Country with no deafness Toward a world open to everyone
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In a booming, crowded corridor of the alma mater of many generations of engineers and constructors - Baumanka, currently Bauman Moscow State Technical University, MSTU - one encounters an unexpected door plaque: Moscow center of complex rehabilitation of invalids with problems of hearing. But there is no strangeness here; rather this is a logical consequence of time and its technologies.

Some twenty years ago, I was struck by a tiny newspaper article. In a small Swedish village, there was a boy, deaf and mute, and all people have learned the sign language in order the boy didn't feel lonely. Everyone could talk to him as equal, and this made the little citizen a full-fledged member of society.

I thought with sorrow that society should get matured for such really human perceptions and actions to ameliorate hardships of its weakest minority. Therefore today each such example raises optimism and hope, especially at home and especially in a synthesis of human reaction and current opportunities in information and education.

Behind the door of the educational-rehabilitation center in MSTU one finds not just an auditorium but a whole two-tier complex. There are special learning and computer classes with equipment unfamiliar to regular students, a laboratory and a methodological room for specialists and teachers, which resembles a control room of a complex technological process. The process is really complex and high tech, and its official name writes as Head educational, research and methodological center for professional rehabilitation of persons with limited hearing abilities.

In simpler words, here the regular MSTU engineering courses are taught to deaf and hard-of-hearing students. Dr. Raisa Dmitrievna Goncharova, Vice-Director on Teaching Affairs, shows special equipment, which sometimes would be envy even for a perfectly hearing student. In an auditorium there is an electronic board: all formulas and texts hand-written by a teacher are scanned automatically in a computer, where a student can go back to them until he or she completely masters the problem. A lecture can also be brought on a diskette and therefore be loaded in a computer and human memory. There is one more board - with additional possibilities for special educational institutions. A system of mirrors

attached to the board helps students follow not only what is written but also the lector's face when he stands back to the audience. As known, many deaf people can understand speech with help of articulation.

Now the class president Misha Shalinchikov demonstrates informational capabilities of a radio class. A teacher hangs a microphone with a transmitter, and a student has a receiver, actually a hearing device. One can equip the whole audience or just one hard-of-hearing student, if he attends a regular class. Even for the only hard-of-hearing student there will be a sign language interpreter. And this happens starting with the junior year when, after three preparatory years of a special adaptive program, a would-be engineer joins the regular class.

Misha, for example, graduated a special Moscow school and decided to become an engineer-technologist in a field of metals. The only way to do it was to take Bauman preparatory courses created specially for candidates with limited hearing. After graduating those courses one had to take admission exams on the full program without any allowances. The current class has around 40 students; all in all 154 hard-of-hearing boys and girls study at MSTU, almost a half of them being completely deaf. Along with Muscovites there are students from 30 regions of Russia and other parts of the former Soviet Union. Young people from Kamchatka and Ukraine, Murmansk and Uzbekistan find here a key to their full-fledged future.

In a computer class (13 working seats) it is apparently quiet, almost no voices are heard but the faces are lit by creativity, the eyes by intense thought; on screens there are formulas and graphs, schemes and constructions. The class is open for students from the first to the sixth year; here with help of the special support system (tutoring) they start from basics of computer techniques and end up with graduating projects (diplomas). Many course projects on physics and mathematics, strength of materials, engineering graphics, microelectronics are made at such a modern level, which is required by technologies of the 21 century.

All rooms and equipment of the center look new. Indeed, until recently this was a university sport hall. The Moscow government provided funding to rebuild and re-equip, and since 1998 the rehabilitation complex had a new look. In general, the history of the center is long; first hard-of-hearing students appeared at Bauman as early as in 1934 on the personal request of Ordzhonikidze, Minister of Heavy Industry, to provide social support of invalids. But these were isolated cases and without government support, with help of

enthusiastic volunteers. The end of the century brought new information and educational technologies: from the early 90th the hard-of-hearing students are prepared to enter MSTU after a special cycle including auxiliary and developing courses. Moreover, most students get special devices developed by the center to experience life as normal as possible. In 1992 there were only eight students, now there are several tens, and they are mastering seven specialties (from 54 at MSTU). The center has a staff of 30 full time members, including sigh language interpreters, plus several tens of part time teachers. One should note that in 2000 six faculty members were awarded a prize of the president of Russia.

Given the total amount of people with so-called limited abilities, who need support and professional rehabilitation to become socially full-fledged, what's done so far is a drop in the ocean. And this is an expensive drop because education (free, of course) of a hard-of-hearing or deaf student costs twice as much as that for a regular one. But what is a hundred and a half of the lucky chosen by the education fortune if there are tens of thousands of unfortunates deprived by fate or nature? With the utmost efforts, the university can expand twice the hard-of-hearing contingent. Still, for the whole Russia this would be a tiny air-hole, which requires steady expansion. But for the whole world?

That's why in the office of rector of MSTU, Professor Igor Fedorov, there was a meeting of founders of the rehabilitation center and a delegation of the similar American institution, Rochester Institute of Technology, which includes National Technical Institute for the Deaf (NTID). The next step of professional and social rehabilitation of the hard-of-hearing was discussed within a broad international project with Professor James DeCaro, Director of the project, and Professor of Mathematics, Maria Shustorovich, a winner of the Eisenhard Award of NTID for outstanding teaching.

We consider this direction to be of high priority for the oldest Russian technical university and fully recognize its high humanitarian and social value, said the rector. It's very important that we work not in isolation but with participation of interested and sensitive partners. Help of Ministry of Education was very effective. Building renovation and equipment for new technologies were realized with personal involvement of the Moscow mayor, Yuri Luzhkov, who got acquainted with deaf students of school No 30 who had dreamed to study at MSTU. Because of this interaction such a center came to existence - a modern educational institution with its own methodologies and devices.

The rector admits, however, that the scale of such an educational phenomenon in Russia is still insufficient. In the United States, whose experience the Bauman people have carefully studied, more than a hundred universities practice education of the hard-of-hearing. In Russia this work has begun in some university cities such as Novosibirsk, Saratov, Vladivostok, Vladimir. Recently, at Ministry of Education problems of education and social adaptation of invalids have been discussed, 52 rectors made presentations, and more than 10 of them got involved in education of the deaf. Of course, if this is done not separately but within a unified and highly organized network, the efficiency will be incomparably higher.

This coincides with goals of the major international project (Postsecondary Educational Network, PEN). The PEN director, Dr. DeCaro commends as a big achievement an increase from 8 to 154 hard-of-hearing students within 10 years at the leading Russian engineering university. However, at NTID there are 1100 deaf students (among 13000 students of the Rochester Institute), and the difference in the scale is obvious. True, NTID was established in 1967 by a decree of President Johnson, and this is one of the rare US schools having federal support. The second similar college for the deaf is humanitarian (liberal arts), in Washington, D.C.

Now it's time for a next step. Many handicapped people in the world should make a choice - to live as invalids on welfare or as independent and socially active citizens. To help them is both a humanitarian and social task. To this end, says Dr. DeCaro, the Nippon Foundation provided a grant to establish the PEN, which will develop a unified network of educational institutions for the hard-of-hearing in several countries. During five years, the funding of this system will exceed six million US dollars, results being evaluated each year. Our minimal program for this period is to establish a base from 7-10 leading universities. Each of them will connect a group of institutions through a common methodological and technological system, communicating via Internet. Around thirty universities of different continents will be involved. This will guarantee high quality of education with a uniform standard and dissemination of modern experience and technologies wherever there is a need. At Bauman MSTU, we already see such a standard. The goal now is to extend it throughout Russia and establish global links with similar leading world centers. Such a base center, connected with US universities, already exists in Japan, this year it will be in China, next year in Russia (based on MSTU) and Philippines and later in some developing countries.

Dr. DeCaro stresses that although the mission is of high

humanitarian value, the expenses are not pure charity. An analysis has shown that the hard-of-hearing return to society four times as much as was spent for their education. First of all, taxes from an earned income of a specialist or businessman. Then, refused welfare benefits (a big saving for the state in a developed society). And this goes with the restored self-esteem of many people, which determines to a large extent a moral climate of society.

Director of the Bauman rehabilitation center, Alexander Grigor'evich Stanevsky concurs: all graduates obtain reliable and even sought-after professions, find jobs and get a high social status of a taxpayer. Even during difficult years of perestroika, the Bauman diploma retained high rating and now it keeps climbing. Alexander Grigor'evich is said to devote his whole life to education of hard-of-hearing and to the center, which is usually called the Stanevsky center. Not long ago, came a deaf boy from a remote village in Buryatia. His parents sold their only cow to pay for his travel to Moscow. The boy went through the Bauman program for the hard-of-hearing, passed regular exams and was admitted to MSTU. One can say that he justified the family's hopes. It looks like a happy ending but our task is to make sure that there would be no need to a family to sacrifice and a capable boy could get educated close to home at the same high level as in Moscow. One can say that this is a credo of not only one man-organizer but of the whole project with intercontinental scope.

In this highly needed project, original traditions and international partnership, human compassion and high technologies of the new century, sentimentality and pragmatism are melted together. A circle of participants is not limited. Victor Vasil'evich Saprykin, chairman of the board of METTEM, the company manufacturing filters for cleaning water, established ten personal stipends for hard-of-hearing MSTU students and provides financial support for the center. Saprykin, a MSTU graduate, is fully aware of educational problems of our time. But there was also a personal reason: his son is hard-of-hearing and in need of professional help. In search of useful experience Saprykin went to US, where at NTID he met James DeCaro and Maria Shustorovich. Now the son is a freshman at MSTU, and his father is actively involved in the center. And Saprykin's experience may be very appropriate: METTEM is now in the process of establishing computer clubs in Moscow, Ekaterinburg and even Berlin. Connected by a fiber optics network into unified information space, the clubs will facilitate distance learning, diagnostic consultations and conferences, and serve as Internet café

The common duty of many organizations should be creating jobs for

graduates of such educational centers. Those who doubt their professional fitness could be reminded of Beethoven, Tziolkovsky and other titans of spirit. But let's come closer to earth. Once in a subway I noticed a group of teenaged boys and girls: they all were distinguished by intelligent liveliness of faces and eyes, by a thread of sparkling communication. They were charming because of their intellect, ease in contact and keen attention to each other. I would like to come closer and to listen a bit to what they were discussing. But in their small circle there was silence. They were deaf and perhaps even mute. They expressed by gestures and articulation. But this didn't prevent them from expressing the whole range of emotions and thoughts; they surprised and got surprised, laughed, objected and agreed. The roar of passing trains didn't disturb them: they were surrounded by silence. But voices and thoughts sounded inside them.

This and other observations made me understand why they are more lively and clever than many of us, hearing and talkative. Perhaps the reason is that in order to contact and understand the surrounding, more intense work of mind is required, and this training eventually develops thinking and creativity forming a higher personal intellect. So, in an open professional competition, who will be a winner?