

Response to  
MG-ED-DV Digest - 9 Apr 2000 to 10 Apr 2000

## 1. Can creativity be developed in the classroom? (2)

Date: Mon, 10 Apr 2000 16:57:30 +0300  
From: Cem Tanova <ctanova@MANAGEMENT.EMU.EDU.TR>  
Subject: Can creativity be developed in the classroom?

Many practitioners and researchers argue that intuition is becoming more important in management and that management educators should realise this fact and develop programs that not only focus on rationality, but enhance creativity and intuition.

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Date: 2000.4.12.  
From: Emil Zahner <canmor@compuserve.com>  
Subject: Can creativity be developed in the classroom?

Sure, why not?  
Some qualifying questions:  
Can efficiency of creativity be improved?  
Can error - content of creativity be lowered?  
Can effects of obstacles within creative processes be reduced?  
Can imagination be guided as to "trip" over the "thing" that sparks the new idea?

Like in any other learning process we must differentiate between the means and the execution.

Example:

A teacher (maestro or not maestro) must transfer the principles of the art and skill, and provide examples.

Application: A music teacher must transfer the knowledge of what concerns the music, and examples which clarify the intended results. Musical notation is not an absolute. It is an interpretive language. A guidance on a long lesh.

As poorer the knowledge, know-how and ability, as more "noise" content will be in the music. Ability is a combination of muscular control and subconscious "feeling". Both have to be developed.

Of course it make a lot of difference how these ingredients are transmitted to the learner. Following Pareto, there might be 20% excellent teachers. Since this law hardly changes, however much is invested into teachers, we need to ascertain that the big mass is doing an appropriate job.

Here we are facing a problem which looks like a kind of "nature's law". The top guys often have no clue why they are superior to the mass. They have the talent to perform superbly in their field, less talent to clone their talent unto others. To measure effectiveness, it might be better to look at the results of the masses, the average (creativity) teacher.

Obstacles of creativity efficiency tend to be located in the environment.

Efficiency in creativity is mainly dependent on the ability to asking the right questions.

Guidance of imagination is related to navigation in poorly charted areas.

Obstacles are fear based.

The NAY sayers in the organization (including the idea killers) fear the strangeness. New ideas induce fear, like anything strange. The effect on the adrenaline is there. Fear calls for distress. People who are not aware of this simple fact tend to be unable to handle it. Sometimes the new idea excites eustress. A positive result, yet not a warranty against thinking errors. This calls (in a nutshell) a matter of mind/body control.

The smooth talkers in an organization who will rather talk fuzzy than clear fear taking a stand for something. They are more concerned not to "harm someone's feeling" than to clarify appropriately what needs to be said. (How they want to be loved!) It might be evident that (biological) sensitivity changes reciprocally with signal strength. At some stage even tickling will be rejected.

A creative team will degenerate into a fun driven group of creationists who expel any strong argument and persistent question for lowering group spirit. This is not a case in support of being rough or rude. An appropriately open mind is able to accept a strange idea without preconceivment. It knows the sensitizing process and handles information accordingly. In a nutshell: The mind has to learn receiving information without letting it induce fear. The presenter must know the art of employing the sensitizing process as to reduce fear. As a rule of thumb, it is the speaker who is responsible that the message is not being misunderstood. Eliminating fear is a prerequisite for asking the right questions.

Asking the right questions

The typical diverge/converge process applied and taught might be the core of what is being taught at universities and similar establishments. There might be a relation to Osborn's Brain Storm, an approach quite often distorted by the users. These creativity processes tend to be of low efficiency, error proneness, and breakthrough results tend to be very random. One field where asking the right questions makes or breaks success to an extreme extent is software development. 60% of code is still wasted, vanishes from the market almost without a trail. 20% makes it. (Numbers 1998 from a Toronto university professor who was 20 years IBM soft warrior.)

TRIZ has appeared on the market. Relying very strongly on big computer resources, it is definitely a tool worth knowing, if technology is the applied environment. In my view it is no more a tool to teach creativity than mathematics is one. In both cases specific examples will, however, enlighten the process of finding new questions and checking the results for correctness.

Prospective thinking may be related to a map of related questions, one leading to the other. As is typical for a map, we may start our way at any point. A map contains tried and untried routes. Uncharted territory is "white". We may set a route and change intermediate goals as we gain knowledge. We may even change the (sub) goal or objective as we gain knowledge during a development process. Prospective thinking starts with clarifying where we are and what we actually have. The where and why play an important role. Then we go from known points (pegs of knowledge) into adjacent areas to research their characteristics.

The main objective is of a very general nature. (Not how to sell more cars. Rather how to provide better transportation. GM in the transportation business). The general nature of the higher objective ascertains that alternatives are not automatically discarded.

A number of people have common ideas how such research should be done. Some are Greek from the antiques, others are of more recent times. (Ostwald, Goethe, Zwicky, Holliger, Einstein, Polya, Kant, Planck, Heisenberg, Leibnitz, Laurent, Descartes, and more).

#### Guided imagination

Guided imagination is letting our mind wander on a long leash, which powers an interplay between creativity and intuition. We apply the research principle of the rescue team. No stone remains unturned if it is within the research area we specified. Not wild research, not wild creativity. Not thousands of answers but the best ones. We follow certain ways of progression, quite often using a successive approximation process where there is no direct route of low risk. Along the way we employ variant thinking and modular problem solving. These variants are attached to specific characteristics of a function. Not the function itself. The function may be fastening - by a nail. The nail can have different characteristics. These don't change the function, but they do change the ease of manufacture, use and the efficiency of the function.

These morphological principles of invention - if understood properly and applied correctly will permit a team to be a more consistently inventive resource than the sole inventor tends to be. The principles taught at most universities are based on psychology. They are sure to create fun, relaxation and large numbers of "results".

#### A matter of recognition

Whatever skin is pulled over the motor which drives creation will not change the power of the motor. The current psycho engine is under heavy attack by the Russian TRIZ. It might be worthwhile to invest into researching the Euro-American resource of Creative Morphology and Guided Intuition. By the way, it easily accommodates Triz into one of its major creativity tools. Just to eliminate a typical misconception: The morphological box is only one of the tools of dimensional morphology. It is not the system.

\*\*\* Common sense is the collection of prejudices acquired by age eighteen. (Einstein)

\*\*\* I should have become a carpenter after discovering relativity. (Einstein)

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