1 Rules for Working and Principles of Understanding

- Refer explicitly to the analysed text.
- Write down results and your main reasoning.
- Develop text analyses which are understandable to others.
- Give reasons for your text analyses.
- Read texts several times to test and revise understanding of both the parts and the whole.
- Start with the assumption that the author makes true statements and gives sound arguments and go on to test this assumption (principle of charity).

The principle of charity is of special importance if you criticize a text. Before you can legitimately criticize the text you have to make it as strong as you can; that is, you must start with the assumption that the author intended to present coherent and true statements. If you fail to do that, there is the danger that what you criticize is not the position the author in question holds but only a “straw man”, a mere caricature of its position.

2 Preparing the Text Analysis: How to Proceed

- Make clear to yourself the specific goals of your text analysis.
- Call to mind how much time you have.
- Gather basic information about the text.
- Decide whether it is worth reading the text.
Basic information about the text. Some questions you should answer before or during your reading (not every question is relevant in all cases):

- Who is the author?
- When was the text first published?
- Where was the text first published?
- Transmission history: In which language was the text written? Is there more than one version of it? Is there a critical or a standard edition?
- What is the topic of the text?
- To what type of text does it belong? For example: documentation (data compilation), information (scientific paper), argumentation (essay), advocacy and persuasion (political program), prescription (law), information dissemination (public media).
- Readership: To whom is the text targeted?
- Context of publication and discussion: In which political and social situation was the text written? To which discussion should it make a contribution? For or against who or which position was it written? What is the position of the text in the complete works of the author?
- Impact: Is the text well known? has it been influential?

Goals of your text analysis. When you have clarified the preconditions for your text analysis and acquired the basic information about the text, you can decide whether and how you want to read the text. You also need to be clear about the specific goals of your text analysis. For example: Should the text analysis provide a first overview of a topic? Or a survey of views and controversies about a topic? Or a deeper understanding of some arguments for or against a thesis?

3 Reading: How to Work on the Text

- Texts want to be read several times and in different ways.
- Set goals: Before you start reading, be clear about what you expect from your reading.
- Work methodically: Develop techniques of reading and textual work and use them consistently.
- Write during reading: Record your results, but also questions, uncertainties and ideas.

3.1 Forms of Reading

If a text is worth reading at all, it is worth reading more than once. Make use of different forms of reading and different ways of accessing the text:

**Sequential reading**: The text is read “from beginning to end”. Sequential reading is usually necessary if you have to read the entire text.

**Selective reading**: Individual passages are read, but not necessarily in the order of their arrangement in the text.

Both sequential and selective reading can be more or less intensive:

**Diagonal reading**: The text is “scanned” to identify as fast as possible the most important contents and the main features of its structure.

**Cursory reading**: The text is “read through” to grasp its content and structure quickly and in broad outlines.

**Intensive reading**: The text is read meticulously to capture its content and structure carefully. In this process, you have to mark the text and work in a written form.

**Strategies of reading.** It is important to choose an appropriate form of reading according to the type of text and the purpose of your reading. If a text seems difficult and complex, it is helpful to combine several readings with different aims and corresponding forms of reading. If you want to study an entire book, it is often helpful first to read the whole text diagonally, then several chapters cursory and then selected parts intensively. For texts that follow formalized conventions, such as scientific papers, you...
might adopt the following strategy: Read the title first, then perhaps the abstract; if you are still interested, scan the illustrations with their captions and if the text turns out to be useful to you, continue to read the text diagonally.

3.2 Marking Texts

Marking by placing notes, underlining and other marks makes reading an active process, improves memory and documents your understanding for later re-reading. Guidelines for marking texts are:

- Do not mark the text during your first reading. Start only after you have read the whole text diagonally once. To assess the meaning of individual passages, you have to know the whole content of the text in broad outlines.
- Do not mark the text excessively – or the marked passages will not attract attention any more.
- Mark texts systematically. It is best to develop your own procedure and apply it consistently.

Examples of marking strategies:

<table>
<thead>
<tr>
<th>Highlighting</th>
<th>Comments between the lines</th>
<th>Notes in margins</th>
</tr>
</thead>
<tbody>
<tr>
<td>red</td>
<td>= main thesis</td>
<td>translations</td>
</tr>
<tr>
<td>orange</td>
<td>= important concept</td>
<td>elementary explanations</td>
</tr>
<tr>
<td>blue</td>
<td>= function word structuring</td>
<td>numbering the steps of a line of thought</td>
</tr>
<tr>
<td>green</td>
<td>= example</td>
<td>elucidating grammatical structure</td>
</tr>
<tr>
<td>yellow</td>
<td>= …</td>
<td>content-related key words, esp. with a view to later structuring</td>
</tr>
<tr>
<td>circle</td>
<td>= indicates structure</td>
<td>function-related:</td>
</tr>
<tr>
<td>frame</td>
<td>= key concept</td>
<td>ex = example</td>
</tr>
<tr>
<td>wavy</td>
<td>= unclear</td>
<td>def = definition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>th = thesis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>arg = argument</td>
</tr>
<tr>
<td></td>
<td></td>
<td>obj = objection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ref = refutation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>personal comments:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>? = unclear</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/ = rework again</td>
</tr>
<tr>
<td></td>
<td></td>
<td>// = look up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>! = important</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+ = good!</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– = criticize!</td>
</tr>
</tbody>
</table>

4 Structuring: How to Analyse the Structure of the Text

- Structuring aims at giving an overview of the structure of the text in a transparent representation.
- Structuring is the basis for all analytical work beyond mere skimming.
- Proceed stepwise: Start analysing larger text units and then go on to smaller passages.
- Take not only the content of a text unit into account but also its function.
- Choose an appropriate form of representation that reveals the hierarchic structure of the text.
- Revise constantly the structuring during your text analysis.

Structuring is the most important instrument of text analysis. Structuring is not summarizing, but giving a transparent overview of the line of thought and especially the argumentation of a text. Properly done, structuring ensures intensive and target-oriented examination of the text. Benefits include:

- You figure out the basic outline of the text.
- You can always find your way around in the text you analyse.
- Even considerably later, you can quickly access the text and your understanding of it.
- In a discussion, you can efficiently compare your understanding of the text with other views.

The first point is decisive. You cannot understand the content of a text without understanding its structure first.
4.1 Outline of a Method for Structuring

Structuring a text comprises two basic tasks (not necessarily dealt with in this order):

**Task 1.** Structure the text by dividing it in passages that constitute unity of thought (sect. 4.2)
- For every passage of text, consider the following questions:
  - **Extent:** Which parts of the text belong to this passage?
  - **Content:** What is this passage about?
  - **Function:** Which function does this passage serve? (e.g., thesis, comment, argument, example)
  - **Relation:** To which other passages is this passage related?
- Provide every passage with a title that expresses its content and function.

**Task 2.** Represent the structure (sect. 4.3)
- Use the titles from task 1 as a starting point for an overview representing relations between passages and documenting which parts of the text belong to each passage.
- Useful representations are numbered hierarchies and diagrams.

You need to pay attention to text-structures on several layers. Passages can contain further passages and can be related to each other in many different ways. Hence, a “flat” list of titles is typically too simplistic, rather you need some hierarchical representation. Further recommendations:
- Marking the text while reading is the basis for structuring. It is especially helpful to mark the suggested units in the text. If you have already added side notes and underlining revealing function and content of the passages, you have a good basis for structuring.
- At the beginning, do not structure in a very detailed manner. Rather, consider top-level structures first and refine step by step. That way, you get an overview more quickly and you do not have to rework it fundamentally again and again.
- Structuring is the instrument of a text analysis, hence it usually remains work in progress. It does not only provide the basis for a deeper analysis of important passages, it should also be adapted continuously as your understanding of the text advances.

4.2 Working out the Structure of the Text

Three questions guide the structuring of a text: In which content-related passages can the text be divided? Which functions do these passages have? How do they play together? Hence, at the heart of the matter are content-related units, the function of these units and the relations between them:

**Step 1: contents.** Determine the content-related passages of a text. These passages are not always identical with the typographical paragraphs.

**Step 2: functions.** Find out and make explicit what the author is trying to achieve in a passage. Use verbs (or nominalizations, such as “thesis”, “example” or “objection”) to express functions.

For example: Does the author claim something, propose a definition, introduce a thesis, give an example, ask a question, comment on her approach, articulate a requirement, pass a value judgement, refer to something, justify or conclude something?

**Step 3: relations.** Work out the ways in which the different parts of a text are related to each other.

There are several helpful techniques for structuring. In practice, you will usually apply them in combination.

**Make use of the clues provided in the text.** Often a text includes explicit clues that help in analysing its structure. For example, the following items deserve your attention:
- subtitles
- paragraphs
- numbering
- formal features of the print layout (e.g. highlighting)
- comments about the structure of the text; usually in the introduction, sometimes on the book cover
- tables of contents
- summaries at the beginning or at the end of a chapter
None of this is sacrosanct. For example, sometimes a more perspicuous overview results if you combine several paragraphs, split a section into several parts or combine discontinuous sections that are separated by digressions.

**Identify structure indicating formulations.** You can highlight structure words and structuring phrases, for instance with the use of colours. Some examples:

- for additions: further, additionally, moreover, furthermore
- for oppositions or additions: not only … (but) also, however
- for justifications: because, since, so
- for conclusions hence, therefore, consequently, so that

**Address questions to the text.** Explicit questions are particularly helpful if the structure of a line of thought is difficult to work out clearly. You can write down a list of questions and read the text again in the light of these questions. If you focus on the argumentative structure, relevant questions include:

- Which theses are formulated explicitly?
- Which assumptions are used implicitly?
- How are the claims justified? Are there unjustified claims?
- What is the argumentative functions of the examples?
- Which conclusions and consequences are drawn from the argumentation?

**Focus on relations between passages.** When analysing relations, the following difficulties have to be dealt with:

- Printed texts are linear sequences of sentences, paragraphs and chapters. But usually their content exhibits a complex structure. You have to establish and represent this network of relations.
- Important relations can be found not only between passages on the same level of text structuring (e.g. between chapters or between paragraphs), but also between larger and smaller text units (e.g. a whole chapter can explain a concept introduced in some paragraph of another chapter).
- Besides the relations explicitly indicated in the text (e.g. by cross-reference, but also by pronouns), you have to take into account content-related relations that are not explicitly designated as such.
- It is sometimes difficult to establish unambiguously the relations between passages. Often a solution can be found if you consider the context of the relevant passages.

### 4.3 Representing the Structure of a Text

The representation of a text-structure should make as clear as possible relations between passages of the text as well as their argumentative and logical dependences. If a text is very simple and short, you can note the structuring directly in the margins. In general, you need to sketch it out on a separate page to get an overview.

**Hierarchical structuring** assumes that you can represent the relations between the parts of a text by nested sequences of passages. The most familiar version are decimal numberings as used in tables of contents. Indention or bold type can also improve the result, if used systematically and selectively.

- Start with a rough outline of the text. It is useful to identify a general scheme, for example:
  - introduction – main part – conclusion
  - plan – execution – results
  - thesis – justification – objections – answers to the objections
  - question – answer₁ – critique of answer₁ – answer₂ – ... – proposed solution
- Within these larger parts, look for subparts and sub-subparts and refine the division step by step.

Hierarchical structuring has the following advantages and disadvantages:

- The hierarchical structure can easily be associated to the linear structure of the text.
- There are almost no practical limits to length. Hence, the method is suitable even for substantial texts and detailed structuring.
  - Very complex and non-linear lines of thought cannot be represented clearly and lucidly.
  - Hierarchical structures can get difficult to read if they exceed a certain length.
To make a transparent representation of complex and non-linear lines of thought, graphic representations (cf. chapter 5.3) are often more appropriate. But they can make it more difficult to relate the structuring to the text.

**Example.** For purposes of illustration we chose a short example, although in practice the structuring of longer text is more important and worthwhile. At the beginning of the book *Changing Course*, there is a declaration signed by 48 business leader (see appendix). It can be structured according to the following basic pattern:

<table>
<thead>
<tr>
<th>Introduction</th>
<th>(paragraphs 1 and 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theses</td>
<td>(paragraphs 3–17)</td>
</tr>
<tr>
<td>Conclusion</td>
<td>(paragraph 18)</td>
</tr>
</tbody>
</table>

Since the theses constitute the bulk of the text, this part should be analysed more precisely. Although the part consists of theses throughout, it can be divided into two subparts. Firstly, there are basic statements about the conditions for sustainable development. Secondly, there are a series of theses about the measures that are necessary to realize sustainable development:

<table>
<thead>
<tr>
<th>Introduction</th>
<th>(paragraphs 1 and 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core-thesis about the conditions for sustainable development</td>
<td>(paragraphs 3–5)</td>
</tr>
<tr>
<td>Theses about the necessary measures</td>
<td>(paragraphs 6–17)</td>
</tr>
<tr>
<td>Conclusion</td>
<td>(paragraph 18)</td>
</tr>
</tbody>
</table>

Next, we have to think about how to further divide the large part about necessary measures. As the theses of the BCSD are formulating tasks addressed to governments, industry and society it is suitable to structure it according to the addressees:

<table>
<thead>
<tr>
<th>Theses about the necessary measures</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Theses about the tasks of governments</td>
<td>(paragraphs 6–8)</td>
</tr>
<tr>
<td>Theses about the tasks of business</td>
<td>(paragraphs 9–13)</td>
</tr>
<tr>
<td>Further theses about the tasks of governments</td>
<td>(paragraphs 14–15)</td>
</tr>
<tr>
<td>Theses about the tasks of society</td>
<td>(paragraphs 16–17)</td>
</tr>
</tbody>
</table>

For a better overview, both parts about tasks of governments should be combined. To complete the structuring, we subdivide the remaining passages – introduction, core-thesis and conclusion – and characterize their function and content. The hierarchy is expressed by numbering and indents:

1. **Introduction**
   1.1 Aim of the text: Commitment of the business leaders to sustainable development (paragraph 1)
   1.2 Justification: Quality of life requires economic growth without destroying the environment (paragraph 2)

2. **Core-thesis about the conditions for sustainable development**
   2.1 Basic principle: Sustainable development requires new forms of cooperation between government, business and society (paragraph 3)
   2.2 Three components: Economic growth, new technologies, efficient markets with internalized environmental costs (paragraphs 4–5)

3. **Theses about the necessary measures**
   3.1 Theses about the tasks of governments (paragraphs 6–8, 14–15)
   3.2 Theses about the tasks of business (paragraphs 9–13)
   3.3 Theses about the tasks of society (paragraphs 16–17)

4. **Conclusion:** Formal statement of commitment of the members of the BCSD (paragraphs 18)
5 Summarizing: How to Capture the Essential

- Represent concisely essential statements, central arguments and the basic structure of the text.
- Summaries have to be comprehensible without acquaintance with the original text.
- Adapt the representation to the aim of your text analysis and to the question it should answer (a short text is not always the optimal solution).

A summary should record clearly and in broad outlines (sect. 5.3) the structure (sect. 5.2) and the central statements of a text or a larger part of a text (sect. 5.1). This is a double challenge. You have to confine yourself to the essential but yet formulate precisely, comprehensibly and clearly in your own words. Summaries focus exclusively on the analysed text. If you include some of your own thoughts, they must be identified as such unmistakably. Summaries are useful in two respects:

- In a very short form, they provide an overview of the essential content of a text and thereby make the results of your text analysis available.
- They can be used during your text analysis to capture the essence of what you already have read and understood.

Even though summaries are short, they require a considerable amount of work. You cannot expect to write down a summary “in one go”. The best strategy is to proceed step-by-step. Begin with a longer draft, then rework it and shorten it.

5.1 Core Contents of the Text

Three ways to focus on the central contents of a text are:

**Determining the crucial point**
- What is the central statement of the text? What is the main thesis of the text?
- Formulate this thought in one to three sentences.

**Analysing the title**
- What is the function of the title? Does it focus on content, on method or something else?
- How do topic, leading question and central statements of the text relate to its title? For example:
  - If the title raises a question: How is it answered in the text?
  - If the title mentions a central concept: What role does it play in the text?
  - If the title indicates a thesis: How is it justified in the text?
- Does the title fit the text? Is an alternative title possible? Which title would you give the text?
- There are many possibilities to represent the results; for example, a mind-map with the title in the middle and the aspects mentioned as branches.

**Identifying the central passage**
- Is there a key passage which is decisive for the question or the purpose of the text?
- Where is this “climax” of the text?
- How is the text organized with respect to the central passage? What steps lead up to the central passage? What follows from it?
- The structure of the text with respect to the central passage can, for example, be represented in a diagram.

5.2 Structure of the Text

If you have worked out the structure of a text (cf. sect. 4), the basic architecture of the text is already clearly displayed. For the purpose of a summary, it is often useful to choose a more simple and linear representation of the train of thought. For this you can work with the following basic pattern:
Introduction
- What is the question the text wants to answer? What purpose does the text serve?
- Does the author describe his approach or method, and if so, how?
- Does the author situate the text in a wider context, a subject area or a tradition?
- Are there hints at the structure of the main part of the text?

Main part
- Which positions are discussed and what are their basic claims? How could you label the positions?
- Does the author sketch its own position? Does he relate it to other positions?
- Which arguments are offered for or against the positions? On which explicit or implicit assumption are they based? How is the argumentation as a whole structured?
- Does the author raise objections against his position? Does he reply to the objections? Which objections are not dealt with?

Conclusion
- What are the results of the text? How is the text summed up by the author?
- Does the author mention open questions?
- Is there a preview of other work?

The answers to these questions can be recorded in a table:

<table>
<thead>
<tr>
<th>text segment</th>
<th>formal components</th>
<th>answers, statements, contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>introduction</td>
<td>question</td>
<td></td>
</tr>
<tr>
<td></td>
<td>approach/method</td>
<td></td>
</tr>
<tr>
<td></td>
<td>…</td>
<td></td>
</tr>
<tr>
<td>main part</td>
<td>positions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>author’s position</td>
<td></td>
</tr>
<tr>
<td></td>
<td>arguments in favour of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>…</td>
<td></td>
</tr>
<tr>
<td>conclusion</td>
<td>results</td>
<td></td>
</tr>
<tr>
<td></td>
<td>…</td>
<td></td>
</tr>
</tbody>
</table>

5.3 Representing Summaries

The form of a summary should be selected according to the purpose it is intended to serve.

Abstract. This is the classic form of a summary. It is a continuous text, usually not longer than half a page. Abstracts require careful formulations, because they need to present the essential content of the text succinctly, yet be easy to understand even for somebody who has not read the original text. You have a good basis for writing an abstract if you have structured the text and compiled a table as shown at the end of sect. 5.2.

How to write an abstract
- Formulate the key statement: Try to capture the content of the text in a single sentence that indicates what the topic, the question and the central conclusion of the text are.
- Formulate supporting sentences that stand in a specific relation to the key statement. For the moment, you may ignore their order. If longer passages result, condense these by omitting everything that is not absolutely essential.
- Arrange the supporting sentences: Organize the material in light of the key statement and reformulate it in such a way that content-related connections become clear.
- Revise: Read the abstract, ask the following questions and make the corresponding modifications.
  - Does the abstract make clear what the text primarily is about?
  - Does the abstract give an overview of the central steps of the argumentation in the text?
  - Is the abstract comprehensible without acquaintance with the original text?

Example. In the following abstract we underlined the key statement:
This essay attempts to provide an analytical apparatus which may be used for finding an authoritative formulation of the Precautionary Principle. Several formulations of the Precautionary Principle are examined. Four dimensions of the principle are identified: (1) the threat dimension, (2) the uncertainty dimension, (3) the action dimension, and (4) the command dimension. It is argued that the Precautionary Principle can be recast into the following if-clause, containing these four dimensions: ‘If there is (1) a threat, which is (2) uncertain, then (3) some kind of action (4) is mandatory.’ The phrases expressing these dimensions may vary in (a) precision and (b) strength. It is shown that it is the dimension containing the weakest phrase that determines the strength of the entire principle. It is suggested that the four-dimensional if-clause be used as an analytical apparatus in negotiations of the Precautionary Principle.


Stylistic and linguistic aspects are a special challenge in the case of an abstract. The following rules should be obeyed:

- **Formulate carefully**: Avoid misleading words and pictorial language; pay attention to unambiguous reference, especially if you use pronouns.
- **Avoid wordiness**: Use of appropriate conjunctions and similar linguistic means to express connections between sentences in as few words as possible.
- **Formulate in your own words**: Without a compelling reason, do not adopt phrases from the text.
- **Limit use of jargon**: An abstract is a self-contained text. It has to be comprehensible without acquaintance with the original text. So you cannot adopt concepts that are used with special meaning in the text. Also, an abstract is also not the right place to explain concepts, unless the text essentially contains the explanation or coining of a concept.

**Six-sentences-presentation** (cf. https://www.ph-freiburg.de/ew/homepages/holzbrecher/wissenschaftliches-schreiben.html). This is a structured alternative to the abstract. It is also applicable for parts of a text if, for example, you need a concise statement of the argumentation in a chapter. Six-sentence-presentations are short continuous texts in the form of a mini-essay reporting, as the name suggests, the content of a text in six sentences. No sentence should be longer than twenty words – hence, the formulations have to be precise. Again, the structure of the text can serve as a starting point. There are different possibilities to organize such a presentation. For example:

1. sentence: lead topic and question of the text introduction
2. sentence: position key message, differentiation from other positions main part
3. sentence: arguments support for the position of the author main part
4. sentence: objections what problems does the position face? main part
5. sentence: answers how can the objections be answered? main part
6. sentence: conclusion conclusions, prospect conclusion

**Thesis paper.** The aim of a thesis paper is to give an overview of the ideas discussed in a text. Thesis papers are especially suited for texts that present different positions about the same issue or the position of some person or group about different issues. They are also helpful to make the central statements of a text available for later reference; and they provide a good basis for a discussion of a text.

**How to write a theses paper**

- **Identify the theses**:
  - Which are the characteristic key statements?
  - What do they refer to exactly?
  - How are they justified?
  - Are there important assumptions which are not explicitly formulated?

- **Formulate the theses**:
  - Be concise. Phrase the theses in one or two sentences that are comprehensible on their own.
  - Be direct. Instead of “X holds that A has property B” write “A has property B”. (The title makes clear who advocates the thesis.)

- **Wrap up the theses paper**:
  - Check whether you did justice to the statements of the author.
  - Arrange the theses according to their topic and, if you wish, number them.
Further considerations are necessary if you summarize a text which discusses several positions concerning the same question. In such cases you initially have to decide whether you only want to consider theses the author adopts. Positions the author rejects appear then only from his point of view. Another possibility is to divide the theses paper and report the main theses of all the important positions discussed. In this case, it is crucial to distinguish the different positions, label them clearly and associate the theses to these positions. Later you perhaps want to check whether the positions were in fact put forward as the author describes them, or whether they are reported imprecisely or whether the author even has “invented” his opponents.

Example. Summary of the requirements for government, business and society as declared by the 48 business representatives of the BCSD (cf. text in the appendix).

| 1. Business leaders are committed to sustainable development since linking economic growth with protection of the environment is needed for welfare that is intra- and intergenerationally just. |
| 2. New forms of cooperation between governments, business and consumers are necessary to combine economic growth with resource-efficient technologies and markets that internalize environmental costs. |
| 3. Governments need to harmonize regulations for trade internationally, set clear environmental goals and create incentives by market-conform instruments. |
| 4. In agriculture and forestry as well as in poor countries, governments need to open markets, provide security for private ownership, deregulate and provide efficient administration. |
| 5. Sustainable development is in the interests of business, but businesses have to extend their responsibility to external partners and introduce a new business culture promoting eco-efficiency and technology transfer. |
| 6. Sustainable development can only be realized if education and training bring about changes in the behaviour of consumers. |

Concept maps. Concept maps are based on the idea that the meaning of a text can be represented with the aid of two basic elements. Concepts determine the content of the text; relations between these concepts shape the structure of the text. Examples of structure-giving relations are property, condition, reason, consequence, comparison, purpose, and part–whole. To represent the structure of a text in a concept map you schematically depict the central concepts and the relations between them:

How to design a concept map

- Place central concepts within boxes. Different forms (e.g. rectangles and ellipses) can be used to additionally classify the concepts, for example, according to importance.
- Represent relations by lines between the concepts.
  It is important that you indicate not just that a relation obtains, but also what kind of relation it is. You can either add words along the lines or develop a system of notation. The relation \( x \) is a condition for \( y \), for example, you can represent by a word (“if”), an abbreviation (“cond.”) or a certain kind of arrow (“⇒”).
- Insert corresponding references to preserve the connection to the text.

To make a transparent representation, you can develop the concept map stepwise and try out different arrangements. You save time if you work with pencil on paper and use computer programs only for the final version. Some prefer to begin with post-its on a large sheet of paper.
Example. The three concept maps illustrate the conception of sustainable development as described in the declaration of the BCSD (see appendix). All three concept maps contain the same concepts and relations. Nevertheless, they do not convey the same impression. Without checking, it is actually hard to see that they are equivalent in terms of concepts and relationships represented.

This concept map suggests two things. Firstly, the market is at the centre with governments, businesses and society as “fellow players”. Secondly, one relationship seems to be missing. Without a link between government and business, the concept map is almost a “good”, i.e. closed and symmetrical, shape.

The vertical placement of governments, market and businesses forms a simple symmetrical shape suggesting an axis governments-market-businesses. Society is set apart, acting as the consumer. Furthermore, the market is distinguished from governments, businesses and society since it is represented by a different shape.

This gives the impression of a well-organized configuration with governments and businesses arranged around the axis formed by market and society. The effect of the “good” form is so strong that we do not notice a missing vertical link between governments and businesses. It is also easy to see that there is only an arrow from society to market but not the other way around. But this is true of the other relations as well. One may ask, for example, why there is no arrow from society to governments representing “democratic participation”.

This concept map illustrates the conception of sustainable development as described in the declaration of the BCSD (see appendix). All three concept maps contain the same concepts and relations. Nevertheless, they do not convey the same impression. Without checking, it is actually hard to see that they are equivalent in terms of concepts and relationships represented.

Example. The three concept maps illustrate the conception of sustainable development as described in the declaration of the BCSD (see appendix). All three concept maps contain the same concepts and relations. Nevertheless, they do not convey the same impression. Without checking, it is actually hard to see that they are equivalent in terms of concepts and relationships represented.
Declaration of the Business Council of Sustainable Development

[1] Business will play a vital role in the future health of this planet. As business leaders, we are committed to sustainable development, to meeting the needs of the present without compromising the welfare of future generations.

[2] This concept recognizes that economic growth and environmental protection are inextricably linked, and that the quality of present and future life rests on meeting basic human needs without destroying the environment on which all life depends.

[3] New forms of cooperation between government, business and society are required to achieve this goal.

[4] Economic growth in all parts of the world is essential to improve the livelihoods of the poor, to sustain growing populations, and eventually to stabilize population levels. New technologies will be needed to permit growth while using energy and other resources more efficiently and producing less pollution.

[5] Open and competitive markets, both within and between nations, foster innovation and efficiency and provide opportunities for all to improve their living conditions. But such markets must give the right signals; the prices of goods and services must increase to recognize and reflect the environmental costs of their production, use, recycling, and disposal. This is fundamental, and is best achieved by synthesis of economic instruments designed to correct distortions and encourage innovation and continuous improvement, regulatory standards to direct performance, and voluntary initiatives by the private sector.

[6] The policy mixes adopted by individual nations will be tailored to local circumstances. But new regulations and economic instruments must be harmonized among trading partners, while recognizing that levels and conditions of development vary, resulting in different needs and abilities. Government should phase in changes over a reasonable period of time to allow for realistic planning and investment cycles.

[7] Capital markets will advance sustainable development only if they recognize, value, and encourage long-term investments and savings, and if they are based on appropriate information to guide those investments.

[8] Trade policies and practices should be open and, offering opportunities to all nations. Open trade leads to most efficient use of resources and to the development of economics. International environmental concerns should be dealt with through international agreements, not by unilateral trade barriers.

[9] The world is moving towards deregulation, private initiatives, and global markets. This requires corporations to assume more social, economic, and environmental responsibility in defining their roles. We must expand our concept of those who have a stake in our operations to include not only employees and shareholders but also suppliers, customers, neighbors, citizens' groups, and others. Appropriate communication with these stakeholders will help us to refine continually our visions, strategies, and actions.

[10] Progress towards sustainable development makes good business sense because it can create competitive advantages and new opportunities. But it requires far-reaching shifts in corporate attitudes and new ways of doing business. To move from vision to reality demands strong leadership from the top, sustained commitment throughout the organization, and an ability to translate challenge into opportunities. Firms must draw up clear plans of action and monitor progress closely.

[11] Sustainability demands that we pay attention to the entire life cycle of our products and the specific and changing needs of our customers.

[12] Corporations that achieve ever more efficiency while preventing pollution through good housekeeping, materials substitution, cleaner technologies, and cleaner products and that strive for more efficient use and recovery of resources can be called “eco-efficient”.

[13] Long-term business-to-business partnerships and direct investment provide excellent opportunities to transfer the technology needed for sustainable development from those who have it to those who require it. This new concept of “technology cooperation” relies principally on private initiatives, but it can be greatly enhanced by support from governments and institutions engaged in overseas development work.

[14] Farming and forestry, the business that sustain the livelihoods of almost half of the world’s population, are often influenced by market signals working against efficient resource use. Distorting farm subsidies should be removed to reflect the full costs of renewable resources. Farmers need access to clear property rights. Governments should improve the management of forests and water resources; this can be often achieved by providing the right market signals and regulations and by encouraging private ownership.

[15] Many countries, both industrial and developing, could make much better use of the creative forces of local and international entrepreneurship by providing open and accessible markets, more streamlined regulatory systems with clear and equitable enforced rules, sound and transparent financial and legal systems, and efficient administration.

[16] We can not be absolutely sure of the extent of change needed in any area to meet the requirements of future generations. Human history is that of expanded supplies of renewable resources, substitution for limited ones, and ever greater efficiency in their use. We must move faster in these directions, assessing and adjusting as we learn more. This process will require substantial efforts in education and training, to increase awareness and encourage changes in life-styles toward more sustainable forms of consumption.

[17] A clear vision of a sustainable future mobilizes human energies to make the necessary changes, breaking out of familiar and established patterns. As leaders from all parts of society join forces in translating the vision into action, inertia is overcome and cooperation replaces confrontation.

[18] We members of the BCSD commit ourselves to promoting this new partnership in changing course toward our common future. [signed by 48 business leaders]