WebCite® as <<https://www.webcitation.org/5Y9JmUR50>>

Audio-visual sources in bibliographies

Most of the time, there are a lot of authors in different roles as regards audio-visual sources such as movies, radio programs, music, etc. Since a title of a movie or play is often better known than its author, it is possible to refer to the title instead of its author, making it easier to find the corresponding source. However, there isn't a general rule as how to quote such a source. We recommend the following options:

=> *Avatar* (2009): Cameron, James (director and producer) & Landau, Jon (producer), Lightstorm & 20th Century Fox (DVD). oder

=> Cameron, James (director and producer) & Landau, Jon (producer) (2009): *Avatar*, Lightstorm & 20th Century Fox (movie-DVD).

=> *Echo der Zeit* (2010): Gentechnisch veränderte Kartoffeln, Radio DRS2, podcast, 02.03.2010, https://pod.drs.ch/echo_der_zeit_mpx.xml

=> *Krokus* (2010): Hoodoo, Sony Music Entertainment Switzerland (music-CD).

Writing coaching

When writing an academic paper, you have to deal not only with scientific content but also with questions of style and form. Good phrasings are essential to a paper's quality and should not be considered as add-ons. Finding the right wording and best form can scarcely be overestimated.

A lot of scholars are afraid of writing the first sentence of a text.

Most of the time the writing process is a bumpy road to success (cf. fig. 13). Your ideas may be clear and elaborated; it can nevertheless be problematic to write them down in a convincing, fluent way. Everybody writing a paper knows what a writer's block is, when it is difficult to find the right words or get to the point. The following tips can be helpful when having difficulties with structuring your writing process. However, there is no panacea since writing requires different approaches as well as the development of individual strategies.

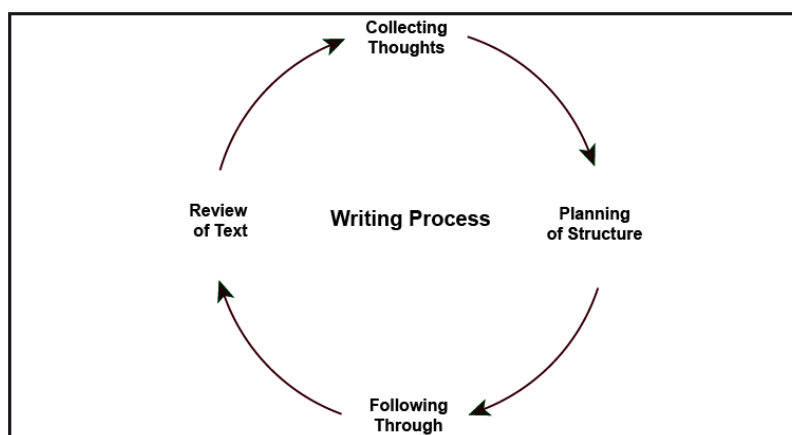


Fig. 13: Overview of a writing process. Source: Diagram by author based on Perrin (1999: 11).

General information

The following tips should make it easier to get going.

Arranging your desk wisely: A good arrangement stimulates the writing process while making it more efficient. It is best to have all relevant sources at your fingertips; however, you should avoid obstructing the desk with books needed at a later date. A jumble of notes or several open windows on a screen will make it difficult to keep track (Perrin 1999: 13).

Deliberately changing your place of writing: A change of location can help to see the written text from a distance. Sensory perceptions (such as looking through a window or hearing voices in the background) influence the capacity for remembering and speech while altering how you see and judge a text. It can also be worthwhile to assign different writing stages to different locations. You could spend some time in a park when writing and being creative before editing and searching for the exact phrasing at a more somber place (Perrin 1999: 21). It is also necessary to consider if using the PC directly is better than writing the first version of a text by hand. Handwritten notes can be taken anywhere, regardless of location. When typing these notes at a later date you can already edit the text for the first time. Handwriting is getting more and more uncommon. Students are therefore likely to have cramps when taking lengthy written exams. Or their handwriting is very difficult to read, which will complicate grading exams later on.

Different writing stages can take place at different locations.

Controlling your stress: Stress is a common phenomenon when writing a paper and is not necessarily a bad thing. However, you should only do under pressure what you really like to do. Most of the time, when being stressed out, it will be easier to let your mind wander than to perform difficult tasks (such as structuring a text, for example). In order to avoid getting lost in too many details, it is therefore better to develop a structured plan before being already under pressure (Perrin 1999: 25).

Creating a time and work schedule: It is best to divide the main objective (meeting the deadline) into short, manageable parts in order to keep track of the amount of work still to be done. It is also worthwhile to define deadlines for each single chapter as well as to reserve enough time for editing and proofreading one's text. In order to avoid too much pressure, we recommend advancing as many preparatory tasks as possible.

Outline and emphasis of a text

Outlining disposition and structure: It is important to make a disposition before beginning to actually write your paper. This applies to short term papers as well, even if it is not always mandatory. It will then be easier to identify, discuss, or even solve any problems regarding your outline at an early stage. However, it is essential to already know the questions you plan to deal with in the paper (even if these questions may vary in the course of time).

Planning your chapters: You should consider focus, keywords, structure, and available literature of each single chapter in advance (Perrin 1999: 55). Writing without any concept is pointless; it will just take a lot of extra time to disassemble and restructure your text. In addition, you can avoid repetitions and trivialities whose revision can be very time-consuming.

Defining emphasis of chapters: It is necessary to determine the importance of each chapter by assigning each one an approximate number of pages. One should also try and stick to that number later on. Chapters that have to be shortened afterwards are uncalled-for (Kraas & Stadelbauer 2000: 131).

Noting keywords for each section of a text will make it easier to start writing.

Following through

It is not always easy to focus on your work continuously; however, we recommend at least two hours per day, if possible. Otherwise it will be difficult to resume your task (Kraas & Stadelbauer 2000: 133).

It doesn't matter if you begin by writing the most important chapters or the most troublesome ones. However, most of the time, it is more convenient to deal with the difficult chapters first. When being on the verge of writer's block, it can be helpful to gain some distance and deal with other chapters for a while before getting back.

How to avoid writer's block

Many writers have experienced a writer's block: you cannot put down any ideas on paper. The more you try to take your mind off things, the worse it gets. The following tips should help to avoid or get over writer's block. *Only the last two sentences should be read before going on:* It is best not to read the entire text already written when suffering from writer's block. A comparison between good and bad passages at this stage can be quite paralyzing. However, when considering only the last two sentences, it will be easier to find a transition to the next sentence before continuing to write more fluently (Perrin 1999: 69).

E-mail method: It is advisable to tell a friend via e-mail what you try to write and why it is difficult to do so. This mail should be written in one go, without reading or correcting it. By adapting your language and being more straightforward, you can detach yourself from circumlocutions and encourage a more fluent writing style (Perrin 1999: 77).

Crash method: In the worst case, you can also imagine a computer crash; the relevant file has not been saved. Therefore, the entire passage has to be written anew. An earlier version, or parts of it, must not be used. This will also promote a more fluent way of writing (Perrin 1999: 87).

Revising and rethinking your work

Asking others to read your text: People (neither specially trained nor involved in the writing process) should be asked to summarize what is most important. Compared to a writer, a reader will perceive a text differently and focus on comprehensibility, text flow, and a logical structure. A reader's view can be very helpful and tell the writer if there are any stumbling blocks left (Perrin 1999: 61).

Final editing: It is necessary to save enough time for editing your text. Most of the time, there are still a lot of corrections and additions to be made. You should especially focus on checking footnotes, references to other chapters, headings, pagination in the table of contents, and spelling (Kraas & Stadelbauer 2000: 131). Additionally, we recommend looking over a logical sequence of sentences as well as the flow of your text.

Reserve enough time for revisions!

How do I create a good poster?

Learning objectives

At the end of this chapter you should have learned the following:

- You know the advantages and disadvantages of a poster.
- You can assess a poster.
- You know how to design a good poster.

The poster-a special form of presentation

Posters are a means of communicating research results or proposals in a concise fashion. There are a lot of congresses and conferences where posters can be presented in addition to presentations. Some conferences are arranged for poster events only. With a poster, it is easy to present content in a short period of time by means of a poster. Moreover, large-format printers are more and more affordable; a lot of departments therefore possess one (also referred to as plotter).

A poster can be more than just a summary of a presentation. It is not about using all the space available for as many contents of an academic paper or project as possible (posters are often printed in the A0 format, 841 x 1189 mm). you should instead aim for presenting its essence clearly and appealingly, according to the motto: "Less is more". As with any scientific writing, posters have to be prepared carefully and the content must be accurate.

Posters are meant for presentations where time is limited.

Advantages and disadvantages of posters

Advantages

A poster speaks for itself; the presence of its author is not necessary. It is therefore possible to reach a broader audience when compared to a presentation limited in time.

It is also possible to present several posters in the same room and at the same time; visitors can have a look at those posters they are interested in.

Sometimes as the author you have the possibility to present a poster while giving a short introduction. An interactive situation evolves while having a close contact to the audience, closer than when delivering a speech. Posters can be used several times and presented at different events.

A poster is suited for people suffering from stage fright at least, for those who have difficulties when speaking in front of large groups. Standing next to their poster for some time in order to answer just a few questions is less stressful than talking on a lectern.

Poster can be used several times.

Disadvantages

Once a poster is printed it will be difficult to make corrections or adaptations; it is therefore less flexible when compared to a presentation that can be modified any time.

A poster must attract attention. Especially when being presented at a poster fair, it has to compete with many others posters.

Preparing a poster can take just as much time as when writing a speech. However, practice makes perfect. Posters generally require reduced content as well as getting to the point. Selecting what has to be included or omitted is not always easy.

What is printed is printed; it is therefore necessary to thoroughly check for errors!

Conclusion

If choosing between delivering a presentation and presenting a poster (a lot of congresses offer both possibilities), one should consider which form of presentation is best for one's project before preparing things accordingly.

Those with a creative vein can achieve a great deal with a poster.

What should a good poster look like?

Before dealing with creating a poster, you should think about what a good poster should look like. Additionally, you should check which software and visual material (photos, graphs etc.) can be used. Before you start creating your poster, make sure that you know its main message, why it is important, what is new about it and how you are going to support this message.

Like a cook, prepare everything you need before you start writing and drawing.

- A good poster presents reduced information while getting to the point of what the audience should remember.
- It is appealing to the eye while inviting to read.
- What is most important can be spotted right away.
- It invites to ask questions while sparking a debate.

A good poster should say:

- Look at me!
- Read me!
- Ask me!

Having considered what you want to say, make a sketch for your poster.

Look at me!

In order to be read at all, a poster has to attract the observer's attention, just like an advertisement. One second must be enough to get the viewer's attention, fifteen seconds to understand the main message.

Its title should be readable from a distance of 5 m while presenting the shortest summary as possible, in other words, its «take-home message». This title should be special, to the point, and significant in order to attract attention. It is not always easy to find a good title. The following steps can be of help:

- Make a summary of the poster's content using only five sentences
- Condense these sentences into one sentence
- Select keywords and key terms
- Then finally combine these words to form your title

Avoid hanging titles (title: subtitle):

- Not: «Great sorcerers of Middle Earth: Gandalf and Saruman»
- Rather: «Gandalf and Saruman, Middle Earth's great sorcerers»

Do not use capitalization in titles:

- Not: «Climate Change and Biodiversity in the Arctic»
- Rather: «Climate change and biodiversity in the Arctic»

The overall impression should be appealing. The rule that 50 % should be used for images and the other 50 % for text is not always applicable; however, it can serve as a guide when preparing a poster.

A clear structure is as important as a good choice of colors, which can even be provocative.

The poster's heading is also its take-home message.

Read me!

There should only be as much text as necessary on a poster, what needs to be known but not what would be nice to know. Reading running text is generally more time consuming than listings; it is therefore advisable to make only little use of running texts.

Legibility is guaranteed by using a large font size. A poster in A0 format should contain characters that aren't smaller than 7 mm (references can be smaller). You can check this when scaling down the poster to the A4 format; its content should be readable from a distance of one meter.

Use italics or boldface instead of underlining for emphasis and use hyphenation if you chose justification to avoid gaps between words.

Everything should be readable from a 1 m distance.

Images (photos, graphs, tables, etc.) should be self-explanatory and contain titles as well as references. Background images are an exception (as regards titles), since their purpose is only illustratory.

A good structure is achieved by using offset blocks with headers. In addition, these blocks should be clearly ordered to avoid an impaired reading fluency: «Don't fight reader's gravity!»

When selecting your texts, you should brave the gap and omit less necessary things. Depending on the context (audience, room, space) the size of a poster can differ. An A0 format is quite common today.

It is not necessary to present everything; less is often more.

When choosing between portrait and landscape, you should go for landscape since it is better suited for human viewing patterns. However, such (printed) posters are not very common because they require more space. It is therefore important to check beforehand which dimension and orientation are accepted. More and more posters are only projected digitally, requiring the landscape format (unless communicated otherwise).

Landscape is better suited for human viewing patterns; portrait is more common.

Ask me!

Ideally, a poster delivers food for thought and sparks a debate. This can be achieved by surprises or uncommon comparisons; however, it is important to stick to the facts. Question marks, used literally or figuratively, can also stimulate a discussion.

It is important that posters are related to the audience while using appropriate vocabulary. Abbreviations should be avoided unless they are common and well-known.

Sometimes it makes sense to provide handouts; interested persons can then rely on this information and contact the author at a later date.

Ideally, a poster stimulates thoughts as well as discussions.

Structure and types of posters

A poster's structure

Posters should vary and give creativity its space. However, there are certain basics that are very common. The following order is random and not binding. For the design of a poster the use of rasters or guides may be helpful. Two, three or four columns can be used. Text and images can run over more than one column.

A good structure supports the legibility of a poster.

Header area

Not all posters require a header or heading. In general, this is the area where a logo is placed, the logo of a department for which the author is working. There can be guidelines as regards the correct placement of a logo; just inquire at your organization.

Title area

A title should be clearly visible (from a 5 – 10 m distance), significant, and not too long. Due to space restrictions it is often placed next to the logo, which may not be in accordance with your organization's guidelines (e.g. the University of Zurich specifies that the space to the logo's right side has to be left blank).

Author's photo and address

At poster fairs, where authors are not always standing next to their posters, we recommend providing a photo in order to be recognized and approached, if necessary. There should at least be an address (an e-mail address is often sufficient). Make sure to mention all authors and their affiliation (the latter can be put in the footer area).

- Albus Dumbledore¹, Alain D. Sokal²

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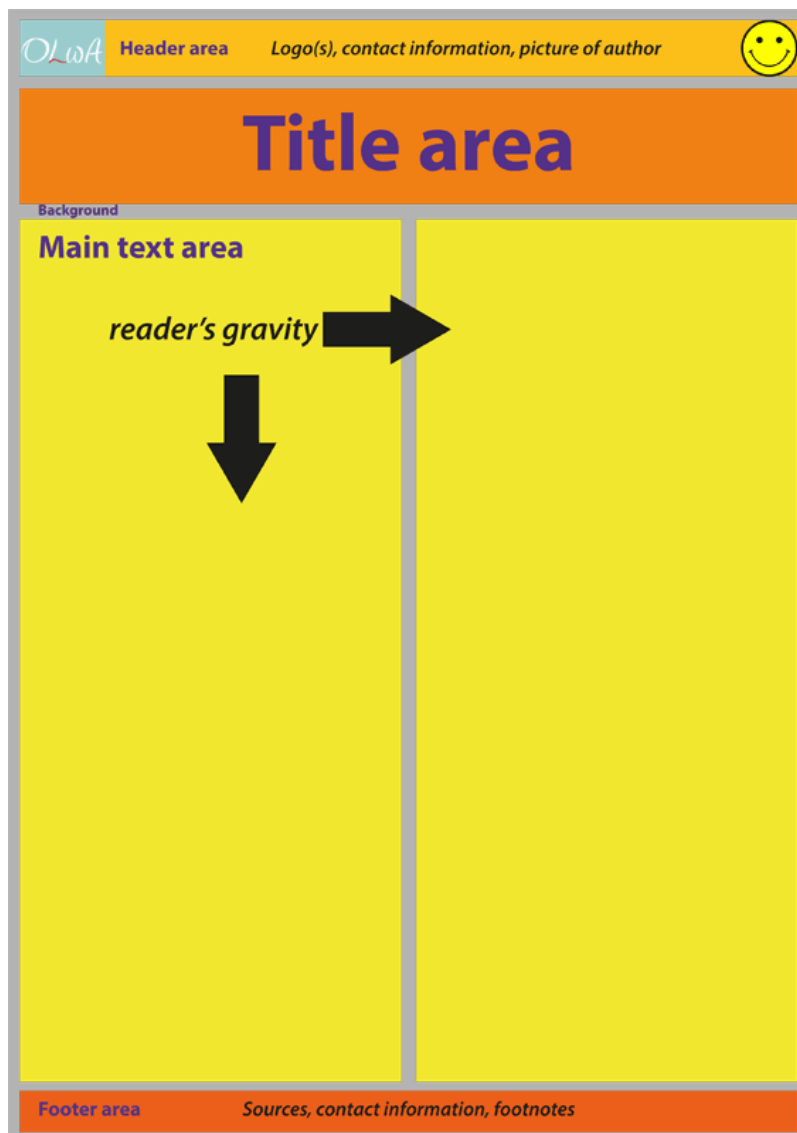


Fig. 14: Idealized representation of the structural elements of a poster. Source: Diagram by author.

Main area

The main area can be structured and sub-divided, e.g. by using several columns or an image across all columns, etc. In this area, you present the poster's main statement.

Footer area

Header and footer can be seen as a kind of framework tying it all together. However, the footer is not just a graphic element; this is where you can indicate references and contact details as well. This is also the only area where the font size doesn't necessarily have to be read from a distance of 1 - 1.5 m.

Background

Often there are posters highlighted not only with colors but also with a structure or an image. This background should be appropriate as regards the poster's topic and not be distracting at all. If in doubt, it is always best to choose an unstructured background color.

Fonts

In a poster you can use serif as well as sans serif fonts. For longer texts sans serif fonts should be avoided, but since you should not use longer text blocks in a poster both types can be used. Avoid decorative fonts since they are not so legible. Use boldface for emphasis, avoid underscores or italics for a poster.

If you use justification for text blocks, make sure that hyphenation is on. In order to avoid too large spaces between words better use ragged alignment. Lines typically do not contain more than 70-90 characters. Texts with longer lines should have bigger line spacing to render them more legible. Typical line spaces are 20-30% bigger than the font (i.e. for a 40 pt font you should use 48-52 pt line spacing).

Different types of posters

There are various possibilities to present content by means of a poster. The type to choose depends on the resources available.

Roll-up poster

The most common poster type is the roll-up poster; it is most of the time printed in A0 format and can be transported rolled-up (in a protective cover). This is the easiest and most appealing way, provided that there is an appropriate plotter.

However, there is not always such a plotter. In addition, print-outs in A0 format can be quite expensive. A few software applications therefore offer the possibility to create an A0 poster before printing it in 16 pages (A4 format). These pages then have to be glued or taped together. Compared to a poster in A0 format this is hardly appealing from up close but from afar the difference will be hardly noticeable.

Modular posters

A modular poster consists of different single pages in A4 or A3 format, arranged on a pin board. Its advantages: such a poster can be easily created as well as transported. Additionally, this type of poster requires well-structured text or image blocks. However, such posters give the impression of not being very professional and are therefore no longer very common.

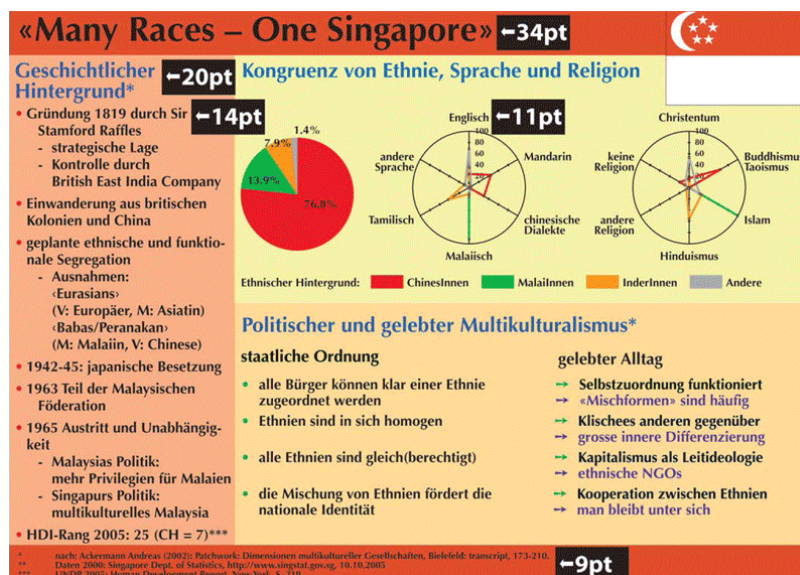


Fig. 15: Font sizes for a digital poster created in A4 format. Source: Norman Backhaus.

Digital posters

Special types of posters are digital ones; they are not printed but projected. One will therefore not need an appropriate plotter; however, there are still some things to consider. Not all projectors are suited to present colors adequately. It is therefore necessary to increase contrasts as well as font sizes, due to a projectors' low resolution. When using images, a digital poster can get very large which will complicate transferring it to another computer. In order to minimize compatibility problems, it is best to create a PDF file with implemented fonts.

In order to present colors as best as possible, one should use the (additive) RGB color space (red - green - blue) for projected posters instead of the (subtractive) CMYK color space (cyan – magenta – yellow - key (= black)), which is generally used for print-outs.

Digital posters require a larger font size.

Tools

Colors

Choosing the right color for a poster is more important than choosing one for a presentation. It is therefore necessary to consider (if there isn't a mandatory template) which colors are best to use for one's poster. There are topics having an affinity to certain colors. Green is the color of choice when dealing with environmental topics. However, it is not mandatory to observe such rules; one can deliberately choose another color.

In order to increase legibility, good contrasts are of importance. There are a lot of theories as regards the relation of colors, and all of them are fully justified. In 1961, Johannes Itten developed a color circle, now very common and easy to apply. It is based on the primary colors yellow, red, and blue; a first mixture results in the secondary colors green, orange, and purple. If these colors are again mixed with a primary color one will get tertiary colors. The resulting color circle (available in a CMYK version as well as a RGB one) provides a good basis for your color selection. Complementary colors are rich in contrast; they are diagonally arranged (directly or in an acute angle) on the color circle (e.g. yellow and purple tones, or orange and blue ones).



Fig. 16: Color circle according to Johannes Itten. Source: Wikibooks (http://de.wikibooks.org/wiki/Datei:Farbkreis_Itten_1961.svg, accessed: 03/03/2016).

Colors should be appropriate or form a reasonable contrast to the topic.

Good contrasts improve a poster's legibility.

The following combinations (font on background and vice versa) are clearly legible:

- green on purple
- purple on yellow
- orange on blue
- white on black

The following combinations are less recommendable:

- blue-green on red is hardly recognizable when being color-blind (google «Ishihara test» in order to find out whether you are color blind)
- red on blue is piercing and causes afterimages
- blue on green is not contrasting enough

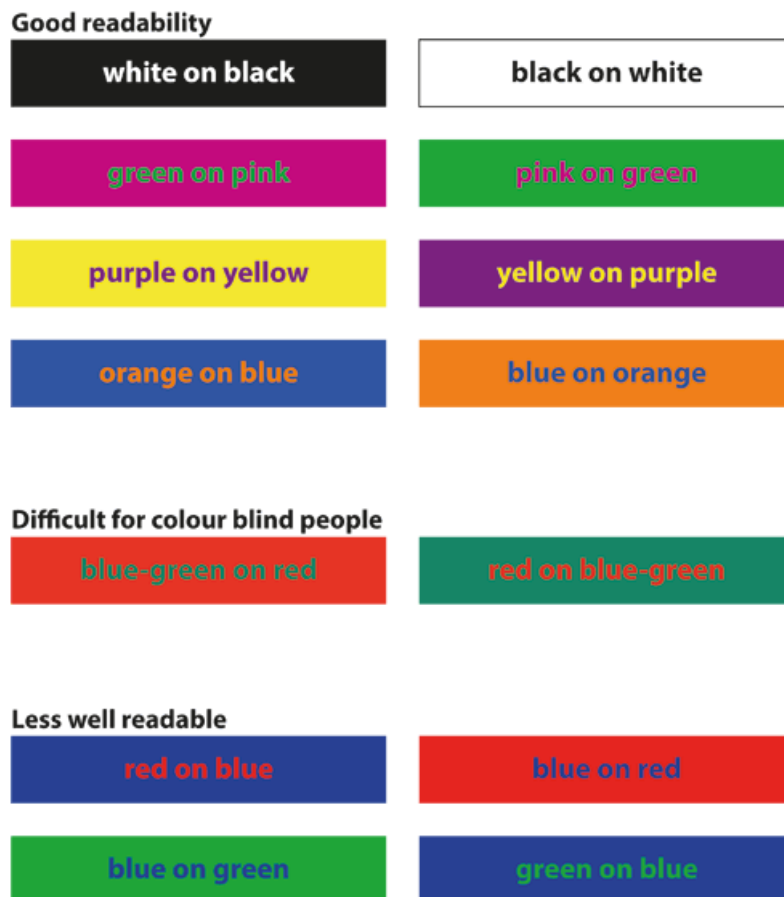


Fig. 17: Examples of color combinations. Source: Diagram by author.

Software

A poster's quality does not depend necessarily on the software used but on its content and structure. However, an adequate program (e.g. an app) can make one's task easier. It is possible to create posters by means of word processing programs (e.g. Microsoft Word, Open Office, Apple Pages, LaTeX, etc.), presentation software (e.g. Microsoft PowerPoint, Apple Keynote, Open Office, etc.), or layout software (e.g. Adobe Illustrator, Photoshop, InDesign, etc.). Layout software offers more options and better quality but is not always accessible. It is nevertheless possible to create an appealing poster by using word processing programs or presentation software instead.

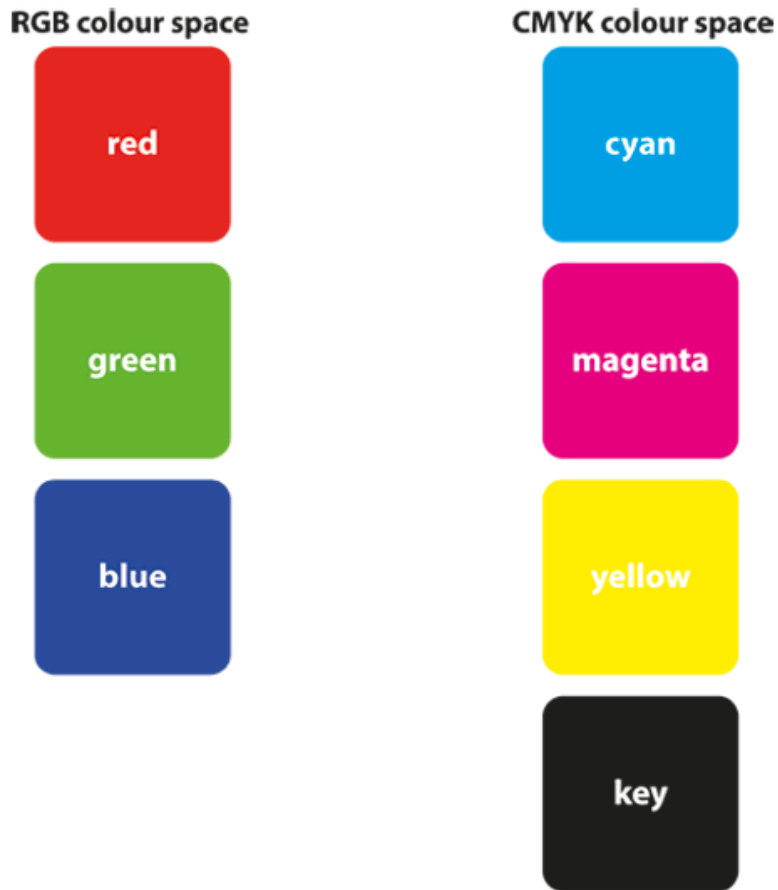
Using good software can enhance your poster.

Images and graphs

It is important to pay great attention to an image's quality. When creating a poster in A0 format, images must have a good resolution. You therefore have to consider redrawing simple graphs or maps to avoid using a pixelated image from the Internet, which would not be very professional and disturbing to the eye. With graphs eliminate chart junk to focus on data and label graphs directly instead of using legends.

Print

Before printing a poster, you should check it thoroughly since any corrections afterwards can be quite expensive. It is easy to detect and correct any (typing) errors on screen; the colors used can then be tested by using a color printer and a print-out in A4 format. For digitally presented posters the RGB color space should be used, for print CMYK.



On screen the colours may be displayed differently!

Fig. 18: Color spaces RGB and CMYK. Source: Diagram by author.

Using a bad resolution of graphs and images is rather unprofessional.

Presenting posters

Posters can be presented on their own, similar to a silent presentation or a visualized publication. There are a lot of posters on the walls of research institutes; either once created for a congress or presenting a summary of a research group's achievements.

Different ways of presenting

There are different types of presentations (e.g. at congresses or conferences). Similar to a presentation, one could use a method where the entire audience is supposed to walk from one poster to another while each author gives a short introduction (often there are just a few minutes at the author's disposal). The second method

provides for the audience to walk around freely (poster bazaar), while authors are supposed to give information on their posters for a certain time. They should not give a speech but answer questions or inform interested persons about specific details. The third method is presenting poster transparencies by means of projectors, very similar to other presentations.

Poster bazaars offer the possibility to interact with the audience.

Are there any rules when presenting a poster?

Generally, there is no difference between giving a presentation and presenting poster; the rules are basically the same. The most important thing is to provide a good view of your poster. The author (or speaker) should also always refer to the poster (e.g. by pointing to images or text passages). Laser pointers are useful when presenting projected posters but not when standing right next to it.

An advantage of a poster bazaar is the fact that you have the possibility to immediately respond to questions of the audience. It is not common to read out loud or take notes; a poster as aide memoire is more than adequate.

Assessment criteria for posters

There are different ways to assess a poster. The most important aspects are content and visualization. The following questions should help you creating an appealing poster.

Content and overall impression are the most important things; details can be an improvement.

Criteria to consider

- Overall impression: Does my poster have a good structure?
- Blanks: Is my poster full of text passages and graphs, or is it well balanced? Are there any blanks interrupting reading fluency?
- Relation between text and graphs: Do they complement one another as regards content and visualization?
- Text size: Is the text clearly legible or only partially?
- Structure and reading fluency: Is there a clear structure supporting reading fluency?
- Authors: Are the authors indicated on the poster? Are there any contact details?
- Content: Are the three principles «Look at me!», «Read me!», and «Ask me!» put into practice? Are the main statements of my poster clearly presented?

Further reading

Further reading

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Hess, G., K. Tosney, and L. Liegel. 2009. Creating effective poster presentations 2006, URL: <http://www.ncsu.edu/project/posters/> (accessed: 21.09.2021).

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Disclaimer

The graphs of the chapter on poster creation were (if not stated otherwise) created by ourselves or made in courses we conducted at the Dept. of Geography of the University of Zurich. The names were rendered irrerecognizable. The poster on arachnids was given to us by a gifted and non-conformist poster creator, the Spiderman.

Online ressources

Stock photography (please check copyrights with every picture you download)

- Everystockphoto: <https://www.everystockphoto.com/>
- MorgueFile: <https://www.morguefile.com/>
- Royalty Free Stock Photography: <http://www.adigitaldreamer.com/gallery>
- Stockvault: <https://www.stockvault.net/>

Colors and fonts

- Dafont–Schriften: <https://www.dafont.com/>
- COLOURlovers: <http://www.colourlovers.com/>
- Colorbrewer (for maps): <https://colorbrewer2.org/>
- ColorCombos: <https://www.colorcombos.com/>

Presentation skills

Learning objectives

At the end of this chapter you should have learned the following:

- You know how to prepare for a presentation.
- You know the essential elements of a good presentation.

Introduction: «Presentation skills»

When making a presentation or speech, you circulate condensed information on a topic, e.g. a text's content, a research project, or a paper's results. The most important thing is to point out essential statements in a clear and precise way. It is therefore necessary to make up your mind about the aim of your presentation before writing it down: «What should the audience learn from my speech?». Most of the time, there are just a few things that listeners will remember. It is therefore advisable to limit yourself to one or two main statements. An academic discourse focuses on topics and should not serve as a tool for self-promotion. However, the quality of a speech depends on the way it is delivered. The best research results will not be of any interest to the audience if presented poorly.

The shorter the time, the more important the way of presenting your project or its results. It is therefore essential to be well prepared for communicating complex issues in a short period of time. The more complex the topic, the more difficult the task. However, practice makes perfect and one should therefore seize the opportunity to make a presentation or deliver a speech as often as possible.

Presenting your project is an opportunity to inform a larger audience about research results.

Preparing for a presentation

Looking for a presentation topic is similar to searching for a topic to write about in academia (cf. «**Topic selection, posing problems and questions**»). However, you should always be aware that writing a paper is not the same as writing a speech since there is indeed a difference between presenting a topic to listeners and dealing with it for readers. It is also important to consider the audience before asking too much or too little of your listeners. It can be helpful, for example, to distribute an abstract, a summary, or a synopsis of your presentation beforehand. However, sometimes this can also be a distraction.

Writing a manuscript

A manuscript is a presentation's framework and serves as aide memoire when giving your speech. Depending on conditions and personal preference, you can either use an entire text or a script containing only the most important keywords (e.g. headings). Attention should be paid to the following questions:

What should the audience learn?

What should listeners remember? It is common practice to prepare a suitable concept based on 2 or 3 (learning) targets. Especially when presenting a comprehensive work, it is necessary to limit yourself to just a few aspects. Most of the time it makes more sense to focus in detail on just a few issues than to bring up as many topics as possible.

To which issues do you have to/want to limit yourself?

- Focus on main statements
- Ordered by importance of the matter
- Deliberate shortening

How to structure a presentation for a better understanding?

- Distributing handouts, showing slides, using the blackboard, and pointing out the issue you are talking about at that very moment or
- Highlighting headings or chapters when using electronic devices (by using tabs at the bottom or the top of a slide, for example)
- Clearly and logically structuring the presentation, allowing the audience to easily follow one's train of thoughts
- Indicating fixed points (slides, sketches, etc.)
- Providing examples that relate the topic to the audience

Natural brilliant speakers or rhetoricians are rare; however, presentation techniques are easy to learn!

Do you plan to speak off the cuff, to paraphrase, or to just read?

In general, a speech delivered naturally while using only a few notes as guidance will be more convincing than a speech just read out loud. However, a lively speech given by means of a manuscript is better than to ad-lib while being ill-prepared. In order to deliver a good speech you need a proper framework of keywords (a manuscript of catchwords or headings) to hold on to. Such a manuscript can consist of file cards, a mind map (cf. «**Structuring**»), or transparencies that will also serve as a reference for the audience. When preparing for a presentation, we recommend paying special attention to smooth transitions and shifts in subject to improve security.

For paraphrasing (rephrasing or restating terms and sentences), you write down in detail what the presentation is about. Then these sentences will not be read out but rephrased while delivering your speech.

When preparing a manuscript, we recommend writing short sentences to avoid convoluted ones.

It is also advisable to test a speech before the actual talk. Only then will you notice any clumsy transitions, wrong phrases, or if there are enough keywords on your manuscript.

How to keep track of time?

- You should give a presentation for test purposes (alone or with others) while counting the time.
- Most of the time, a speaker will need less time when practicing. You should therefore allow for ten percent more time or less subject matter accordingly.

Only when practicing aloud can you estimate the expenditure of time.

Getting a general idea of lecture rooms

It is easier to give a presentation in familiar surroundings. We therefore recommend checking the lecture rooms beforehand to deliver your presentation in an optimal way. Attention should be paid to the following questions:

Are there all the means needed, are they ready to use, and do you know how to use them?

- Procuring projector, computer, overhead projector, slide projector, chalk, pointer, water-resistant markers, etc.
- Making a reservation for the equipment before testing it in time
- When making a Power Point presentation we recommend checking the projector, cable length, and compatibility before setting the resolution. Don't forget any necessary adaptors. Always check if there are matching adapters at hand (e.g. when using Apple)!

How to use the room efficiently?

- Checking your position when speaking, showing slides, using a second projector, etc.
- Make sure that the audience has a good view of the speaker, the blackboard, or the screen

Feeling comfortable in a room means feeling confident when presenting your project.

Prepare material before the presentation

You should prepare all necessary material in time to get the feeling of having things under control as well as being ready to begin.

Is the material well ordered?

It is advisable to number your pages and transparencies. One tends to drop things when getting nervous; and it can take quite some time to get organized again.

All the means provided have to be checked beforehand; a dried-out pen or a laser pointer without battery, for example, are quite useless.

A good start is essential for a presentation; it is therefore important to be well-prepared.

Are you able to start right away?

You should be prepared and able to begin with your presentation right away. Rearranging things (such as attaching one computer to another, for example) should be organized and checked beforehand (at least theoretically). It happens all the time that a laptop cannot be connected to a projector. It is therefore advisable to have a USB stick with your presentation at hand (PDF format).

General information on presentations

Establishing rapport with the audience

It is important to establish a relation to the audience to grab its attention. You should maintain eye-contact with different persons and avoid wandering eyes (to a window or a door, etc.), gazing indifferently into the distance, or staring at your paper or the projector permanently. During a seminar, it is best not to speak only to the instructor.

You should address the audience and not talk to yourself.

Body language and posture

It is important to pay attention to your own body language when making a presentation. We recommend considering if you tend to move too much or too little, and how you react when being nervous (where to put one's hands, etc). Your body language has a great effect on the audience; its attention can easily be distracted by peculiar movements, right away from your topic. It is best to avoid nervous twitches, pacing around, bouncing up and down, or putting your glasses on and taking them off constantly. However, we don't recommend being rooted to the spot, keeping your hands in your pockets, or neglecting your gestures. The more natural the movement (pointing to a slide or the blackboard, explaining something by using your hands, etc.), the better the quality of your presentation.

You should also pay attention to the fact that the audience should always be able to quickly follow your train of thought. This is even more important when writing a presentation. The audience should have the opportunity to sum up what it has just heard. It is therefore necessary to use clear, short sentences, to rephrase complicated issues several times, to explain technical terms, and to provide enough conversational gaps. Such gaps are breaks for both the speaker as well as the listener and should therefore not be spoilt by fillers such as «ah». Sometimes it makes sense to provide an intermediary summary in order to focus and structure all the information obtained.

Your body language should be natural; any ticks should be identified and then avoided.

Negative example: a professor (emeritus) in Zurich used the filler «ah» about 200 times in less than 90 minutes.

How to give an interesting speech or presentation

Academic papers as well as presentations should impart knowledge as interestingly as possible. A speech therefore has to be not only appealingly arranged; it should also be easy to follow. It is generally advisable to use various stylistic devices to grab the audience's attention. Its ability to concentrate will quickly decline when listening to extensive arguments or long-winded explanations. You should therefore divide a speech into distinguishable sections, for example, as regards derivation, explanation, and exemplification. A transition from one section to another should then be indicated by using proper stylistic devices (cf. fig. 19).

	Phase	Things to Keep in Mind
0.	Pre-Phase: Check situation	Make speech practice and breathing exercises; exhale before beginning with the first sentence; clarify atmosphere or expectations of listeners
1.	Establish contact with audience	Consider situation: choose introduction well (anecdote, funny remark - if suitable, appropriate examples; listeners will immediately decide if they want to pay full attention or not), while creating a relation between topic and audience's situation
2.	Introduction of problem (justification of topic, objective, definition, theses)	Provide transparencies or PowerPoint slides as you deem appropriate. Relate to previous knowledge of listeners; define problems posed. Indication of structure, length, and results to be expected. Point to following discussion, if applicable
3.	Development (delimitation of problem)	Deliver a few arguments; name exponents also working on this problem
4.	Clarify problem	Optionally: proceed dialectically and bring forth each argument (thesis, antithesis, synthesis), deliver examples for clarification, especially when dealing with complex data
5.	Solve problem, decisions	Begin with an intermediary summary, if applicable
6.	Summary, response to objective, final statement	Close presentation by making a final statement or gesture. Prepare for questions or a following discussion
7.	Discussion	Prepare for possible questions before presenting the topic. Weigh questions before answering precisely as well as briefly. When presenting an ongoing project, it is best to ask someone to take some minutes of the questions posed.

Fig. 19: Phases of presentations. Source: Diagram by author.

We recommend communicating complex and less complex issues alternately, if possible; ambitious content should be presented in a concrete manner. In addition, it is helpful to vary your speech rate and make use of other rhetorical devices such as interposed questions or short discussions. Little anecdotes, exemplifications, charts, or comparisons make a presentation livelier and can help to avoid boredom. It is also advisable to use different devices such as slides, blackboards, pictures, samples, and transparencies. However, you should show only a few slides since activating a projector always takes some time while having to block out the light with curtains.

Variations make presentations interesting.

Exercise: Preparing a Presentation

Prepare five PowerPoint slides. Try to let images speak for themselves before clarifying them with concise sentences.

Hint: Consider the following examples at <https://www.slideshare.net>.

When creating transparencies or a Power Point presentation, one should consider the following: transparencies and slides are used to impart knowledge in keywords or to exemplify subject matters by means of illustrations or charts. They should not be overloaded or give an account of the contents of the entire presentation. As a general rule, one should only use six words per line and not more than six lines per slide. A projected text has to be clearly recognizable at all times and from everywhere in the room. The sentence «You'll see—unfortunately not now» is very common but should be avoided. The question «Can everybody read this, even in the back?» is also well-known because one tends to use a font size that is too small. It should at least be 18 and 20 in larger lecture halls.

Sometimes it is refreshing to be off the beaten track as regards well-established forms of presenting and writing a paper. However, one should always think things through and plan thoroughly, down to the last detail.

While the use of overhead projections is increasingly rare, new forms for presenting content emerge i.e. Prezis. For them basically the same rules apply as for other computer-based presentation. A prezi should moreover not be too «nervous» by swirling and zooming in a too rapid pace that makes the audience dizzy.

It's not the quantity but the quality that counts when using transparencies.

Stage fright

Stage fright is a fear of failure (or a loss of face) in front of an audience. A stressful situation causes your body to release adrenalin, a hormone, to be ready for combat or flight. An option would be to run away from what is causing fear: the audience in the lecture hall. However, such reaction is not acceptable in society; you therefore have to stay and see it through. It is always possible to turn nervousness into something positive, something that will power your presentation and take away the fear. Stage fright can be transformed into a loud voice and sweeping gestures, which will then have a soothing effect on the speaker. In the end, it's the presentation's topic that counts and not the presenter.

You can take comfort in the fact that almost everybody gets nervous when having to deliver a speech. Being a little nervous does not hurt; it helps to tap your full potential. However, when being overpowered by stage fright, you have to do something about it. One option could be to practice in front of just a few friends or siblings. Most of the time, it is the unknown that one fears. Another option could be to consider that the most important thing is to impart knowledge and not to use a presentation as a tool for self-promotion. It is not the impression others have that counts but the speech and its content. People suffering from stage fright should therefore always try to talk about topics they can embrace wholeheartedly ([Schröder-Naef 1988: 190](#)).

Stage fright can indeed be transformed into positive energy.

Discussion

Discussions are an important part of your studies and come in various forms and techniques. Often there is room for a discussion after a presentation or speech; the audience can pose questions, add comments or criticism. Group discussions in seminars are essential to exchange information and opinions, or to review texts. In addition, a discussion with peers can be useful when searching for a new topic (e.g. when planning to write a master's thesis).

An objective is to exchange ideas, arguments, and knowledge.

A good, lively discussion has its advantages. It offers the possibility to look into new subjects while including new aspects and views. Established principles and convictions will be challenged and put into perspective while promoting tolerance towards dissidents. Comparing different views in an objective discussion may ideally result in realizing that dissidents can provide «legitimate» arguments as well. The claim to absolute truth can be settled. On the other hand, there are discussions that provide more clarity by showing generally understandable things from different angles. We especially recommend discussing problems since this will activate a potentially wide range of possible solutions as well as innovative and unconventional ideas ([Schröder-Naef 1988: 57](#)).

In order to promote a discussion's positive aspects, you have to create some necessary conditions first. All participants have to respect a few basic principles when having a discussion: polite manners, giving others a chance to speak without being interrupted, avoiding interjections and private conversations. All participants

are equal, other opinions have to be respected, and all contributions should be paid equal attention. You should be critical but fair as regards all the arguments produced to avoid just reinforcing preconceptions. Arguments should be kept short in order not to wander from the subject.

Additionally, there are mandatory conditions as regards organization and equipment. Discussion groups should consist of five to ten people in the best of cases. Otherwise the range of contributions will be too small or too diverse («chatterbox» vs. «sleeper»). A good preparation is key, for participants as well as the moderator. All participants should know the topic after reading and working through the text to be discussed (marginalia, excerpts, etc.). A moderator has to be able to prevent deviations (not too many details or trivialities), stimulate a stalled discussion, and account for dissenting opinions. It is therefore necessary to have expert knowledge on the one hand and a sense of the situation on the other hand, as well as concrete ideas of how to direct a discussion's energy onto the right track while making it livelier.

When discussing a topic, there are sometimes problems, both individual and group specific. The intensity of participation will always be varying. A few will tend to monologize and prevent others from getting a word in edgewise; they use discussions as platforms for self-promotion. A discussion round often seems to be a battle field, where people not only try to convince others of their opinion but also aim at defeating opponents. Their motto is: «The last word wins». Such a verbal exchange may boost one's ego but will not result in any new findings since all participants are just forced to defend their positions more fiercely than planned.

Group-specific problems often manifest themselves by being afraid of one's own opinion. It is difficult to object to an opinion already accepted by the majority, even if that opinion is different from one's own. Additionally, a mutual consent on the inside can forward intolerance on the outside. A uniform group risks confirming all preconceptions instead of challenging them (Steiger 1994: 172).

Competent moderators always have discussions under control.

Moderators should support timid people in expressing their opinions.

Discussions aren't promoted by fights and verbal exchanges.

Minutes

Minutes are seen as a document (in written, photographic, acoustic, or filmic form). They reflect circumstances and preconditions as completely and transparently as possible and can therefore give information on statements, opinions, activities, etc. In general, minutes are *process-driven* (description of activities or a discussion). An exception is the *results-oriented record of a discussion*; such a record especially archives results (Rückriem, Stary & Franck 1989: 57–75). The following rules apply (cf. fig. 20):

- Do not give an account of the entire course of the discussion and avoid deviations and repetitions
- Do not repeat arguments literally; their contribution as regards the main problem is important. This means that the recorder has to understand the topic of the discussion and clarify continuously any intermediary results.

Minutes' header	<ul style="list-style-type: none">• Title of presentation and organizer• Date of session• Topic of session• Name of presenters and participants; topics of presentations and discussion• Name of minute taker
Main problem	<ul style="list-style-type: none">• Differing concepts• Differing opinions and reasons• Corresponding questions and answers• Summary of agreements• Summary of disagreements and unsettled questions

Fig. 20: Structure of an elaborate discussion record. Source: Rückriem, Stary & Franck (1989).

Learning techniques and exam preparation

Learning objectives

At the end of this chapter you should have learned the following:

- You can apply different learning techniques and know how you learn best.
- You can organise your learning process efficiently.
- You know what to expect in an exam.

Introduction: «Learning techniques and exam preparation»

When preparing for an exam, many students have all kinds of doubts. On the one hand, you have to deal with a rather overwhelming amount of learning matter; on the other hand, you are uncertain how to learn best. Generally speaking, there is no universal formula since exam preparations rely on an individual basis. Thinking about processes, strategies, and emotions is as important as your learning content. By monitoring yourself, it will be easy to find out which techniques are useful and where there are still difficulties, doubts, or motivation problems (Steiner 2000: 9). Especially after finishing your exam preparation, it makes sense to review the experience gained in order to modify your technique, if necessary, when preparing for the next exam.

It is worthwhile to invest some time for planning one's learning strategies.

Learning has to be practiced; it can be compared to sporting activities that require constant practice in order to be successful. It also has its ups and downs which has to be accepted and considered in your schedule. You should aim at finding your personal learning method, encompassing all capabilities and preferences. In the best of cases, we recommend searching for a technique that stimulates your curiosity and interest, making the learning process agreeable despite all the pressure. There will always be difficult subjects or single chapters that cannot be embraced wholeheartedly. In this case, it is advisable to focus on the main objective of your preparation (a passed exam or final degree), and realize that sometimes it is necessary to struggle through hard times.

Even learning takes some practice.

Learning can be scheduled. A good time management can help to reduce any fears of not coming to terms with the learning matter. Additionally, it is easier to make plans for recreation, deliberately and with a clear conscience. However, one has to have realistic ideas and plan some extra time as a buffer (illness, etc.) (Steiner 2000: 100). It is also necessary to be able to estimate efficiency, which will be achieved by gaining experience and monitoring oneself.

Monitoring and self-reflection improves your learning style.

Learning approaches

Depending on learning content and learning phase, there are different learning approaches. When dealing with the basics of a matter, for example, or the vocabulary of a little-known language, learning will almost only be incoherent and oriented towards facts. When dealing with subjects already known, you will be more and more capable of including new ideas in your body of knowledge. It is a fact that knowledge will be better memorized

if it is used, related, and developed. However, there are also students who prefer an approach that is oriented towards facts; your learning success will be immediate, and there is no need to have doubts if you learn the right thing (Steiner 2000: 50).

Knowledge will be better memorized when relating it to something already learned.

- *Learning oriented towards facts* (surface approach): Memorizing incoherent facts, dealing with details. Isolated analysis of parts of a course, repetition of unaltered contents.
- *Learning oriented towards experience* (elaborative approach): A course's content is personalized and concretized by relating it to your own experience as well as by applying it out of context.
- *Learning oriented towards a deeper understanding* (deep approach): (deep approach): Searching for the essence of the study material. Different parts will be connected to form an entity while looking for relations to other contents. You draw conclusions as regards content and authorship to personalize the knowledge gained.

Concentration

Learning success is closely related to the capability of concentration. If you let the mind wander and do not focus on learning targets, important components of your learning success (e.g. efficiency and the faculty of thought) will decrease accordingly. The capability of concentration can be increased in the same way as all the stages of your learning process:

Attaching importance to a topic's introduction: It is difficult to concentrate if the introduction and the way of tackling a subject are already flawed. Your curiosity is piqued by getting a general idea first as well as by trying to find a concrete example, or by relating it to everyday life. We recommend, for example, trying to get an overview of an entire book or script in just one hour before imagining a summary of its content. Chapters can be skimmed over while evaluating them by means of important keywords or by reading just their headings and very first sentences. On the one hand, this method will wet the appetite for filling the gaps; on the other hand, you have already gotten an overview and are therefore better prepared for what comes next (Steiner 2000: 76).

Having a good introduction of a new topic will help to concentrate better.

Getting in the mood for new topics: We recommend preparing yourself mentally for a new learning session. It is best to review what you have learned the day before; then you can establish a connection between those two learning sessions. A re-entry in a topic will be easier since a part of the repetition is already achieved (Steiner 2000: 81).

When relating topics to each other, it is easier to approach new subject areas.

Reserving time for certain tasks (cf. «**Time management**»): Learning processes are simplified by reserving extra time for learning and thinking. You should pay attention to the fact that such times have to be undisturbed and respected by your surroundings. It is therefore necessary to identify any sources of disturbance before eliminating them (e.g. phone, noise). Other things influencing your capability of concentration (e.g. mixed feelings) should be assigned to another date. By creating a steady rhythm of fixed hours for learning and leisure purposes, you reduce the risk of getting disturbed while making learning a matter of course (Steiner 2000: 79).

You should not feel guilty when enjoying some time off.

Breaks: Breaks are important for your capability of concentration. It is difficult to provide hard and fast standards; however, it is generally better to make many short breaks and just a few long ones. Sometimes it is enough to take a sip of water while looking out of the window or making a few steps in order to increase your capability of concentration. It also makes sense to alternate reading and writing or to take a short break and do some cooking (Steiner 2000: 82).

Changing your learning location: By changing the learning location every few weeks, you avoid monotony while rendering the learning process more interesting (Steiner 2000: 83). It is also possible to structure single learning steps by choosing different locations, for example, by studying in the library before repeating the learning content at home or on the way home. However, many students prefer one single learning location since constant surroundings are better suited for focusing one's thoughts and avoiding distractions.

Breaks and some exercises structure the learning process and lighten one's mood.

Retelling things learned: It can be very useful to repeat the most important facts for real or imaginary people, experts or not, every other day or at least every now and then. Most of the time, it helps to clarify relations and overall structures by rephrasing and simplifying them (Steiner 2000: 89).

Taking notes of a learning session's beginning and end: By monitoring learning hours, you achieve the following objectives: on the one hand, you find out how long it is possible to pay attention (notes on length of learning session and situation). On the other hand, you can create the atmosphere of being under pressure in order to increase the capability of concentration during learning sessions (Steiner 2000: 91).

What can't be explained hasn't been understood.

Organization when learning

Learning processes can be structured in various steps (cf. fig. 21); all of these steps require a different mental state. There are those requiring vision and others accounting for imagination or elaboration. The most important thing is to realize that there are indeed such sub-processes before trying to do everything at the same time (e.g. activating previous knowledge and working through new material simultaneously). You could also try and separate single learning steps deliberately by changing the location (e.g. structuring at your desk, then memorizing on the couch or while taking a few steps).

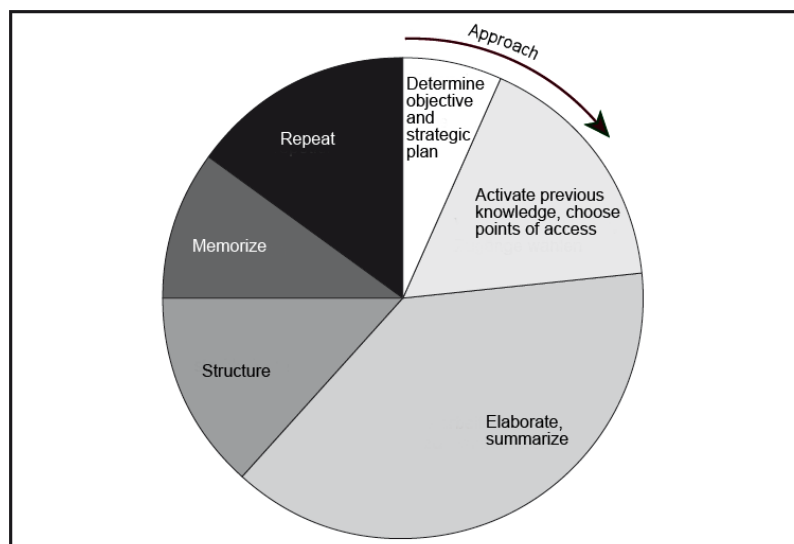


Fig. 21: Steps of learning processes. Source: Diagram by author based on Steiner (2000: 171).

There should be enough time for the different steps of one's learning process.

Determining objectives and purposes

Expectations when taking an exam can vary; there are those just trying to pass and others only wanting to get top marks. It is best to clearly determine your objectives before preparing for an exam in order to set a time frame, either deliberately or compulsorily (Steiner 2000: 99).

However, it is also important to define the purpose of each single learning session. If you make resolutions to concretize all expectations it will be easier to focus on the learning content since your energy can then be better concentrated. Aims can vary to a great extent. You can decide to tackle a difficult chapter, for example, relate a single content to another, get an overview of an entire script, or make a short summary of the most important facts for someone outside the subject area.

The time needed for learning depends on the objectives set.

Gathering information, activating previous knowledge, getting started

You should learn how to use catalogs, microfiches, databases, inter-library loans, DP, statistics, and word processing applications as soon as possible. We recommend collecting all necessary information, lecture notes, etc. before preparing for your exam. It is cumbersome when trying to learn and search for literature and information at the same time. Additionally, it is necessary to have all relevant information at hand before getting a general idea of the entire learning matter.

When beginning to learn, all the things needed should be ready at hand.

This is the right time to activate your previous knowledge and perhaps search for additional information in order to simplify touching on a new subject. When activating previous knowledge, it is necessary to have a vision as well as the ability to quickly get a general idea of the learning matter as regards content and complexity. It is also important to get a good start. It is worth taking your time when dealing with a new topic, even if you get the feeling of not learning anything at all. A good first impression is key when trying to pique your curiosity and

arouse interest, for example, by finding an anecdote, a biography, an analogy, a practical example, or a relation to your own experience. In addition, a good start can help to establish connections and references that can be useful when memorizing the matter at a later time. Learning matter should be accessed from various angles, interpreted by means of different research perspectives, or connected to your sensory perception in order to better keep it in mind. References to previous knowledge are therefore essential for learning in a successful way.

Elaborating, developing

Developing learning content is similar to discovering new worlds. This is a very challenging step since new information and contents have to be understood before being able to relate them to your previous knowledge. The most important thing at this stage is to find analogies and examples (of your personal choice) in order to comprehend an abstract body of knowledge (Steiner 2000: 184). A sketch or a draft can help to illustrate complicated correlations as well as soliloquizing or discussing learning contents with peers. Generally, learning content that has already been discussed and paraphrased will be easier to memorize and reproduce.

You realize if contents have been understood when looking at examples of your own choice.

Economizing

There is often not enough time to deal with all areas to the same degree. It is therefore necessary to spend your time wisely as regards different learning phases. At the beginning, you have to decide what has to be learned and what can be neglected.

When elaborating and developing knowledge, it is essential to determine which learning content or chapter can just be skimmed through and which one has to be dealt with in more detail. At this stage it is very important to prioritize and focus on basics in order not to get lost in details. Knowledge learned superficially will hardly be memorized, especially when not being used or repeated at a later date. In such cases it is better to limit yourself to just a short overview. In-depth studies and focusing make sense when trying to find important relations as well as one's main questions (Steiner 2000: 197).

Most of the time economizing—concentrating on the essential—is mandatory.

Structuring

By structuring content (cf. «Use of literature»), you categorize, arrange hierarchies, relate fragments to an overall picture, and select appropriate keywords. Learning content can then be better memorized and retrieved at a later date. Knowledge is being condensed. Accordingly, it will require less memory space and is therefore easier to manage as compared to unstructured knowledge (Steiner 2000: 195).

Before beginning to learn, we recommend saving one or two days for mentally structuring your content and relating single subjects to each other. Most of the time, there are useful references or analogies, provided that they are arranged in a logical way. In order to structure texts and learning contents, there are various devices and techniques such as mind maps, sketches, summaries, structural analyses, and highlighting.

Structuring means keeping track of your learning content.

Mind maps

Mind Maps create a central image (cf. fig. 22). Associations and subordinated topics branch out to form other branches of inferior topics and terms (Buzan 1996: 59). A mind map greatly differs from standard notes or lists. When taking notes, keywords are often concealed because they appear in different contexts. Experts argue about the purpose of mind maps generated by a computer. They claim that structures are better memorized if

written by hand. Important information can get lost. Notes are often not very appealing to the eye; memorizing them will be difficult since the associative ability is not supported. Your creativity is equally not stimulated; it is therefore difficult to concentrate and be motivated enough to learn (Buzan 1996: 49).

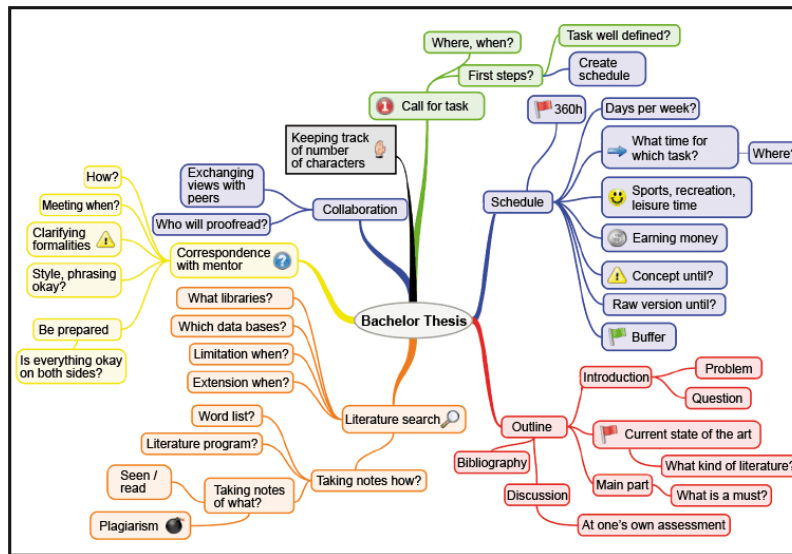


Fig. 22: Example of a mind map. Source: Diagram by author.

A mind map's hierarchies and categories increase your capacity for remembering since single words are not just listed randomly and regardless of their significance (Buzan 1996: 84).

We recommend highlighting mind maps additionally with colors (each branch with a different one), images, or symbols. It is also important to pay attention to clarity and distinctness (e.g. only one keyword per line, central lines thicker than others, etc.). Mind maps are there to support and structure associations; busy, chaotic images should therefore be avoided (Buzan 1996: 59). In case a mind map serves as basis for a speech, it is possible to add a numerical classification where branches are numbered and ordered chronologically.

Mind maps can also be used when taking notes during a lecture or creating a manuscript for a presentation.

Even if layout tips can be helpful at the beginning, it is not advisable to create mind maps in agreement with strict rules; it is better to develop your own personal style. Creating a mind map is done step by step and already associated with a learning effect.

When dealing with a text, you should first try and get a general idea of it: content, headings, results, and conclusions. Then you can determine the central image as well as the main branches of your mind map. After getting more detailed information and text comprehension, this mind map can be elaborated and finally completed by integrating even difficult contents. It is not a matter of making an entire mind map first before repeating its content. Elaborating a mind map should ideally be an important part of your learning process by structuring a text and supporting your ability of comprehension (Buzan 1996: 144).

Structural analysis while reading

Before dealing with a book's or script's content, we recommend analyzing its structure and outline. Learning per se will then be easier since you will not be confronted with unforeseen tasks. A text's structural analysis can be distinguished by the following levels (Steiner 2000: 166):

- *Structure of text:* The entire structure of a text will be analyzed, its number of chapters or sections. You search also for prominent key terms.
- *Structure of content:* You determine the function of certain text parts to facilitate your orientation within a chapter. You should also pay special attention to introductions, summaries, and conclusions already providing an indication of text contents.
- *Content per se:* It is easier to deal with a text's content per se if certain conditions (such as structure, frame, and summary) are already known. When working on comprehensive texts we recommend trying to determine and summarize the most important contents in a short period of time (cf. «**Concentration**»).

Structuring your learning matter clearly makes it easier to learn.

To sum up, it is clear that contents will be retrieved better after structuring your learning matter efficiently. However, a good structure alone is not a guarantee for being able to memorize things easier.

Memorization

Elaborated, reduced, and structured contents will be easier to memorize. However, there will always be learning matters that are difficult to remember, even if repeated over and over again. When dealing with difficult contents such as formulas or abstract data, it can be helpful, even if it will take some time, to use mnemonics and stories to learn something by heart.

It is important to add that forgetting is not always a bad thing. On the contrary, it contributes to the quality of knowledge. Knowledge that is unconnected, out-dated, or no longer applied will be deleted automatically. You will therefore only memorize condensed as well as focused knowledge (Steiner 2000: 216).

Mnemonics help to memorize difficult content.

Repeating

When repeating, you try to memorize condensed content already structured. Knowledge repeated one time only will usually be forgotten more quickly than knowledge repeated over and over again. It is therefore best to repeat things learned the very next day before tackling new contents. Repeating things the very next day will not take much time; the interval between elaborating and repeating can therefore be kept short.

Repeating learning matter helps to memorize it and keep it in mind.

Repeating by means of flashcards

You create a set of flashcards per subject, ordered by weekdays as well as by weeks and months. Learning content worked through today is then put in the section of the following day in order to be repeated again. Content that has been memorized successfully is put in the section of the following week; it will therefore be considered not before that date. Content that hasn't been memorized will be put again in the section of the following day until it can be finally memorized. The following week, this procedure is restarted from the beginning. Content already memorized is put in the section of the following month while unknown content gets into the section of the following day and then into the one of the following week, step by step, until it has reached the section of the following month. Learning contents of a subject will therefore be repeated continuously. Its advantage is that the amount of content that still needs to be repeated will not be too much right before an exam; if time is running short no content will be lost (Steiner 2000: 233). In case there are a lot of different

subjects this method is inadvisable since creating and using a lot of flashcard sets simultaneously will be very time-consuming. However, the concept of repeating learning content in short intervals before repeating it in longer ones can also be practiced without flashcards and will therefore always be a good idea.

Attitude when taking an exam

Exams are critical situations since you have to present the knowledge gained in a short time at a specific date, in oral or written form. Your condition on that day is important; however, a good preparation can compensate for not being at your best (the reverse is more difficult to achieve).

When taking an exam, the time available for testing students is limited; often it will only be possible to present just a tiny amount of the things learned. Sometimes you may be therefore frustrated: «I have done so much to pass this exam and now they are only asking about one or two details». This may be dissatisfying at that moment; however, exams can only draw samples of the things learned. They will never be able to test the entire spectrum of your knowledge as regards a topic or a seminar, even if students try to cover as much of that spectrum as possible. It is therefore best to prepare for a limited range of topics from the very start.

Written exams

Bachelor and master examinations most of the time consist of several consecutive exams with questions on different subjects. In order to pass these exams, it is necessary to proceed in a structured way. First you should take some time to get an overview while reading each question thoroughly. Which questions are easy to answer, which ones are more difficult? How much time can be spent per question, is there enough time left to review things? It is best to take some notes immediately. Then you should begin with answering those questions that can be dealt with best to get them off your mind. However, it is important not to overrun the time available for each question. You should also avoid skipping a question; it is always better to write something since zero points are difficult to compensate. At the end, there should be some time left to review all the questions and make amendments.

Oral exams

Oral exams offer the possibility to ask your examiner a question in case of doubt; however, there is less time available for answering the questions posed. You can always take short notes before answering examination questions in a more structured way. We recommend «thinking out loud» in order to let examiners follow your train of thought; they can then confirm or correct your thoughts. In case of doubt, it is best to say: «I understand this question in the following way», before continuing with things you know. If you are wrong the examiner will either make corrections or there will be follow-up questions concerning the topic raised.

By completing this course you will have acquired a good basis for scientific work. Knowing the formal requirements you have more time at your disposal to engage with content, to formulate research questions and to actually collect data.

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