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Education and National Security: System Deficiencies of Mathematical Education in Russia and the USA

Abstract. The paper looks at the mathematical education in Russian schools regarded not long ago as fundamental and based on developing students' mental abilities. However, the analysis of the Trends in International Mathematics and Science Study (TIMSS 2011) demonstrates the non-consistent results in mathematical achievements of young Russians over the last fifteen years referring to the decreasing rate of successfully solved high level problems. The author disapproves of mechanical duplication of any foreign experience contradicting the Russian realities. Meanwhile, a lot of people in the USA and elsewhere abroad realize that national security is closely related to the human capital, which directly depends on education. The publication considers the limitations of mathematical education both in Russia and the USA from the national security stand point.

The author gives the comparative analysis of the system errors in mathematical education of the USA, and singles out the ones to be avoided: the residual investment into the human capital, rising gap between the school mathematics and mathematical science, degrading fundamentality of mathematical education, test drills instead of in-depth training, non-consistency of school reorganization, reduced academic hours, etc. In the author's opinion, the negative foreign experience should be considered in order to meet the time requirements and preserve a unique Russian brand of the high quality mathematical education.

Keywords: education, national security, TIMSS, reorganization of mathematical education.

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