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Global Thinking Development of High School Students in the Integration Process of Curricular and Extracurricular Education.

Topicality of the research

One of the main questions in contemporary world is how to overcome the global problems. Traditional methods are not effective in planetary scales. In searching of new methods they came to conclusion it is necessary to build up the new structure of thinking style and to bring up people could operate with categories of whole World in thinking. Conception of Global Education is one of the solution of that problem.

As courses for Global Education multiply it is becoming more and more clear that it is important to direct the Global Education process not only for Global Literacy but also for Global Thinking development.

That is why exploration of nature of the Global Thinking, its functioning mechanism and conditions of its development are topical.

Many researches (I.U. Alexashina, A.P. Liferov, etc.) found that integrative processes in education promote the Global Thinking development. That opened the opportunity to explore influence of that processes to the Global Thinking. My experience of work in Extracurricular Education system created a base for exploration influence of integration of curricular and extracurricular education to the Global Thinking development.

That is why the research of phenomena of the Global Thinking and conditions of its development in the process of integration of curricular and extracurricular education is topical and possible.

The goal of research: to find conditions provide global thinking development of students in the process of integration curricular and extracurricular education

The object of research: process of global-orientated education

The subject of research: high school student's global thinking development

The hypothesis of research:

Conditions of the Global Thinking development in the process of integration of curricular and extracurricular education are:

- unity in ethical values and meanings of all subjects in educational process as a result of integration of curricular and extracurricular education
- global-orientated content of program in curricular or extracurricular education
- using educational technologies for creativity and activity development

The proved statements:

1. Personal conditions of the Global Thinking development are motivation to studying to be able to solve different level problems, high intellect and creativity.

2. Psychological characteristics of high school students caused transitions in their consciousness which promote the Global Thinking development in Global-orientated educational process.
3. Pedagogical conditions of the Global Thinking development in the process of integration of curricular and extracurricular education are:
- unity in ethical values and meanings of all subjects in educational process as a result of integration of curricular and extracurricular education
- global-orientated content of program in curricular or extracurricular education
- using educational technologies for creativity and activity development

4. Using the special technology of the Global Thinking development in educational process gives the opportunity to manage its development.

The theoretical discoveres:

1. I opened up the new content of term "Global Thinking", found its parameters, mechanism of work and conditions of its development.
2. I created the scale of the Global Thinking for level identification of its development
3. I found interconnectedness between structures of the Global Consciousness: Global Literacy, Global Worldview, Global Thinking.
4. I found capacities of the integration of curricular and extracurricular education in increasing efficiency of the Global Thinking development.
5. I found a psychological characteristics of high school students which should be taken into account in the Global Thinking development.

The practical significance:

1. I worked out:

- the method of diagnostic allows to evaluate the level of the Global Thinking development
- technology of the Global Thinking development
- the method of evaluation of influence of educational process to the development of student's qualities with eliminating influence of personal parameters
- the method of evaluation of influence of educational process' components to the development of student's qualities

2. Detected rationality of putting into practice:

- selecting tests of identification of intellectual and creative capacities of applicants to enter the school presupposes the Global Thinking development of all students
- interaction skills training for all subjects of educational process to create the person-orientated educational environment.

The experimental base of research:

St. Petersburg's schools from different districts:
- 631 (for Global Education)
- 177 (for critic thinking development)
- Extracurricular Fostering Center
- 244 (standard program)
- 311 (standard program)

The authenticity of the research is provided by:

- representativity of sample (243 students 14-17 y.o.)
- data of experiment accord to criteria of authenticity (normal dispersion of data)
- receaving the same results by different methods of research

A brief content of research

Introduction of the dissertation includes the exploration of the Globalistic's role as a field of knowledge designed to overcome negative sides of Globalization process.

Chapter I. The Global thinking development as the problem of research.

1.The new content of the term "Global Thinking".

Global Literacy is very important for the contemporary youth but if educational process (EP) has a goal to help students to develop their Global Thinking, the Global content of the program is not enough for that. For example if students understand the integrity of the World it doesn't guarantee they can use this understanding in solving global problems. That is why it is important to understand necessity to direct EP not only to foster the level of Global Literacy and Global Worldview but for Global Thinking development too.

The Global Thinking many researches define as ability to think by the categories of holistic world, planet; perceive the world as a system of systems and system of multilevel interdependences. (I.U. Alexashina, R.Hanvey,etc.)

During research process I have formulated an additional definition by discovering a new content of this concept: GT is creative thinking which became systematic by operating with the categories of whole world.

It is important to differentiate GT from the other concepts connected with it.

World Outlook is named Global if it is holistic and contemplates the unity all the processes and objects of the world.

Consciousness is named Global if it is holistic at the all levels of reflection and contemplates the unity all the processes and objects of the world including thinking and worldview as rational components.

Global Literacy means global-orientated knowledge; skills to build in the global world outlook all of new knowledge and to see its implement in solving problems in the different parts of life.

According to the character of problems to be solved with the GT I have concluded that Global Thinking is Universal (for the Universe) therefore the more thinking includes types and qualities of thinking and the higher levels of each of them the higher level of the GT. The problem of exploration of GT nature became the problem of comparing the GT with Creative Thinking (CRT) which is also universal, and exploration the nature of creativity by its interconnectedness with the other personal parameters – level of intellectual quality, cognitive abilities, motivation and ethical values.

Analysis of the CRT nature based on works of different researches (J.P. Giulford, E.P. Torrance, A. de Bono, etc.) allows to conclude that new ideas in creating

process emerges because of tuning up of the human consciousness, casual or purposeful. Consciousness becomes an open unbalanced system by that tuning. Ethics and a system of values effects to the possibility of such turning. In such system information can organize itself in unfamiliar way, and lateral connections between processes and objects might play an important role for creating something new. The open system means free informational exchange with the world and including this system into the world as a subsystem. The GT has the same way of work because it is intended to reflect the world in consciousness by the most effective way.

Universal (which means independent of concrete historical context) parameters of GT found in this research – integrity, dynamics and alternativity also could be the structures of CRT.

As a result of comparing GT and CRT I concluded that they differ only by the fields of thinking.

CRT by dynamics of its interaction with it's subject of thinking, the whole world and its processes and connections, including the global problems solving, develop its structures and become systemic and global thinking. It becomes by the process of solving large scale problems in search and selection information, analyzing, integrating, building it up as the system, creating hypothesizes, theories and verifying them in practices.

2.Parameters and evaluation system of the GT.

Review of the literature allows to conclude:

- Creativity (CR) and intellect (IQ) are interconnected but orthogonal factors. They define the process of solving problem and play different roles in its different stages.
- Different (universal) interests of person tell about his/her creativity
- The sphere of motivation, IQ and CR form the system of interconnected parameters. A level of intellect determinates the level of creativity. Motivation determinates if that abilities will be realized. Intellect development is a result of creative possibilities' work and depends on motivation. Motivation depends on the level of intellect and creativity. Values give direction to the cognitive processes. Motivation sphere determinates the character of this process, creativity potential determinates its wideness, and level of intellect determinates its deepness. The whole system of that parameters is open and its work depends on the other factors – heredity, latent periods of synergetic development of parameters, on the whole spectrum of inner and outer conditions of life.

Many researches connect GT development with the creative potential development depends on his intellectual-personal qualities. U.N. Coulutkin names 4 pairs of qualities:

1. mind is open to new knowledge – criticism of mind
2. divergent – covergent thinking
3. lability – stereotypic of thinking
4. impetuosity – reflecsivity of mind

All the pairs are in the dialectical unity. A person who can think global develops that qualities and gain the skills of management of balance between each pair depending on concrete situation, and raise the efficiency of thinking by that.

In this research I derived the parameters of GT – integrity, dynamics and alternativity from that qualities, and deduced from that parameters R. Hanvey's dimensions and similar dimensions in the other conceptions of Global Education which depend on historical context.

Calibrating GT parameters by levels of development allowed me to build up a scale of GT for its diagnostic.

I	INTEGRITY (interconnectedness in space)
0	Objects and systems in the world mostly is not connected
1	strong interconnections between subjects and the other simple connections are taking into account
2	lateral interconnections between subjects and the other not simple connections are taking into account
3	Multilevel interconnections between subjects are taking into account
4	The model of the word became a whole system where all objects and facts belong to definite place. Skills to build up the scheme of interconnections between any objects and facts
II	DYNAMIC (interconnectedness in time, interdependence; the opposite from static, stereotypic; includes mobility, flexibility, ability to interact, reflexivity)
0	There are no movements and changes in the world except of movements of objects
1	Synergetic development of different systems is taking into account
2	Development by material, energetic and informational interaction between systems is taking into account (including dialog and reflexivity)
3	Multilevel interdependences are taking into account
4	The model of the word became a whole process of multilevel and multispeed of development of all systems. Skills to build up the scheme of interdependences between any objects and facts
III	ALTERNATIVITY (interconnectedness in cause; various vision of problems)
0	Only one function of multifunctional object, one solution of complicated problem is taking into account without causes and effects of that solution
1	There are several variants of solutions (could be considered with strong causes and effects)
2	There are different types of variants of solutions (could be considered with strong and lateral causes and effects)
3	Skill to find all alternative points in solution important in context of situation
4	Alternativity as the principle of world development, of development of all its objects and processes. Skills to build up the spectrum of variants of solutions for any alternative point of problem and prove the choice of the way to the solution

Interconnectedness between parameters increase with the development of GT in each parameter. Consideration of parameters as independent becomes difficult. That is why the 5^{th} level belongs to whole system of parameters "integrity- dynamic- alternativity".

5. INTEGRITY - DYNAMIC –ALTERNATIVITY.

Perception of the world as a holistic system - alternative process with multilevel interdependences of all objects, facts and processes, vision of the pattern of strong and lateral interconnectedness of possible causes and effects of problems, spectrums of its possible solutions, taking into account their interdependence. Developed responsibility of making solutions is the effect of that perception.

The GT level could be found as a sum of rates in each parameter (from 0 to 15) or as the arithmetic mean (from 0 to 5). The GT is developed if it achieves 3d level because this is the lowest level when thinking begins to operate with systems which gives opportunity to solve effective large scale multilevel problems (including global problems).

Transition from each level to the next means transforming quantity accumulation to the new quality. Each level of each parameter might be calibrated by quantity units if needed.

Description of transitions and method of calibrating levels is considered in full research manuscript.

3. The GT as a function of personal parameters.

Evaluation System allows to measure the GT and to find out the GT dependence on personal parameters by experiment.

Conclusions made from the analysis of results:

1. integrative perception of the world (understanding that everything is interconnected in the world which one can learn from Global Education program) do not guarantee the GT development but it is necessary condition of its development. It could be a base of functional integrity as a component of the GT.
2. If there is no motivation for thinking about the whole world and its development the GT is not developed. Positive motivation is necessary condition for GT development but its existence is not enough to develop GT.
3. Intellectual quality, creativity and the GT are interconnected but orthogonal factors. There is a correlation between development of GT and values of IQ and CR. That values determinate potential maximum of the GT. Motivation, influence of EP and the other possible factors determinates how that potential will be used.
4. There are trice more students with developed GT among the students with different (universal) interests than between others. This fact confirms correlation between GT and personal parameters because universality of interests is derivative parameter from the system of considered personal parameters.

Integrative perception of the world was measured by content- analysis method applied for it by S.V. Tarasov;

Presense or absence of motivation was explored by observation and by analyses of student's papers;

IQ was measured by G.Eysenk test;

CR1 (verbal) and CR2 (imaginative) creativity was measured by two subtests from E.P.Torrance kit of tests adapted to Russian students by E.E. Tounik.

The results of tests had been confirmed by interviews with the teachers.
Data of universality of student's interests had been received by quiz.

4. The GT as a function of periods of human development.

Peculiarities of age effect to the GT development.

Many conceptions of teaching Global Education have different goals for different ages of students.

1. primary school. All teaching subjects designed not to lose the original natural wholeness of the world perception of students.
2. middle school. Teaching of each subject is more extensive and specialized. The goal of teaching is to give knowledge in each subject and to help students to orientate them global as much as possible which means finding connections of that knowledge with the whole picture of the world in student's perception.
3. high school. All of the student's knowledge received before formed in the holistic structure of the picture of the world, including development of all systems.

So deep holistic world outlook might be formed in the high school.

Many researches (J.Piage, I. Kon, etc.) consider this stage of human development as the time for natural forming the first personal world outlook. At the same time that years are last in school and student has to choose the way of his/her integration to the society. Requirements of society to the future adult citizen stimulate the process of natural creating own worldview. That is why Global Education helps student to create the most adequate outlook of the world because of deep understanding its wholeness and dynamic which allow student to see himself/herself as a part of the world and see the best way of integration to the society.

According to the quiz results (S.V.Tarasov) of 200 students from St.Petersburg's school of Global Education 37% of 13-15 aged students (9^{th} grade) found their world outlook rationalistic and 29% holistic; 14-16 aged students (10^{th} grade) have different results - 34 % of holistic and 27,2% of rationalistic.

That results had been confirmed by the fact that the average value of the GT of 9^{th} grade students form the same school was not higher than the average value of the students from 10^{th} and 11^{th} grades with standard school program.

The results of age dispersion of the GT of high school students are disposed in manuscript.

A special technology of the GT development allows increase it in 9^{th} grade up to the level of 11^{th} grade. Description of technology will be given later.

Chapter II. Impact of Educational Process to the GT development.

1. Pedagogical conditions of the global thinking development.

Let's consider the functioning mechanism of the GT.

Dynamics reflects the sensitivity to the problem and choose the set of reactions which determinate the next stage of the way to the solution. It is based on integrity – the more structured information we have about the problem the more effective our reaction on the way to the solution could be. Alternativity is based on dynamics – the width of the spectrum of reactions one can see determinates by parameters of reaction. Integrity is based on alternativity – the wider the spectrum of possible versions of solutions and its effects the more integrative the whole picture of the world is. The process of thinking in trying to solve problem goes on cycle of that system of parameters. Every time in transition from one parameter to another the process of thinking is based on achieved previous results of system with that tree parameters. That is why not only image of research subject but the reflecting system develops by development their parameters. The level of each parameter gets higher on each next loop of that spiral. The higher the level of parameters the more holistic the system of parameters is and it is getting more complicated to consider each parameter separately.

In the thinking over the solution dynamics is responsible for the choice of focal alternative points which based on person's world outlook. Than in that points person use dynamics again to choose direction of the way to the solution by alternativity (which means integrated worldview from that points of view). Alternativity becomes a "local integrity". On high levels of the GT it becomes a "glocal integrity" which means local impressions of global processes (the term of W.Rudometoff and R. Robertson). On the next stage one returns to the "global integrity" to explore the pattern of close and far, strong and lateral effects of one's choice and then again the choice of local alternative points of on that base, etc.

That consideration gives the vision of that process from the other point of view and allows build up the other model with the other parameters:

1. width of the potential "vision" field (global and glocal integrity)
2. skills of the orientation in that field (interactivity skills in dialogue with the World; sensitivity to the problem which responsible for the choice of alternative points and the choice of further directions to the solution).

Two models of The GT process allow explore the conditions of the GT development in EP. The structure of the first model reflects the structure of the educational environment (EE) described in the research work of S.V. Tarasov, and the second – in the research work of V.N. Druzhinin.

According to S.V. Tarasov, student allows the EE to participate in his/her process of building up the world outlook if this EE is holistic, interactive and variable. Wholeness means that all necessary components are included and it forms social, cultural and educational integrated environment. Interactivity means interaction between all subjects of EP and between student and cognitive reality. It determinates the value of possibility to be open-minded, flexible and ready for interaction of environment to its subjects. Variable means existence of field of different meanings and significances, and different opportunities for the choice of contents, forms and methods of curricular and extracurricular activities.

V.N. Druzhinin describes the EE which helps students to develop creative possibilities:

1. low determination of behavior
2. informational abundance
3. existence of creative behavior samples.

That comparison of EE and the GT model pattern can be confirmed by comparison of mechanism of ideas genesis in lateral thinking (E. de Bono) and democratic EE as a condition for creativity development (O.E. Lebedev).

All three authors consider the same EE from different point of views. That EE was named personal-orientated.

Interaction between person's structures of thinking and the World defines genesis and process of functioning GT. In that process structures of thinking becomes the same with structures of the World as a whole system. Thinking process becomes integrative, dynamic and alternative while creating a model of the World. That means thinking becomes global.

This process reflects the philosophical principle of unity and likeness of a man and the World described by many ancient and contemporary philosophers (N.N. Berdyaev, V.I. Vernadsky, etc.).

So the EE should have the same structure to be included to that process as a middle part - link in the system "a person – the World". This determinates condition of GT development in EE.

Then I considered what students need to develop integrity, dynamic and alternativity of thinking. The result was they need the integrated, dynamic and variable content of the educational program with technologies of creativity, self-organization ability and activity development.

The EP is defined as the process of realization of educational program in EE. So all the pedagogical conditions of the GT development are found. The next question of research was how to build up that conditions.

2. Integration of curricular and extracurricular education as a condition of global thinking development.

Many researches (I.U. Alexashina, A.P. Liferov, etc.) found that integrative processes in education promote the GT development and need comprehensive consideration in this research.

Integrative process in education reflects the integrative processes in all spheres of contemporary world. There are many classifications of integrative processes in education. In this research I divided this process to the "horizontal" component (natural and social sciences) and to the "vertical" (curricular and extracurricular education) and consider the second. Both of them build up conditions for the GT development.

Whilst I work in the Extracurricular Education Center about 12 years I have developed and used in work the program designed to comprehensive harmonic personal development of students which includes the GC development and affords a base for the exploration of the influence of integration of curricular and extracurricular education process to the GT development.

Exploration of mechanism of integration needs to find out the differences and interconnectedness in these two kinds of education.

The goal of curricular education is providing the basic level and content of knowledge, skills and attainments (KSA) of all students. Extracurricular education is designed to help curricular one in that goal by providing extracurricular KSA. The additional and main for the student goal (based on curricular goals) of the extracurricular education is self-identification and self-realization of students. The extracurricular education not only additional education to curricular but it is also self-sufficient system.

Difference and interconnectedness of goals presuppose different character of methods, technologies and forms of studying.

Curricular education process as compulsory for mass presupposes traditional lessons with frontal forms of work and strict determination of behavior. In extracurricular education parameters and conditions of work are depends on needs and interests of students and presupposes participating of interactive technologies in EP, building up the positive motivation, not strict determination of behavior which promote creative possibilities development and self-organization skills of students. Curricular education has to be orientated to the "average abilities" student and tries to orientate everyone to yearn to be "average" to increase efficiency of EP. Extracurricular education is orientated for individual approach of EP for each student. Integration opens opportunity of interaction between students and EP to set the optimum balance in this system.

Curricular education is orientated mainly to reproductive thinking development (intellectual development) but extracurricular to productive thinking (creative). Integration gives the opportunity to develop both qualities on the different stages of work which increases thinking process possibilities and promotes the conditions of GT development. Integration of knowledge of these two kinds of education gives the opportunity to give extracurricular knowledge on the base of curricular, and fix the curricular knowledge by operating with them in accumulating of extracurricular one's. Methods and technologies of extracurricular education provide student's interest and activity on curricular lessons, curricular methods and technologies give the opportunity to manage of studying of all students according to the goals of curricular program at the extracurricular lessons.

Analysis of the literature of integrative process in education allows to determinate stages of that process:

1. forming of the informational connections - informational exchange between curricular and extracurricular education and coordination of its giving as a knowledge
2. forming of the operational connections – exchange of methods, technologies, mental operations, methods of operating with information according to the conditions of its using.
3. forming of interdisciplinary connections and then "modules" from the levels of lesson to the level of disciplines. Fist it could be in the students' minds on the base of the 1st and 2nd stage then in programs with deeper and wider opportunities to build it in the students' minds.
4. forming the holistic system – educational environment with the following characteristics:

- unity of values and senses of curricular and extracurricular education worked out during the process of coordination;
- completing, correcting and stimulating each kind of education the other in programs development as a result of interaction of all the subjects of EP;
- mobility and flexibility, opportunity of variation in depending of variable conditions (for example it could be forming of interdisciplinary lessons and modules of interdisciplinary courses).

Thus the system on the last stage of integration is the person-orientated educational environment which considered from different points of view in research works of V.N. Druzhinin, S.V. Tarasov and O.E. Lebedev. The 5th level of integration could be integration in program content. Program content will become global-orientated. Probably the 5th stage will be common for the "vertical" and "horizontal" components of the process of integration.

Global-orientated educational process could be defined as a dynamic of realization global-orientated educational program in person-orientated EE.

To find out the influence of components of the global-orientated EP I created and used the method of comparing of EP in different kinds of St. Petersburg's schools.

	631	EFC	177	244	331
dev	+	+	+	-	-
env	+	+	-	-	-
cont	+	-	-	-	-

Dev – using the technologies of creativity development in EP
Env – presence of person-orientated educational environment integrated from curricular and extracurricular education
Cont – global-orientated content of program

Measurement of the personal level of the GT of each student allows to find the average value of the GT in each school and compare these values in different ways.

1. The difference between the average values of the GT in school 631 and EFC shows the effect of global-orientated content of program;
2. Between EFC and school 177 - the effect of presence of person-oriented educational environment integrated from curricular and extracurricular education;
3. Between school 177 and 244, 331 - using the technologies of creativity development in EP.

All obtained results are given in the manuscript.

The results of comparing proved the theoretical conclusions of the effect of considered components of EP to the GT development and allow to find how the GT development depends on system of personal parameters and parameters of EP. In all 8 cases with combinations from that parameters forming the Global World Outlook is possible. Students gifted with high intellect and creativity could form The GT structures. That conclusions were based on supposition that during educational interaction:

- it is possible to effect to forming of students' motivation in case of EE participation in process of forming the worldview
- less but possible to effect to creativity development
- very difficult or almost impossible to effect to the intellectual development.

Interconnectedness between 8 considered cases is described in the attachment to the manuscript where the GT is considered as a multivariable function.

	Personal Parametres			+ Parametres EP			= Structures of consciuosness		
№	M	IQ	CR	env	cont	dev	GO	GT	GC
1	+	+	+	-	-	-	+	+	+
2	+	+	-	-	-	+	+	+	+
3	+	-	+	-	+	-	+	-	+
4	+	-	-	-	+	+	+	-	-
5	-	+	+	+	-	-	+	+	+
6	-	+	-	+	-	+	+	+	+
7	-	-	+	+	+	-	+	-	+
8	-	-	-	+	+	+	+	-	-

M- motivation
IQ - intellectual quotient
CR - creativity
GO – Global World Outlook
GT – Global Thinking
GC – Global Consciousness

To explore the effect of EP to the GT development was important to eliminate effects of personal parameters to its development. That was made by eliminating from whole amount students whose personal parameters were high enough to develop the GT without EP, and students whose personal parameters were not enough for its development even with help of EP. That allowed evaluate effect to the GT development of EP in each of considered schools which (by percentage of students with developed GT from the students who are left after elimination).
Experimental results showed that considered pedagogical conditions effect to the GT development but does not allow yet manage this process. Consideration of the mechanism of the GT development allowed to conclude that in considered pedagogical conditions the structures of the GT would develop only by building up GO. The process of the GT development goes slowly because of age peculiarities and inertia of the EP effect to the structures of thinking. Inertia means that EP could effect to knowledge accumulation immediately, after some period of time to development structures of world outlook which students build up using that knowledge, and then after longer period of time to the structures of thinking. Technology of the GT development allows overcome the inertia of the educational EP by development of thinking structures.
That mechanism explains connections between Global Literacy, Global World Outlook and Global Thinking.

Chapter III. Principles of Diagnostic and Development of the GT.

Diagnostic of the GT is developed on principles of G.Altshouller and E. de Bono creative thinking investigation. They found that exploration the nature of spontaneous process of creation allows bring them into practice. Understanding of advantage of creative thinking and theoretical knowledge of its methods is not enough for the development of its structures. It is necessary a row of practical tasks.
The GT development has the same consistent pattern. To have knowledge of global problems even detailed and systematic is not enough for the GT development. It

needs practice of solving large scale and whole world problems (as a training tasks). The analysis of solutions could help to interpret on the GT scale according to one of its levels on each of parameters and then the level of the GT could be qualify.

The experience of work in the Extracurricular education on my program designed to help students in multilevel harmonic personal development allowed me to figure out the form of diagnostic (a game-competition) and main principles of its organization which allowed me to build up several versions of tasks content and implement it into practice.

The competition could stimulate the emergence of creative abilities in positive EE which approve encourage of all participants of competition (A.F.Osborn). The worldwide problems in tasks encourage the appearance of the GT structures in solutions.

Working together in teams participants help each other to realize their GT potential. Competition is a good way to receive a large amount of data at once.

A high level of communication skills couldn't guarantee a high level of the GT. But a person couldn't reach the 4^{th} level of Dynamic parameter of the GT without developed communication skills. An average value of the team's GT allows to compare a team work and find winners which make a sense of competition. In this research was important to find out only a personal level of the GT of each participant. Principles of organization of GT competitions, possible versions of competitions with task contents, principles and examples of interpretation solutions of tasks on the GT scale, review of the most common and interesting answers with analysis of solutions obtained in the experiment are attached to the manuscript.

Technology of GT development consists of rows of tasks similar to tasks in diagnostic and special tasks for integrity, dynamic and alternativity development. Diagnostic results allows to control and manage each step on personal development of the GT and to plan the next step or row of tasks. So the process of the GT development is based on interaction between task solutions and diagnostic. To get the most exact results of measurement the tasks of diagnostic could be the same before and after workshop with technology implementing. Content of technology with variable task versions is attached to the manuscript.

The workshop of the GT development is integrative. The first one was held on the curricular program at the school of global education and each participant had to take an active part in work. An interactive form of lesson and creative environment was very similar to extracurricular classes. Integration came out in process of involving all students in active work by students interested and active in the beginning. The tasks were built on the base of curricular KSA program but their solutions could be found (because of open character of tasks) by the whole spectrum of KSA including gained by the extracurricular program. Integrated EP of school created a base of its gradually actualization and using stage by stage in search of solutions of the problems.

Integration of curricular and extracurricular education effects to the GT development by two ways:

1. direct system's effect by structure of educational program and EP to the thinking structures as intermediate system between world and person interaction. That means the integration's result – holistic, interactive and alternative EE develops thinking with the same structure – the GT.
2. indirect (lateral) effect by development of creative potential, communication skills (including ability of effective interaction), ability for self-organization of activity, universal interests. Integration effects to development of that qualities and they effect to the GT development.

The results of this research could be used for students' GT development in any school, college or university. It is necessary to take into account personal parameters and age of students and build up EP with considered components which includes workshops for the GT development with diagnostic allows to control and correct this process.

The research brought out the problems:

I. In the same field of research:

1. Working out concrete programs and workshops for the GT development which would take into account found conditions and stages of its development;
2. Investigation of transitions in personal- motivational and axiological sphere of person during the GT forming;
3. Investigation of process and results of integration global educated students to the social life, including:

- establishment of Global World Outlook as they growing up and getting included into socium;
- integration of these people to management of social life;
- improvements in social life as they participate in it.

II. Need to be solved in allied disciplines:

1. Critical thinking: its nature, parameters, mechanism of work, conditions of development and diagnostic.
2. Inertia of effect of EP to the thinking structures.
3. Creativity as a psychostabily factor in non-stabilized social situation.
4. Society development and pulsating character of its need of creativity of its citizens.
5. Interconnectedness of personal and social ethics as a condition of creative potential development of person.
6. Functions of person-orientated EE as a result of integration of curricular and extracurricular education in creative abilities development.
7. Democratization of Educational System as a process of building it up by integration of curricular and extracurricular education.