

Early Development of the Human Being Ideal Constituent and Art Cognitonics as the Answer to the Challenge of Knowledge Society

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ABSTRACT: *It is broadly accepted that success of countries in economic and social competition considerably depends on the quality of creative class and of its proportion relatively to all working people. The analysis shows that the principal distinguished feature of this class representatives is a well developed ideal constituent. First of all, it means that such people have high creativity, a dream to do something good and useful for many people, the increased ability of social collaboration, and increased awareness of social responsibility. It is broadly understood that the main contribution to the development of these qualities should be made during preschool and school years. This paper states the approach of a new scientific discipline called cognitonics (very shortly, it is the science about the human being in the digital world) to early development of mentioned qualities and, as a result, to the development of the human being ideal constituent. In this connection, a significant branch of cognitonics called art cognitonics is introduced. Besides, proceeding from the fundamental results of cognitonics, the expedience of creating a new branch of sociology is grounded, this new branch could be called sociology of sublime values dynamics. Its main objective is to be monitoring the evolution of the vector of the personality's ideal constituent.*

Keywords: Knowledge Society, Digital society, Humanbeings, Cognitonics

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1. Introduction

The modern information society is turning in many developed countries into knowledge society (or smart society). There are serious reasons to believe that success of countries in economic and social competition considerably depends on the quality and proportion of a specific minor part relatively to all people of the country. R. Florida [1] introduced the term “creative class” for denoting this specific minor part of a country’s population. He divides this class into two subclasses: super-creative core and creative professionals. The members of the first subclass are qualified as being fully engaged in the creative process. These

are, first of all, scientists, engineers, programmers. These specialists create innovative commercial products and services, invent energy saving technologies, etc. According to [1], this subclass includes over 12% of all U.S.A working positions. The subclass of creative professionals consists of knowledge-based workers and specialists working in business, finance, the legal sector, healthcare, and education. As a whole, R. Florida described the creative class as comprising (in the year 2002) about 30% of working positions in U.S.A.

The main ideas of the creative class conception well correlate with the central idea of the *smart fractions theory*. It says that a relatively small fraction of persons with highly developed cognitive abilities makes over proportional contribution to growth and prosperity of the society they are members of [2].

The analysis shows that the distinguished feature of the creative class representatives (especially of the supercreative core) is a well developed ideal constituent of the personality. This constituent includes the presence of a positively-coloured, constructive dream, creativity, the ability of social collaboration, and social responsibility.

That is why the problem of creating theoretical approaches and educational methods contributing to the growth of the human being ideal constituent is highly topical from the standpoint both of economic growth and social progress.

It is well known that preschool and school years play the decisive role in the development of the human being ideal constituent. The aim of this paper is to describe some central ideas of the approach of cognitonics (or the science about the human being) to early development of the human being ideal constituent. The term “cognitonics” was introduced by V. A. Fomichov and O. S. Fomichova in a paper published in 2004 in Canada. The first fundamental paper on cognitonics in an international scientific journal is [3]. The ideas of cognitonics have received a broad support of international scientific community. In particular, the scholars from 23 countries participated with the papers in the First, Second, Third, and Fourth international scientific conferences on cognitonics in Slovenia (Ljubljana, Jozef Stefan Institute, October 2009, 2011, 2013, and 2015) being the subconferences of the international scientific multiconferences Information Society 2009, 2011, 2013, and 2015 (see <http://is.ijs.si>). Many scientists and educators say that the ideas and methods of cognitonics have helped them to solve concrete difficult practical tasks; e.g., see [4, 5].

The main attention in this paper is paid to grounding the significance of developing the ideal constituent of young children and adolescents and to indicating some new approaches to solving this problem provided by cognitonics.

2. Determining Features of the Constructive Business Representatives' Personality

Dr. Jens Pohl, Professor Emeritus of California State Polytechnic University (CALTECH) and a Vice-President of Tapestry Solutions (a Boeing company), carried out a very interesting analysis of basic personal features of entrepreneurs and of their activity's significance for USA economics. He done this in the keynote address delivered at the Opening Session of the 23rd international scientific conference on Systems Research, Informatics and Cybernetics, held in August 2011 in Baden-Baden, Germany [6]. According to statistical data of USA government, over 70% of all new working positions in the year 2007 were created by the companies of the age less than 10 years. Over 60% of new working positions in this year were created by very young companies, their age from one year to five years. Economic experience accumulated in abroad shows that a recession, especially as deep as in 2008, is followed by the manufacturing of a broad spectrum of new products and by mastering of entirely new, unexpected markets. The personal qualities of entrepreneurs play the key role in these processes.

Let's use the term “constructive business” for the activity of entrepreneurs aimed at creating new kinds of production and new kinds of services being objectively significant for the society. For instance, the development and distribution of new technical means for automation of agricultural works or works in building industry, new computer systems, and new means of communication. The content of [6] shows that the main accent in this keynote address is just on the representatives of constructive business (though this term is not used). The starting point for carrying out a study discussed in [6] was the following observations:

(1) The opinion that entrepreneurship creates wealth is true as a whole. However, this wealth is distributed very irregularly and is associated with a relatively small number of people. According to the data from [7], the most part of entrepreneurs gain less money in their companies than they would gain as hirelings.

(2) It is very difficult to launch new business, and the most part of the efforts to create a company don't reach the stage of operational business. According to statistical data, after 7 years of activity two thirds of the companies are not able to get benefit during three consequent months.

Taking into account these observations, it would be natural to put the following question: what peculiarities of the personality urge people to become entrepreneurs? The analysis carried out in [6] shows that the principal engine of entrepreneurship is the following features of the personality:

- Acute non-satisfaction by the state of affairs being a consequence of a well developed cognitive-emotional sphere;
- A strongly expressed desire to achieve better results in comparison with other people, where the ground of this desire is a dream to create a product or/and to propose a service being demanded by a lot of people;
- The independence of thinking allowing to not pay attention to neglecting or disheartening opinions of the people around (often not seeing the reasons for intense work without a tangible material benefit).

Thus, just a well developed ideal constituent of the human being, first of all, the presence of a bright, positively coloured dream, the faith in the own ideas and in the own forces, creativity enable an entrepreneur in the sphere of constructive business to find the strengths for prolonged intense work, to overcome the lack of faith in the people around, and in many cases to achieve victory in his/her undertaking. It should be underlined that without faith it will be hard to be curious, creative, and innovative.

According to [6], just the readiness of the person to think in a non-standard way, creatively and to run risks for achieving his/her dream with passion and contribution of huge work is the principal driving force of economics, the principal source of innovations' emergence.

Wonderfully, the mentioned distinguished features of the entrepreneurs in the sphere of constructive business practically coincide with the features traditionally ascribed to the representatives of the so called "creative professions": writers, poets, painters, musicians, designers, etc.

That is why the attention to increasing the quality and volume of the human being ideal constituent, starting from the childhood, is necessary not only from the standpoint of supporting the gifts of future writers, poets, painters, musicians, designers, etc. but has a high social significance for forming a country's creative class as a whole.

3. Shortly About a Seven-levels Model of Consciousness Development

It is well known that preschool and school years play the key role in developing creativity, the ability of successful social collaboration, social responsibility and in the formation of positively-coloured, constructive dreams. A new angle of look at developing these qualities and a broad spectrum of original educational methods is provided by cognitronics. To say very shortly, it is the science about the human being in the digital world [3, 8 - 10].

The constructive core of cognitronics includes the System of the Methods of Emotional-Imaginative Teaching (the EITsystem). This system contains educational methods aimed at developing cognitive-emotional sphere of the learners, in particular, emotional intelligence, associative abilities, creativity (first of all, through developing the skill of understanding and composing metaphors), reasoning skills, linguistic mechanisms, communication culture, the awareness of social agreements and social responsibility. The core of the EIT-system was elaborated by O. S. Fomichova in the first half of the 1990s and has been expanded in the second half of the 1990s and in the 2000s. The EIT-system is underpinned by our Theory of Dynamic Conceptual Mappings (the DCM-theory). The DCM-theory and the EIT-system are described, in particular, in [11 - 21].

The EIT-system has been mainly realized at lessons of English as a foreign language for Russian-speaking children and at the lessons of poetry and literature in English, at lessons devoted to explaining the symbolic language of painting, the culture of communication, and the symbolic language of classical dance. These kinds of lessons are considered in numerous countries as highly appropriate for young children and adolescents.

The effectiveness of the EIT-system became the starting point for enriching developmental psychology (DP) by an original model of developing conscious control in the childhood: the control of thought, emotions, and actions [10, 22]. Before the

publication of [10], DP possessed the basic model of consciousness development proposed in [23]. This model considers four levels of consciousness development (LOC) and covers the ages from nine months - one year to four years. The papers [10, 22] propose to expand this model by three additional levels with the numbers 5 - 7 (LOC5 – LOC7), covering the ages from 5 - 6 to 13 - 14 years.

A very short, preliminary description of these levels is as follows. The first additional level LOC5 is called *the level of broad beauty appreciation*. Reaching LOC 5 by the person means that this person possesses a well-developed feeling of beauty in various manifestations: the beauty of a thing, of an idea, of an expression, of a picture or sculpture, of the interpersonal relationships, etc. [9, 10, 22].

The second additional level LOC6 is called *the level of appreciating the value of thought*. The successful transition from LOC 5 to LOC 6 means that (a) a child is aware of the fact that his/her ideas may be socially significant, i.e. the child may be appraised by the friends or adults for the originality and beauty of his/her idea; according to [17, 19], it means that the Thought-Producing Self of the child has been realized; (b) a child appreciates the value of the thoughts of other persons [8, 9, 10, 22]. The third additional level LOC7 is called *the level of enhanced awareness of social agreements and social responsibility*. Reaching LOC 7 by a person means that this person is sufficiently mature in the social sense, i.e. possesses an enhanced awareness of social agreements and social responsibility [9, 10, 22].

It should be underlined that modern preschool and school educational systems in various countries encourage only a rather small proportion of children to reach the 5th - 7th levels of conscious control. But to considerably increase this proportion is vitally important for successful socialization of children in knowledge society. Happily, at least one broadly applicable way of solving this problem is given by the EITsystem.

4. Art Cognitronics

Art cognitronics is one of the principal branches of cognitronics, or the science about the human being in the digital world. It aims at tuning the cognitive-emotional sphere of the young children and adolescents with the help of well-known works of art. The goal is to create a bright semantic trace in the world's conceptual picture of the learner corresponding to an idea explaining or illustrating a moral value, communicative situation, a situation of making a decision, cognitive process itself, the process of self cognition and consideration, the seething cocktail of emotions, a way of viewing the world around, etc.

Art cognitronics establishes the links between the objects, situation, processes, views of a person (a beholder) and the work of art that becomes a metaphor or a vivid illustration (vivid mental representation) of something the beholder is considering about.

That is why the consciousness of the beholder receives a considerable impulse to developing the ability of establishing diverse analogies and consequently to finding a new look at a situation.

Art cognitronics is characterized by the following things: -

- Paining is regarded as a language to express oneself, one's views, values, mood, attitude, look; the works of art help to better understand something, the troubles of the beholder, a painter is regarded as an interlocutor, and his/her work of art – as his/her way to convey a message;
- The subject of the excursion (in our case – the talks) may be a painter and his/her works of art, but in fact in case with a painter, art cognitronics reveals the philosophical and practical questions the painter faced as a human being and the way he/she answered the question with his/her pictures or sketches;
- Mindfulness, that is, coming to understanding and making a decision paying attention to details; the details are a kind of a key to grasping the meaning of the message conveyed by the picture and the same key as startup of the process of consideration on the problem in general as a kind of personal response to the ideas evoked by the work of art;
- Co-creation as the process of reconstruction of the painter's idea of the sitter and, as a result, the reflection of the sitter in the mirror of the painter's conceptual picture of the world; that is a mental representation of the sitter's conceptual picture of the world;

• Serendipitous information, that is, the information that is desired but not expected; it turns a work of art in general or some details on the canvas (a key to that work of art) into a bright metaphor of a possible solution to a problem under consideration.

Example 1. At the very beginning of the way, a painter decides what to choose: portrait painting or landscapes. This choice can be compared with the choice at school between mathematics or humanities. It is important to choose mathematics not because one is not good at languages and literature but because one wants to better understand the beauty of mathematics and wants to perceive the essence of the earth as a planet. One should choose the humanities because he/she is bewitched by the word, understands that any culture is underpinned by language and wants to penetrate the very essence of the cognitive process, the world's conceptual picture of the people belonging to different cultures.

The same happens in case of painting: one shouldn't choose landscapes because he/she can't understand the human being as a system. A painter chooses the landscapes because he/she discovers the harmony, the beauty in the nature and, unfortunately, can't find that beauty and harmony in the human being.

Example 2. It is well known that in order to enrich the colour of their canvases, the impressionists made use of what is known as division of colour and optical blending. For instance, to represent a green meadow, they put little tabs of blue and yellow on the canvas which are supposed to be combined to form green in the eye of the beholder – a far more intense green than one taken straight for the artist's palette. That is why it is impossible to understand the idea of a picture standing close to the canvas. We have to step aside and look at it from some distance to enjoy it and to have the desired effect.

The same situation we have in every-day life. "Multiple debs, reflections" prevent us from grasping the sense of what is happening. As in case with impressionists' canvases, we have to have a look at the situation from a distance, and distance in this case is equal to time distance. We need some time to better understand what has happened, and this will help us to cope with the situation.

Example 3. Let us consider the picture by Claude Monet "Waterlilies, Green Harmony" (painted 1899). One can see a pond, a Japanese bridge that spanned the pond, and the water surface dotted with lilies. Even the sky is suggested only by its reflection in the water. The beholder is faced with a vast coloured surface. Though we know for sure that the lilies are white, but in fact there are no white lilies in the picture. They are of different hues due to the reflections on them of the trees, sky, plants, bridge, etc. That is the reflection of the surrounding objects. Then in every situation that troubles a person, he/she has to take into account all the hues of the problem, almost all details, facets of the situation under consideration. The idea evoked by the picture that there are no white lilies in the pond leads to understanding the fact that there are no "black and white situations" in the life, and one should try to see all the "hues" of a life situation in order to take a wise decision in this situation.

5. A New Branch of Sociology: Sociology of Sublime Values Dynamics

One of the peculiarities of knowledge society is the improved information processing ability of people and intense children-computer interaction being very often beyond the limits of necessity.

Since childhood children know how to use mobile phones, send SMS, use computer and smart TV. On the other hand, they emulate grown-ups and acquire the skills of rational approach to solving the problems. Very often, it is underpinned by the idea of profit of any kind. It is not the idea of reciprocation or gratitude but the idea of payment to do something in return.

In case of aggression (fighting, calling names, cyber bullying) the model of behaviour turns out to be "tit for tat". Even in case with the relationships with parents, very often there is a strong link between a good mark and a kind of payment for it. It leads to the ideal of expedience that excludes, in great number of cases, the idea of the human being ideal constituent. An expedient action might be useful or convenient for a particular purpose, though not necessarily fair or moral. Under the framework of upbringing, it may turn reasoning and rational approach to problem solving into a task how to get something for oneself, how to get profit, how to earn money, how to acquire better working position, but, very often, without any consideration about honour, dignity, right or wrong, without a conscious thought about responsibility, possible consequences, that is taking the decision without any connection with sublime values.

It is possible to roughly split people in two groups according to their system of values and the way they define the priorities [10]. The main question people answer are: what you value, what you believe, and how you act. The way people answer these

questions and define priorities influences the process of decision making which is the result of the cognitive process based on information.

The first group includes people whose decision is underpinned by not only sound reasoning but also by ideal values, such as dignity, honour, beauty, etc. The second group contains people whose decision are underpinned by sound reasoning and pragmatic values, such as expedience, calculation, profit, might, suggesting the well-known formula “business – nothing personal”. *People belonging to the first group* are more independent and consistent in taking decisions. It is more difficult to influence their process of taking decisions, they have faith in what they are doing and they are motivated by sublime values and the idea of calling. *People belonging to the second group are less independent and consistent in taking decision.* It is easier to influence their process of taking decision, promising a profitable bargain or any other profit [10].

An example can be taken from the book by Enid Blyton “The Famous Five on a Treasure Island”. There was a situation when parents were offered quite a good sum of money for a little island with a ruined castle on it. The sum was far more than they ever thought of getting. They struck a very good bargain. At that moment they didn’t think about their only daughter who they had gifted the island too, and the island became an embodiment of her inner world. The girl reproached her parents: “Though you only gave me the island when you thought it wasn’t worth anything,” said George, her face wide and angry, “As soon as it is worth money, you take it again away. I think that’s horrid. It – it isn’t honourable”.

It looks topical to develop a new branch of sociology called “*the sociology of sublime values dynamics*”. Its main objective might be as follows: *monitoring the evolution of the vector of the personality’s ideal constituent.* The results of the studies in this branch could explicitly describe the peculiarities of taking decisions in various situations by some large groups of people, explicate the prevailing approach to taking decisions.

6. Conclusion

The principal driving force in knowledge society is its creative class. It is shown in this paper that the main distinguished feature of the creative class representatives is a well developed ideal constituent (it includes, first of all, creativity, a dream to do something useful for people, increased ability of social collaboration, and deepened feeling of social responsibility). That is why the task of increasing the quantity and proportion of a country’s relative class should imply a strong attention to the development of the personality’s ideal constituent in children and adolescents.

A broad collection of original, well tested educational methods aimed at developing the human being ideal constituent is provided by cognitronics – the science about the human being in the digital world. This collection is the main part of the System of the Methods of Emotional- Imaginative Teaching developed in Russia.

The proposal to develop a significant branch of cognitronics called Art Cognitronics is formulated.

Art Cognitronics may be considered as a metaphor: as a book with pictures and conversations for people of any age, on the one hand. On the other hand, as a way of answering the question evasively but brightly, using both languages: natural language and language of painting, creating a thrilling, thought-provoking atmosphere to make a person (especially an adolescent) become an interlocutor of a painter. It means that he/she acquires an ability and possibility to continue that dialog by him/herself in case of emergence or many other cases.

Art cognitronics becomes a considerable part of the process of thinking, improves serendipity, information processing abilities, cognitive process, and makes much higher the consideration level of taking a decision. On the level of a personality, art cognitronics makes the world of art a part of the world’s conceptual picture but not a parallelly existing world for those who can it understand.

Art cognitronics expands the friendly space of interaction and includes the smartest painters of the past and present in the process of interaction. It makes the space of art gallery with pictures of past and present be a necessary one fore the adolescents and grown-ups.

Art cognitronics leads them to the idea that the humanitarian problems are similar despite the time we are living in and makes the problems much more bearable.

The final scientific result of this paper is the proposal to create a new branch of sociology - the Sociology of Sublime Values Dynamics.

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