

there are still a lot of unsolved questions in its theoretical part. That is why educational experiments are of a great importance in proving the methods to raise pupils' key skills. The problem that we are working on is, why the key skills (general academic performance, according to Russian standards) developed at school, are hardly applicable in real life situations? In 2002 we offered a hypothesis, that child's experience of applying his key skills in arrangement of a personal educational environment with desired parameters, can help solve the problem. This process is both cognitive and practical for a child, causing real changes in his immediate surroundings. A solution to this problem let a child regulate his space-temporal learning conditions, communicate with other students, and choose the best individual learning methods. Such experience help develop an effective individual study style, and is an educational practice of using key skills in school-life situations. To prove our hypothesis, we developed an educational program «Ecology of study process», which was tested in the six Russian regions. The program is a *pilot project* aimed at framing ecological content of school programs, and is based on the *general academic performance system, mentioned in the draft federal standards for general education*.

It was shown, that practical use of key skills for developing an educational microenvironment, increases child's mental task performance, study motivation and psychological health. It also motivates to actively control the environmental conditions outside school walls. We have applied for a patent.

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POLLUTION OF ATMOSPHERIC AIR AND THE FORM OF RESPONSE OF THE HUMAN ORGANISM IN THE LARGE CITY

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The health care maintenance for everybody in the XXI century – is the WHO's main task and the Russian Federation's priority direction. In this respect, «The Health» national project is successfully being realized, the different forms of the medical service, the early detection, and the patients' rehabilitation are being improved. The formation reasons exposure of the different pathology and the human organism's response forms is the most significant task of the medicine.

The atmospheric air designated pollutants, on action of which the mucous membrane of the upper section of the respiratory tracts is sensitively reacted to, take a considerable place in the health rates forma-

tion by data of the numerous scientists – hygienists' researches [2, 3].

More than 100 designated pollutants, having the different limiting harmful indices (e.g. the reflex, resorptive, reflex-resorptive action, and, even, the sanitary and hygienic nature), are being discovered in the atmospheric air of the city of Kazan.

The total designated pollutants emission into the city's atmosphere makes up 114,766 tonnes per a year, and only 28,739 tonnes of the non-detected particles are being ejected into the atmosphere, and 86,027 tonnes of the pollution are being detected, owing to the nature conservation arrangements realization. All this is being distributed in the air within the city's territory limits, and by 26 grams of the designated pollutants are fallen for the every citizen. Such pollution amount in a year is quite insignificantly low, but not for the citizens of Kazan.

The low wind velocities and the calm are made up almost 45% days in a year on the territory of Kazan that creates the definite difficulties of the designated pollutants dispersal and formulates their accumulations conditions in the bottom layer of the air. The given negative factor is being intensified in many times, at the expense of the considerable number increase of the transport units and, in addition to many gas-and-dust detecting installations aren't working in full power, and they often go out of service, that results in the considerable pollution increase in the air basin.

The maximum number of the trials with the exceeding hygienic regulations is found out by the content of 4,9% carbon oxide, 1,4% nitrogen dioxide, 2,6% sulphur dioxide in the average annual calculation for 2007 year, by our researches data and the degree analysis of the city's atmospheric air pollution with due regard for the supervisory bodies results.

The comparative analysis of the actual designated pollutants concentrations with the maximum once-only limiting concentration in the air along the transport thoroughfares in the rush hours of the transport traffic is fluctuated: carbon oxide from 5,6 up to 14,3 mg/m³, nitrogen dioxide from 0,05 up to 0,21 mg/m³, sulphur dioxide from 0,15 up to 0,6 mg/m³, the suspended materials from 0,19 up to 0,58 mg/m³. The designated pollutants concentration in the atmosphere is depended on the transport units' number, the year season, twenty-four hours period and many other factors. Besides the above-mentioned substances, hydrogen sulfide, phenol, benzene, toluene, ammonia, formaldehyde, hydrocarbons, nitrogen oxides, and a great number of transformation products, including the same formaldehyde, acetaldehydes, aldehydes, ketones and the others are defined in the air.

The human organism response on the factors complex influence, having conditioned by the atmospheric air pollution, is begun from the upper sections of the respiratory tracts, that it is revealed in the frequency increase of the respiratory organs diseases,

which are the most expressed among the population, where the high degree of the air pollution is observed. The lowered city's areas are the most polluted territories, where the considerable rates of the designated pollutants are concentrated. By the results of the statistical parameters generalization, the primary sick rate frequency by the respiratory organs diseases of Kazan for 22,2% is more, than, in average, by the Republic of Tatarstan, and this magnitude is, approximately, constant for the last 10 years of the observation. For all this, the districts with the high degree of the atmospheric air pollution (e.g. the Moskovsky, Novo-Savinovsky, Sovetsky, Kirovsky ones) are distinguished by, where there are the large transport thoroughfares and the lowered landforms areas. The difference by the sick rate frequency is considerably expressed among the children (e.g. 34,3%). In comparison the respiratory organs diseases spreading of the whole city's population with the republican ones, the exceeding portion is made up 36,3%, but it is 33,8% among the children population. The sick rate frequency of the children is more, for certain, on the territory of the Moskovsky district (e.g. 460,8 cases) against 358,7 cases for 1,000 children [1].

We have taken the character and structure study of the frequency changes of the sick rate with the temporary loss of the ability of work (SRTLAW) from the otorhinolaryngologic pathology (ORLP) among the economically active population (EAP) in the Republic of Tatarstan (RT). The official data have been appeared as the researches object on ORLP in RT for 1996-2006-es by the 16 – TI form «The Data on the Temporary Invalidity Reasons».

ORLP has been presented by three groups in the SRTLAW structure: the ear diseases (ED), the acute respiratory infections (ARI), and the acute pharyngitis and tonsillitis (APT).

The temporary series analysis with the changes intensity estimate in the dynamics by means of the corresponding parameters has been used as the epidemiological research methods. The tendency of many years calculation by means of the leveling by the method of the least squares has permitted to eliminate from the periodical and random vibrations, however, the peak values (e.g. the maximum and minimum ones) of the SRTLAW frequency have been studied separately for the whole period, and the changes have been estimated in the separate sexual and age-related groups.

By the final results for 2006, ORLP is made up almost a quarter (24,3%) of all the registered SRTLAW cases in RT. For the part of the first group – ED is found only 1,3% SRTLAW, but the rise frequency of the given diseases among EAP is fixed at the level of $0,70 \pm 0,12$ cases (here and further – the arithmetical mean value \pm the error of mean) for 100 working people. For the part of the second group of ORLP – ARI is practically fallen up to 20% in the SRTLAW structure, but in calculation for 100 work-

ing people, in average, is made up $9,23 \pm 0,90$ cases. It has been mentioned the total SRTLAW frequency decrease on ARI for the registered period, in spite of the dynamics undulation, when the rise periods (e.g. 1997, 1999-2000-es, 2002) have been changed by the decrease periods (e.g. 1998, 2001, 2003-2006-es). At the leveled dynamical series, the descent velocity of the intensive indicator for 11 years was quite small – in average, 0,8% per a year. The most descent is found for 1998 (e.g. – 12,1%), but the increase – for 2002 (e.g. + 8,6%) at the year-on-year rate of changes of the ED indicator. The last, the third group, the diseases – APT is made up to 3% SRTLAW, but by the frequency level – $1,40 \pm 0,17$ cases for 100 working people.

Thus, the frequency and the spreading of the respiratory organs diseases, especially of the upper sections, are found in the direct dependence from the designated pollutants concentration in the atmospheric air of the urban and rural populations. The highest levels of the designated pollutants are observed on the highways and the lowering sections of the territory, where the high frequency and the diseases spreading are observed. The upper respiratory tracts pathology is mentioned by the significant group of the EAP diseases, as it is made up 23% of all the registered SRTLAW cases.

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AgNORs IN THE KUZBASS INHABITANTS (THE WESTERN SIBERIA)

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The nucleolar organizer regions (NORs) – these are the chromosomes' sites, having contained the ribosomal genes. The NORs are able to be visual-