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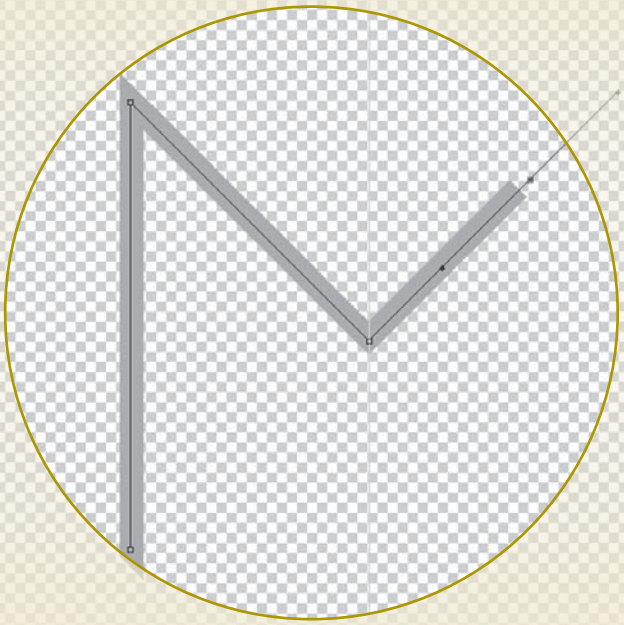
Creativity techniques

A short compendium to give you an abundance of ideas and innovative solutions



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Creativity – an indispensable impulse and an important factor for success

«Your creativity is atrophied – that is, it's totally ordinary». This was the sharp diagnosis of a well-known creativity trainer when confronting her seminar students on one occasion. Although there is hardly any other human intellectual faculty that enjoys such a high reputation as creativity, in most areas of our society today it is treated very much as a poor relation. Creativity seems to be the privilege of artistic professions, or of those that lean to publicity or media presentation. Job descriptions for medical practitioners rarely feature the word «creativity» among the criteria for selection. It almost looks as if creative thinking is quite unnecessary for doctors and other staff engaged in clinical practice.

Admittedly, things would be at a pretty pass if surgeons suddenly took it into their heads to express themselves creatively when working in the operating theatre. But a spot of inventiveness is sometimes called for even there. Not all issues can be resolved on the basis of mere routine: even surgeons can sometimes find themselves faced with problems in their work that calls for flexible thinking and unconventional solutions. It remains the case that every patient is a unique medical case, whose condition requires to be individually treated. It isn't always possible to get the answer out of the textbook. As for clinical research, that would not be possible at all without a fair dash of creativity. In research the whole object is to develop new and original approaches, and then investigate ways in which they may be implemented on the practical level.

To put it in a nutshell, human creativity is an indispensable impulse and an important factor for success in practically all walks of life. Medical science and clinical work are no exception to this rule. But how do you find the right creative solution when you need it? Isn't creativity a gift of Nature? Is there any chance of compelling it by the application of these «creativity techniques»?

Well, yes and no: creativity techniques do not make any claim to being automatically capable of generating new ideas. They are, however, a tool that can be highly effective in helping the individual to unlock his or her own intrinsic powers of creativity.

On the following pages you will find out more about the creative process, and familiarising yourself with some of our proven creativity techniques. The ideas, admittedly, will have to be supplied by yourself.

Having the courage to make the «creative leap»

Creativity techniques are tools that are designed to overcome barriers in your head. On the basis of pure analytical thinking you will hardly be able to find solutions that are really innovative and surprising. Creativity techniques can help get you out of the rutted tracks of your habitual thinking.

Edward de Bono, the leading authority worldwide on «thinking about thinking», describes this process as the «creative leap». He compares our habitual thinking with a broad river. To leave it takes an energetic effort: we have to make a mental leap into the illogical, into the slightly crazy, into uncertainty. But having done this we must find our way back – as if returning from a side channel – to the main riverbed of our flow of ideas. This is because the creative mental impulse is only fully completed when we have succeeded in making the side channel «navigable», so to speak, for our habitual thinking.[1]
A great many creativity techniques are based on this model, which de Bono also refers to as «lateral thinking».

[1] Cf. de Bono, E.:
De Bonos neue Denkschule – Kreativer denken, effektiver arbeiten, mehr erreichen
[De Bono's New School of Thinking – How to think more creatively, work more effectively and achieve more],
Munich 2002, p. 79 ff.
Cf. also Nöllke, M.:
Kreativitätstechniken [Creativity Techniques], Planegg 2002, p. 9 ff.

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1. Mind-mapping

Mind-mapping was developed back in the seventies. It facilitates the structuring and visualisation of problem situations. As a result of the excessive emphasis that is laid on analytical thinking, human beings have a tendency to develop complex themes on a sheet of paper by working from left to right and from top to bottom. But this bears no relation whatever to the brain's natural way of working.

Mind-mapping supports mental leaps and spontaneous ideas. It is a technique that enables you to create a mind-map for any given theme – a map of your brain patterns, so to speak. In a phase of creativity, our brain works with such rapidity that we are not in a position to formulate and mark down all our thoughts, images and logical links in a comprehensible way. This is because in such a state we do not think in terms of complex formulations, but rather in keywords and associated images.[2]

To do mind-mapping you need a big sheet of paper and as many coloured pencils or crayons as possible. You then proceed as follows:[3]

- You start your mind-map in the middle of the sheet. Here you write in large letters a word or a short sentence which reflects the essence of your problem. Or even better, you make a drawing of the theme in question. An image gives you an enhanced capacity for creative thinking.
- Now you write down, as spontaneously as possible, all the associated that appear to you to be linked with the central theme. Note these down in the form of keywords.
- Ignore your controlled thinking, and fill the sheet as quickly as possible with everything that comes into your head in connection with the central theme – no matter how ridiculous or insignificant it may appear.
- Write in capitals. This makes the map easier to take in.
- Create links between the words, trying to bring them into relation with one another, correlate your associations and arrange them in groups.
- Wherever possible, add images and symbols. And use as many different colours as possible. You can define your own colour codes if you like – red for main points, green for subordinate points or whatever.

[2] Cf. Backerra, H. et al:
Kreativitätstechniken – Kreative Prozesse anstossen, Innovationen fördern
[Creativity Techniques – Triggering Creative Processes, Encouraging Innovations], Munich and Vienna 2002, p. 66.

[3] Cf. Michalko, M.:
Erfolgsgeheimnis Kreativität – Was wir von Michelangelo, Einstein & Co. lernen können
[Creativity, the Secret of Success – What we can learn from Michelangelo, Einstein & Co.] Frankfurt am Main 2001, p. 67 ff.
Cf. also Nöllke, M.: Kreativitätstechniken [Creativity Techniques], Planegg 2002, p. 64 ff.

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- Take time to go over your mind-map and add the finishing touches – inserting new ideas, or deleting irrelevant aspects. In this way you can get closer to finding the solution to your problem.
  A mind-map on the theme of «creativity»

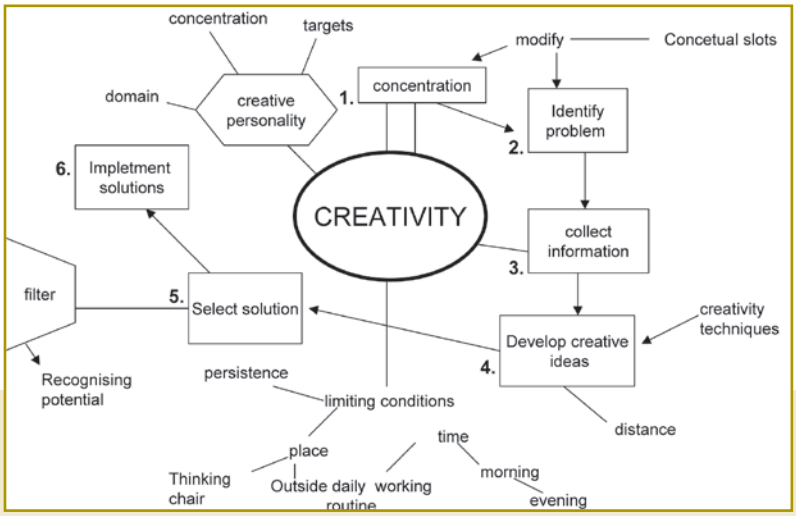

Fig. 1.: Example of a mind-map.[4]

Incidentally, mind-maps are outstandingly useful as a memory aid. If you want to pick up a theme again at a later time, a mind-map will help you to find your bearings in short order.

2. Method 635

What is known as «method 635» is a variant of brain-writing, or we might call it a form of brainstorming that has been written down. «635» stands for 6 participants, 3 proposals for a solution and 5 minutes.[5]

Each participant is given a sheet on which has been written the question for which a solution has to be worked out. In the next five minutes he must list three proposals for a solution. Then he passes his sheet to the next person, while receiving from his neighbour on the other side a sheet on which the latter's three proposals have been noted down. Inspired by these, he writes three more new ideas down – and so it goes on.

The session comes to an end when each participant has had each sheet to work on – in other words, after half an hour. In this time 108 (= 6 x 3 x 6) proposals will have been created. It is best, by the way, not to evaluate them until the day following.

This is because the participants need to «change gear», mentally speaking: the next stage calls for objective criticism, where «crazy ideas» have to be examined to see if they are at all practicable.

Method 635 subjects the participants to considerable creative stress: they have to come up with a great many ideas while working against the clock. This can be a spur to mental productivity, though in some cases it may prove inhibiting. So you would be advised to try out this method on a small scale in the first instance, and to use it sparingly.

[4] Diagram taken from Nöllke, M.: Kreativitätstechniken [Creativity Techniques], Planegg 2002, p. 67.
[5] Don't worry, you can apply this technique just as well with 4, 5 or 7 participants.

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3. Mental provocation

Mental provocation is perhaps the most spectacular creativity technique developed by the pioneering thinker we mentioned earlier, Edward de Bono. This involves using apparently contradictory statements to liberate oneself from traditional patterns of perception, so inducing a state of instability which may point the path to a new idea. Mental provocation allows us to look at things from a different angle. It puts distance between you and your problem, and stimulates you to find out-of-the-ordinary solutions.

Being mentally provocative means «going crazy in a controlled way». Taking your problem as a starting point, you make a statement that is diametrically opposed to all your past experience and convictions. To let other people know that you don't mean this statement to be taken literally, you prefix your statement with the word «PO» – standing for «Provocative Operation».[6]

Let us consider an example. The problem in this case was that factories were polluting the river. The further downstream you lived, the more polluted the water became. The provocative statement in response to this situation was «A PO factory is itself situated downstream» – which on the face of it is completely illogical. This act of mental provocation did however give rise to an idea which has actually been applied in some countries. Instead of getting water from the river «up above» as in the past and channelling it back to the river «further down», factories are only allowed to get water from a point below their own outflow. This means that they are the first to suffer from their own pollution.

You can produce suitable acts of mental provocation if you start from things that appear self-evident and turn them back to front. Just formulate a few of these for problem areas in the daily routine of your clinic.
«The PO patient doesn't have to go for radiology treatment, radiology comes to him.»
«PO consultants are meticulous in carrying out the instructions of the nursing staff.»
«In PO hospitals patients eat to their heart's content, with a last meal just before the operation.»

And so on... Even absurd distortions, exaggerations and wish-fulfilment fantasies are allowed:
«PO hip implants may be administered to the patient orally.»
«In PO operating theatres, the temperature is below freezing point.»

By jogging your thoughts into action with this kind of provocative stimulus, you can transform them into new and useful ideas. You have four possibilities here: you can explore the principle of your provocative statement, follow up the consequences of your absurd notion step by step, focus on what it is about the statement that makes it abnormal or try to bring out the positive aspects of it.

[6] Cf. de Bono, E.:
De Bonos neue Denkschule – Kreativer denken, effektiver arbeiten, mehr erreichen
[De Bono's New School of Thinking – how to think more creatively, work more effectively and achieve more],
Munich 2002, p. 79 ff.

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4. The morphological box

The morphological box, developed by the Swiss astrophysicist Fritz Zwicky, is a method that involves a systematic approach to the development of ideas, working with the help of a matrix. Thus it is particularly suitable for people who are used to thinking in technical and analytic terms. It is not without reason that the morphological box is frequently used in connection with what are known as constellation problems – for example, in the field of product development.

In principle the object here is to anatomise the problem that is to be solved into clearly delimited subordinate aspects. When you vary and combine these aspects in any way you like, many new potential paths leading to a solution of your problem will appear. This increases the probability that you will get as close as possible to the ideal solution. The method includes the following five steps:[7]

1. Definition and analysis of the problem:
   the question is formulated and is written over the morphological box as a caption.
2. Determination of the parameters:
   higher-level parameters are allocated to the subordinate aspects, and entered in the first column of the matrix. For reasons of complexity, there should be no more than seven features selected. These should be as independent of one another as possible, and must be applicable to all possible solution variants relevant to the problem in its entirety. This step is the crucial one, and it may be supported by the use of other creativity techniques like mind-mapping.
3. Determining possible attributes of the parameters:
   for each parameter, possible attributes are now determined and entered in the matrix cells to the right of the associated feature. If at this stage the features give rise to too many attributes, so that the scheme becomes unmanageable, it is possible to reduce the undue complexity of the situation by breaking it down into sub-matrices.
4. Determination of the combinations:
   each possible combination of individual attributes represents a solution, which is linked with a line on the matrix.
5. Evaluation of the alternatives and selection of a solution:
   the alternatives that have been identified in step 4 will be examined to see if they are technically feasible and economically viable, with a view to picking out the ideal solutions.

To illustrate this, let us take a simple example. It is a question here of deciding on a new design for a conference table.

What would a completely original conference table look like?							
Parameters	**Parameter attributes**						
Number of legs	None	1	2	3	4	5	100
Material	Wood	Glass	Plastic	Cork	Felt	Metal	
Height	0 cm	30 cm	70 cm	1 m	2 m		
Form	Rectangular	Oval	Square	Round			

[7] Cf. Backerra, H. et al:
Kreativitätstechniken – Kreative Prozesse anstossen, Innovationen fördern
[Creativity Techniques – Triggering Creative Processes, Encouraging Innovations], Munich and Vienna 2002, p. 80.

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The resulting idea – a floating table, perhaps suspended from the ceiling. But possibly even a table two metres high might be contemplated as an option – you would just need to have the chairs to match.

An additional advantage of the morphological box is that the recording of the results on the form is practically automatic. It is suitable both for use in a group and for individual work.

5. Osborn checklist

This apparently simple but highly effective method is named after Alex Osborn, who also invented brainstorming, probably the best known of all creativity techniques. The Osborn checklist is particularly suitable for situations where you already have ideas or products on hand, but have so far only been able to find conventional or unsatisfactory solutions for them. The list thus also works admirably as a tool in the subsequent processing of a creativity session that has already taken place.

The Osborn checklist serves to extend the area under consideration by means of sequences of questions. Of course you must first of all have determined which product, method or problem calls for improvement. You then go through the ten points of the following checklist in full. Take sufficient time for each individual point. And develop for each of them at least one idea.[8]

1. **Change the use!** – Are there other possible ways in which it could be used? Can you make use of the idea in a different context?

2. **Adapt!** – What else looks like this idea? Are there parallels? What models could you imitate?

3. **Change it!** – Can you change the significance, colour, movement, size, form, smell etc. in any way?

4. **Enlarge it!** – Can you make it bigger? Add to it? Increase the frequency – the height, length, value or distance? Can it be multiplied? Or exaggerated, or coarsened?

5. **Shrink it!** – Can you make it smaller? Subtract something from it? Make it lower – or shorter, thinner, lighter, brighter, finer? Can you split it up? Or use it as a miniature?

6. **Replace it!** – Can you find substitutes for any aspects of the idea? Can the process be designed differently? Are other positions, other pitches possible? Can you use elements from other countries or epochs?

7. **Transpose it!** – Can you swap around parts or sections? Can the sequence be changed, or origin and effect put in reverse order?

8. **Turn it back to front!** – Can you form the opposite of the idea? What does the idea look like when mirror-inverted? Can you swap roles? Can the idea be turned through 180°?

9. **Combine it!** – Can you link the idea with others? Can a larger totality be incorporated? Can it be broken down into modular components?

10. **Transform it!** – Can you bore holes in it, bunch it together, extend it? Harden it, liquefy it or make it transparent?

[8] Cf. Nöllke, M.: Kreativitätstechniken [Creativity Techniques], Planegg 2002, p. 93 ff.

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Suggestions for further reading

- Hendrik Backerra et al:
  Kreativitätstechniken – Kreative Prozesse anstossen, Innovationen fördern; Carl Hanser Verlag 2002, ISBN 3446218696.
- Edward de Bono:
  De Bonos neue Denkschule – Kreativer denken, effektiver arbeiten, mehr erreichen; mvg Verlag 2002, ISBN3478729904.
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  Serious Creativity – Die Entwicklung neuer Ideen durch die Kraft lateralen Denkens; Schäffer-Poeschel Verlag 1996, ISBN 3791010654.
- Michael Michalko:
  Erfolgsgeheimnis Kreativität – Was wir von Michelangelo, Einstein & Co. Lernen können; mvg Verlag 2001, ISBN 3478083796.
- Matthias Nölke:
  Kreativitätstechniken; Rudolf Haufe Verlag, 3. überarbeitete Auflage 2002, ISBN 3448049875.
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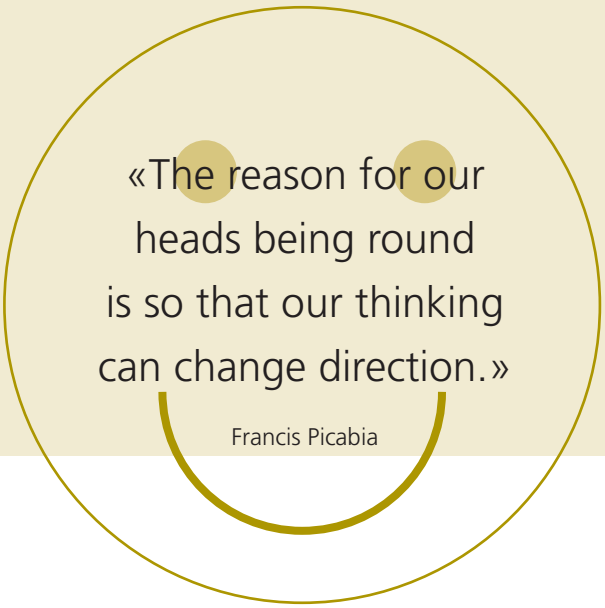

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