

International telecommunication projects as one of the perspectives in creating a common educational and cross-cultural framework

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SUMMARY

International collaboration in education has become a sphere of high priority within Russia's foreign policy. The fact of the country's joining the European Council (1996), improvement of partnership between Russian educators and their international colleagues predetermine integration of the Russian system of education into the European and global educational framework. One should also take into consideration the new tendencies in the school nurturing processes, which aim at developing students' mind and cultural standards.

The international telecommunication projects supply material for a comparative study of the effective use of identical or alternative methods to tackle the given problem. Such projects as: "GLOBE", "KidNet", "Global Lab", "This is our Time" have involved students' learning activities and appeared to be a very successful component in the process of their education and nurturing and they can be effective only in the context of the whole educational developing and learning concept. It is just a component of the educational system; it is not a system itself. And we should use this experience in practice of mental, creative and ethical development of students.

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International collaboration in education has become a sphere of high priority within Russia's foreign policy. The fact of the country's joining the European Council (1996), the active participation in its commissions and organizations and improving partnership between Russian educators and their international colleagues predetermined integration of the Russian system of education into the European and global educational framework.

The integrative processes enhance the quality of education in Russian schools and higher educational institutions which meets the demands of the international educational standards, improves competitiveness of the Russian specialists in the world labour market and contributes to their academic mobility. As a result, we witness mutual recognition of educational diplomas and certificates. And students exchange visits have stopped being something rare and are turning into a curricula component of the education.

However, it is still inaccessible for the most state secondary schools which are widely spread in Russia. And the matter is not that the choice of a school depends on the district or regional administration decision. Even if a school through modern technological means has an opportunity to establish international partnership by itself, it lacks financial opportunities to receive foreign partners. Unfortunately, these realia of a modern Russian school have become an obstacle in establishing international contacts.

The lack of finance and technical supply obstructs the informatization teaching though it is becoming a basis of the global modern life. One should also take into consideration the new tendencies in the school nurturing processes, which aim at developing students' mind and cultural standards.

In the information technology community, the thorough knowledge becomes less important, as sometimes it is rendered obsolete before students manage to master it. Possibly, it might be officially admitted that the acquired-to-be-remembered-for-ever knowledge is not the main objective of the school curricula but it is the information source stimulating thinking.

Shifting off the pedagogical teacher-centered paradigm to the learner-centered one, predetermines the leading role of the developing education over just-acquiring-knowledge process. The learn-to-learn principle becomes a corner-stone in nurturing an independent personality.

The problems and perspectives of Biological education are actual and important. It is proved by the results of the Second International Assessment of Educational Progress (IAEP-2) held by the US Educational Service (ETS) in 20 countries of the world for 9-13 aged students in 1991.

Some of the assessment tasks aimed evaluating the level of scientific cognition methodology. According to the tests results, the most successful were the school students from South Korea (78%) and Taiwan (76%). The students from the USSR were the 5-th (71%). These results a little bit higher than the average results of the countries-participants (69%), but they do not differ much from the ones of such countries as Switzerland (74%), Hungary(73%), Italy(70%), Israel (70%), Canada (69%), France (69%), England (69%).

The knowledge quality level in Biology was 80% in Korean students, 78% in Taiwan students, 77% in Hungarian students, 73% in Russian students which is 5% higher than the average level. Within this score, the most portion goes to the usage of knowledge while the level of the integrative knowledge and methodological skills got the least evaluation.

The results of the 3-d testing of this kind in 1995 put Russian students into the intermediate group with the average scores. This differed but little from the 1991 results. And the research methodology skills were pointed out as the poorest once again.

It might possibly have been effected by the traditional educational methodology when the teacher's explanations took the most part of the lesson and thus the verbal methodology prevailed

And still now, just reflective activities and tasks deprived of any initiative and creativity are more common in the school syllabuses.

Methodological knowledge and skills are not paid attention to and, hence, are not mastered within a system. Even if the students are given observation and experimental tasks, they are to perform them within the given strict instruction which leaves any initiative out.

None of the school biological subjects is supplied with the graded methodology on the scientific research, as data collecting, observation, experiment planning and performing, hypothesizing, interpreting and visualizing the results, etc. So, many of the Russian teachers are posing a question of who they are nurturing, either creators or stuffed-with-information “cases”. We hope that the Russian educational reform will answer this question as many others.

Summarizing the said-above, we should spotlight awareness of the necessity in searching for new approaches, which would:

- provide for the learn-to-learn principle,
- develop a student's personality,
- involve a student into cognitive activities,
- form research activities skills and critical thinking,
- motivate partnership activities,
- effect the integral perception of the world,
- enhance telecommunication activities on different levels,
- form perception on the dialogue of cultures as a non-alternative philosophy in the contemporary world,
- master the information processing skills, making the recourse centers of all levels accessible for any user.

Project activities is one of the most popular and effective forms of organizing the work with students. It is being widely used in the educational systems of different countries.

The project method is a special arrangement of the educational process extensively involving planning and practical activities in order to accomplish the project. This method sprang into being in the rural schools of the USA and was studied in details by the American educators, such as J. Dewy, W. Killpatrick, E. Collins and others.

The main requirements for the implementation of the method are the following:

- a socially/personally significant problem which needs integrated knowledge/investigation to solve it,
- theoretical, practical, cognitive significance of the predicted results,
- students' independent (individual/in-pairs/groups) activities,
- a structured content of the project with fixated results in each step,
- use of the investigative methods: stating the problem and objectives of the investigation, hypothesizing, discussing the research approaches, organizing the results, analyzing the data, summarizing.

Telecommunication projects occupy a distinctive place among the other educational projects. They have been made possible in early 80s with the start of telecommunication networks, which allowed teachers and pupils from various countries to communicate with each other.

By an educational telecommunication project we mean a cooperative learning-cognitive, creative or playing activity of pupils-partners, organized on the basis of computer telecommunication, having the general aim, coordinated methods, means of activity, dedicated to achievement of the general result. They are justified pedagogically when as a part of them:

- we involve single or plural observations of various natural or social phenomena, which demand collecting the data from the different regions of the world;
- we obtain comparative studies of using common or different (alternative) methods of solution of one or other problem, revealing those of them, which are acceptable for all situations;
- we offer the joint doing of work: practical or creative.

To the educational telecommunication projects which held a prominent place in the educational curricula of a secondary school the following projects of the American National Geographic Society (NGS) “Hello!,” “Acid Rain,” “Weather in Action,” “What’s in Our Water?,” “What Are We Eating?,” “Too Much Rubbish,” “Solar Energy” can be assigned. They involve the use of Kids Network and the program is often called KidNet.

NGS projects were designed for the pupils of 5-7 forms. At our school, the fifth form pupils began studying them in 1996. Every of 7 cycles is rated at 6 weeks and dedicated to studying of some ecological problems.

To realize the content of every of them, pupils are included to a research team, which has its own scientific consultant. Members of the team are selected so that for the solution of a task students from different countries situated far from each other work together.

The wide use of research methods in the organization of pupils' learning activities creates such a situation when they really feel themselves scientists, and believe, that the results of their researches are necessary for the solution of the global ecological problems, is a peculiarity of all NGS projects. Skills that students acquire working in the KidNet Project are:

- Research methodology
 - asking questions and identifying the problem*
 - hypothesizing*
 - planning and accomplishing observations*
 - collecting data*
 - organizing and verifying data*
 - analyzing data*
 - mapping and graphing data*
 - summarizing data*
- The use of geographic maps (printed and computer version)
- The use of a computer and telecommunications to exchange information
- Group activities. International collaboration.

Global Learning and Observations to Benefit the Environment (“GLOBE”) might also be an example of rather successful use of project technologies in natural-science education. First, it was performed in 1994 on the “Day of the Earth” by vice-president of the USA Al Gore. In March 1996, 32 countries, and Russia among them, became its participants. Our school was a member of this program in November 1996.

The GLOBE Program is not only training, but also a research program, that is based on learning and observing the environment. Students and teachers from 4000 schools of 60 countries are participants of “The GLOBE Program.” There are 50 such schools in Russia, and more than 30 of them are in St-Petersburg and Moscow.

Making investigations according to the “GLOBE Program” requires an experimental area of 15*15 km with location of the school as close to its center as possible. Within this area, three study sites are distinguished:

- bio-geological;
- hydrological;

- the site for studying atmosphere, climatic phenomena and soil moisture. Measuring and recording data on the study site are taken with different periodicity. Some of them - every day, others - every week and even every season. Making investigations, it is not necessary for every pupil to take every measuring. Coordinator of the program should think over the system, which provides their effective collecting. That's why sometimes some pupils are invited, sometimes - the whole class. It must be flexibility in selection of the participants, making measuring. However, the school coordinator requires strictness for accurate following scientific methods and demanded regularity of result's submitting.

“GLOBE” gives to students of different ages an opportunity to take part in the research. The participants of the project accomplish the following measurements:

atmosphere/climate, hydrology, geology/biology, soil, phenology, geographical position.

At our school the "GLOBE Program" is being carried out basically during the optional lessons, but it is possible to integrate it successfully into the school and extracurricular activities.

Students in groups of different ages can be involved into the practical work. So, for example, pupils of the third form during the lesson of natural science master methods of measuring of temperature and quantity of rainfall, learn to determine types of clouds and cloudiness. Every day the students on duty enter the data not only into the traditional "Diary of natural observations," but also into the register for messaging them to "GLOBE" server.

During the lessons of natural history in the fifth form, teachers organize observations of seasonal phenomena in nature as well as preparation of photo- and video materials. They also master the simplest methods from the chapter “Soil.” At biology lessons organization of biometrics study is possible. However, the senior students can get the whole perception of the Program only during optional lessons. They master more different methods of observations of the environment, gaining skills of work in ecological monitoring and technologies of information exchange in Internet network.

Our school's long-termed cooperation with non-school educational institutions, especially with the Palace of Children Creative Activities, helps to solve the problem, connected with the lack of required research equipment. Students of bio-medical classes work successfully in the laboratory of hydrobiology of the “ECO” scientific society. Skilled pedagogues of additional education help senior students to go through the research stages to enter them into the world of science. Such joint work of pedagogues of the both educational zones enhances scientific knowledge of the environment and it also nurtures an ecologically competent personality.

All over the world, students taking part in “The GLOBE Program” observe the environment according to the single methodology and present the results of their investigations for centralized processing, so all the participants of the project can use them. The list of school-participants and their reports is available in the Internet. The “GLOBE” server allows using the received data as a source of educational information.

The telecommunication projects spoken above are related to the category of long-termed. Among the short-termed projects, which are used in extracurricular activity, we can name “Tandem-One-Step-Beyond-Electronic-Communication-Project” (TOSBEC) and “This is our Time.” These are international educational projects run by Sintermeerlencollege (SMC) city Heerlen (The Netherlands). They are co-sponsored by UNESCO.

The main idea of the TOSBEC project was connected with the unique expedition to the coast of Antarctica in January 1997 aiming at scientific research of the environment and studying its ecosystem. Unique opportunity of the dialogue between young scientists going to Antarctica was performed by just several schools from every continent.

Using e-mail and Internet students could be virtually connected to the expedition, discussing with the members of scientific international team that was on board the ship results of the investigations, which had taken place near the coast of Antarctica. Among the most crucial ecological problems, the problem of thinning of the ozone layer above the Pole was discovered. Due to this phenomenon some of the researchers got sunburned.

Participation in the virtual expedition allowed students of the tenth form not only to learn better the problems of history, geography, biology and ecology of Antarctica, but also actively use knowledge of the English language in the communicative function. They realized importance of the scheduled-fulfillment of the tasks, summing up and making feedback communication. Ethics of international contacts has become more understandable.

“This is our Time” project was held in 1995 for the first time and since then it has been in the cyber space every year. Among its themes there are those connected with the environmental studies.

The most of Russian telecommunication projects are short-termed and might be used basically in the extracurricular activities, but not as systematic courses. These are telecommunication competitions, question-answer games with the use of e-mail connecting groups of students from different schools. Many subjects according to the schedule are discussed during these activities.

Another popular Russian Children's Telecommunication project is “Ecological Community” conducted by the Institute of Soil Science of the Moscow State University. At present, more than 70 organizations from 36 regions of Russia, Byelorussia, Ukraine take part in the work of its sections:

- botanic investigations,
- zoological investigations,
- hydro-biological investigations, including monitoring of basins,
- monitoring of overland ecosystems,
- protected natural territories.

The theme “Primroses” from the first section arose the most interest among the teachers and students of school N28. In the course of learning children became acquainted with the new theme with the help of interactive learning guide accessible from the server of the Center. Apart from this, they mastered methods of geobotanical description of phytocenosis, learnt to use a plant guide, initiated campaigns against unlimited gathering and selling of protected primroses in the streets of Voronezh.

For the summary, we would like to emphasize that in secondary school N28 the use of project technologies during the lessons and extracurricular activities can be effective only in the context of the whole educational developing and learning concept. It is just a component of the educational system, it is not a system itself. And we should use this experience in practice of mental, creative and ethical development of students.