9. *Thinking and creative (constructive) problem solving*

Thinking and creative thinking

Why thinking in praxeology?

Because efficiency or cost-effectiveness require new solutions from time to time. What is effective today may not be at all tomorrow.

Thinking is a skill that can be improved and even learned. You have to learn to think creatively.

According to **Edward de Bono**, "thinking is a practical skill through which intelligence influences experience (for a specific purpose)".

Intelligence and thinking

Intelligent people can justify any point of view. The more they are able to give a consistent argument, the less they wonder why they are talking about it.

The ability to think is sometimes confused with eloquence. Intelligent people learn quickly and often succumb to the temptation to replace thinking with talking.

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Intelligence and thinking

An eminently intelligent person is usually convinced of the rightness of his or her own views, always wants to be brilliant and believes that his or her social status is due to intelligence.

Intelligent people often criticize others because it seems to them that it is a sign of weakness to show somebody that they are wrong and to subject one's own ideas to the evaluation of others or to agree with somebody else.

Intelligent people prefer reactive thinking (solving tasks, classifying and organizing data) over other types of thinking, e.g. creative and active thinking.

Intelligent people often draw conclusions too hastily, because they draw them on the basis of the first signals, often without knowing the whole problem.

Intelligent minds often prefer volatility and sharpness over wisdom. They choose what is more effective.

That is why intelligence and effective thinking is not the same.

9. Thinking and creative (constructive) problem solving

Thinking man

Who is a thinking person?

It is a person who knows the purpose of his thoughts and does not wander from thought to thought. He/she is determined and self-confident, but also modest. He/she is aware that her point of view is only one possible. One should think slowly. Haste is not conducive to effective thinking.

Information and thinking

Nobody is able to get all the information. In the current phase of development man produces more and more information and has access to more and more information. However, the lack of complete information can be replaced by thinking.

Emotions and values and interests

Feelings are the determinant of thinking, but they can cause them to deform the image of reality. Thinking should help us to arrange our perception of the world in such a way as to make the best use of emotions.

9. Thinking and creative (constructive) problem solving

Thinking

Thinking and action

Thinking is often an excuse for inaction. Practical thinking is based on risk assessment, project design and planning. Ability to act is as important as knowledge.

Conscious thinking - we think when we want and direct our thoughts to any object or aspect of it. Unrestricted thinking is important in creative thinking, but should not dominate.

Logical thinking is a way of thinking that consists in linking subsequent problems to those we already know. Therefore, new knowledge must get caught up in what we already know. Often it doesn't work when the organization functions in a changing environment.

Creative thinking - uses imagination, techniques based on analogy, associations and other methods. Creativity helps to increase competitiveness.

9. *Thinking and creative (constructive) problem solving*

Reproductive thinking and productive thinking

Reproductive thinking is chosen when we have a problem to solve, which we think is or is similar to another (with which we already have experience). When we think reproductively about a given problem, we choose a solution that has already been applied and which has proved its worth.

Reproductive thinking is usually rigid and schematic. It emphasizes experience and promotes solutions that we already know.

The aim of **productive thinking** is to create many different approaches to a problem. To see a problem from all sides, you need to take a point of view and then move on to a different one. Productive thinking leads to creative thinking.

Creativity is a very complex concept. It can be defined as the ability to look at a given issue or problem from another point of view. It is necessary to have some knowledge and to question it as only right.

9. *Thinking and creative (constructive) problem solving*

Barriers to creative thinking

Barriers to creative thinking:

1) **Diagrams** - we pay attention only to certain aspects of the problem and ignore others. Henry Ford's thinking scheme proved itself by saying "we will give customers any colour they want, provided that it is black". This made sense when automotive development was not widespread, but at a later stage of development, when competition existed, it weakened the Ford brand's position in the market.

2) **Perceptual barriers** - are an obstacle to perceiving the world as it is.

3) **Cultural barriers** - result from the pressure exerted by the environment on a given person.

4) **Emotional barriers** - fear, anxiety, jealousy.

5) **Strategic barriers** - too much emphasis is placed on the past, focusing on a narrow range of opportunities, on known solutions. They limit imagination.

9. Thinking and creative (constructive) problem solving

Barriers to creative thinking (cont.)

Organizations also block creativity when they: put the emphasis on management control, reward solutions with a tangible financial dimension, analyse ideas for too long, lack of flexibility in the organizational structure, preferences for projects with potentially large profits, limiting the amount of investment in research.

9. Thinking and creative (constructive) problem solving

Creative people

Creative people are able to juxtapose seemingly different issues. They question the existing state of affairs. They undermine the assumptions made.

They are interesting, looking for new opportunities. They are open to all sources of information. They take the initiative, they are not afraid to make decisions. They do not look too much into the past and the future is important for them, they have a lush imagination. They are ready to take risks and treat mistakes as calculated in their activity.

They are independent. They are reluctant to submit to existing standards and set their own standards, feeling reluctant to standards and goals imposed from outside. They question common views and values, but they do not hide their unconventional views. In life, however, this can result in rejection and loneliness. Creative people adapt easily to changing conditions and circumstances.

They are persistent. They are able to reject correct solutions in order to find an ideal solution.

9. Thinking and creative (constructive) problem solving

The social context of creativity

There are factors that are conducive to creativity or may disrupt it. The most important factors will be presented below:

Family

Traumatic events, such as illness, divorce, loss of loved ones, often occurred in the family environment of creative people. Negative experiences may manifest themselves as a "escape into creativity". The development of creativity can also be based on the increased sensitivity of the person who has negative experiences. Creativity can also be the result of restoring an imbalance. In a climate of safety in the family home, creativity can also develop if the child has security and a certain margin of freedom.

9. Thinking and creative (constructive) problem solving

The social context of creativity (cont.)

There are factors that are conducive to creativity or may disrupt it. The most important factors will be presented below:

School

He often plays a negative rather than a positive role in the development of creative attitudes. It conveys knowledge about norms and values, but also teaches conformism. Teachers who ask questions often expect one "right" answer. The child stops asking questions and by meeting the expectations of the school learns "convergent" behaviours. School is not conducive to creativity because it usually tries to transfer knowledge, putting less emphasis on thinking, intellectual independence or imagination. Excessive knowledge discourages people from dealing with a given discipline. Teachers play the greatest role in a child's creative development at school. Their attitude, openness, professionalism, avoidance of excessive criticism, enthusiasm and interest are conducive to liberating pupils' creative attitudes.

9. Thinking and creative (constructive) problem solving

Creativity in the workplace

Place of work

In the workplace, creativity allows for the development of both individuals and the organisations themselves, which have to face competition - and to do so, they must be creative and employ people who have ideas. The company's objectives should be a challenge for employees, and the existence and functioning of the organisation should be important to them. Employees should feel free and have the support of colleagues. They must not be afraid to come up with new ideas. An atmosphere conducive to discussion and tolerance of moderate risk is also important.

9. Thinking and creative (constructive) problem solving

Creativity in the workplace (cont.)

Mentor

It is a person who takes care of the creator's development, helps and advises. Such a person should have a fairly high social status. A young person, a beginner, often doubts his or her abilities and abilities. The mentor's task is to dispel these doubts.

Model or pattern

It is a person from whom an inexperienced artist takes an example. The function of the model is to show the young person "how to do it". It is about knowledge about procedures, the way of thinking.

9. Thinking and creative (constructive) problem solving

Social perception of creativity

Many people, despite the fact that they are able to judge the work of others, are not able to create works themselves.

Usually, the author himself often evaluates his work differently than the audience. Creative people are often convinced that they can influence the course of things. Awareness of being evaluated, as well as observations of the process of creating a work negatively affect creativity.

Immediate evaluations of ideas have an equally negative impact on creativity, which is why when generating ideas, for example by means of the "brainstorming" method, it is necessary to refrain from evaluating them.

In many fields there are no clear evaluation criteria, which is why intermediaries (critics, reviewers) also have a role in evaluation. Where there is a large number of creators of a similar level, the role of intermediaries - e.g. among actors - increases. When a work is generally understood, intermediaries lose their meaning.

9. Thinking and creative (constructive) problem solving

The process of creative problem solving

Stages in the process of creative problem solving:

1. Analyzing the environment in order to find potential problems.
2. Discovering goals.
3. Collecting information.
4. Proper problem definition.
5. Concretization of assumptions.
6. Creating solutions to the problem.
7. Evaluation and selection of possible solutions.
8. Implementing selected ideas.
9. Control and evaluation.

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Implementation of ideas

The implementation of ideas is essential to maintain the effectiveness of the organization's functioning.

It is known that new ideas may face resistance. However, overcoming resistance may be possible with good communication. The most important thing is to convince others of the idea.

What can be a source of opposition to change?

➢ fear of new ideas and the associated change in the way of working,

➢ feeling, others don't care about us and treat us like pawns,

➢ the feeling that new ideas come from outside, which may pose a greater threat than what is inside.

Effectiveness in introducing an idea is guaranteed by arousing commitment, a sense of co-determination, responsibility for the joint implementation of ideas.

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Implementation of ideas (cont.)

Sometimes ideas need to be passed on to someone else for implementation. People who will implement other people's ideas should accept them. If our co-workers are critical of our ideas at the moment, they should be dissatisfied with the current state of affairs. Then they will start looking for other solutions themselves.

The next step is to highlight the benefits for each person affected by the change. The most effective tool in convincing people of their ideas is communication. One of the models that can be used to stimulate others to act is the **AIDA model**.

> **A - (Attention)** - attract attention,
>
> **I - (Interest) -** maintain interest,
>
> **D - (Desire) -** stimulation of thirst/lust,
>
> **A - (Action) -** obtaining an action.

9. Thinking and creative (constructive) problem solving

Reduction of objections to amendments

Every change causes some objection

There are no objections when people have the opportunity to participate in the design of changes or when we ask them for their opinion. One way to alleviate opposition is to introduce a trial period change. If changes bring more benefits than disruptions, they will also be accepted.