SYSTEMS THINKING
within our modern life and education

Let us think about thinking!

What does it mean "SYSTEMS THINKING"?
There are three main questions today:

1) what does it mean “THINKING”?

2) what does it mean “SYSTEM” and “SYSTEMS THEORY”?

3) what does it mean “SYSTEMOLOGY”?

THINKING – it is spiritual process as processing of information within human’s brain - it is human’s consciousness in action

World of thoughts – human’s reflection of sensed world

Reflection of sensed world in human’s consciousness – it means building systems of thoughts, it is systems thinking process as human’s conscious spiritual life.

Systems thinking – it’s universal or general form of human’s thinking, what is independent of concrete content of definite thinking process.

Systems thinking - reflection of sensed world by human – it means reflecting world by parts, comparing and connecting them together in definite systems.

Systems theory – general theory of human’s systems thinking!
World of thoughts – it is SYSTEM of thoughts

THEORY

Consideration

Cognition

Behavior

PRACTICE

Reflection of real world – systems thinking

SYSTEMS THEORY – general theory of thinking:

reflected phenomenon as a system in human’s consciousness

System – it is selected by human from other phenomena definite phenomenon (body or process) as a definite set of interrelated (connected, joined) parts of this phenomenon.

All phenomena are reflected in human’s consciousness as systems!

Any thought is a system, built from other thoughts and building other thoughts. Thinking means systems thinking - analysis, comparison and synthesis of systems.
Multilevel or hierarchical structure of systems

Order and disorder of structures – arrangement of system’s structure

Systemic visualization of two levels human’s action

Human’s action

COGNITION CONSIDERATION BEHAVIOR

Cogn Consid Behavior Cogn Consid Behavior Cogn Consid Behavior
SYSTEMEOLOGY – applied systems theory

For example - SYSTEMEOLOGY OF EDUCATION

Education – it is specially organized gaining of life experience for life.

General structure of human’s life experience

Result of education is set of person’s knowledge, skills and attitudes

[ Latvia’s law of education, 1998 ]

Educational process involves learning/teaching and upbringing activities

[ Latvia’s law of education, 1998 ]

Knowledge
(What is this?)

Skills
(How to do this?)

Attitudes / Values
(Why to do this?)

The principal core structure of humans’ educatedness -
life experience (knowledge, attitudes, skills) for life (cognition, consideration, behavior)

<table>
<thead>
<tr>
<th>SKILLS - realization of abilities</th>
<th>CONSIDERATION (valuation, goal defining, decision making)</th>
<th>BEHAVIOR (planning, providing resources, execution)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S k i l l s of gaining information and its’ analysis and synthesis</td>
<td>Evaluation, goal defining and decision making</td>
<td>S k i l l s of planning, providing resources and execution</td>
</tr>
<tr>
<td>ATTITUDES - value orientation</td>
<td>Cognition of values (creation of sample values - what is good?)</td>
<td>Development of attitudes</td>
</tr>
<tr>
<td>KNOWLEDGE - facts and causality relations</td>
<td>Obtaining knowledge (what is it and why is it so?)</td>
<td>Processing of knowledge (critical thinking)</td>
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Concluding notes.

There are always many problems in our life and education -
(what means specific state of our consciousness
when we do not know what, why and how to do)

To solve our problems - we need to develop our thinking abilities -
we need to develop OUR SYSTEMS THINKING

WE ALL NEED TO STYDY SYSTEMS THEORY

To have better life -
we need to make our people better!

Good luck to all of us, dear colleagues!

Some references:

• Agoshkova, E.B., Systems thinking in the twenty-first century.  
  http://web.bu.edu/wcp/Papers/TKno/TKnoAgos.htm (accessed 25.01.09)

• Joseph O’Connor, Ian McDermott. THE ART OF SYSTEMS THINKING (Essential 
  Skills for Creativity and Problem Solving). THORSONS An Imprint of 

• Draper L.Kauffman, Jr. INTRODUCTION TO SYSTEM THINKING, 1994.

• Barry Richmond, Steve Peterson. INTRODUCTION TO SYSTEM THINKING, 1996.

• D.Halpern. THOUGHT AND KNOWLEDGE : AN INTRODUCTION TO CRITICAL 