

Mind maps

Mind maps are one of the so-called **information visualization tools** (IVT), and we will focus on them in this module because they may bring a new and less common view of working with information, recording one's own notes and thoughts, recording brainstorming, or planning activities. At the beginning of the module we will give some thought to "how and why it works" in terms of cognitive psychology.

We will of course teach you to create mind maps - you should buy (or find at home) crayons and try to return to your childhood drawing; however, we must not forget mapping software.

Basic terms:

Information visualization tools - Tools or methods developed for the creation of data visualization, information, knowledge and relations which can be used in a broad range of activities: creating previews, visualizations, sharing information and knowledge, planning, record keeping and other forms of communication.

Mind/mental maps - The author of this concept is Tony Buzan. According to him, mind maps are tools which enable the brain to use both hemispheres while processing information, and thus support associative thinking. This significantly affects the way we remember information and knowledge, and the way we recall or create them. The concepts of mental maps and mind maps are equal in this module.

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1 Mind maps and a little psychology

Mental representation and cognitive psychology

Mental representation, according to Psychology Dictionary, “**denotes an ability to preserve in memory the image of an absent object or another information collection stored in one’s mind, to encode it and recall it again**”; the principle of learning is thus an ability to manipulate ideas and images representing reality, i.e. mental representations, more easily than the real world”

Based on the definition we can therefore state that while working with information it is appropriate to imitate the methods our brains use; not only with studies but with any creative work. Conventions of our society cause that we are to a great extent used to receiving information in the form of coherent linguistic performances (either written or spoken). Cognitive scientists observe, however, that the **contents of our minds are encoded in a wholly different way in the form of mental representations**.

Try to imagine ...

Rather than explain the theory of perception, let us try a simple task:

*Close your eyes and recall the most pleasant experience from the previous summer. In what form do you recall the information? It will be an **image** (i.e. a mental representation of information) **complemented with emotions, sounds and other sensations**. Based on this combination, your brain will then reconstruct the whole situation, events that preceded and followed, and other connected “memories”. The brain processes information in the form of mental representations.*

Visualizations of data, information or knowledge in terms of their recording, e.g. in the form of a mind map, work with various forms of mental representations, and enable us to capture information in the process of creation.

Visualization creation is not only a recording; IVT require a wholly different approach than common text notes or excerpts - both upon recording and upon reading. Subconscious processes participating in the process of mental representation creation in our minds acquire larger space to develop.

Chapter summary

We have a brief theoretical background - we know the theory of mental representations says that **the brain does not process information in a linear way** (as in a text) but by means of representative images. Visualized information is close to our way of thinking, and if we use it, we may get other ideas and procedures than those which come up with “mere” reading.

2 Mind maps: theory

The author of the concept of mind maps is Tony Buzan, who has been concerned with this issue since 1970’s. Information visualization has even deeper roots; remember e.g. Leonardo da Vinci’s diaries or Darwin’s On the Origin of Species.

According to Buzan, mind maps are tools which **enable the brain to activate both hemispheres at once when it comes to information processing**, and thus significantly affect the way we remember information and knowledge, and the way we recall or create them.

Why is it important to interconnect the brain hemispheres? Because then we may get brand new ideas with which we can work further.

Mind maps can **GENERALLY** be used for:



- organization of ideas,
- making notes,
- mapping of thoughts,
- brainstorming,
- planning,
- procedure selection,
- learning,
- improving one’s memory,
- problem management,
- concentration,
- eliminating mental mess,
- gaining general views of given issues,
- confrontation with particulars.

Mind maps may be a very useful **STUDY** tool in:

- defining problems/topics,
- orientation in information sources,
- search for information and formulation of search questions,
- analysis, synthesis and evaluation of feedback.

3 Mind maps: the principles of their creation

First of all, it is important to realize that it is entirely up to you which form and procedure you choose while creating a mind map. The objective of this section is to acquaint you with creation principles considered important by Tony Buzan, as well as with proven “hints and tips” by other authors who deal with the issue of mind maps.

According to Tony Buzan, all mind maps should have the following **common characteristics**: the use of colours, ray structure directed from one centre, the use of curves instead of straight lines and angles, symbols and brief expressions.

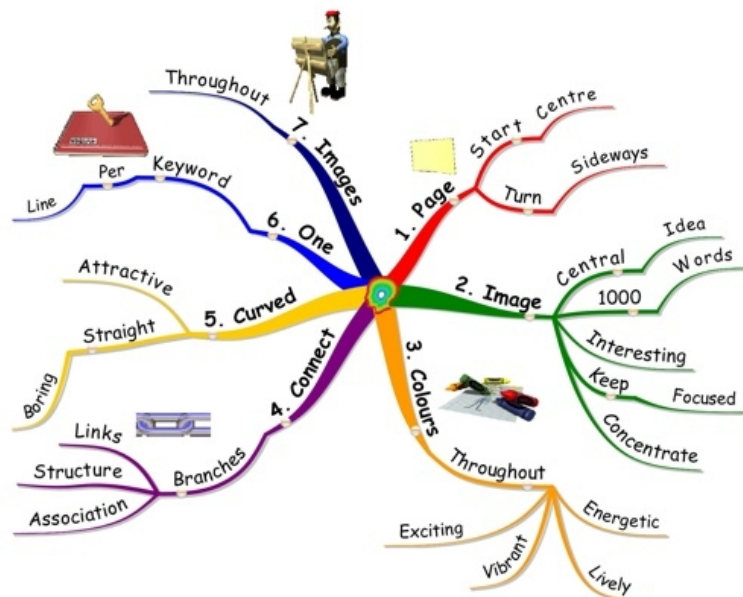
Building stones of mind maps according to T. Buzan:

The use of various colours
Ray structure of one centre
The use of curves instead of straight lines and angles
One-word concepts and symbols

3.1 Seven steps to creating a mind map according to Tony Buzan

1. Always **start to draw your map in the centre** of a horizontally positioned sheet of paper. Do not limit your ideas by putting your central idea in a corner.
2. **Express your central idea by means of a picture.** A graphic depiction will help you use your imagination.
3. Use **colours**, inspire your brain.

4. **Link the main branches** to the central picture, then link the second-level branches to the main ones etc. You will thus support the work of your brain with associations. If you put all information only in one branch, then in another, you will cut off all other branches from the flow of ideas, and associations cannot run freely.
5. **Draw branches as curves**, do not bore your brain! Straight lines have a curt and unpleasant effect, and the brain is bored. Even a turn of the paper or adding another concept helps you memorize (Turning or manipulation with objects stimulates various receptors, and the brain thus creates further mental representations.)
6. In order to increase the efficiency and flexibility of your mind maps, use **only one keyword or simple expression for each line**. Further associations and information are added to one word/concept much more easily. What is more, a long text in branches is far from well-arranged and blocks thinking.
7. Use **pictures and symbols in the whole map**, it is fun. Without pictures, the map is still functional but loses a part of its inspiration... as the old Chinese saying goes, a picture is worth a thousand words.



TRY!

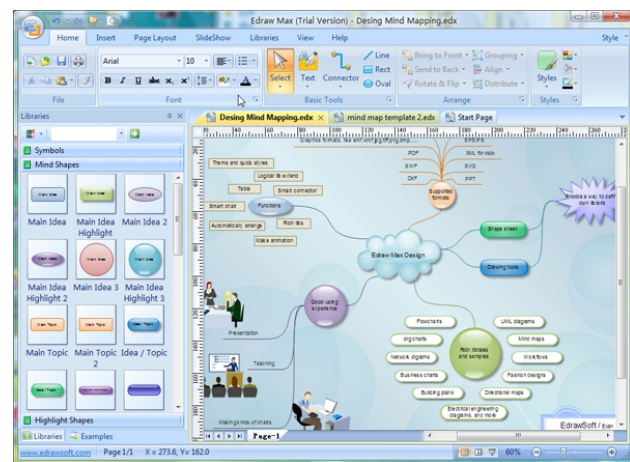
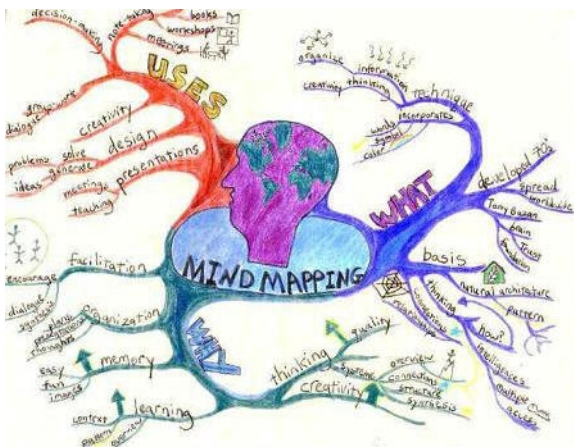
Take a blank sheet of paper, format A4 or larger if possible, coloured pencils or crayons, and try the seven basic steps in practice. Create a mind map on the topic “frog”.

1. In the centre of the A4 paper (placed horizontally), draw/write the word frog.
2. Write/draw 4 words/pictures around “frog” which come to your mind when you look at the animal.
3. Write/draw other 4 words/pictures in such a way that you direct the map from the frog to the edges of the paper.
4. Repeat step 3.
5. Draw 4 pictures relating to the concepts in the map/Add 4 new pieces of information only by means of pictures
6. Repeat step 2.
7. Choose one branch and add/draw further 4 words/pictures only to this branch.
8. Proceed until no more associations come to your mind, either relating to the central concept or connected with other concepts in the map.

On the Internet you will find lots of examples of various map types and ways of their creation. It is enough to search for “mind maps” in Google Images. You can also look in a map “library”, for instance on Mappio server.

3.2 Mind maps - crayons or software?

What to choose, computer-made or hand-drawn maps? It is impossible to give an unambiguous answer to this question. It is generally recommended to start drawing maps in hand until you learn the basic skills. Each software, that is, is operated in a slightly different way and has different options, and it could thus unnecessarily limit you at times when you should experience absolute freedom while creating your mind maps.



We can also say that **software tools have changed the appearance of mind maps**. In such programs it is not good to apply Buzan’s principle “one word - one junction point in a map”; on the other hand, avoid long sentences or even paragraphs. From a certain quantity, a map loses its transparency.

It has surely occurred to you by now that the creation of an elaborate mind map **may be time-consuming**, especially if you draw it in hand with crayons and pictures. If you need to solve a serious problem or plan an important event, then you may spend a whole afternoon with your map; you will be returning to it and may even create more than one.

On the other hand, a map created in a mapping software as a business meeting record may be ready in 15 minutes, and later will prove really useful to you and your colleagues; it will be available to everybody at all times, and all of you can insert up-to-date changes, information of completed or new tasks etc.

3.3 Practical hints and tips

The use of mind maps is an ability which can be adapted to our individual needs. A lot of “gimmicks” have already been discovered, of course. In recommended sources you will find our tips of some bloggers who deal with the issue of mapping.

What have we found particularly useful?

If you draw maps regularly

Buy an A4 spiral note, with grid or blank paper and perforations for tearing individual sheets away, and small self-adhesive notes as distinguishing bookmarks.

Sets of coloured liners are suitable for drawing maps.

Self-adhesive notes

In case of the manual approach and large-format production (e.g. flipcharts during business meetings, notice boards or walls in your own office/bedroom), small distinctive self-adhesive notes definitely pay off - you can change their positions, remove or rewrite them as you wish.

Self-adhesive notes with dimensions from 102 x 76 mm are ideal for small maps pasted in books during your studies.

Use icons!

Icons or simple symbols will help you orientate in your map more quickly. In case you share your maps, such icons may indicate to your colleagues e.g. where you can see weak spots of the given project, or which deadline comes first.

Learn to distinguish among various meanings of icons which are often similar in different mapping software. And if you draw your maps in hand, be creative and devise your own icons.

Brainstorming

In case the topic of the previous module captured your interest, we have good news: mind maps significantly help during brainstorming or reflecting upon an idea.

Use only one pencil with brainstorming. The objective of “mapping” is to get as many ideas as possible. Changing coloured pencils holds you off and you will not manage to capture the flow of ideas, or you will slow it down unnecessarily.

When you finish brainstorming, you can redraw “practicable” ideas.

4. Software for the creation of mind maps

You can find mapping software via search engines (“mind mapping software” etc.) or on Wikipedia, or you can find inspiration on blogs and in articles.

Examples of mapping software:

- [FreeMind](#)
- [Freeplane](#)
- [MindMeister](#)
- [Mind42](#)

Mobile phone applications

Many of you undoubtedly own the so-called smartphones, or mobile phones with operation systems capable of much more than just making phone calls and sending text messages. You will not be surprised, then, that even among such applications it is possible to find those in which you can create mind maps.

5 Conclusion

Information visualization tools and, above all, mind maps may help you manage both your studies and work more effectively. Due to the fact that IVT work based on principles similar to those of the brain, and especially the fact that mind maps use both hemispheres, IVT support: memory, creativity, concentration, activity.

If you learn to draw mind maps in hand, you will acquire a unique ability which you will be able to use flexibly on various occasions.

Author of this module

Tereza Matysová <librarian>

I graduated from the Department of Information and Library Studies at the Faculty of Arts at Masaryk University. Mind maps and information visualization tools in general formed the topic of my Master's diploma thesis. It is a highly interesting field, easily interconnected with my current field of work, which is (among other things) information training in the Central Library of the Faculty of Arts of MU.