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MATH EDUCATION IN RUSSIA 2009-2016

A SURVEY AND PERSPECTIVES

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Background

- A strong common general math education without connection to modern real life and educational request of students and country's needs
- Compulsory secondary school with no variety, diversity, with weak and rare specialization in high grades
- Education runs formally without referring to what is really learnt and what is just passed by
- Common graduation exams provided in schools. The results are the main indicators of 'school achievements'. Low and decreasing prestige of technical and math education
- Unified State Exam (USE) made as a mechanical adaptation of CITO technique to traditional content and common curricula

Steps

- **2004.** First educational standard with a weak attempt to formulate new features was written in **Roman** and *Italic*. An idea of two levels in education was 'dashed'. The probability and statistics were mentioned.
- **2008-2012.** New editions of the standard (new generation). FES'08/12 doesn't content curriculum. The PT&S are announced as a part of school math course.
- **2009.** Under new standard the design of curricula was delegated to schools
- **2009.** New model of USE on math. Clear practice-oriented part and total refutation of multiply choice items. Shorter but with rapid ascend of difficulties. It revealed and sharpened all problems accumulated from old years.

The Concept

- **2013 Dec.** After long discussions The Development Concept was worked out and approved by the government. Six pages with two main ideas about school math education:
 1. Students are different (most revolutionary point)
 - 2 Math for them might be different also. Three levels are allocated:
 - Basic (Math for life)
 - General (math for profession, whatever this means)
 - Creative (math for future mathematicians and researchers)

Two-levelled USE

- **2015.** Based on the Concept the USE runs in basic and advanced levels. The problem of students with non-math request in their life was successfully (or merely satisfactorily) solved.
- New problems have immediately arisen.

Curricula

- The new standard doesn't include curricula. What does?
- Due to the Concept and corresponding changes in educational lawmaking it became possible to make not one general curriculum but a pack of different exemplary ones for junior (5-9) and high (10-11) grades.
- **2015.** Exemplary Curriculum for JS: two levels – basic and applied with two sublevels of the last. PT and S makes a special chapter with enumerating all didactic units.
- **2016.** Exemplary Curriculum for HS: three levels – basic (with two sublevels including a compensating one), applied and creative with an extension

Textbooks

- Very traditional
- Don't meet new content (practically oriented tasks, financial literacy, multilevel curricula)
- Government has put a task to develop new textbooks in short terms.

Specialized math education

- One of most important things in the Concept is an idea that elite math education and popularization must be a part of state policy.
- Within last 5 years in Russia we got more than 100 new math educational centers, lot of summer and winter schools.