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RUSSIA'S MOTTO: NOT ONLY TO SHOW WHAT HAS BEEN DONE BEFORE BUT TO CREATE NEW THINGS TOGETHER

THE RUSSIAN MILSET TEAM

Of course an EXPO Science is the result and outcome of youth's creative work in science and technology, but a present-day expo is something more.

In the modern world of fast communication any result is a collective result. It is achieved through joint work in close contact, meeting both personally and on the Internet. Expos begin long before their participants gather together, as the participants cooperate while preparing their projects, elaborate general standards and requirements, which the projects have to meet. They also work together in international science camps, on expeditions, at congresses and contests. Today we can more and more often see the results of participants' joint work presented at the expos.

What brings success to an exhibition is a network of joint activities, the results and achievements of which the exhibition sums up. And the members of MILSET have managed to create such a network. Apart from the expos themselves it also includes the European Science Day for Youth, the Science Photo Contest, youth congresses, science camps, expeditions, and more. We believe that the future development of MILSET should be related to the further development of the interconnection and continuity of these events and activities. The expo of the XXI century is an expo that goes on all the year and includes a lot of different activities and events.

In Russia we have been implementing this idea for several years now, and numerous organizations from other countries have joined us.

Meanwhile we manage to find successful solutions to the following issues:

- Finding sponsors and funds;
- Better career prospects for talented youth;
- Improving mutual understanding between specialists in different spheres: education, science, business. They understand that they have common goals and can achieve them only through work with young people;
- International business prospects for youth;
- Practicing teamwork skills in international teams — models of the future international organizations.

Apart from participating in the MILSET international events, we in Russia carry out a range of events and activities, included into the MILSET program:

- Developing and expanding the network of schools and youth creativity centers, which take part in the projects (the participants are students from 500 schools

all over the country and international participants from all the continents) — thus building a solid foundation for the continuous and successful project activity;
- Holding a range of diversified congresses and contests (the largest event is Vernadsky National Contest of Student Research Projects) — thus selecting and promoting the best projects;
- Holding scientific camps and other events in cooperation with universities and scientific centers (the International Research School, the ESE exhibitions) — thus bringing the future career prospects;
- Organizing youth expeditions (the Joint Russian-Mexican Expedition) — thus immersing the participants into joint work on scientific projects;
- Developing the network for international student exchange (the prospect is the development of the Science Youth Vector program) — thus establishing firm personal contacts, which ensures the effective international communication in the future.

We are convinced that the implementation of these will be Russia's contribution to the future development of MILSET.

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Translations: Roman Gadas, Daria Pchelnikova

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ALEXANDER LEONTOVICH
Director of Moscow Center of Technical and Scientific Creativity for Youth, Chairman of All-Russian Movement of Creative Teachers "Researcher", MILSET Executive Committee member
a@redu.ru

THE ROLE OF MILSET IN THE WORLDWIDE DEVELOPMENT OF YOUTH'S SCIENTIFIC AND TECHNOLOGICAL CREATIVITY

In the second half of the XX century a new trend in the development of youth's creative activity appeared. Creativity in the community, where its members support each other and work out their own criteria for evaluating the performance, can be very productive. It helps develop an important thing — ***people's motivation to achieve results.*** *It is well known that the best way to make people do something is to make them want to do it. Motivating students to obtain knowledge is a more powerful and successful mechanism of education than scrupulous development of educational programs or recruitment of qualified teaching staff. MILSET has been an embodiment of this trend in the field of youth's leisure activity in science and technology since the late 1980s.*

This kind of approach was new in the world of youth's creative activity then: the conferences and congresses known at that time (ISEF in the U.S., for example) were positioned as intellectual contests, aimed at identifying and selecting the most talented young people. The basis of such events is was the competitive environment, which identified the best ones. Conferences were similar to Olympic competitions, where to achieve victory you need to be very narrowly specialized and work out

daily and for long hours, and where a whole team of adults works for one young "intellectual athlete|".

The strategy of MILSET is different: it is **the strategy of cooperation not competition.** This is a more effective strategy, as it allows you to create larger systems by differentiating the functions of their individual parts and cooperating. Higher animals have a lot of organs, each of which performs a different function — the brain carries out the higher nervous activity, the stomach digests food, muscles provide movement, etc. Can you imagine what would happen if the right hand starts to compete with the left one? In the history of the human civilization there have also been a lot of episode that show us that cooperation and collaboration are more productive than the competition and rivalry. Economic and cultural relations between different states increase the stability of the international community, and allow us to work together to meet global challenges.

The science studying self-organization of complex systems is called Synergetics. In recent decades, Russian scientists made a significant contribution to its development, (N. Moiseev, S.Kurdyumov, G.Malinetsky, S. Kapitsa, etc.). It shows that joining into a large differentiated system is energetically more favorable than separate existence. And that is the MILSET self-organizing mechanism that unites youth creativity in different countries into a single system. The expo participants will become important figures in their countries in the future and "the MILSET family" will become "the family of nations", where the principles of MILSET will prevail.

A FEW WORDS ON STANDARDS

Nowadays, the member and partner organizations of MILSET do not enjoy proper state and public support in all the countries they represent. I think that in some ways this is the result of the insufficient public awareness of what MILSET does and lack of theoretical justification of its activities. In today's pragmatic world it is absolutely necessary to ensure the competitiveness of our non-competitive system and the people involved in it. Therefore an urgent task today is to provide the professional PR-support of MILSET and its activity.

And to do so, first, we need to clearly **define the subject and the direction of our activities, their hierarchy and interrelation,** especially with regard to EXPO-SCIENCES.

We need to clearly define what exactly is presented at the exhibitions. Obviously, for two people to understand each other, they both have to speak the same language, for example, English or French, or Spanish. The project structure and the rules of its presentation can be such a "common language", which allows the participants to understand each other and to discuss the questions raised. There should be **uniform rules (or recommendations), clearly explaining what the project should consist of:** the introduction, goals and tasks, methods, results, and conclusions. If there is no uniform structure, you often cannot understand what the authors' achievements were and generally what it was all about.

At every expo there should be expert evaluation, and its rules and criteria should be known in advance both to the participants and the experts themselves. While evaluating the projects, the experts should take into account the age of their authors. The main purpose here is to find out how important the implementation of the project was in the author's life, what new knowledge and qualities he has acquired, while working on it. Therefore, the complexity of methods or equipment, with which the project is executed, does not matter. It happens sometimes that the author performs his work using very sophisticated equipment at a local university or anywhere else, but does not understand the principle of their own measurements. This is not a good result really. Our expertise is different from the expertise of "adult" projects where the expert finds out the circumstances in which a meson may appear, it is not an exam in which the examiner finds out whether the examinee knows the date of the first manned flight into space. Its main point is to motivate the author of the project to work on its development, qualified advice on how to improve it. This is called **developing, motivating expertise.** Thus, the experts absolutely must observe two rules. Firstly, they must always mention the advantages of the project and the author's achievements, which are always there even in the worst project. Secondly they must advise the authors on how they can improve their project in the future. So experts at an expo are not only professionals in their field, but also teachers and psychologists.

Should there be winners at the exhibitions? Of course. Every participant should know that they are the best, that they are not losers. Here we can see a simple solution: they all should be the winners, you just need to think of enough nominations **for every project to be the best in its category.**

MILSET should work as a system, and all its activities should be closely related. Therefore, every expo should provide information about other MILSET projects, the Executive Committee members should take care of it and provide information about those activities, the organizers of which cannot visit the expo.

The idea behind MILSET — the idea to promote scientific and technical creativity among young people from different countries with different levels of economic development, regardless of their political systems and religious affiliation, the idea to create the atmosphere of mutual interest with young people involved in scientific and technical creativity in different countries, their personal acquaintance, the idea to provide the opportunities for the development of meaningful contacts after the expo — is an idea that will last forever. This idea should be brought to the audience systematically and in popular form.

WAYS OF ORGANIZING INTERCULTURAL COMMUNICATION AT INTERNATIONAL EVENTS. FOR THE ROUND TABLE "SCIENCE FAIRS AS DETONATORS OF INTERCULTURAL UNDERSTANDING"

EVGENIY BALLAD
PhD in physics, head of the acoustic laboratory of the Moscow Center of Technical and Scientific Creativity for Youth, supervisor of students research projects

While communicating at the events and programs organized and held by MILSET, students and teachers get an opportunity to socialize and make friends with their colleagues from all over the world. While discussing their creative projects and exchanging professional experience they take part in extensive cross-cultural communication: the participants get to know each other, share their views, and present themselves as bearers of cultural traditions of different countries. One of the interesting and challenging tasks is to organize this kind of informal intercultural communication in order to establish and deepen cross-cultural understanding between participants from different countries.

On the one hand it will create most comfortable atmosphere at the event, and, on the other hand, will create favorable conditions for participation in joint projects and the development of productive cooperation in the future.

This speech will focus on the optimization of the efficiency of cross-cultural interaction between the participants of international events by adding various additional forms of joint activity to their programs. We will also suggest some formats of such activities. The material presented here is based on both what is already practiced at MILSET events and on the experience of international events that we have held in Russia for the last 8 years.

Special attention will be paid to the principles of organizing intercultural communication in three main formats:

1. Activities aimed at presenting your cultural community (such as, "Cultural Evenings", for example)
2. Activities involving immersion in the culture of the host country (various tours and interactive forms of communication — master-classes in different elements of the cultural heritage of the country — dances, games, etc.)
3. Communicative training program, which takes the form of an interactive game and is aimed at the following:

— Greeting each other in a benevolent way
— Creating an in-game situation, where all the participants' attention is drown to the differences in cultural norms of communication, and generating awareness and consideration of specific cultural norms of communication in interaction with each other
— Motivation for positive forms of intercultural communication

4. Of course, the extent of demand for the above types of interaction is different for different types of events (exhibitions, workshops, international science camps, etc.), but the main issues solved by the activities organized in the proposed interaction formats remain relevant to establishing productive cross-cultural understanding in the course of any international event.

THE ROLE OF VOLUNTEERS WHILE HOLDING NATIONAL, INTERNATIONAL AND ALL-WORLD SCIENTIFIC EXHIBITIONS. FOR THE ROUND TABLE "LOCAL, NATIONAL AND INTERNATIONAL SCIENCE FAIRS EXPERIENCES"

TATIANA VOMPE
ESE2012 Executive Director, programmes coordinator of the All-Russian Movement of Creative Teachers «Researcher», Russia
tvompe@dnttm.ru

It was a great honour for us to hold Expo-Sciences Europe Exhibitions twice: in Moscow (2010) and in Tula (2012). During this time we were able to develop the work of volunteers while holding the exhibitions. They themselves got precious experience of organizing the exhibitions in Russia and were also able to apply it at Expo-Sciences International 2011 in Bratislava.

It has been a long-term tradition at the MILSET events to engage volunteers. It is also very important to support and develop this tradition and share the experience among each other.

Every year we invite all the participants of the All-world, International and national exhibitions to take part in accounting events, holding in autumn. We re-create the atmosphere of the exhibition to reminisce it all once again, share the impressions and discuss the plans for the future. Volunteers-participants club has been organized and it helps hold new exhibitions.

The role of volunteers while holding the exhibition is great indeed. It is a kind of a solid bridge between the participants and the organizers. The friends of the

delegations are with them during the whole period of holding the exhibition, help solve all the problems, from organizational to domestic, very quickly and effectively. It is volunteers who create special atmosphere of the event. They know what to do and how it all should be. We can say it for sure that the volunteers preserve all the traditions.

The participation of volunteers help children to develop not only communicative, but also many other skills. It is undoubtedly both language and organizing practice. And the best thing is the friendship among the children from different countries. When they grow up, the children continue the communication in their specialty as young scientists and initiate carrying out international joint projects and researches.

It would be unique to create international volunteers' organization within MILSET. Experienced people from all over the world could come and help organize unique events. Thus, it would be possible to create professional service. The best volunteers could become in future the organizers of exhibitions and events in their countries.

EXPERT EVALUATION AS A MEANS TO PROMOTE SUCCESSFUL EXPO PARTICIPANTS. FOR THE ROUND TABLE "FOLLOWING UP SUCCESSFUL SCIENCE FAIRS PARTICIPANTS"

ROMAN GADAS
MA,Teacher of English and English Literature, Supervisor of students research projects in area of human sciences, programmes coordinator of the All-Russian Movement of Creative Teachers «Researcher»
rgadas@gmail.com

We all agree that preparing a student for a successful performance at an expo is important, but it is equally or, probably, more important not to stop there. It is obvious that the student would be far more motivated to participate in an exhibition, if they knew that it is only one of the stages in their professional development and scientific career.

We at the All-Russian Movement "Researcher" and Lyceum 1553 have always realized that and used different means to incorporate participation in expos into the general set of means to prepare students for their future scientific career.

Thus at Vernadsky National Contest of Students' Research Projects, which we have held annually for XX years now, expert evaluation has always been one of the most important part. We invite experts — scientists, professors from Russia's most prominent universities, business people — to visit the contest and evaluate the projects presented by the participants.

Before the expertise, the experts receive lists of parameters, according to which they should evaluate the projects. These lists include up to 15 points from "topicality" and "practical value" to "visualization of the presented material" and "the participant's presentation and communication skill". On the day of expertise, the experts are told, which stands they are going to evaluate — of course each expert evaluates only the projects from the sphere, which they specialize in.

The main goal of any youth's scientific and technological creativity expo — and, therefore, the expertise, in particular — is to improve and increase the students' motivation and to promote creativity in science and technology. Thus, the main idea of the expertise is to involve the participants into constructive discussion on their projects and to suggest possible prospects of their further development.

With the best and the most successful participants, it has some additional effects. Not only does it motivate them greatly (it is always very flattering to be praised by a person who is an established and — sometimes — well-known specialist in your sphere), but may also help them in their future professional development. Most of the time experts take notice of talented expo participants and keep in touch with them after the end of the show. They help them to further improve their projects and introduce them into the "adult" scientific society.

This model of expert evaluation was internationally introduced at ESE 2010 in Moscow and again at ESE 2012 in Tula.

INTERNATIONAL SCIENCE FAIRS AS A MEANS OF CHILDREN AND YOUTH DEVELOPMENTAL GROUTH: VARIABILITY OF THE PARTICIPANTS'. COMMUNI CATIVE POSITIONS FOR THE ROUND TABLE "THE ROLE OF KIDS IN THE SCIENCE FAIRS"

ALEXEY OBUKHOV
Ph.D., Professor, the Chairman of the Psychology of Education Chair
of the Moscow State Pedagogical University
ao@redu.ru

Many years of experience in organizing international exhibitions of children's and youth's scientific and technical projects and research proved their efficiency for the participants' developmental growth. Organizers of such exhibitions normally lay special emphasis on the opportunity for the young participants to present their achievements and the results of their creative activity to experts and interested adults, who they receive assessments and expert opinions from. That is, every participant plays the part of an author who brings the results of his\her work to the public. This is very important for the participants' comprehension and understanding of the effectiveness of their activities, its correctness from the scientific point of view, its prospects in terms of social relevance. However, we believe that exhibitions have a great potential for the participants' development not only as authors but also in other aspects. Let's identify some of them as different participants' communicative positions.

Participants as experts. The exhibitors should master the expert position in relation to the other exhibitors' works. Not only does it give them the opportunity to compare their achievements to those of other people (developing the reflective plane of their consciousness), but also helps develop their critical thinking. It is important that the participants should master the technology of expertise and be capable of saying

something more than just "I like it" or I don't like it" about other people's works. So it is necessary to give the participants all the criteria and parameters of expert evaluation. Among these parameters, we have identified the following: *content evaluation* (the seriousness and the originality of the subject, the amount and the quality of the experimental data, the level of understanding of the results and the conclusions), *evaluation of the attitude to the audience* (knowing the terminology, ability to explain the content of the work to the public, the ability to answer questions accurately and clearly), *evaluation of the presented material* (visibility, accessibility and completeness of the presented material, the presence of interactive demonstration material and its use, the quality of stand design). Reflection on each expertized work is optional, but one of the most significant for the participants who are in the expert position. It is conducted in the form of a detailed answer to the question — what in the work was interesting, impressed you, gave food for thought or new knowledge, etc.?

Also the exhibition regulations should include an item dividing each participant's time at the expo into 2 parts: in the first one the participants are at their stands and present their works to others, in the second one they evaluate other participants' works.

Participants as colleagues. It is important to give the exhibitors the opportunity to communicate with their colleagues in similar or related spheres of science and technology from different countries and regions. If the works at the exhibition are distributed by subjects (divided into sections), it is done through the work of the section — in different forms of work (stand session, discussion on oral presentations at the section, etc.). If the works at the exhibition are allocated by some other principle, then the participants can be given a special task to find their colleagues in the common space of the exhibition. The expo regulations only have to set the organizational framework for this kind of interaction between the representatives of similar subject areas from different countries, regions and organizations.

Participants as employees. We consider it important for the participants not only to share their knowledge and experience with representatives of similar spheres, but also find the possibility to build cooperation with those from very different fields of science and technology. For this we created a special contest of interdisciplinary projects, which is held as part of the exhibition. Two people from different sections and scientific areas presented at the exhibition should come up with the idea of a project, justify it and present it to the special committee. The implementation of the new project has to use the materials of each of the two works. Besides we emphasize that we particularly welcome the union of the natural sciences and the humanities (ie, the works that are not from the neighboring areas of science). It is important to provide temporal and technical possibility for the participants to develop such joint projects.

All the four of these positions of children and young people as exhibitors, of course, influence the development of friendly relations between them. The situation of intercultural communication at the science fairs in many ways performs the task

of the participants' productive mutual development. The task of the organizers is to design the program and the regulations of the exhibition in such a way, so that each participant can make the most of themselves in various communicative positions. The principles presented here were put into practice as far back as 20 years ago at the 1st Vernadsky All-Russian Contest of Youth's Research Projects and since then have always shown their productivity.

EDUCATION FOR SCIENCE, OR SCIENCE FOR EDUCATION. FOR THE ROUND TABLE: LOCAL, NATIONAL AND INTERNATIONAL SCIENCE FAIRS EXPERIENCES"

ALEXANDER SAVVICHEV
Grand PhD I biology, Senior Research Associate of the Vinogradsky Institute of molecular biology of the Russian Academy of Sciences, presidium member of the All-Russian Movement of Creative Teachers
«Researcher»savvichev@mail.ru

Education and Science are two interconnected branches of rational activity of the rational mankind. These are two directions, functions of which, as it may seem, are well-understood and easily-explained. The goal of the Science is to investigate the objective laws of the existence of substance in the widest meaning of understanding this category, including a man himself and the society, i.e. everything what can be conceptually cognized. And at the same time the Science is not restricted only within the function of cognition, but compliments the cognition itself with the active changing of the surrounding world in order to improve the quality of human life. It is important that the mankind realized not long ago, that it is very important to improve the quality of human life not only for people, but also for their environment. Education in its widest meaning has been preparing people to the appropriate existence in the environment, including the Society, which is the constituent part of the environment. In this meaning any professional or specialized studying is only

a small part of Education itself. Scientific approach, worked out as an instrument of cognition, is becoming the methodological basis of Education and, in its turn, the questions of organizing the subjective consciousness of scientists — the functionaries of the scientific search are being solved.

Education and Science as directions of state politics unavoidably get institutional forms, which become kinds of restricting enclosure of every direction. These institutional forms differ in their formal evolution; it happens as a result of specification the goals and tasks of Science and Education (science –fundamental and applied, education — basic, professional and higher). Scientific establishments, as a rather conservative complex, preserve the Institution of Post-graduate study, renewing with its help professional and creative resources. Educational establishments, especially those of Higher Education, organize the scientific-and-research centres as they realize the conceptual restriction of any traditional school or university system (in the ideal model). One-direction divergence of the Institutions of Science and Education cannot be stopped, but it can be compensated by the activity of different social institutions.

The example of this social institution in Russia is the All-Russian movement "The Researcher" and MILSET — in the world. The promotion of holding joint (Education and Science) arrangements must become specific program directions of the activity of these institutions. It is important to increase the status of "the research supervisor" of a schoolchild and create the instruments for their interaction. The program documents, regulating the holding of exhibitions, should provide the existence of sites, activating the interaction of schoolchildren and the representatives of scientific approaches. It is known that lively international cooperation bears a great potential in increasing the motivation for both Education (students' exchange, probations and so on), and Science (conferences, congresses). Mutual interference of this kind of cooperation, supported by social institutions, is able to enrich every of these genetically bound, but different directions.

THE INTERRELATION OF MILSET EVENTS. FOR THE ROUND TABLE "SCIENCE FAIRS INSPIRING SCIENCE VOCATIONS"

KSENIA SALNIKOVA
Head of the International Cooperation Department of the Moscow Center of Technical and Scientific Creativity for Youth, Executive Committee member of the All-Russian Movement of Creative Teachers «Researcher», IRS Executive Director, MILSET Europe Executive Committee member, Russia
Ksenia@europe.milset.org

One the MILSET's most important achievements is the creation of the worldwide network of member and partner organizations working with youth and for youth in the sphere of leisure activities in science and technology.

We all remember that MILSET began by organizing Expo-Sciences International, held once in 2 years. Later it became clear that it was not enough, and we started to have regional expos between the international once (such as ESE, ESI AMLAT etc). Some more years passed and we understood that even that was not enough.

So we started holding science camps, youth conferences, the science photo contest, the science day for youth and so on. Year after year MILSET initiates more and more events and activities of this kind.

Besides each of the member organizations always welcomes international participants to its national events related to science and technology. There are agreements (formal or informal) between many local expos about participants exchange. And its been common practice in many countries for quite a while that the

best projects of national expos are awarded with the participation in international events or national events in other countries.

And it is good that national organizations maintain and develop direct and mutually beneficial relations between each other.

To further develop such relations MILSET has recently initiated the Science Youth Vectors Programme, that aims to establish close partnership based relations between different organizations involved in youth science and technology activity and to stimulate collaboration between them in different fields and on different projects. It is a platform, where any organization affiliated to MILSET could propose the idea of a new interesting project and look for partner organizations in other countries. Science Youth Vectors programme includes projects as short-term bilateral events where children from two different countries meet together to complete a project in a certain field of science.

We believe that at present the most interesting MILSET events are those where the participants do something and get the results together. This type of events is probably the most dynamic and thrilling for the participants. It totally immerses them, making them permanently search for new solutions and establish the communications within the working group. For comparison: at the ordinary expo you are not in the situation where you need to communicate permanently – the only thing you need at the expo is to present the results of some work that you have already done, so the amount of communication is up to you. We in Russia have been holding such events for a long time and several years ago brought them into the international level in cooperation with MILSET. The successful examples of such events are: the IRS and International Expeditions (SYV).

Thus from rare expos to permanent communication and cooperation, both at international events and with member organizations working directly with each other. I think that the logical development of that would be to present at Expo-Scieces not only projects done by individual participants (or groups of participants) within a certain period of time, but also but also the results of joint international projects.

A NEW KIND OF TOURISM – SCIENTIFIC TOURISM OF SCHOOLCHILDREN. FOR THE ROUND TABLE: TABLE "SCIENCE FAIRS INSPIRING SCIENCE VOCATIONS"

MARINA SERGEEVA
Grand Ph.D. in Chemistry, Professor, Head of the Biology Department of the Specialized Scientific and Educational Centre of Lomonosov Moscow State University, Executive Committee Member of the All-Russian Movement of Creative Teachers «Researcher»
mg.sergeeva@gmail.com

It is widely known that the tourism is a very important branch of economics. People travel to recreate or to learn something new. Usually this last goal includes the acquaintance with the history, art and architecture of a place. But nowadays it is necessary to join it all to the scientific world, which is understood as universities, scientific and research institutes, museums – the places where scientific knowledge is kept, communicated from generation to generation and multiplied. The youth should be acquainted with this world in a way as they are with other cultural aspects of the mankind. They also should know that the world of science is a part of the whole.

That's why we suggested a new kind of tourism for children – scientific tourism. The gist of the project is the following. A group of schoolchildren arrives into the city which is famous for its scientific achievements. Usually it is the capital of the country. The duration of their staying there is 8 days. During the first hours of the project psychologists work with the group in order to make a team and "open the door into the world of knowledge" together – it is a special training. General

acquaintance with the city takes place on the same day. Further days consist of three parts:

1) Studying;
2) Museums;
3) Art.

Studying is the part of the project when the participants study chosen in advance subjects (biology, chemistry, physics and so on) with the lecturers from universities for 4 hours in the mornings. Some of them make short researches in the laboratories of the university. The main thing is that the knowledge is transmitted by those who create this knowledge immediately (the teacher in the school also transmits the knowledge, but they themselves don't create it).

Museums — this part includes different lectures of the scientists about scientific achievements and also visiting the museums (Zoological, Planetarium, Paleontological, Geologic, Polytechnic Museums and so on) and the laboratories of the leading universities.

The third part — the art — includes visiting the theatres (dramatic, opera and ballet). The schoolchildren make the presentation about these 8 days of scientific tourism on the last day. In the presentation they answer the following questions: what new have I learnt about the science, the city and about myself? and How can I use this knowledge in my future life? There is a special training at the end of the program, which helps to revise the given information and realize it better.

The important points are:

1) the creation of an integrated educational area: Science, Art, City; a group of schoolchildren and every schoolchild as a personality within this area.

2) creation of special reflection about the science, the world and your own place in it.

These two aspects are very important for creating systemic way of thinking for every person. For modern youth it is necessary to percept the world as a system of many interconnected processes. It is also important that when such educational area is organized, not the paradigm "Stimulus — reaction", which is used by modern business corporations, but the paradigm "Stimulus — consideration — reaction" starts working and is necessary for people of the 21st century. Activation and development of research abilities of schoolchildren takes place. It is achieved by combining new impressions, special training programs, lectures of scientists, visiting museums and theatres of the city.

Experience. The idea of the scientific tourism was introduced by M. S. Sergeeva within the program "School 5+" (www.edu5.ru). The project has been successfully developing since 2011. Several groups of schoolchildren from Kazakhstan have come to Moscow (the system of schools "Nazarbayev Intellectual schools"). They did biology, chemistry, physics and information technologies, got ready for the tests in these subjects. Several schoolchildren did the research projects at the university. Moscow State University — the best university of Russia took part in the project, the lecturers — the scientists from this university.

The difference from international research school MILSET. During the international research school the children make a research cooperating with each other and with tutors. In the project "The Scientific Tourism" the City and the University are included into this kind of cooperation. But the groups in this project are not numerous, no more than 20 people.

The project can be fulfilled both within the country – the member of MILSET, and while travelling to other countries.

http://jose.milset.org/