

# Developing innovation competencies for organizations

Joaquín Moreno Marchal  
Universidad de Cádiz  
Spain

*joaquin.moreno@uca.es*

## Creativity and innovation as key competencies

The economy and the society in the XXIst are named as 'knowledge based'. It means that the value is based on the creation of new knowledge and their applications. In this culture, creativity and innovation are considered as key competencies, directly related to social development, competitiveness of organizations and employment (Atomium Culture).

What is the relationship between creativity and innovation? The concept of creativity is concerned with finding new perspectives, breaking limits and being opened and receptive to diversity. Innovation looks for the impact in a social level of the creativity results. Therefore innovation is a complex process involving different abilities and competencies, being creativity at the core of them. Innovation includes perception of opportunities, ideas generation and evaluation, action plans, cooperation, risk ... (Fig. 1). Innovation is a complex process that put into action several competencies.

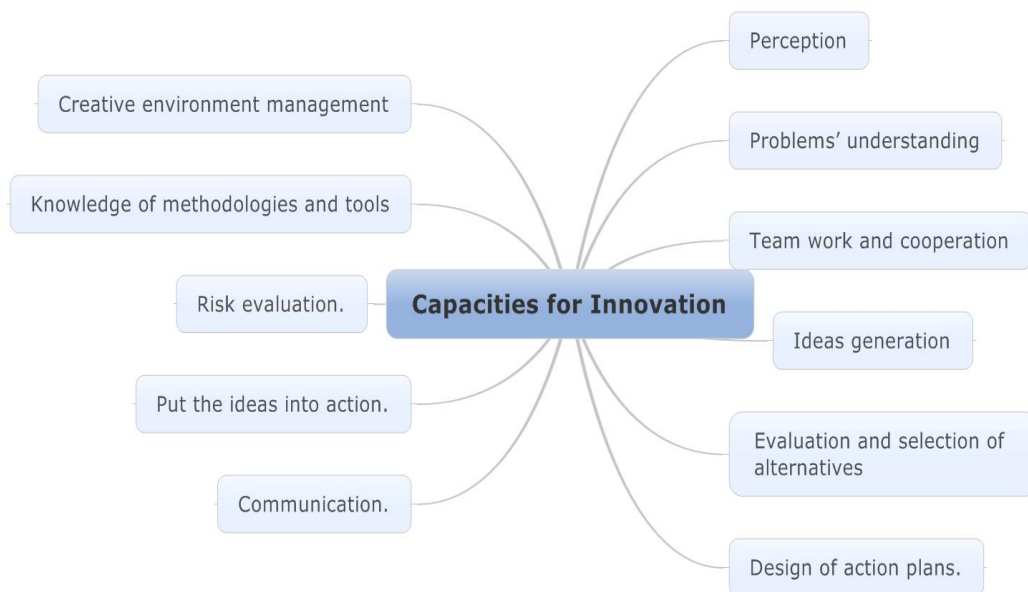


Fig. 1

To develop innovation capacity is a social need in our society. Innovation is important in two levels: at personal level and at organizational level. For organizations innovation is the key for competitiveness (in a wide sense of the concept), being people in the core of the innovation process. Therefore training people to develop innovation competencies is a need for all companies that want to be competitive.

All these considerations became a great challenge for the global educational system and of course for the University, that must to promote creativity and innovation through programs, courses and training. In this framework, a course about creativity and innovation, inside the Vocational Training Program of Cadiz University, was organized in 2010. It was developed at Parque Científico Tecnológico Agroindustrial, a technology park related to agro food, in Jerez (Spain).

## **Course design**

The course Creativity and Innovation was conceived with the following objectives:

1. To know and to practice principles and methodologies for creativity and innovation.
2. To practice innovation trough the design of innovative projects.

It was organized as a blended learning course modality, with seven presential sessions (15 hours), and a total amount of 30 hours being developed during a period of forty days.

As we have explained before, innovation is a complex process that involves different and capacities. Developing the competencies needed for innovation is an interesting training problem. In order to attain the objectives proposed, a methodological framework was designed based on the following approaches:

1. Construction of a creative and collaborative environment. This is a very special and interesting methodological issue concerning companies because it is a keystone for developing innovation.
2. Use of a model of the innovation process, named CREALAB, as a structure for developing contents, methodologies and tools for innovation projects' design.
3. Use of examples obtained from artistic creation.
4. 'Learning by doing', applied to the innovation projects' design.
5. Course conception as a meaningful experience for participants.

An schema of the model CREALAB used to represent the process of innovation is shown in Fig 2

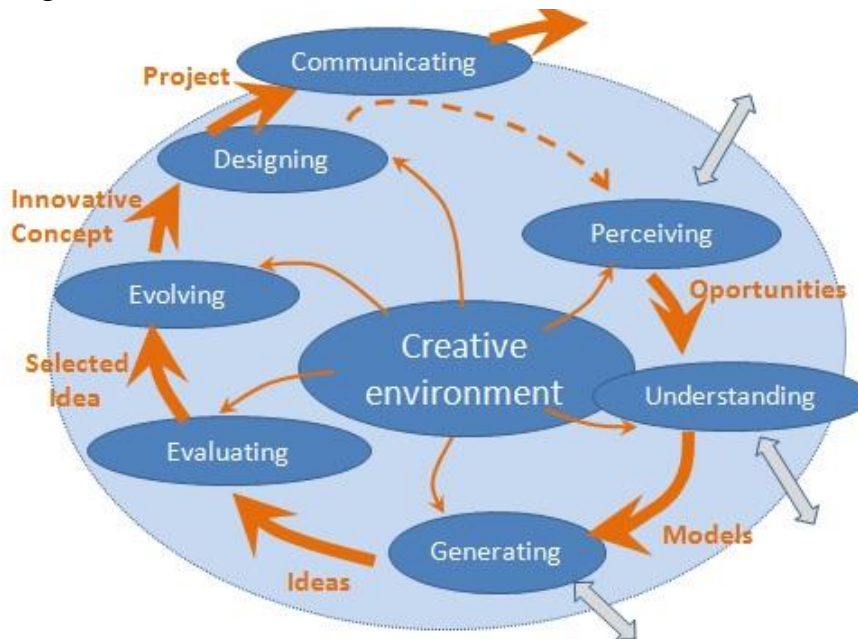


Fig. 2

## Construction of a creative environment.

From the methodological approach point of view, the construction and managing of an environment open to new ideas and project have special interest in organizations. This is the axe about all dynamics of the innovation go around (see Fig.2). In the course such space of work is based on the acceptance and promotion of some basic principles as:

- a. An atmosphere of trust and collaboration between participants.
- b. The possibility to propose initiatives (new ideas and projects) the participants have.
- c. Flexibility in the organization, including the physical space.
- d. Fluid communication and knowledge share between participants.
- e. Non evaluation of ideas in the process of generating them.
- f. Multidisciplinarity

## Results and evaluation

Seven persons from five different organizations (related to foods, aeronautics and education) have participated in the course. As it has been indicated in the methodological approach the participant had the initiative to propose problems, analyze them and transform them into a project for innovation. The following ones are some of the problems proposed

1. How to change the client perception of an X food product?
2. How to organize a creative environment in a company?
3. How to create an edible packaging?

4. How to sell X food product in a loose way?
5. How to offer expert medical services?
6. How to obtain a Y food product with low calories?
7. How to avoid that the dog scratches the door?
8. How to change brand positioning?
9. How to reduce loss in hot water shower?

For objectives and results evaluation different tools were developed:

1. A self evaluation questionnaire for personal competencies in creativity and innovation, filled at the initial and final sessions, with two levels: a global level and a specific level, through the self evaluation of eleven abilities related to innovation (Fig. 3 and 4).
2. A global course evaluation questionnaire about the objectives, results and methodologies of the overall training action.

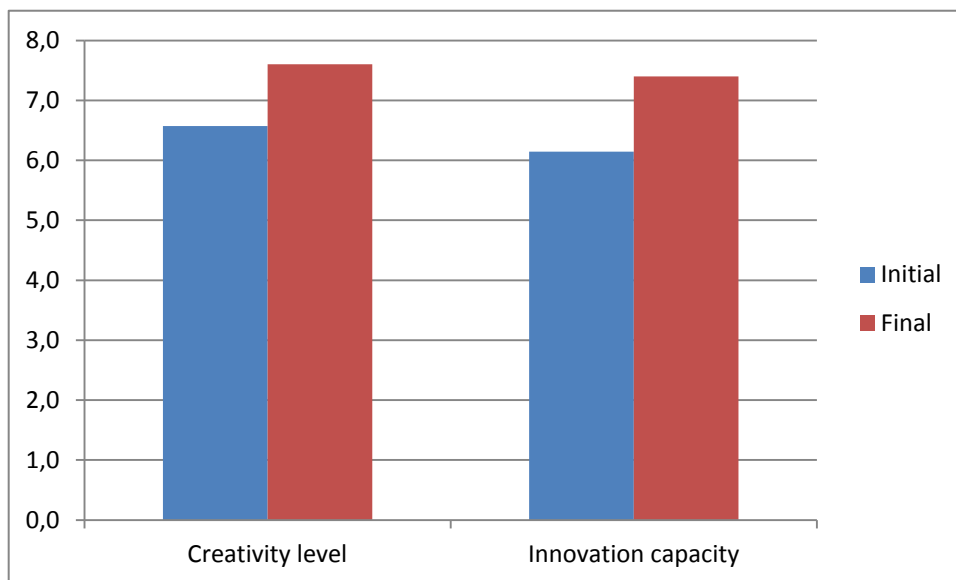


Fig. 3

The self evaluation difference results obtained between the initial and the final sessions of the course, at a global level, show an increase in creativity and innovation capacities of 16% and 20%.

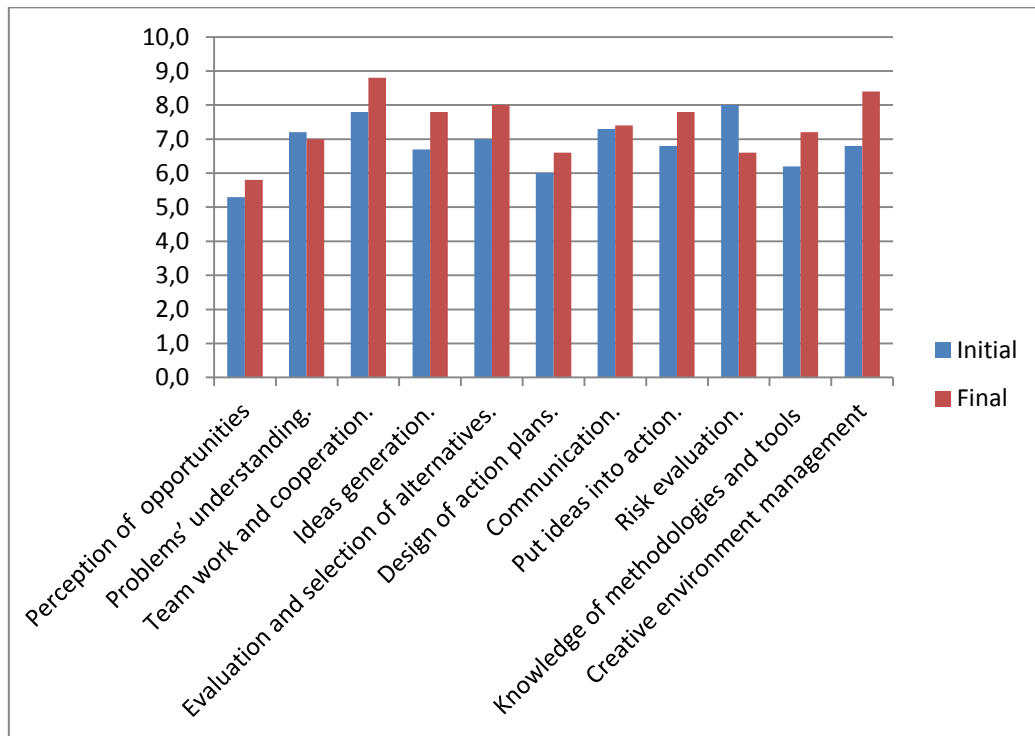


Fig. 4

The specific self evaluation of innovation capacities (Fig. 4), through the identification of eleven abilities related to innovation, shows a meaningful increase in eight out of them. Despite these results imply a subjective evaluation, they mean there was more confidence in personal capabilities. It must be pointed out that this result is very important in the sense that this subjective ability could be converted into a real ability in the practice.

Special consideration must be taken into account with the competency named 'creative environment management' that shows a meaningful increase in the self-evaluation test results. Inside organization the construction and management of space of work open to creativity is crucial for obtain good innovative results. These data also confirm the good implementation of the methodological design, especially in which is concerned with 'Construction of a creative and collaborative environment' approach.

The overall course design is also evaluated with a questionnaire. The results are shown in Table 1.

Scale of valuation: 1- Disagree a lot, 2- Disagree, 3-Partial agree, 4-Agree, 5- Agree a lot	
<b>OBJECTIVES</b>	
I have learned a methodology for innovation development	4,7
I have practiced innovation	4,6
<b>RESULTS</b>	

I have generated ideas	4,3
I have started a project conception	4,6
I have progress in the construction of a team for developing my idea/project	4,0
I have found people, resources and aids for innovation developing	3,8
<b>METHODOLOGY</b>	
The course has been a creative environment	4,8
The course has been a significative experience for me	4,7
The course has been conceived as a space for collaboration	4,7

Table 1

These data show that the objectives of the course have been reached in a good level both in 'learning methodologies' (4.8/5) and 'practice innovation' (4.4/5). Good results are also obtained in the methodological evaluation. Participants think that the course 'has been a creative environment' (4.6/5), 'has been a meaningful experience' (4.8/5) and 'a space of collaboration' (4.8/5).

The questionnaire had an open question about the most interesting of the course. The results are shown in Table 2

1. 'To know how to create creative environments'
2. 'Above all, to think that any kind of idea could be feasible'
3. 'To overcome one's fear for expressing ideas'
4. 'It can be resumed as in spite of being a course 50 Km far away from home, after 8h. working, and waking up at 6.30 in the morning... I still get enthusiastic for continuing learning'
5. 'Very nice'
6. 'It has taught me not to have fear'
7. 'It has taught me to break up a project'
8. 'To meet enterprising people' `Conocer gente emprendedora'
9. 'The knowledge about other resources to become an innovator'
10. 'It modifies previous ideas'
11. 'It causes changes in the way face up problems and search for solutions'
12. 'It aids to meet other people that can contribute a lot'

Table 1 Course evaluation: the most interesting issues

## References

Atomium Culture. <http://atomiumculture.eu/>

Aprender para la Sociedad de la Innovación. J. Moreno y M. A. Castro (eds). Servicio de Publicaciones de la Universidad de Cádiz, 2004.

Creative problem solving: An applied university course. R. V. Valqui. *Pesquisa Operacional* v. 30, n. 2. 2010.

European Innovation Scoreboard 2009. <http://www.proinno-europe.eu/page/european-innovation-scoreboard-2009>.

El valor de las ideas. L. Bravandere y A. Mikolajczack. OBERON, 2000.

Innovation in the Knowledge Economy, Implication for Education and Learnin. Informe OCDE, 2004.

La persona protagonista de la innovación. Informe COTEC, Madrid (2007).

Managing Creativity and Innovation. Harvard Business Essentials. Harvard Business School Press, 2003.

Recomendación del Parlamento Europeo y del Consejo de 18 de Diciembre de 2006 sobre las competencias clave para el aprendizaje permanente.

The Oxford Handbook of Innovation, J. Fagerberg, D. Mowery, R. Nelson Eds. Oxford University Press, 2006.