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# OPTIMISM AND CREATIVITY

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**Original source of material:**

<http://web.ncf.ca/an588/create.html>

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## **Introduction: Concentrate on Creativity**

For example, if one person is good at music and terrible at math, and another is the other way around, should each one spend most of their time struggling to attain near-average ability at their worse subject? They could reason, "I'm already good at music, so I don't have to spend much time at that."

I don't think so. I think it's best for each to spend a little time struggling with what they're not good at, and lots of time getting to be excellent at what they're good at. Humanity involves specialization. It's better to have an excellent musician who can barely count his/her money and an excellent mathematician who can sing out-of-tune at holiday parties once a year, than two people who are reasonably good at both subjects.

Explorers tend to have difficulty with organizing, and to be good at creative thinking. So let's spend a small part of our time working at getting somewhat organized, and a large part of our time practicing being very creative.

Much of this article draws from the books of Edward de Bono, a pioneer in the art of deliberately improving one's creative thinking processes. Like de Bono, I'm talking in terms of solving problems, but I recognize that some creative thinking is not directed towards solving problems: for example, the creation of works of art may not involve problems. The same techniques can still be used.

## **de Bono's Creativity Techniques**

Edward de Bono, in his book "The Mechanism of Mind," proposes the following techniques to enhance creative thinking. In his book he describes a model of how the mind works, which explains why these techniques are useful. Essentially, it has to do with breaking out of the way one has been looking at a problem, and looking at it in a new way:

-- **Random Input:** This can take the form of opening a book at random, selecting a word at random (by pointing with one's eyes closed) and then thinking about how that word can relate to the problem one is working on. There are many other ways of bringing random input into one's thinking. One can go for a walk and let the objects one sees influence one's thinking. The input should be from outside the mind, since the mind will tend to choose something related to the ways one has already been viewing the problem.

-- **Quota:** When you've thought up a satisfactory solution to your problem, don't stop. You may be able to think of a still better solution. The quota method is to say something like, "I'm going to think up at least 5 tolerably good solutions to this problem." You then of course choose the best one to actually implement. I used this technique in thinking up some names for the webstar (see my home page).

-- **Attention to different parts of the problem:** Selecting an aspect of a problem and bringing that aspect into the foreground of one's thoughts for a while allows a perspective to develop which can lead to a solution. One of de Bono's examples: Some employees were impatient waiting for slow elevators in a building. The solution was to install mirrors. The employees became busy looking at themselves in the mirrors and were no longer impatient. This solution came from switching attention from the problem of the slowness of the elevators to the problem of the impatience of the employees.

-- **Cross-fertilization:** allowing ideas to flow back and forth between more than one person. This method has similarities to random input, but is more than that. Two or more people working together can think up new ideas that no one of them would think up alone, because they have more than one way of looking at things, so each can continue the thought process when the other gets stuck.

-- **Reversal:** Thinking of the opposite of something in some way: opposite in size, time, direction, meaning, etc; switching the roles of two people or things. In the elevator example above, one might think, "What if we purposely try to make the elevators even slower?" This question might lead, in a roundabout way, to the solution of installing mirrors, via the thought of the employees wanting to spend more time standing in the hall. Or it might lead to some other solution which one might not have thought of if one hadn't asked the question.

## **Optimism**

Pessimists are more often right, but optimists accomplish more. One thing I learned from de Bono's books is that an attitude of continuing to search for a solution, even when it seems quite impossible, often does lead to a solution. Even in the face of a rigorous proof that there is no solution, a different way of defining the original problem can lead to a solution. Often we believe there is no solution but there is a fallacy somewhere in the argument we've used to convince ourselves of this. Creative thinking can jump across those barriers.

A real eye-opening (or mind-opening) experience for me was following the first section of de Bono's book "A Five-Day Course in Thinking". He poses a number of problems, one problem for each day, involving building a bridge with a number of knives on top of a number of bottles. Each problem seems impossible at first. Then as I worked through the problems, either finding a solution myself or giving up and reading his answers, I would think, "OK, yeah, I guess it was possible after all," and then read the next problem which would be something like "now do it with one fewer knife," and I would think, "but surely THAT's impossible," and laugh; but of course each one was possible. This exercise changed my whole approach to life, both to little everyday problems like opening a jar, and to big problems like solving a city's unemployment problem. Believing that a problem is impossible to solve is not an excuse for quitting applying creative thinking techniques for solving it. (If you read "A Five-Day Course in Thinking," I recommend being very careful not to look ahead. A half-second glance at one of the diagrams gives you the solution to a problem, taking all the fun out of it. I saw the solution to one of the problems while flipping through the book in the bookstore. )

Every problem has a solution. If you don't look for it, you won't find it.

## **Brainstorming**

Brainstorming is a technique for creatively solving problems. One of the main elements of brainstorming is the lowering of the threshold for acceptance of ideas. A brainstorming session with several people also uses cross-fertilization of ideas.

It is usually suggested that a time limit be set for a brainstorming session, perhaps half-an-hour. During that time, ideas are stated out loud and written down, including silly ideas as well as serious ones. No criticism of ideas is allowed. Criticism and evaluation is put off until the next phase, immediately after the brainstorming.

There are several reasons for allowing silly ideas. For one thing, once an idea has been stated out loud and written down, it may turn out not to be as silly as one thought. For another thing, a genuinely silly idea can serve as excellent random input for stimulating the generation of good ideas by other participants. Accepting and writing down a genuinely silly idea may also result in one of the more shy participants thinking, "well, my idea isn't as silly as that one, so I guess I can say it," perhaps bringing out an idea that turns out to be important. It can also be possible to modify a silly idea and make it usable.

A good goal is to produce a long list of ideas, including some silly ones. Aiming for this goal is more likely to produce at least one good idea than one would get if one aimed for a small list of ideas with none of them silly.

## Some More Creativity Techniques

I used de Bono's creativity techniques to think up some more techniques that can be used for enhancing creativity:

- Stop thinking about the problem for a while and come back to it later.
- Think of other problems that are analogous to the one you're working on; either real or imaginary problems in real or imaginary domains. Solve those problems, then translate the solution back to the original domain.
- Write down the problem, then translate it into various languages. Different languages divide things into concepts (words) in different ways, so this forces you to think about and re-cast the concepts that are involved.
- Explain the problem to someone. For example, explaining a scientific problem to a layman, or to a scientist in a different field, forces one to think about the meanings of the concepts involved.
- State the problem in much more vague, broad terms; or state it in much more specific, precise terms.
- Physical methods: Get plenty of sleep. Consume brain-enhancing nutrients such as plenty of vitamin C, ginkgo extract, etc. Get some exercise, and have a snack just before your thinking session so you have adequate blood sugar levels.
- Think about the problem just before going to sleep. Tell yourself you're going to dream about a solution to the problem. Put a pen and paper next to the bed so you can write down your dreams.
- Use your best time of day ... morning, perhaps ... for creative thinking.
- Visual images: purposely think in visual images. Practice making images of the things related to the problem appear clearly and in detail in your mind. Manipulate the images.
- Put pictures and objects around where you'll see them, things that relate somehow to the problem.
- Change track earlier than a blockage. For example, suppose you've been thinking over and over again, "A, therefore B, therefore C, therefore D, therefore E, and then where can I go from there?". There's a blockage at E: you haven't been able to progress from there. Well, take a different crossroad of thought earlier on. Rather than searching for a route from E, search for a different route from, say C, and follow it. "C, therefore X, therefore Y ...".
- Imagine an alternate universe. Assume something that's false, that will make the problem easier to solve. Solve the problem in that universe, then see if the solution can be modified to work in this universe.
- Go into right brain mode. (see book "Drawing on the Right Side of the Brain", which teaches how to draw by using the right side of the brain.)
- Broaden the perspective: ask why the problem exists at all, and redefine the problem as the organization of the universe in such a way that that problem exists.
- Record-keeping: keep a list of problems, recording how impossible they seem before they're solved. Looking back later on how many impossible-seeming problems actually got solved can help fuel optimism about the search for solutions to new problems.
- Start from a imagined solution and work backwards.