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Monday Seminar in Mathematics Education

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The Moscow Institute of Physics and Technology: a chapter from the history of physical, mathematical and technical education under Soviet rule.

Abstract

This talk is about the origin and early development of the Moscow Institute of Physics and Technology (MIPT). This institute arose in 1946 as a special faculty of Moscow Lomonosov State University. In 1951, as result of the long struggle, this faculty was closed but at the same year MIPT arose again as an independent educational institute.

Moscow Institute of Physics and Technology was formed according to the educational project proposed by the great Soviet physicist Peter Leonidovich Kapitsa (the Nobel Prize winner in 1980). Kapitsa and other leading Soviet physicists and engineers worried about the break that appeared between scientific education and scientific research in the immediate postwar years. The leading physicists and engineers were not satisfied by the qualification of those who graduated at the Physics Departments of Moscow and Leningrad State Universities and Technological Institutes. They proposed higher education within the framework of those research establishments which were under their command.

Kapitsa's project can be summed up as follows: 1) a careful selection of the most gifted and inclined to research young persons; 2) fundamental severe training of students in physics, mathematics, mechanics and theoretical physics; 3) special courses of instruction leading to the professionalism and delivered by the so-called "base" chairs ("base" departments) which were set up at the research institutes of the Academy of Sciences and at advanced applied institutes; 4) an extensive invitation of working scientists to teach.

Although MIPT contributed a lot to Soviet science and technology, its early history already showed the problems which led to the deformation of Kapitsa's project. I try to demonstrate that these problems did not result from organizational mistakes, they rooted in the very idea of MIPT.

The talk concludes with some thoughts about the current situation of physical and mathematical education in Russia after the fall of communism.