MODULE 1: THE CONCEPTS OF CREATIVITY AND INNOVATION

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<tbody>
<tr>
<td>Project Title</td>
<td>“Towards a More Innovative Workplace”</td>
</tr>
<tr>
<td>Project Acronym</td>
<td>InnoWork</td>
</tr>
</tbody>
</table>

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.
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I. Module overview

| **Learning objectives** | As a result of engaging with the materials in this module, learners are intended to achieve the following learning outcomes:

**Knowledge:** gain knowledge on why creativity is important, what are the main characteristics of creativity and creative people, how can creativity be developed.

**Skills:** improved ability to identify creativity impetuses and obstacles in the organization; improved ability to adapt traditional methods, concepts, models to new applications; proactive thinking; self-assessment; understanding attitude.

**Competences:** Encouraging creativity; facilitating a climate that supports creativity in an organization; managing change; leader behaviors; analytical thinking. |
|---|---|

| **Time schedule** | Time necessary for:
 Learning content (self-study): 1.5 hours
 Self-test questions: 5 minutes
 On-line exercises: 20 minutes |
|---|---|

| **Structure** | The module is divided into three main topics:
 ✓ Why is creativity important?
 ✓ What are the main characteristics of creativity?
 ✓ How can we develop creativity?

The creativity process is further analyzed through the prism of 3 interesting models. |
II. Learning content

Introduction

What is creativity and what is innovation? You may have your own definitions and you will be able to see some ‘official’ definitions in the first sub-chapter of this module.

We will also take a look at the main characteristics of a creative person. Did you know creative people have a particular sensitivity to problems? How about you? Are you an adaptor or an innovator? Do you work within the system to improve things or do you challenge the system and come up with proposals for change?

In this module we will also discuss how to develop creativity. You will read about how important it is to allow people to do something they love, free and self-determined, along with some leadership behaviours that should be encouraged in order to achieve this. Three exemplary models on the creativity process will be explained. The first model contains 8 activities to encourage people to be more creative, the second model is focused on the factors that facilitate and motivate creative behaviours and the third model looks at creativity from the different viewpoints of the individual, the group and organizational levels.

Why is creativity important?

Nowadays, we are entering a new age where creativity is becoming increasingly important and more and more people are recognizing this. It is now essential to foster and encourage right-directed (as creativity and emotion) over left-directed thinking (as logical, analytical thought).

Creativity is very important in businesses: organizations need it to adapt to the fast-changing environment, to develop new products and to improve customer services. Creativity is also a key to the ongoing vitality and survival of organizations. In response to this need, managers have invested in various targeted approaches, such as, creativity training programmes, team-building, and leadership development to improve it.

Creativity has been studied from a variety of perspectives. It may be defined as the formation of novel, appropriate and useful ideas by individuals or small groups. In the context of an organization the term innovation is often used to refer to the entire process by which an organization achieves creative problem solving, generates creative new ideas and converts them into novel, useful and viable commercial products, services and business practices.

Last but not least, the European Parliament emphasizes the importance of creativity asserting “to promote creativity, through lifelong learning, as a driver for innovation and as a key factor for the development of

2 Idem.
personal occupational, entrepreneurial and social competences and the well-being of all individuals in society”³.

The European Union declared 2009 as “The European Year of Creativity and Innovation” where it was said that “More than ever, Europe’s future depends on the imagination and creativity of its people”⁴.

As R. K. Sawyer states: “Creativity will continue to increase in importance, due to several broad societal and economic trends:

1. Increasingly, globalized markets result in greater competitiveness, even for industries that historically had been protected from significant challenge.
2. More and more sophisticated ICT result in shorter product development cycles.
3. Jobs that don’t require creativity are increasingly being automated, or are moving to extremely low-wage countries.
4. Growing wealth and leisure time in advanced countries (and beyond) have raised the demand for the products of the creative industries. As of 2007, the creative industries represented over 11% of U.S. GDP⁵.

As Gerhard Fischer argues, we have to underline the social nature of creativity⁶. Creativity does not happen inside people’s minds, but in the interaction between a person’s thought and a socio-cultural context.

To sum up, creativity contributes in several areas, such as innovation, problem solving, planning and decision-making⁷. Moreover, creativity has been described as the most important economic resource of the 21st century⁸.

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What are the main characteristics of a creative person?

Let us take a look at the main characteristics of a creative person. Michael Kirton suggests that there are two types of creative persons in organizations\(^9\): **Adaptors**, who work within the system to improve things and **Innovators** who ignore or challenge the system and come up with more radical proposals for change. The characteristics of both types are summarized in the table below:

<table>
<thead>
<tr>
<th>Adaptors</th>
<th>Innovators</th>
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<tbody>
<tr>
<td>Prefer to do things better;</td>
<td>Prefer to do things differently;</td>
</tr>
<tr>
<td>Seek professions that encourage stability</td>
<td>Seek professions such as marketing that</td>
</tr>
<tr>
<td>and order such as accountability and</td>
<td>demand interaction with changing</td>
</tr>
<tr>
<td>production;</td>
<td>environments (who deal with incertitude);</td>
</tr>
<tr>
<td>Formulate ideas without changing much</td>
<td>Would rather produce ideas introducing</td>
</tr>
<tr>
<td>the initial data of the problem.</td>
<td>new elements and changing the relation-</td>
</tr>
<tr>
<td></td>
<td>ship between elements of a problem.</td>
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</table>

It is also interesting to take a look at Guilford’s (1950) view on creativity\(^10\). For him, creativity is a pattern of several primary abilities that are characteristic for creative persons. Such traits or abilities include the following:

1. **Sensitivity to problems.** Creative people see problems where others do not, ability possibly related to curiosity. **Test yourself:** List things that are wrong with, or could be improved in common household appliances.

2. **Fluency.** People who produce large number of ideas are more likely to have significant ideas. **Test yourself:** State as many consequences as possible to a hypothetical situation, such as: “A new invention makes it unnecessary for people to eat.”

3. **Novel ideas.** Creative people have unusual but appropriate ideas. **Test yourself:** Note the frequency of remote verbal items in a word-association test.

4. **Flexibility.** Creative people should be able to easily change set. **Test yourself:** try the

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\(^10\) “Handbook of Creativity”, by John A. Glover, Royce R. Ronning, Cecil Reynolds
Remote Associates Test developed by Martha Mednick. For each set of three words, the goal is to find an associated word that all three have in common.

5. **Synthesizing and analysing abilities.** Creative thinking requires the organisation of ideas into larger, more inclusive patterns and symbolic structures must often be broken down before new ones can be built.

6. **Complexity.** It refers to the number of interrelated ideas an individual can manipulate at once.

7. **Evaluation.** At some point, the value of new ideas must be determined. **Test yourself:** Rank in order of excellence several correct solutions to a problem.

Gilbert Tan mentions 3 *important ingredients* of a company’s creativity: foundation, competencies and support.\(^1\) **Foundation** refers to the belief systems. Employees must think positively of themselves and believe that they can be creative, and managers must have positive beliefs regarding their subordinates. Then, **competencies**: Employees need to be competent to be creative. They need to have a mix of technical and human relations skills to exercise creativity effectively in the organization. Finally, he identifies **support**, which employees need from the organization in order to be creative.

<table>
<thead>
<tr>
<th>Questions for reflection</th>
<th>Are you an adaptor or an innovator?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What are your creative traits?</td>
</tr>
<tr>
<td></td>
<td>What are the belief systems and competencies that foster creativity at work?</td>
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</table>

**How can we develop creativity?**

*Creativity is “not just a natural talent; it is also a skill that everyone can develop and learn.”*

One of the best ways to help people maximize their creative potential is to allow them to do something they love; with *freedom*\(^1\)\(^2\) and *self-leadership*\(^1\)\(^3\) comes high creativity. In the workplace, employees should be encouraged to explore ideas that are *personally exciting*. Furthermore, the organizations should eliminate unnecessary layers of management and barriers, provide generous rewards for creative behaviour and encourage the use of cross-functional work groups.

To cultivate innovation/creativity in the workplace certain **leadership behaviours** should be practised:

- Encouraging employees to challenge the status quo

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Having an open attitude towards risk taking
- Being able to use mistakes as learning opportunities
- Using and sharing knowledge and information
- Focusing on continuous learning
- Conducting fair and informative evaluations
- Rewarding creative performance
- Practicing participatory management
- Being self-reflective

Time management is also important at the workplace. As Runco affirmed “individuals should be given sufficient time, if they are expected to do creative work”\(^\text{14}\). Creativity is negatively related to time pressure.

INTERESTING MODELS OF THE CREATIVITY PROCESS

In the following three models, we introduce how organizations can facilitate a climate that supports creativity and innovation.

**First model:**

Charles Cave\(^\text{15}\) provides an interesting model surmising 8 activities which should help people in organizations to be more creative. These activities are:

<table>
<thead>
<tr>
<th>Searching</th>
<th>Consulting</th>
<th>Visualizing</th>
<th>Thinking</th>
<th>Exploring</th>
<th>Composing</th>
<th>Reviewing</th>
<th>Disseminating</th>
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<tbody>
<tr>
<td>• Since searching is part of a larger creative process the result set should be easy to save into a spreadsheet for further manipulation.</td>
<td>• Email, listservs, newsgroups, and threaded discussions are excellent asynchronous tools for situationists’ inquiries about previous work and for discussing new ideas with peers and mentors.</td>
<td>• By using visualization alternatives can be reviewed thoroughly and rapidly.</td>
<td>• Liberate the mind by making free associations to related concepts.</td>
<td>• Conduct thought experiments on the implication of decisions.</td>
<td>• If new artifacts are inspired by previous work, then workers should benefit from orderly processes for locating appropriate previous work and modifying it to suit their current needs.</td>
<td>• Reflecting on work is a central notion in quality improvement, creativity, and education methods.</td>
<td>• When workers have created appropriate solution, they can disseminate it and receive reviews.</td>
</tr>
<tr>
<td>• Information derived from searching may provide the right results, but there are still concerns about whether the information is accurate, complete, and up-to-date.</td>
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</table>


Second model:

A model of creativity focused on the factors that facilitate and motivate creative behaviours in organizations has been developed by Teresa M. Amabile\textsuperscript{16}. Individual creativity in a given domain is influenced by the following three components:

- **Domain-relevant skills or expertise (innate skills).** They comprise the possible responses that the individual has to draw upon in facing a given problem or situation. These include factual knowledge such as principles and opinions, technical skills required in a specific domain and “special domain-relevant talents that may contribute to creative productivity”. Domain-relevant skills are comprised of innate skills and those obtained through education. Even if domain relevant skills are high, if there are lacking creative-relevant processes they will be unlikely to produce creative outcomes.

- **Creative relevant processes (learned abilities).** This component includes:
  - Personality traits as self-discipline, delay of gratification, perseverance and independence.
  - Cognitive style, which includes the ability to understand complexities and suspend judgment.
  - Work style, which includes the ability to focus, to replace unsuccessful solutions, to persist during hard times and to sustain high energy levels, effort and productivity.

- **Intrinsic task motivation (task attitudes)** is considered a primary driver for creativity at the individual level. Extrinsic and intrinsic motivation need not work in opposition, especially with regard to entrepreneurial creativity. Entrepreneurial creativity seems to require a synergistic motivation that includes both intrinsic and extrinsic motivation focused on competence and skills development.

In enhancing creativity in organizations, it is important to consider not only each of the separate components of creativity mentioned above, but also their intersection. Amabile suggests that creativity will be highest in that area where the three components share their greatest overlap. In other words, **people are most likely to be creative within their “creative intersection”**. Identifying this intersection can, in itself, be an important step toward enhancing creativity.

In a third model creativity is seen as the complex product of a person’s behaviour in a given situation. Woodman and Schoenfeldt have proposed this interactionist model of creative behaviour. It looks at creativity from different viewpoints:

**Individual creativity:** It is seen as a function of several elements including fluency of expression, originality, personality factors (as broad interests), independence of judgment, autonomy, persistence, and curiosity; intrinsic motivation and finally knowledge, for example, technical skills, domain-relevant skills, cognitive skills, and personality traits linked to creative performance.

**Creativity in groups:** There are many important conditions to bear in mind when we mean group creativity. The probability of creative outcomes may be highest when leadership is democratic and collaborative, structure is organic rather than mechanistic, and groups are composed of individuals drawn from diverse fields or functional backgrounds. Group creativity is not the simple aggregate of all group members’ creativity, but it is influenced by group composition (e.g. diversity), group characteristics (e.g. cohesiveness, group size), group processes (e.g. problem solving strategies, social information processes) and influences stemming from the organization.

**Creativity in organizations:** An organizational culture supportive of creative behaviour can be supported by means of creativity training programs. Cummings and O’Connell suggested that organizational innovation is also stimulated by the organization’s evaluation of its performance in relation to its goals, opportunistic surveillance and environmental characteristics. They also emphasised the importance of information exchange within the external environment to influence idea generation.

| Questions for reflection | What are the factors that facilitate and motivate creative behaviours in your organisation?  
Which of the three models do you prefer to address creativity and innovation at your workplace? Why? |

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III. Conclusion

In this module the importance of creativity has been underlined: organizations need to be able to adapt to the fast-changing environment, to develop new products, to improve customer services, etc. Creativity has been labelled as the most important economic resource of the 21st century!

Now that you know, whether you are an adaptor or an innovator, you have already discovered the characteristics that make you a creative person and whether certain leadership behaviours to foster creativity and innovation are encouraged in your organisation. You have studied three models on the creativity process.

You are now well acquainted with different concepts of creativity and innovation. You have been also encouraged to start analysing your own creative traits as well as the status quo and the development potential with regards to creativity and innovation in your organisation.

IV. Additional reading

<table>
<thead>
<tr>
<th>Creative Thinking for Business Problems / M1 Creativity</th>
<th><a href="http://www.m1creativity.co.uk/">http://www.m1creativity.co.uk/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>This website offers comprehensive information on how to foster creative thinking within an organization. For example, an interesting article on an appropriate climate for creativity and innovation can be found under: <a href="http://www.m1creativity.co.uk/innovationclimate.htm">http://www.m1creativity.co.uk/innovationclimate.htm</a></td>
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</tbody>
</table>

<table>
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<tr>
<th>Creativity / Psychology Today</th>
<th><a href="https://www.psychologytoday.com/basics/creativity">https://www.psychologytoday.com/basics/creativity</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>This link presents a variety of articles related to creativity, as for example:</td>
<td></td>
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<tr>
<td>• The Art of Creativity</td>
<td></td>
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<tr>
<td>• The Creative Personality</td>
<td></td>
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<tr>
<td>• Why Your Best Ideas Come When You Least Expect It</td>
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<table>
<thead>
<tr>
<th>18 Things Highly Creative People Do Differently / The Huffington Post</th>
<th><a href="http://www.huffingtonpost.com/2014/03/04/creativity-habits_n_4859769.html">http://www.huffingtonpost.com/2014/03/04/creativity-habits_n_4859769.html</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>The article exposes that while there's no typical creative type, there are some tell-tale characteristics and behaviors of highly creative people, for example:</td>
<td></td>
</tr>
<tr>
<td>• They observe everything.</td>
<td></td>
</tr>
<tr>
<td>• They take time for solitude.</td>
<td></td>
</tr>
<tr>
<td>• They ask the big questions.</td>
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<tr>
<td>The question how to boost creativity in your organization is answered with 12 suggestions, as:</td>
<td></td>
</tr>
<tr>
<td>• Find inspiration in your mission statement.</td>
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</table>
V. Self-test questions

Question 1: What is not true for innovators (as opposed to adaptors)? (One correct answer)
- They prefer to do things differently.
- They are found in departments that demand interaction with changing environments.
- They seek professions that encourage stability and order such as accountability and production.
- They ignore or challenge the system.
- They come up with radical proposals for change.

Question 2: Which of the following traits are characteristic for creative persons? (Several correct answers)
- Novel ideas.
- Sensitivity to problems.
- Heightened synthesizing abilities.
- Prefer to do things better, but not differently.
- Heightened analyzing abilities.

Question 3: Which leadership behaviours should be practiced to cultivate innovation and creativity in the workplace? (Several correct answers)
- Avoiding mistakes.
- Focusing on continuous learning.
- Having an open attitude towards risk taking.
- Being self-reflective.

Question 4: Which activities should be helping people in organizations to be more creative? (Several correct answers)
- Visualizing
- Relating
- Exploring
- Disseminating
- Brainstorming

Question 5: Which of the following components significantly influence individual creativity in a given domain?
- Domain relevant skills
- Constant complicated thinking processes
- Creativity relevant processes (learned abilities)
- Task motivation
- Dissatisfaction with work

Correct answers:
Question 1: 3
Question 2: 1, 2, 3, 5
VI. Glossary

**Brainstorming**

Brainstorming is a group creativity technique designed to produce a “large quantity of ideas without regard to the quality of ideas” (Rickards, 1999) for the solution to a problem. It was popularized by Osborn (1953). The basic rules of brainstorming include: focus on quantity, no criticism, unusual ideas are welcome, combine and improve ideas. Brainstorming can be thought of as a search process, the target of the search being innovative and useful ideas (Clark, 1958; Rawlinson, 1970; Nickerson, 1999).


**Creativity**

The ability to transcend traditional ideas, rules, patterns, relationships, or the like, and to create meaningful new ideas, forms, methods, interpretations, etc.

([http://dictionary.reference.com/browse/creativity](http://dictionary.reference.com/browse/creativity))

**Evaluation**

The process of making a judgment about the value, importance, or quality of something after considering it carefully.


**Extrinsic motivation**

Drive to action that (as opposed to intrinsic motivation) springs from outside influences instead of from one's own feelings.


**Imagination**

The ability to form mental images, or the ability to spontaneously generate images within one's own mind. It helps provide meaning to experience and understanding to knowledge; it is a fundamental facility through which people make sense of the world and it also plays a key role in the learning process.


**Innovation**

A new idea, more effective device or process. Innovation can be viewed as the application of better solutions that meet new requirements, unarticulated needs, or existing market needs. This is accomplished through more effective products, processes, services, technologies, or ideas that are readily available to markets, governments and society. The term innovation can be defined as something original and more effective and, as a consequence, new, that “breaks into” the market or
society.

Intrinsic motivation

Refers to motivation that comes from inside an individual rather than from any external or outside rewards, such as money or grades. The motivation comes from the pleasure one gets from the task itself or from the sense of satisfaction in completing or even working on a task. An intrinsically motivated person will work on a math equation, for example, because it is enjoyable. Or an intrinsically motivated person will work on a solution to a problem, because the challenge of finding a solution provides a sense of pleasure. In neither case does the person work on the task because there is some reward involved, such as a prize, a payment, or in the case of students, a grade. Intrinsic motivation does not mean, however, that a person will not seek rewards. It just means that such external rewards are not enough to keep a person motivated. An intrinsically motivated student, for example, may want to get a good grade on an assignment, but if the assignment does not interest that student, the possibility of a good grade is not enough to maintain that student’s motivation to put any effort into the project.

Leadership

The position or function of a leader, a person who guides or directs a group.

Time management

The act or process of planning and exercising conscious control over the amount of time spent on specific activities, especially to increase effectiveness, efficiency or productivity. It is a meta-activity with the goal to maximize the overall benefit of a set of other activities within the boundary condition of a limited amount of time. Time management may be aided by a range of skills, tools, and techniques used to manage time when accomplishing specific tasks, projects, and goals complying with a due date. Initially, time management referred to just business or work activities, but eventually the term broadened to include personal activities as well. A time management system is a designed combination of processes, tools, techniques, and methods. Time management is usually a necessity in any project development as it determines the project completion time and scope.

Trend

A pattern of change over time in some variable of interest. Having trend data for some variable implies multiple instances of that variable. For example, one revolution in Africa is an event; two or three revolutions would call for comparative case studies; fifteen revolutions in countries in Africa within five years would constitute a trend. One
of the most obvious, and largest trends, is the increase in world population. A potentially even larger trend, but much less obvious -- or even agreed upon -- would be the gradual warming of the Earth’s atmosphere. Another is the continuing decline in the cost of microchips and consequently of computers.

(http://www.icreate-project.eu/index.php?t=136)

VII. Bibliography


