

## CREATIVE TRAINING REPRESENTED BY THE GOLDEN TRIANGLE PROFESSOR – STUDENT – RESEARCHER

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**Rezumat.** *Autorul pune în evidență formarea creativă bazată pe triunghiul de aur în demersul pedagogic: profesor – student – cercetător. Stilul individual de predare și învățare este potențat de stilul creativ al educatorului cercetător și al studentului cercetător. Se reușește în acest fel obținerea unei valori adăugate în procesul de formare și autoformare pentru un salt calitativ în cercetarea științifică.*

**Abstract.** *The author highlights the creative training based on the golden triangle in the pedagogical approach: professor-trainer – student – researcher. The individual style of teaching and learning is enhanced by the creative style of the educator-researcher and of the student-researcher. It succeeds in this way to achieve added value in the process of training and self-training for a qualitative leap in scientific research.*

**Keywords:** creativity, training, professor-trainer, student, researcher, personal style, creative style

### 1. Introduction

“Souhaiter un renouvellement méthodologique, ce n’est pas renoncer à ce qui est acquis, c’est s’appuyer sur cet acquis pour aller de l’avant.” said Denis Girard speaking on a new trend in teaching technics, a half of century ago [1].

The words of D. Girard have been very convincing in making me work for a new interpretation of a late triangle “education – research - production” based on a today imperative trend of correlating the system of education with the labour market in Romania. The present synthetic work is the result of years of passionate didactic research made before for Annual Scientific Symposiums on Creativity or Invention, and following my PhD. thesis under the UNESCO-Romanian Commission leadership coordination: “Training trainers as educators for creativity” [2], passing through a twenty-year international experience up today.

A pedagogy of creativity aims to provide the trainers and the trainees with a formal incentive framework, a dynamic rhythm and a great variety of formative approaches. Each professor and student should participate actively and consciously in their training, they must always be involved in “something to do”, using all the relevant guidance: observing a phenomenon, solving a problem,

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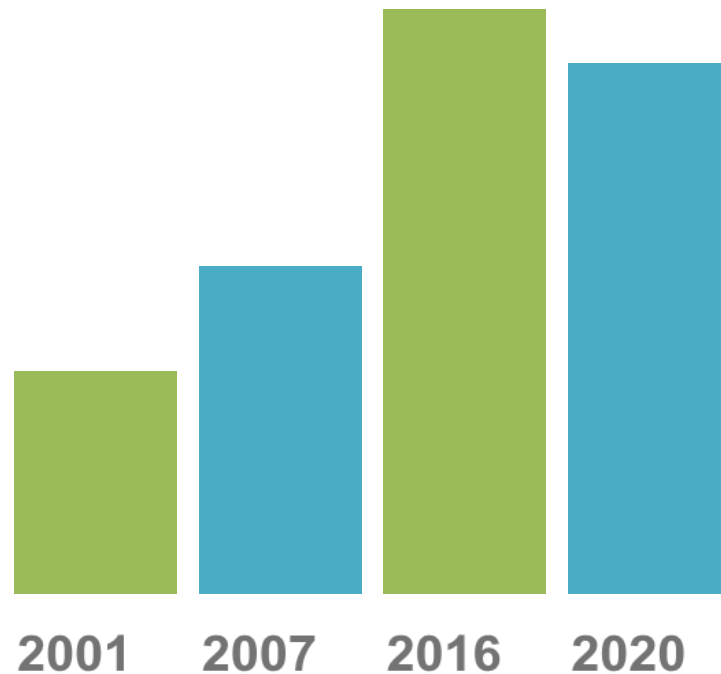
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carrying connections, confirming hypotheses. All these training exercises must be strictly related to a clear endpoint – at the macro level of applicability, in our case research and labor market, and to one or more identifiable “milestones” – at the micro level of implementation, in our case trainers, trainees and researchers.

In a student centered education and training, the nowadays gold triangle of the Didactic of Creativity has to become:

TRAINER/Professor – STUDENT/Trainee/Practitioner – RESEARCHER.

There are three fields of investigation in which it worth to invest. This imbrication has to have as a valuable result a mutual enrichment.



**Fig. 1.** Estimated graphic evolution of the trainees becoming trainers and researchers using a sample of data from the INSERT project [3].

The concept of “self-directed” learning and training has been developed among others by Jennifer Walski and Jean Sabiron at University of Bordeaux II, and Gérard Vaysse at University of Toulouse, France. [4]

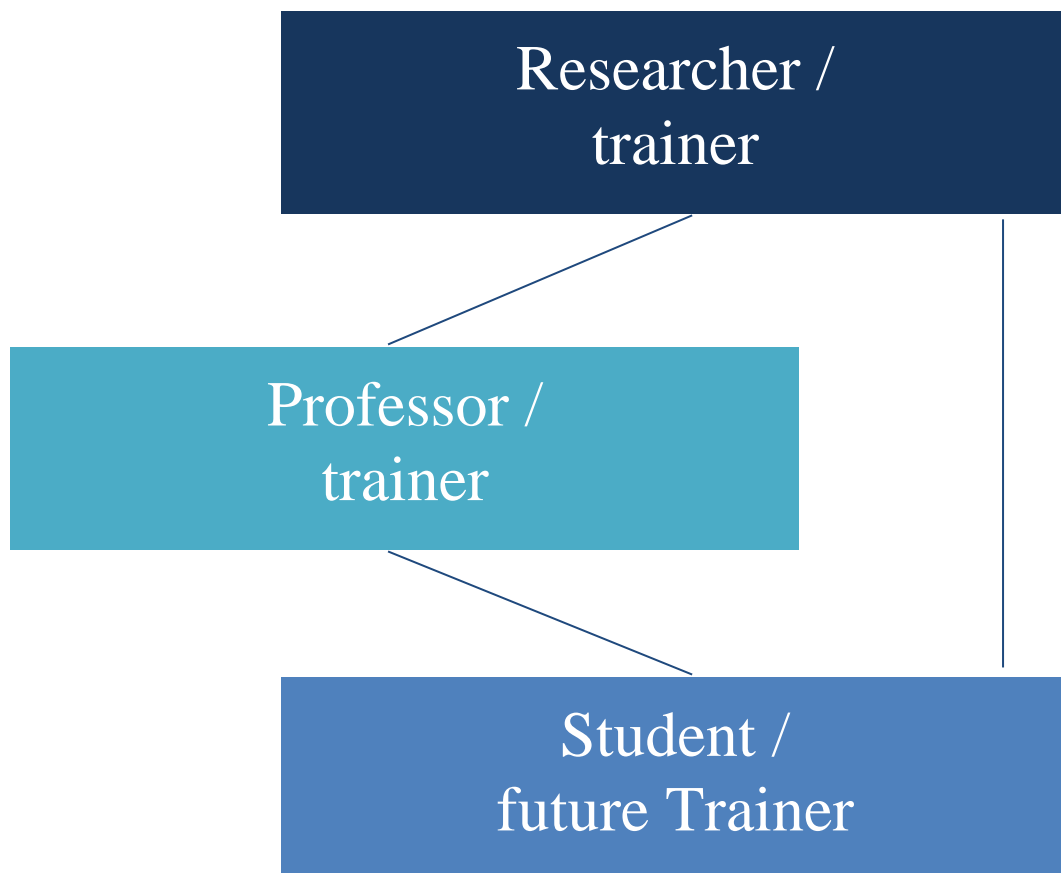
Practitioner can be not only the student but also the trainer and the researcher facing himself.

To prove it we have to give an answer to a new question:

**“What is to be both trainer and practitioner at the same time?”.**

To this end we analyze the consequences of the following relations:

- (1) Trainer – Practitioner
- (2) Trainer – Student / future Trainer
- (3) Trainer – other Trainers
- (4) Trainer – Researchers / Teachers of specialties



**Fig. 2.** The golden triangle formed by Professor – Student – Researcher.

## **2. Psycho-pedagogic bases and interdependence relationships**

We propose as thesis of departure for our analysis creative training and self-directed learning and training which go hand in hand and are interdependent.

Every time the educator for creativity will have to take into account what is daily in an imaginary “specification book” which may include always open, which may include the following milestones.

### **2.1. Relationship Trainer – Practitioner / himself/herself (creativity educator profile)**

If you want to convey something, you have to:

- know very well what and how to communicate,
- have clearly in mind the inventory of the knowledge I share with others.

If you want to be useful, you have to:

- transmit relevant and practical knowledge,
- constantly redefine the knowledge I provide with, considering these knowledge as something alive, in continuous transformation, with their strengths, but also problems to be solved,
- answer questions that require responses, something that must always be redesigned and shaped to form permanently evolving and improving skills.

One has to do all these with the respect of the principle: “What I offer to the others I offer myself too.”

### **2.2. Relationship Trainer – Student / future Trainer**

If you give, then you get in return:

- you must always take into account the dual information transmission channel: Professor  $\leftrightarrow$  Student;
- the opinion and the student's eyes are equally valued, as mine;
- the paralinguistic creative training means are and have to be put into service not only by the trainer, but also by those undergoing training;
- those to whom I address to, my students are expecting something from me, they trust on me;
- if they leave finally satisfied with you and themselves, you are encouraged/motivated to continue: this is a stimulating creative training;
- students ideas, opinions, and questions always help us to build new projects for the groups we work with, or for each student (real learner-centered instruction).

### **2.3. Relationship Trainer – other Trainers**

In the pedagogy of creativity:

- horizontal exchanges between those alike,
- the close cooperation among all trainers,

represent essential elements for its inter- and transdisciplinary nature.

The way we make each other is a true co-training in which:

- you learn and become aware of your own behavior as a trainer,
- you become aware of what you can expect from the other,
- you can give him/her or to ask,

in order to jointly develop a common pedagogic language of creativity. It creates the impetus, multiple possibilities of stimulating, a fabulous emulation.

#### **2.4. Relationship Trainer – Researchers / Teachers of specialties**

A natural and compulsory endpoint is:

- to maintain a permanent bivalent connection with researchers from various fields of science and technology,
- developing and perfecting their concerns to stimulate creative behavior;
- never forget the Doctoral Studies Schools – nursery of academic research with practical and immediate relevance, of medium and long perspective.

### **3. Case studies**

Recently, a mystery about transport megalithic temple of Stonehenge, in Salisbury plain, in UK, was solved by an experiment done by students from the University College London. [5]

Recently, it has been created what appeared to be almost impossible, the world's first robot lawyer specialized in bankruptcy processes of enterprises (IBM). [6]

This very year, a team of the University “Valahia” of Targoviste made up of two teachers, a researcher and three students (two PhD students and one graduate student) won two prizes out of three of the Mobile Microrobotics Challenge (MMC 2016) in Stockholm, Sweden. [7]

A physics teacher from the College “Mircea cel Batran” in Constanta with his students won the NASA - Ames Space Settlement Design Contest 2015 (Ames Research Center): “I had intended to generate the Constanta phenomenon”. [8]

### **Conclusions**

We can generate the MIOVENI-PITEȘTI phenomenon! Each of us - teachers, trainers – future trainers / students - researchers, each university, shall generate such phenomena!

We need hours of interactive, creative type of behavior, incentive to proactive, foresight and creative thinking.

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