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# The Student-Self Oriented Learning Model as a Paradigm for Supporting and Developing Emotional Intelligence and Creativity

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## ABSTRACT

Proceeding from broadly accepted role of emotional intelligence (EI) in professional and personal life, the paper suggests a new learning model (LM) called Student-Self Oriented LM (SSOL-model). It is defined as the model being beneficial for self-cognition and self-construction through the prism of the acquired knowledge and life experience. A successful implementation of the SSOL-model is shortly described. It is the system of emotional-imaginative teaching (the EIT-system), developed by the authors in the 1990s and expanded in the 2000s. This system is underpinned by the authors' Theory of Dynamic Conceptual Mappings (the DCM-theory). The EIT-system includes an original method of developing figurative thinking and creativity at the lessons of second language (English for Russian children)., literature and poetry in English and Russian, symbolic language of painting, and communication culture. It is stated that this method may be used as an effective starting framework for education in knowledge society. The DCM-theory and the EIT-system became the starting point for developing the foundations of a new scientific discipline called cognitonics. The significance of its well developed branch - art cognitonics for helping the learners to answer the encountered moral questions is indicated.

## General Terms
Human Factors, Languages, Theory

## Keywords
Emotional intelligence, art cognitonics, creativity development, serendipity, intelligent tutoring system, early socialization of children, theory of dynamic conceptual mappings, system of emotional-imaginative teaching, cognitive engagement

## 1. INTRODUCTION

The progress of science and technology in the end of the $20^{th}$ – the beginning of the $21^{st}$ century, globalization process underpinned by the stormy expansion of the Internet have posed new demands to education. Likely, the most significant demand is the formation of the preconditions of mastering several professions during the life: for the most part of people, it is impossible in knowledge society (KS) to have only one profession during the life. The second most significant demand seems to be the ability to quickly generate new knowledge, the skill of integrating knowledge pieces obtained from numerous dispersed information sources, the ability of creative thinking while processing new knowledge and its connections with available knowledge.

The analysis of the literature shows that the scholars from many countries consider the problem of supporting and developing creativity of the learners as a highly acute problem. Until the 2000s, the majority of publications on creativity studied the peculiarities of intelligent activity of outstanding scientists, painters, writers, poets, etc. (see., e.g., [16]). This kind of creativity is often called in modern literature "big C creativity" (BCC), this term was introduced in [21].

However, the realities of information society transforming in many countries into KS caused the emergence of the term "little C creativity" (LCC) [2]. The birth of this term reflects the demand of everyday creative thinking. The two criteria of BCC are the originality and high significance for big groups of people. Creativity demonstrated by children usually is subjective, it is determined by their prior knowledge. An important characteristic of children's creativity is imagination.

The realities of KS demand to support and develop LCC in order to increase the proportion of the specialists possessing BCC. But it is not obvious how to achieve this global goal. The paper [20] analyses the results of a large scale study carried out in USA and focused on the evolution of average level of intelligence and creativity during two decades, since the early 1990s. The diapason of participants was from young children in kindergartens to 12th grade students and adults. The results of the study showed a steady decline of creative thinking from 1990 to 2008 among inhabitants of USA. This decline is especially considerable in kindergarten through third grade. Besides, the results of the study indicated that young children "are tending to grow up more narrow-minded, less intellectually curious, and less open to new experience" [20, p. 1]. Taking this into account, Kim [20] expressed the opinion that it is necessary to encourage creative thinking in preschool or before.

Parallelly with the term "creativity", the notion "emotional intelligence" (EI) belongs to the set of concepts  most often used in scientific publications in the field of education. According to [1], EI is the other kind of smart. The studies carried out during two decades after the birth of this notion in 1995 [17] have shown

that EI is the crucial factor distinguishing star performers of various professional roles among all performers of these roles.

EI determines the manner of a person to manage behavior, deal with social complexities, and make decisions leading to positive results. EI is the unity of four core skills forming two primary competences: personal competence and social competence. According to [1], personal competence is composed by two skills: self-awareness and self-management. The first skill is the ability of a person to accurately perceive his/her emotions and stay away of them as they happen. self-management is the ability of a person to use awareness of his/her emotions for staying flexible and for positively directing his/her behaviour. Social competence is defined by Bradberry [1] as the ability of a person to understand other people's moods, behaviour, and motives for improving the quality of his /her relationships.

During the last two decades, the psychologists have discovered a huge role of well-developed EI in taking successful business decisions. That is why now the big companies throughout the world pay a very high attention to the state of EI while hiring, promoting, and increasing qualification of their employees [18].

Since early 1990s, we have been looking for more effective principles of teaching and learning in comparison with the broadly used ones. The accumulated theoretical and practical experience shows that modern education as a whole underestimates the significance of basing on EI for making easier for the students grasping central ideas of theoretical materials to be learned.

The structure of this paper is as follows. Section 2 introduces a learning model (LM) aimed at supporting and developing EI and creativity. Section 3  considers two components of an original conceptual learning environment for studying second language (English for young Russian children). Section 4 gives a very short information about the System of Emotional-Imaginative Teaching (the EIT-system), being a successful implementation of the suggested LM.  Section 5 interprets the EIT-system as a balanced approach to combined development of EI, reasoning skills, and creativity, outlines the significance of this approach for education in KS. Section 6 indicates the importance of art cognitonics and the methods of achieving cognitive engagement at the lessons of art for improving emotional well-being of the learners. Section 7 shows the broad prospects of using the developed educational methods.

## 2. STUDENT-SELF ORIENTED LEARNING MODEL

We believe that modern education may find the ways to effectively deal with numerous open problems as a result of accepting a new LM taking into account the significance of EI in professional and personal life.

The broadly accepted student oriented LM determines the activities launched by the goal to discover the world: acquisition of information, information processing, knowledge construction. The resulting activities are constructing a new text and constructing a new sense. Then the achieved cognitive-emotional state is as follows: a student is well-educated but not intellectually and spiritually mature.

Discovering the world is based on a brand-new culture on the basis of digital opportunities and ideology. Its essence is to catch up with new technologies (but not to find one's way and incorporate it into modern reality as a new vision). It is underpinned by the curiosity and strong aspiration to discover the digital world, on the one hand, and by the desire to emulate the grown-ups and become as smart and powerful as the grown-ups or even much smarter and much more powerful.

The concept of Self is based upon our images of ourselves. The Self develops as it interacts with the most important of environmental influences. Through this social interaction the Self defines itself as a social being, which influences, and is influenced by others [22] .

Student-self oriented learning model (SSOL-model) is defined as the model being beneficial for self-cognition and self-construction through the prism of the acquired knowledge and life experience.

Natural language is the tool for constructing social reality [26]. The Self develops through the social interaction and co-creative work, because creative work suggests personal involvement and is underpinned with strong emotions (e.g., inspiration). The process is always emotionally coloured.

Under the framework of standard model, the process of knowledge acquisition often seems to the students to be first gloomy (no interest, no personal involvement), then pleasant and afterwards filled with never-ending delights. In case with the SSOL-model, the process of learning seems to the students to be pleasant and curious from the very beginning. Afterwards it is filled with never ending delight. The new model helps to exclude from the perception of educational process such characteristics as "gloomy". As a result, it arises the interaction with the environmental influences and causes cognitive engagement of the students.

This idea is intuitively clear to very many experienced lecturers. EI suggests Self, because Self is always emotionally coloured. One is never tired when the subject of the conversation (or lecture) touches his/her Self in a positive and curious way. You are never tired if we are speaking about you and want to know your life experience, you are in the centre of attention.

Strength of materials (or mechanics of materials) is known as one of most difficult disciplines for the university students – future engineers. However, 61 years ago one scientist found a thrilling way to introduce basic ideas of his discipline. This scientist is Charles Seim, he wrote the article "A Stress Analysis of a Strapless Evening Gown" in the year 1956. This article was published in the book "A Stress Analysis of a Strapless Evening Gown and Other Essays for a Scientific Age" (Robert A. Baker, 1969, 212 pages). The translation of this book under the title "The physicists are joking" became very popular in Russia in the 1970s.

The core of the proposed model consists of self-cognition, self-construction, and self-regulation of self-conscious emotions. Let's explicate these notions. Self-cognition is active transfiguration but not passive reflexion. Self is constructed through the interaction with the world (through the discovery of the world). The particular facets of the personality are improved as a result of new experience and as a result of processing the semantic trace left by a strong emotion caused by that new experience (it is the improvement of emotional experience). Self is always coloured by emotions. That is why this semantic trace deepens the emotional experience and, as a consequence, improves the emotional intelligence of the student [23] .

Firstly, the realization of this new model leads to Student – Digital World balanced partnership. It means the spiritual maturity and cultural level of the student become equal to the outstanding breakthrough in digital technologies. Secondly, the realization of the new model leads to the improvement of serendipity and turns information into serendipitous information

(unexpected but desirable). Serendipity is the ability to make pleasant and unexpected discoveries entirely by chance [19]. It leads to much higher level of socialization and to much higher level of responsibility.

To sum up, the suggested model determines the humanistic filling of education in the digital world. The new model suggests:

- a conceptual learning environment instead of a memorization-based one (it means making emotionally coloured the concepts to be learned and, as a consequence, making much easier grasping these concepts);
- the methods of achieving cognitive engagement of the students;
- a system of self-oriented questions in the process of knowledge acquisition;
- the methods of encouraging the students to discover the world aimed at self-cognition and self-construction;
- a method of teaching the students how to process serendipitous information.

# 3. EXAMPLES: A CONCEPTUAL LEARNING ENVIRONMENT FOR STUDYING SECOND LANGUAGE

**Example 1.** The experience shows that it is very difficult for five - six year old Russian students to understand why they should use in simple phrases different words "am", "is", "are" and how one should combine these words with the words "I", "you", "he", "she", "it", "we", "they". Our approach to this problem is as follows. Assume that a teacher knows that her young student Julia has a beautiful dress for theatre, a dress for kindergarten, and a dress for a bathroom. Julia agrees that she never doubts what dress to wear. Then the words "am", "is", "are" may be called the different dresses of the verb "to be" (children at this age have very vivid imagination). Besides, "am" may be called a dress for visiting the house where the word "I' lives, "are" - a dress for visiting the house where the words "you", "we", "they" live, and "is" - a dress for visiting the house where the words "he", "she", "it" live [5].

**Example 2.** In English grammar we have the Present Continuous Tense. We propose a new approach to explaining this Tense, the motive is that our many year experience has shown that this approach provides the possibility to minimize the number of errors. The peculiarity of this piece of grammar for Russian learners is the lack of similar tense in the grammar of Russian language. This tense is very important tense, because it reveals the emotional state of an interlocutor and emotionally colours the speech. It is possible to call it the Emotional Tense – the tense which reveals our emotions. For example, saying "Look, she is reading", we attract somebody's attention to something or somebody, because we are not indifferent to it. When we are talking and drinking in a cafe, we say: "I am readying an interesting book now", it means that we are carried away by the book (at least we are not indifferent towards it if we mention it while talking and drinking). We use this tense speaking about the weather, about changing situation, irritation ("You are always wearing my slippers"), to express admiration ("What a nice hat you are wearing!"), personal arrangements, etc.

This tense shows emotionally coloured attitude towards something, it doesn't just state the fact, doesn't denote something which is true in general. The personal involvement is high, the state of minute is obvious (when somebody scoops a precious, significant, or just a particular minute out of the river of time). Due to the usage of the proposed approach at lessons of English as a second language (SL), the Russian students begin to employ this tense eagerly while speaking. It makes the lessons of English grammar socially coloured and more interesting for the students. Besides, this method reveals the essence of the English character.

# 4. THE SYSTEM OF EMOTIONAL-IMAGINATIVE TEACHING AS A SUCCESSFUL IMPLEMENTATION OF THE SSOL-MODEL

In early 1990s we came to the conclusion that educational potential of young learners (5-6-7 years old) is much higher then it was broadly accepted to believe. The key to more effective realization of this potential should be the ways of establishing a correspondence between a piece of material to be studied and a certain *bright* fragment of the learner's conceptual picture of the world. We called such correspondences *dynamic conceptual mappings* [4]. That is why we started in early 1990s a study aimed at finding more effective ways of teaching and learning due to systemic basing on young learners' emotional experience accumulated, in particular, during the breakfasts and lunches, the walks in gardens and parks and along a river, while visiting school and theatres, playing various games, sport activities, etc.

Step by step, we obtained several scientific and practical results of high social significance, and these results stood apart from the principal trends in education of the 1990s and early 2000s [15]. It was done due to our original *Theory of Dynamic Conceptual Mappings* (*the DCM-theory*) [4 - 7, 12] and our *System of Emotional-Imaginative Teaching* (*the EIT-system*), based on the DCM-theory. The EIT-system is aimed at systematic development of EI, reasoning skills, sound creativity, language skills, and communication culture at the lessons of language - mother tongue and SL, literature and poetry in two languages (on the example of Russian and English), symbolic languages of painting, sculpture, garden-park art, classic dance. We have accumulated the 27-year-long successful experience of using the EIT-system in extra education in Moscow, Russia. Many aspects of the EIT-system are described in our papers published in the proceedings of the First – Fourth international conferences on cognitonics (see, in particular, [11, 13, 14]) and in the papers [3 - 10, 12].

Let's consider now such aspects of the EIT-system that concern basing on and developing EI and Self of the students.

Self is always creative, because it is a personal way of viewing the world, based on the world's conceptual picture of the beholder and his/her estimation of the events.

**Example.** The famous Russian poet Boris Pasternak gives the picture of the early spring, writing:

- Is it only dirt you notice
- Does the thaw not catch your glance?

We ask the students what makes Pasternak think that the thaw is beautiful. The answers of young students (7 years old) are as follows:

- The thaw is like a herd of dapple grey deer basking in the spring sun;
- It is like a surface of the moon dotted with craters;
- A table served for breakfast with blue cups and black ice tea with a piece of Sun.

This approach helps young students to understand and penetrate the very essence of beautiful poetical lines written by the great poet. Besides, it expands their way of viewing the world, makes the surrounding world much more colourful, and their way of viewing it much more creative. This approach helps them also to understand painting (and modern painting, in particular).

An acute educational problem is early socialization of children in KS. Let's illustrate the approach of the EIT-system to solving this problem.

**Example.** In the fairy-tale "Snow White" the Queen asks: "Looking-glass on the wall who is fairest of us all?". The students are asked whether it is a question in fact or she is sure that she is beautiful. The young students give the following explanations:

- If she wants to know as a researcher, she wouldn't be furious.
- She does it every morning simultaneously with having coffee or brushing her hair. It means that she is sure in the answer.
- She is selfish and she doesn't think about the good for the others, even the King. That is why she can't be beautiful. May be attractive, like Cinderella's sisters, but not beautiful.
- When the hunter promises to take Snow White into the woods, he doesn't promise to kill her. But the Queen is sure that he does. It is a cognitive trap: she doesn't expect anybody to protest, to disagree, to disobey her. It is one more prove that she is selfish and doesn't listen to anyone. It will mislead her.
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Our educational results obtained in the 1990s due to the EIT-system were retrospectively interpreted during last decade as a significant contribution to *developmental psychology* and to *positive movement in psychology* [3, 10].


## 5. A BALANCED APPROACH TO COMBINED DEVELOPMENT OF EMOTIONAL INTELLIGENCE, REASONING SKILLS, AND CREATIVITY

Showing the diminishment of creativity level in USA during two last decades, Kim [20] indicated the necessity of starting the development of creativity in kindergartens. An important role in achieving this goal is to be played by calm, free, friendly atmosphere at lessons.

We believe that now, as a whole, cognitive potential of five-seven year olds is underestimated. The analysis shows that the DCM-theory and the EIT-system may be interpreted as an effective theoretical framework for starting education in KS.

The principal advantages of our approach to creating the preconditions of effectively starting education in KS are as follows. Young learners (five-seven years old) get accustomed to the beauty expressed in various ways. It is well known that it is highly important not only for the painters, sculpturers, poets, dress designers but also for mathematicians, physicists, designers of ships and airplanes to have a well developed feeling of harmony, feeling of beauty. That is why our approach is of high value as a starting mechanism for education in KS.

As a consequence of getting a developed figurative reasoning (due to several kinds of intellectual games, intellectual competition),

children get a developed creativity. Our approach to early creativity development excellently correlates with the opinion of
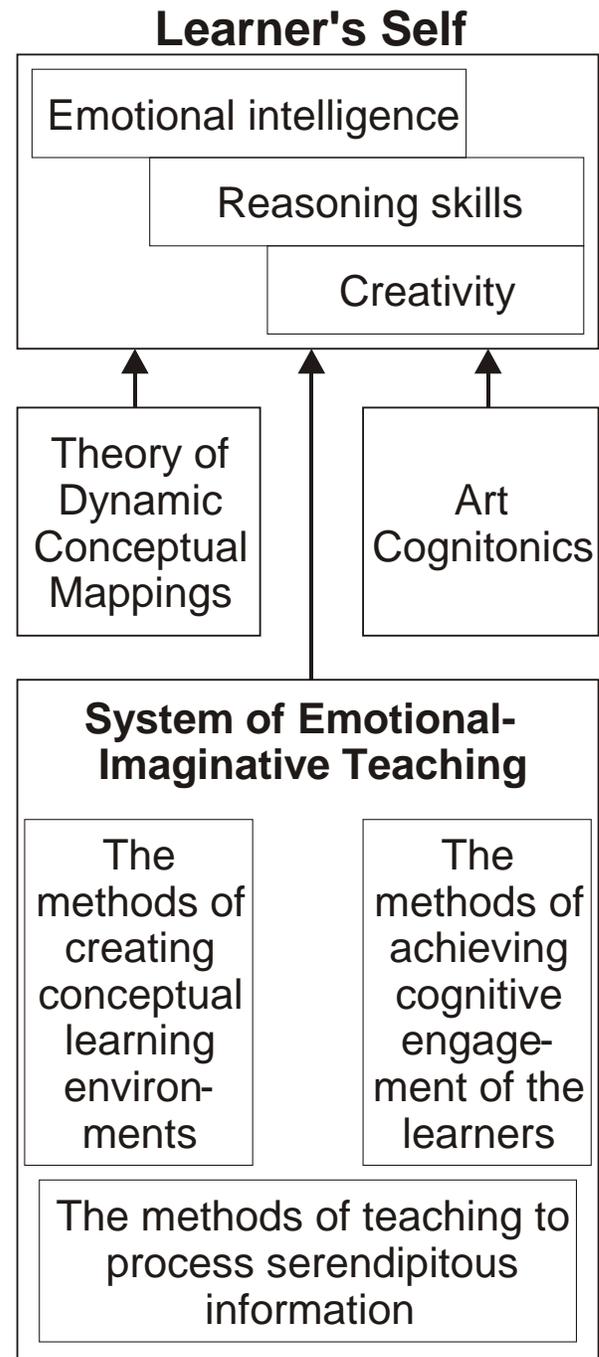


**Figure 1. A scheme of a new look at combined development of emotional intelligence, reasoning skills, and creativity.**

Piaget [24] about the significance of "reflective abstraction'. i.e., about the crucial role of processing and constructing knowledge in the course of mental actions performed on the perceived and imaginary objects and causing generation of new ideas.

As for early socialization, the young students became careful, tactful, thoughtful, they acquire the feeling of empathy and start appreciating the harmony in everything, including human relationships. It is important to do before the age of "teen", when children are ready to discuss and follow the social rules. In this case, beauty becomes the core of their system of values [3, 9, 10], and it helps a lot at the moment they are twelve and are going on thirteen – the transition age. Figure 1 illustrates a new look at combined development of EI, reasoning skills, and creativity.

The EIT-system includes the original methods of teaching to process serendipitous information. According to Kim [20], a very large scaled study carried out in USA showed that during last decade of the XXth century and first decade of the XXIst century children became less able to connect seemingly irrelevant things. That is why our methods of teaching how to process serendipitous information are very topical.

Well developed feeling of beauty creates for the student the preconditions of being successful at arts lessons. It is broadly accepted to believe that art education supports and develops creativity of young children and teenagers, develops emotional intelligence, improves emotional well-being, self-confidence, and

life skills of the students [25].

A fundamental significance of our approach for education in KS is determined also by the formulation of the cognitive precondition of the situation when it is possible to start systematic acquaintance of children with the computer. It is the realization of the Thought-Producing Self of the child [7, 8, 12].

# 6. ART COGNITONICS AND COGNITIVE ENGAGEMENT AT ARTS LESSONS

Art cognitonics (AC) [11] is one of the principal branches of cognitonics, or the science about the human being in the digital world [8 - 11, 13, 14]. The DCM-theory and the EIT-system belong to the constructive core of cognitonics. AC aims at tuning the EI 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.

AC 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 [11].

**Example.** For enriching the colour of their canvases, the impressionists made use of what is know as division of colour and optical blending. E.g., 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 from 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 a certain 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 (see another examples in [11]).

The paper [9] contains an algorithm of resisting emotional attacks from social networks by means of transforming the negative emotions into the positive ones. This algorithm is based on the idea described immediately above.

*Cognitive engagement* (*CE*) is defined in [10, 14] as the process of highly motivated intellectual activity when the interest towards the subject under discussion is so strong that the students loose the track of time and, as a result, they are not tired. The students' interest determines the level of involvement. The emotional response is very close to inspiration, because they are making their own discoveries, and their mental efforts are appreciated. It helps to provide a conceptual learning environment instead of a memorization based one and enhances the motivation. CE is created mainly by the components called in [10, 14] *focused attention, positive effect, aesthetics*, *endurance*, *novelty, motivation*.

# 7. BROAD PROSPECTS OF USING THE DEVELOPED EDUCATIONAL METHODS

The EIT-system has been mainly realized at lessons of English as a SL 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 teenagers. The carefully selected collection of texts used at lessons is provided by a number of classical, world-known fairy-tales and novels, in particular, "Snow White", "Cinderella", "Sleeping Beauty", "Pinocchio", "Pollyanna", "The Life and Adventures of Santa Claus" by L. Frank Baum, "Alice in Wonder Land" by Lewis Carroll, "The Wind in the Willows" by Kenneth Grahame, "The Hundred and One Dalmatians" by Dodie Smith, etc. That is why the EIT-system may be used (after a certain adaptation requiring a small time) in English-speaking countries and in numerous countries where the English language is learned as a SL.

# 8. CONCLUSION

We believe that the proposed SSOL-model possess the properties enabling its usage as a paradigm for education in KS. The focus on the student's Self at the lessons means that the lessons are emotionally coloured, and this very much contributes to the success of the learning process.

Now there is at least one successful implementation of the SSOL-model, and it is our EIT-system, tested during 27 years in Russia. The principal distinguishing features of the EIT-system are an effective, many-staged method of sustaining and developing creativity in young children and adolescents, supporting and developing EI, basing on EI for making much easier the grasping of the materials to be studied.

Our numerous publications in English describe many aspects of the EIT-system. The scholars from various countries do have the

possibility to develop their original implementations of the SSOL-model with respect to their mother tongue and national culture.

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