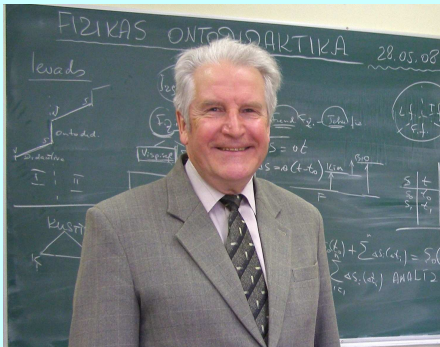


University of Gdansk , Poland  
February 2nd, 2010

Debate  
"Natural Science and Creation of Human"

**BALANCED artistic feelings (ARTS)  
and scientific mind (SCIENCES)  
within our modern Life and Education**



University of Latvia  
Assoc.prof., Dr.Phys.

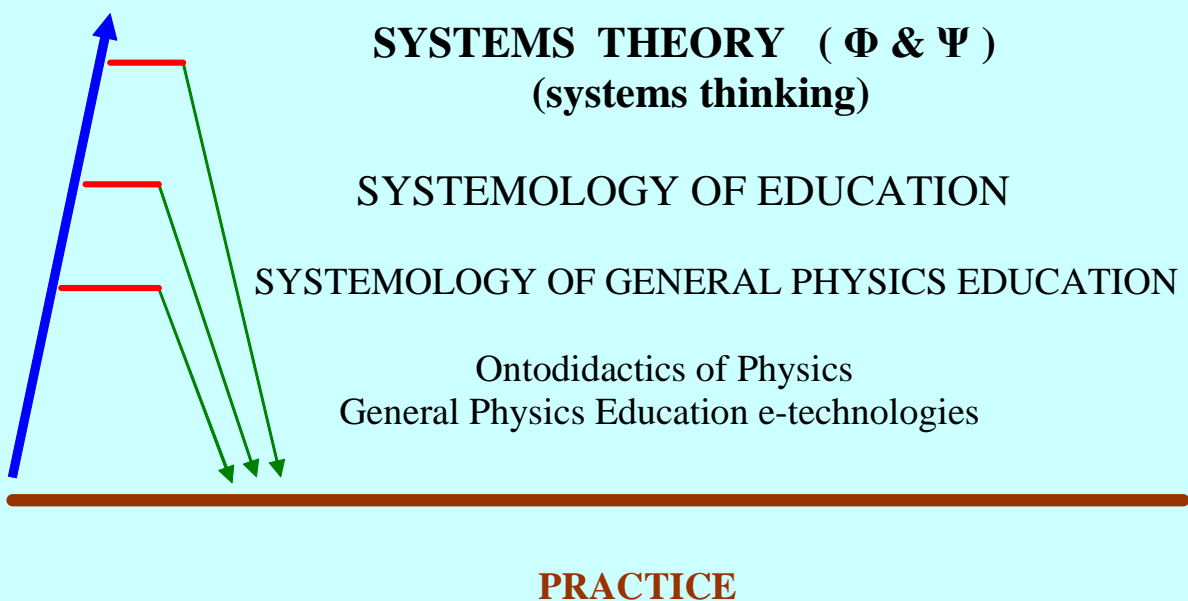
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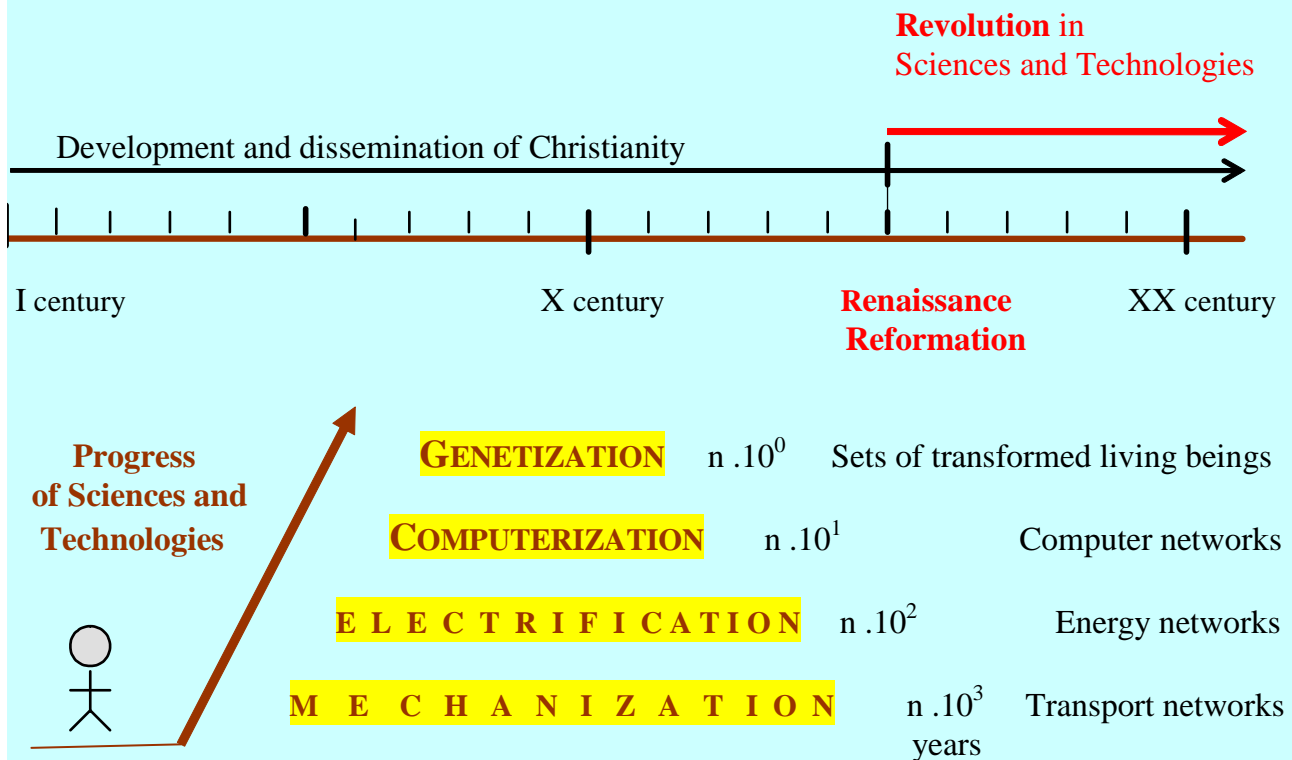
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My recent fields of **research** and **development**



## Development of modern Western Culture and Civilization, Life and Education



### Discussing educational creation of modern HUMAN

by means of balanced development of his/her artistic and scientific spiritual abilities (FEELINGS and MIND),

**there are three main aspects selected :**

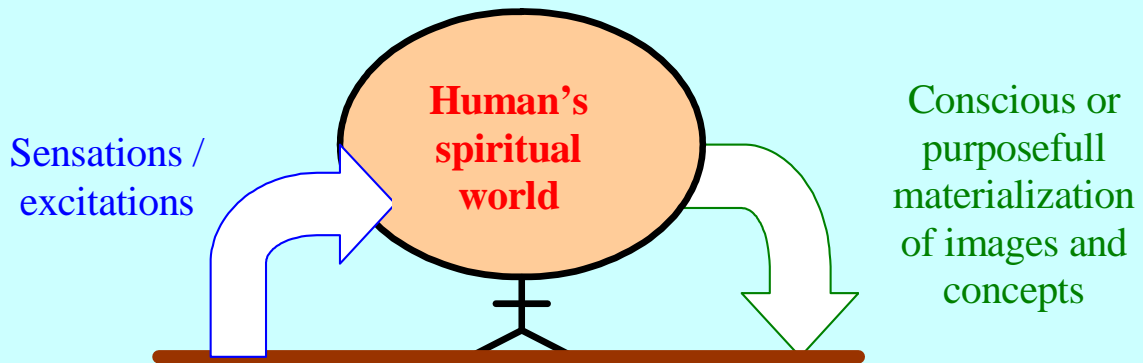
**HUMAN** (what does it mean “human” today, **artistic and scientific reflection of sensed world within human’s world of thoughts** )

**HUMAN’S LIFE and EDUCATION** (what does it mean “education” today and **what education for what life** in our future? )

**HUMAN’S SYSTEMS THINKING** (what does it mean “systemic” reflection of sensed world within *homo sapiens* consciousness? )

## Human – body and spirit

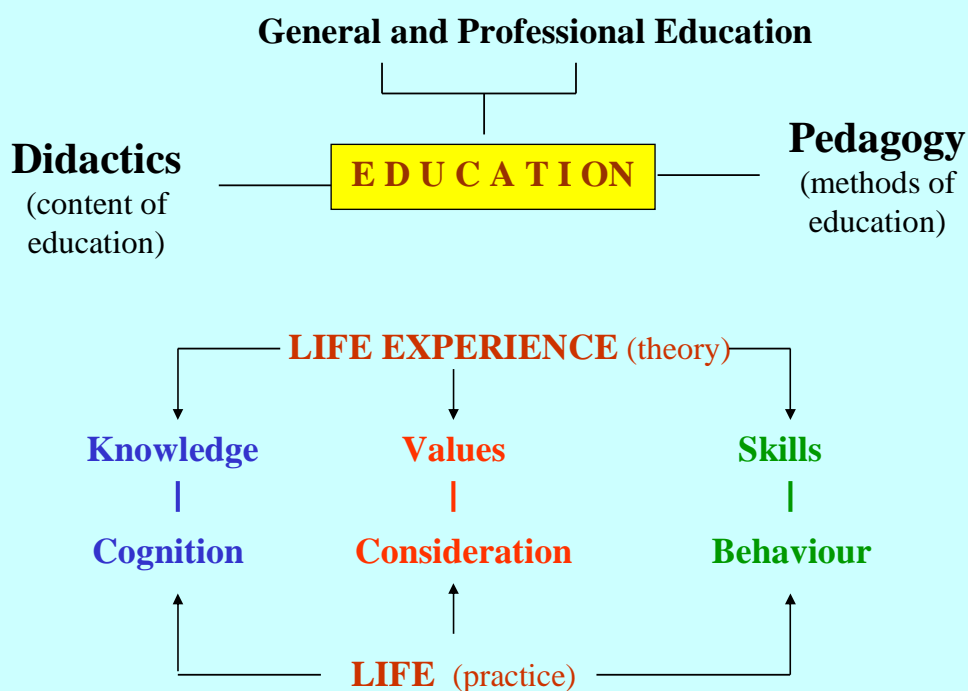
*Homo sapiens* conscious (artistic and scientific) reflection  
of sensed world and following purposeful actions as  
conscious materialization of corresponding images and concepts



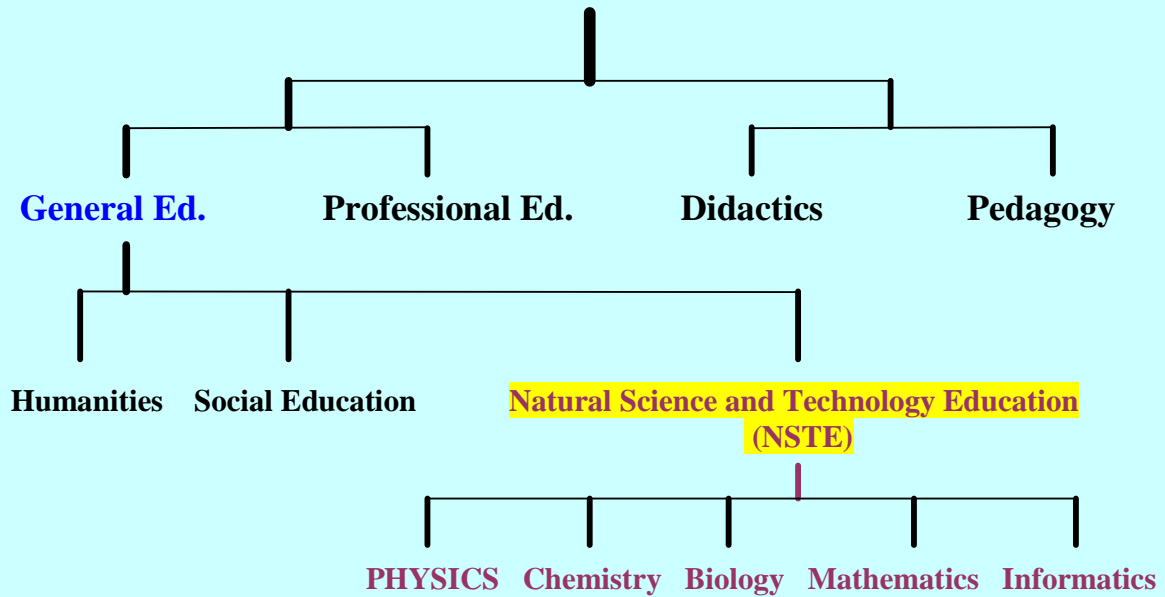
World – human's life medium

**Arts** - images, emotional expression of thoughts - **FEELINGS**  
**Sciences** – concepts, rational expression of thoughts - **MIND**

**EDUCATION** as educational activity -  
it is specially organized gaining of  
**LIFE EXPERIENCE FOR LIFE**



## Research & Development of E D U C A T I O N



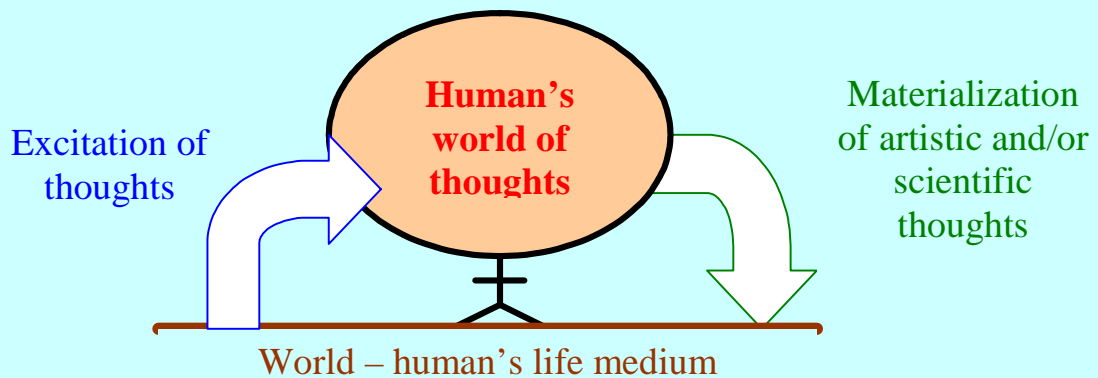
**What General Education for what life?**

## What education for what life ?

E D U C A T I O N		L I F E S T Y L E	
		Development	Existence (consumer's life)
<b>SCIENTIFIC</b>	<b>MIND</b> (concepts, <i>comprehension</i> )	Fundamental and applied research	Service, control, exploitation of our modern life medium
<b>ARTISTIC</b>	<b>FEELINGS</b> (images, <i>imagination</i> )	Inspiration	Enjoyment
<b>PRAGMATIC</b>	<b>WILL</b> (needs, resources)	Pragmatic creativity	Everyday use of artistic and scientific achievements

## Systemic organization and action of human's consciousness

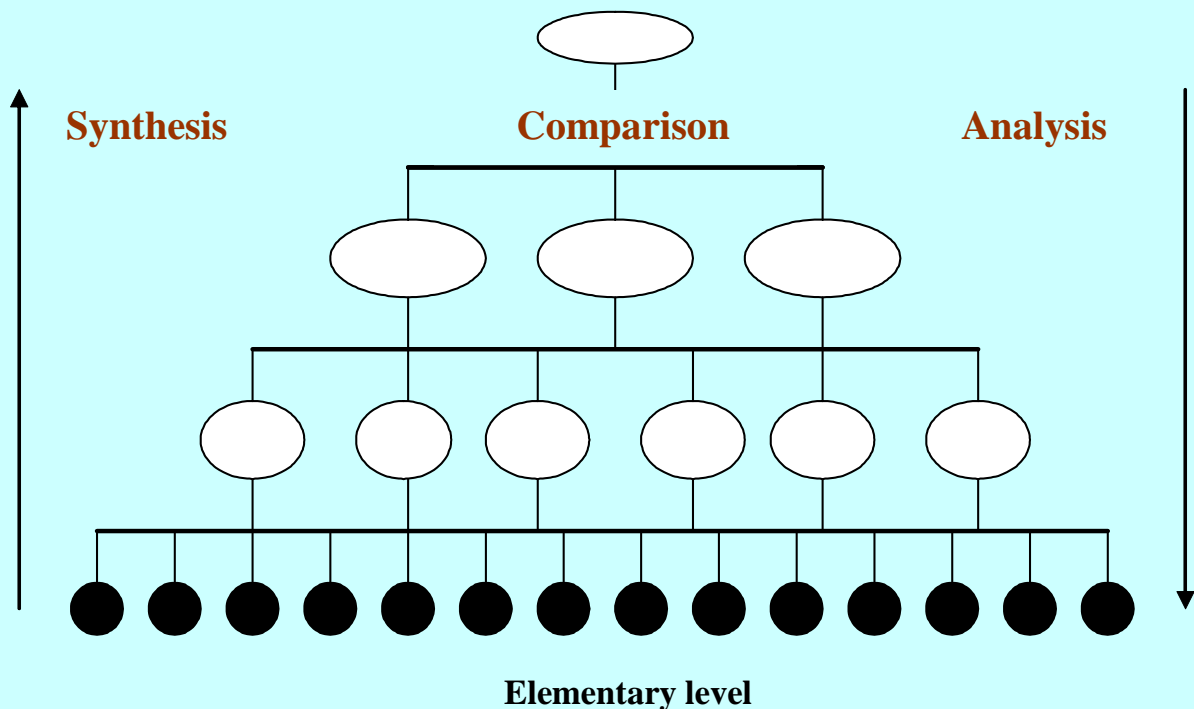
**T h i n k i n g – spiritual process  
as systemic processing of information within human's brain**



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

**There are artistic and scientific thought systems  
within human's consciousness**

## Multilevel or hierarchical structure of systems



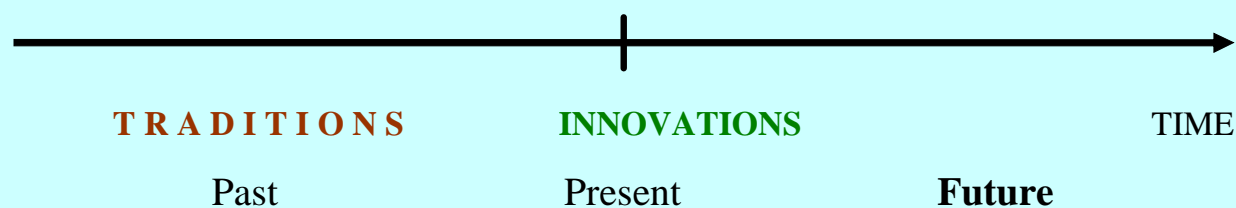
**Arrangement** – indicator of order and disorder balance in a system

**Let us work for better life and education in our future !**

**Let's make our future life better!**

**Let's make better education for better future life!**

**Let's make better people for their better future life!**



**Good luck to all of us !**



**LIFE EXPERIENCE :**

**knowledge,**

**values,**

**skills -**

**for LIFE :**

**cognition,**

**consideration,**

**behaviour !**

**Thank you  
for your  
attention!**

**University of Latvia**

**Assoc.prof., Dr.fiz.**

**ANDRIS BROKS**

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# Some additional material follows !

Selected schemas – **maps of thoughts**

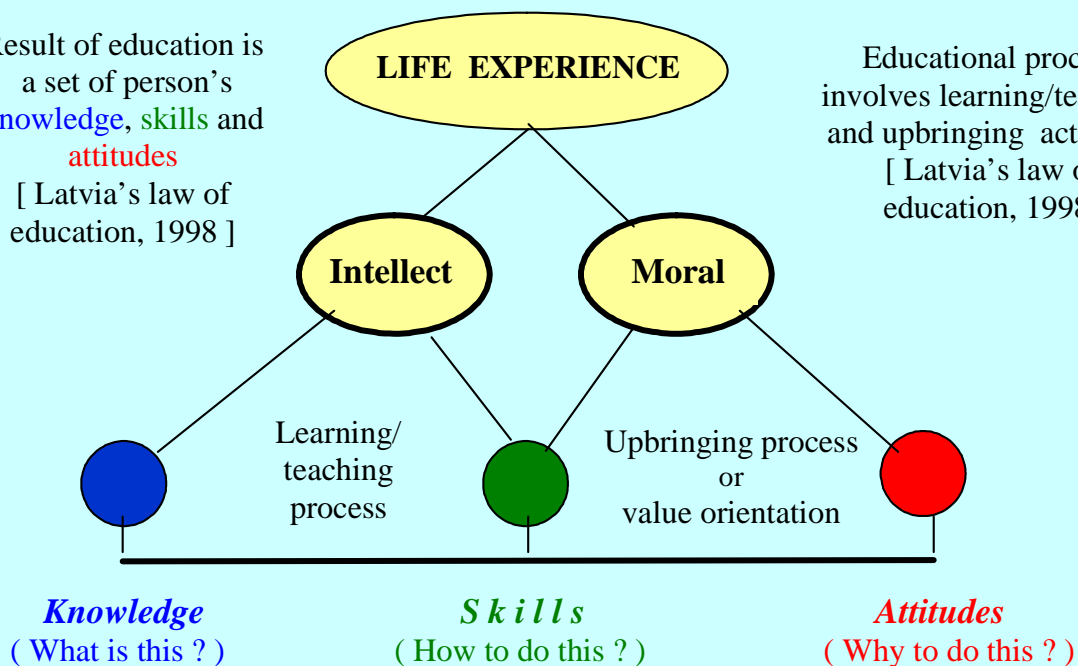
from my articles – available in my blog :

<http://blogi.lu.lv/broks/>

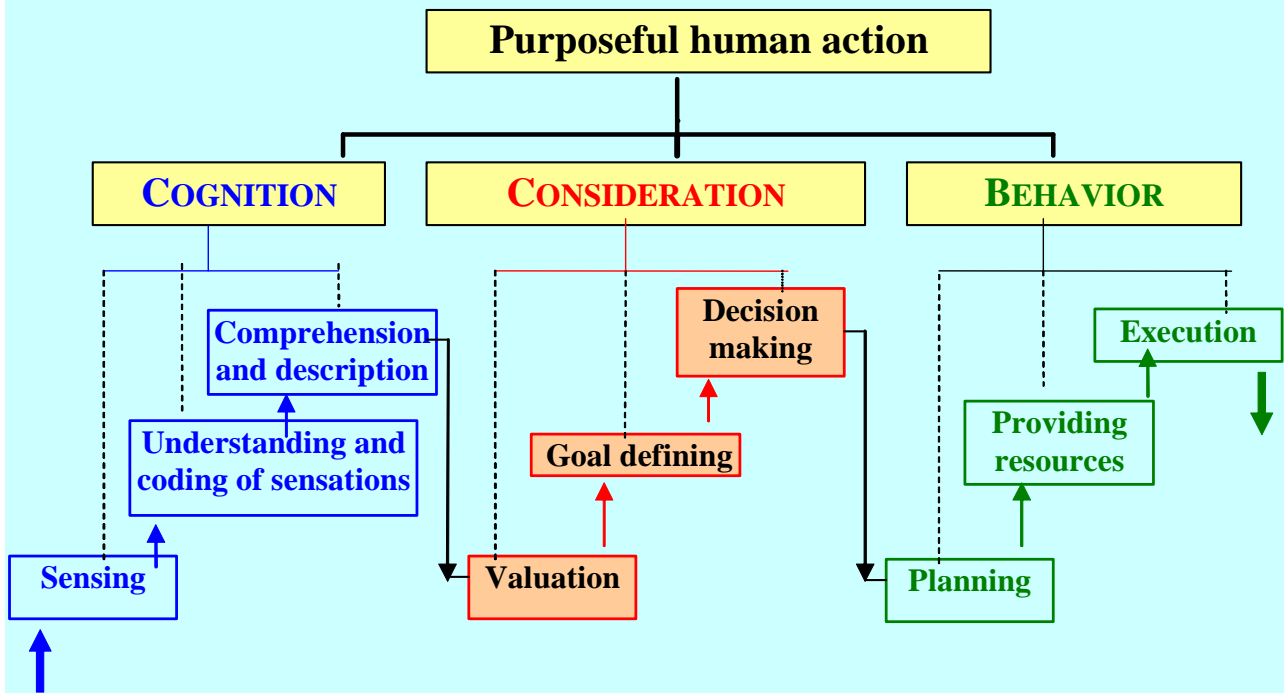
## General structure of human's life experience

Result of education is  
a 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 ]



## Detailed structure of purposeful human actions



## The principal core structure of humans' education -

**life experience** (*knowledge, attitudes, skills*)

**for life** (*cognition, consideration, behavior*)

	<b>COGNITION</b> (sensations, coding, description)	<b>CONSIDERATION</b> (valuation, goal defining, decision making)	<b>BEHAVIOR</b> (planning, providing resources, execution)
<b>SKILLS</b> - realization of abilities	Skills of gaining information and its' analysis and synthesis	Evaluation, goal defining and decision making <b>skills</b>	<b>Skills of planning, providing resources and execution</b>
<b>ATTITUDES</b> - value orientation	<b>Cognition</b> of values (creation of sample values - what is good?)	<b>Development of attitudes</b>	Practical realization of <b>attitudes</b>
<b>KNOWLEDGE</b> - facts and causality	<b>Obtaining knowledge (what is it and why is it so?)</b>	Processing of <b>knowledge</b> (critical thinking)	Use of <b>knowledge</b> in practice

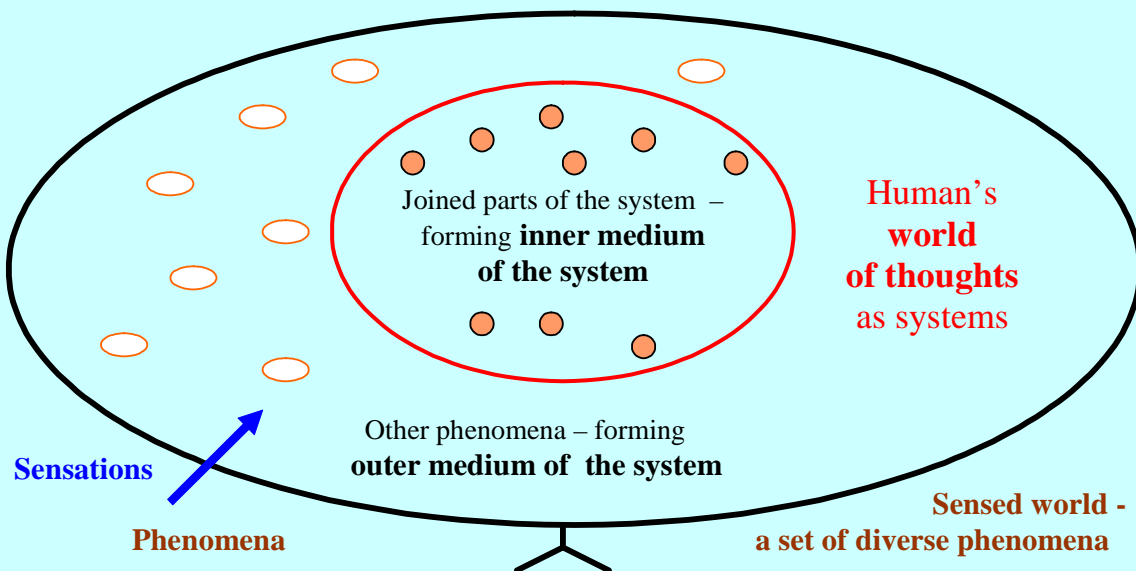


## Balanced development of human's conscious spirit

	<b>FEELINGS</b> (images - artistic way of thinking)	<b>MIND</b> (concepts - scientific way of thinking)	<b>WILL</b> (evaluation of the usefulness of given images and concepts)
<b>Pragmatic people</b>	*	*	Materialization
<b>Scientific people</b>	*	Conceptualization	*
<b>Artistic people</b>	Imagination	*	*
	ARTS	SCIENCE	ECONOMY

Self-sufficient and creative person today needs highly developed **system** of feelings, mind and will, usually with definite accent on appropriate group of personal properties.

## SYSTEMS THEORY – general theory of systems thinking: all sensed phenomena are reflected in human's consciousness as systems



**Any reflected phenomenon as corresponding thought is a system !**

**SYSTEM** – it is selected by human from other phenomena definite phenomenon (body or process) as a set of interrelated (connected, joined) parts of this phenomenon.  
**Human's thinking means systems thinking - analysis, comparison and synthesis of thoughts as systems.**

**World of thoughts (artistic feelings, scientific concepts) – *homo sapiens* artistic and scientific **systemic reflection** of sensed material world - **building systems** of thoughts**

Development of human **FEELINGS** - it means **systemic development of imagination** as **artistic thinking**, based on sensations when developing systems of images – from elementary up to high level **image systems**.

Development of human **MIND** - it means **systemic development of conceptualization** as **scientific thinking**, based on concepts when developing systems of concepts – from elementary up to high level **concept systems**

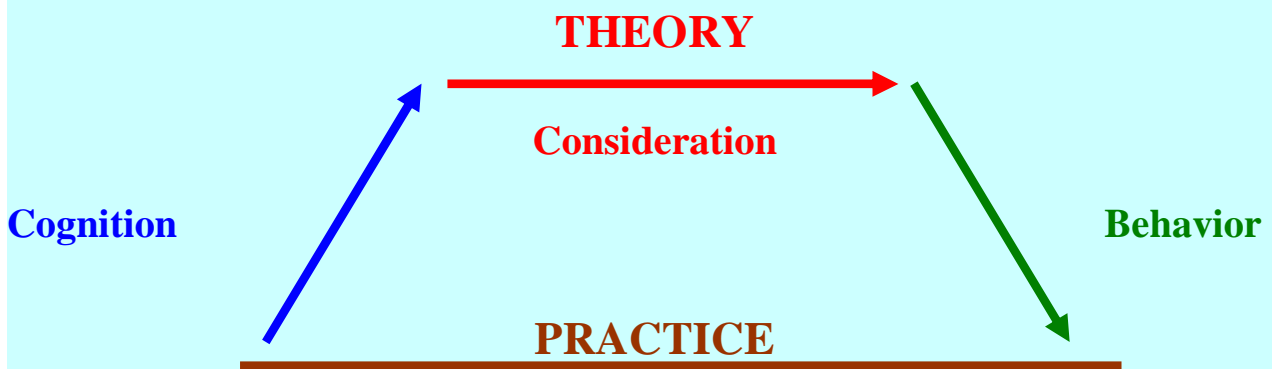
**S y s t e m s** of thoughts –

- \* **artistic** (image based) **systems**
- \* **scientific** (concept based) **systems**
- \* **pragmatic** (will based) **systems**

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

**Systems theory** – general theory of human's thinking!

**World of thoughts – it is SYSTEM of thoughts**



**Systems thinking** - reflection of real world by human's selected parts, comparing and connecting them together in definite systems as a definite sets of these interrelated parts within definite outer medium (environment).