Educational Attainment and Social Inequality in Russia: Dynamics and Correlations with Education Policies

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Abstract. Dynamics of academic performance of Russian school students depending on cultural capital and the size of community is analyzed using PISA and TIMSS data. In order to reveal tendencies in TIMSS and PISA scores dynamics ten educational experts were interviewed. The last 15 years have witnessed a slight improvement in performance of Russian school students and a drop in social and territorial inequality. These changes do not affect all subject areas and result from educational attainment improvements in small populated localities and social groups of low cultural capital. Meanwhile, no growth has been observed in the scores of students with higher levels of cultural capital. The interviews shed light on possible changes in the education system associated with the dynamics of school students' educational attainment.
Keywords: school, territorial inequality, social inequality, education quality, TIMSS, PISA.

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Equality of educational opportunities for different social groups is recognized today as an important indicator of the quality of education systems [Field, Kuczera, Pont 2007]. Educational inequality in Russia is an acute social problem. However, this is not something that has emerged recently. Research shows that, despite the dominant Soviet discourse, access to education varied widely across social groups,

with universities being mainly accessible to children from privileged families [Konstantinovskiy 2008].

International studies, such as TIMSS[1] and PISA[2], are key data sources for analysis of educational inequality today. Education policy experts have attended to Russia's results in such studies over the recent years, but their focus has rather been on the country's mean scores and standing in the rankings than on inequality issues. This interest has been caused by contradictory results: while performing pretty well in TIMSS, Russian school students' score is below PISA average [Kovaleva et al. 2004]. These two studies operationalize educational outcomes in different ways: TIMSS keeps very close to the content of school curriculum, whereas PISA focuses on students' ability to apply school knowledge in solving real-life problems. Researchers have traditionally explained the low scores of Russian students by the fact that Russian schools are not oriented at developing competencies assessed by PISA [Kasprzhak et al. 2005]. They associate improvements in overall education quality with the need to achieve high mean scores in both international assessments [Bolotov et al. 2013; Carnoy, Khavenson, Ivanova 2015].

However, it would be rather inappropriate to make educational policy decisions based on the scores of the average Russian school student. According to recent studies, academic performance differs for students with different social backgrounds. In particular, better results are obtained by students from families with greater cultural capital [Konstantinovskiy 2010; Carnoy, Khavenson, Ivanova 2015] and those living in the major cities [Konstantinovskiy et al. 2006; Amini, Nivorozhkin 2015]. Professional teacher characteristics and teaching methods correlate differently with the educational outcomes of such children and those of their peers from families with lower cultural capital [Carnoy et al. 2016]. It means that universal reforms seeking to embrace all students at once may be inefficient in the Russian education system.

Therefore, the quality of education should be improved by developing a set of differentiated measures for students from different groups and focusing on decreasing inequality in educational opportunities. However, Russia's current education policy makes no allowance for the problem of inequality [Kosaretsky, Grunicheva, Goshin

[1] TIMSS, Trends in Mathematics and Science Study, is a series of international assessments conducted every four years in 4th and 8th grades since 1995. It includes tests in mathematics and science as well as questionnaires for students, teachers and school administrators: http://timss.bc.edu.

[2] PISA, Programme for International Student Assessment, is a worldwide study of 15-year-old students' performance conducted every three years since 2000. It includes tests in mathematics, science and reading as well as questionnaires for students, teachers and school administrators: http://www.oecd.org/pisa.

2016]. Besides, while official documents declare certain changes designed to enhance Russia's standing in international assessments, expert evaluations prove that such changes are implemented very poorly in practice [Bolotov et al. 2013]. The dynamics and extent of inequality in the educational outcomes of students from different social backgrounds need to be analyzed in the first place to change the situation and develop a set of differentiated measures.

This study aims to trace the dynamics of TIMSS and PISA performance of Russian school students grouped by their family's cultural capital and the type of locality they live in as well as to identify the relationship between these dynamics and the changes in education policies.

A mixed method research design is used in the study. Analysis of PISA and TIMSS data was complemented by a series of interviews with experts who were asked to explain possible causes of the tendencies revealed. Ten interviews were conducted with educationalists who are experts in the design of the Unified State Examination (USE) and other education quality assessment tools or who worked for the Ministry of Education and Science at different times, as well as instructional coordinators and school principals.

The study used TIMSS8th grade mathematics and science data and PISA[3] reading, mathematics and science results for 2003–2015. Only school students' results were sampled from PISA data in this study[4]. TIMSS and PISA results are assessed on a scale from 0 to 1,000 with the mean of 500 and standard deviation of 100. The rating scale is divided into 5 (TIMSS) or 6 (PISA) proficiency levels indicating the level of literacy in mathematics, science and reading attained. Both assessments use baseline levels (Level 2), which correspond to minimum skills required in adult life. Students below Level 2 are regarded as unable to apply basic information skills and thus likely to have difficulties in further learning or their career. Level 5 indicates that students are ready to act in unknown situations and apply complex analysis skills.

Students were grouped by location and cultural capital for the purpose of comparison. In keeping with Pierre Bourdieu [Bourdieu 2011], this study uses the mother's education level (whether college completed or not) as an indicator of cultural capital[5]. Regional inequalities

[3] TIMSS and PISA samples are representative for Russia. Each cycle involved about 5,000 school students.

[4] Vocational students are in a different educational situation, and their number is progressively decreasing: from 19% of the total sample in 2003 to 4% in 2012 and 2015.

[5] The PISA's consolidated socioeconomic status index is inapplicable because the Russian education system is hard to fit into the international classification which is used since PISA-2009. Students' answers about their mother's vocational education are encoded as level ISCED5B, which corresponds to

were assessed by grouping students based on the population size of their school locality.

The article will further describe the analysis results, i. e. the dynamics of Russian students' TIMSS and PISA scores in general and across groups with different cultural capital and size of populated locality. Possible causes of the tendencies revealed are identified based on a series of interviews with experts. Conclusion and discussion make up the final part of the article.

1. The dynamics of Russian school students' TIMSS and PISA performance

Russian students showed overall good knowledge of what they had learned in school (TIMSS) but a low ability to apply this knowledge in real life (Fig. 1) throughout the whole period analyzed. The dynamics of results varies depending on the study and domain examined.

TIMSS math scores were growing in 2003–2011, but then a long-drawn-out stagnation followed. In contrast, PISA performance grew better in 2009–2015 after statistically insignificant fluctuations in 2003–2009. The overall improvement in mathematical performance was lower in the PISA than in the TIMSS in the 2000s.

The dynamics in science has been more dramatic. TIMSS science scores had increased sharply by 2011 and changed very little after that. Meanwhile, the PISA performance was getting worse in 2003–2009, which was followed by an insignificant improvement, yet the 2003 level had never been reached again by 2015.

Reading scores were increasing up to 2015 after a slight decrease in 2003–2006. It is in reading that Russian students have had the greatest progress. While there were essential disparities between the domains, and reading literacy tests presented the most difficulty for Russian students in 2003–2006, the gaps had shrunk to a minimum by 2015, when reading literacy of Russian school students, associated with their information skills, reached the levels of literacy in mathematics and science.

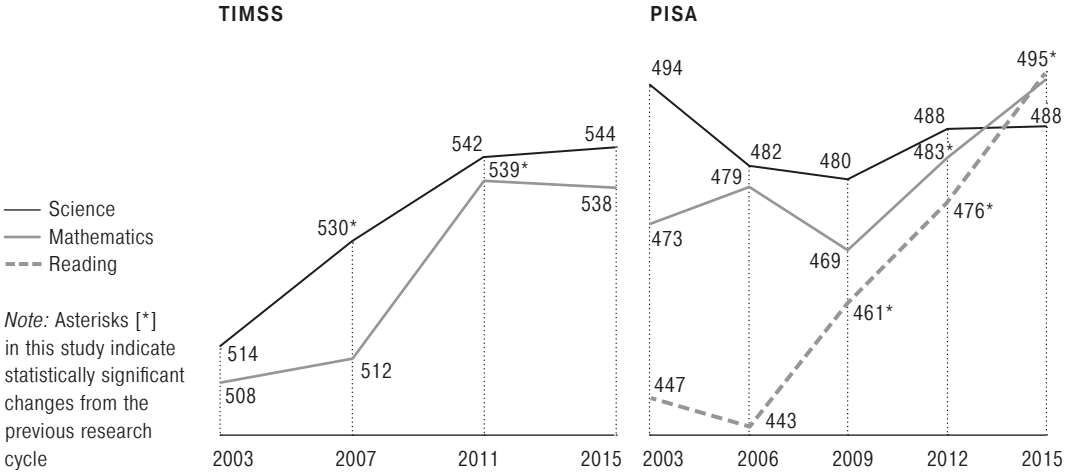
2. Inequality of educational outcomes related to cultural capital

Students with college-educated mothers[6] tend to perform worse in all domains (Fig. 2 and 3) in both TIMSS and PISA. However, the dynamics of scores obtained by students from families with different levels of cultural capital varies between the studies and across the domains.

tertiary education in the consolidated index. However, trade schools and vocational colleges represent independent levels of education in Russia.

[6] The proportion of students with college-educated mothers increased consistently in the TIMSS sample, from 36% in 2003 to 46% in 2011, falling to 42% in 2015. As for the PISA sample, the respective proportion changed very little in 2003–2009, hovering around 35%. In 2009–2015, however, it grew by 16%.

Figure 1. **The dynamics of Russian students' TIMSS and PISA performance, 2003–2015**



Note: Asterisks [*] in this study indicate statistically significant changes from the previous research cycle

TIMSS math scores changed similarly in both groups: sharp increases in 2007 and 2011 were followed by periods of stagnation. Meanwhile, the dynamics in PISA math performance differed between the groups with varying cultural capital. Students with college-educated mothers performed almost the same all the time (with the exception of a small improvement between 2009 and 2012), whereas the performance of students with non-college-educated mothers started growing in 2010.

The same dynamics, with identical changes in TIMSS results and small yet differing changes in PISA scores, is revealed in science performance. Both groups showed a gradual improvement in TIMSS, which had slowed down by 2015. PISA performance had worsened by 2006 and went back to the first cycle values in 2012 among students with college-educated mothers. Their peers with non-college-educated mothers scored more or less the same throughout the whole period.

Changes in reading literacy performance were more consistent than in other PISA domains. A sustainable growth, noncontingent on cultural capital, was observed after 2005. However, in 2012–2015 improvements were more conspicuous in those groups of students with non-college-educated mothers.

As we can see, the two groups identified based on social characteristics show different dynamics of PISA performance in mathematics and science. This may reveal something either about educational interventions targeted at one category of students or about different effects of the same educational interventions on students from different social groups.

Figure 2. **The dynamics of TIMSS scores depending on mother's education**

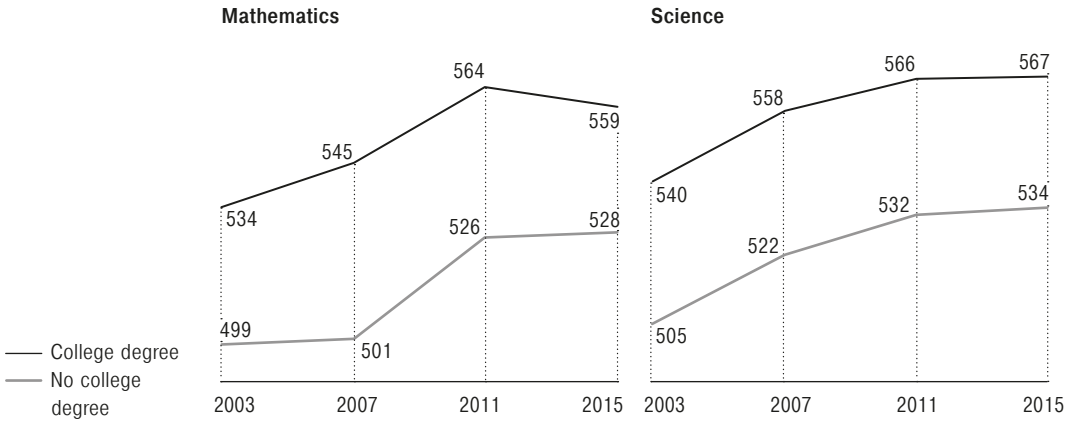
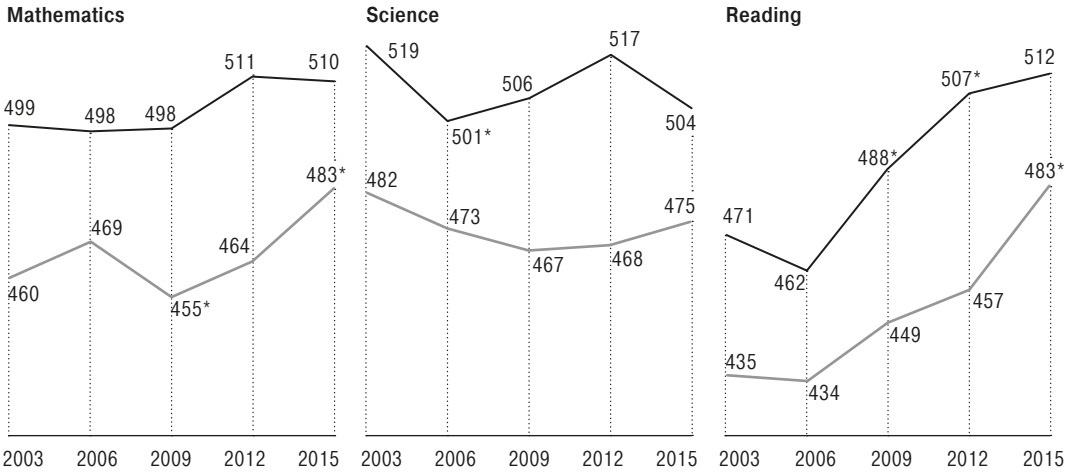
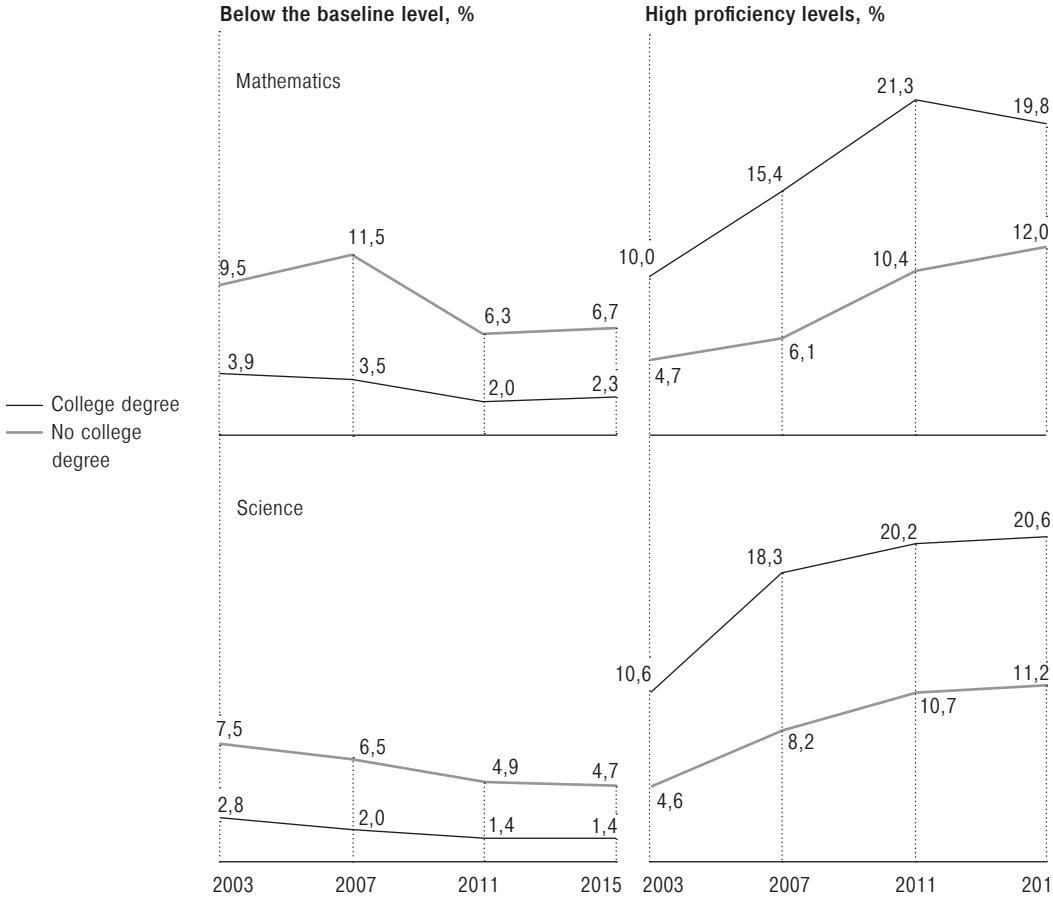


Figure 3. **The dynamics of PISA scores depending on mother's education**



Let us now look at Russian students' performance in terms of whether or not they achieve specific proficiency levels. TIMSS scores are pretty high throughout the period; in particular, students who have achieved high levels are more numerous than those who have not made it to Level 2 in both science and mathematics (Fig. 4). The proportion of students below the baseline level is reducing in contrast to that of students with high proficiency levels in both domains. Students from families with low cultural capital constituted the majority of those who scored below Level 2 throughout the whole period. The growth in the population of high-performing students was provided for by children from families with high cultural capital. Consequently, the lack

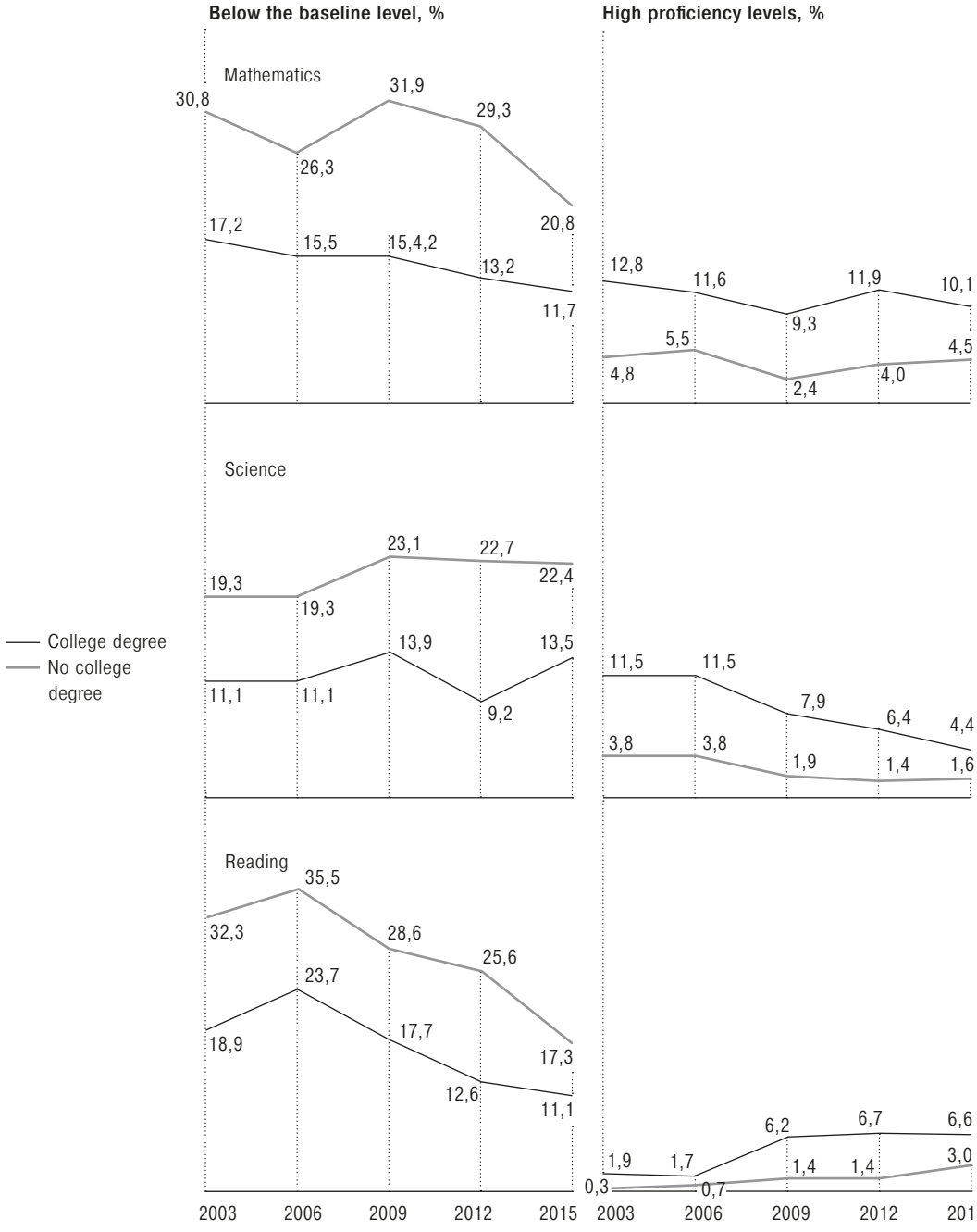
Figure 4. **TIMSS 2003–2015: Russian students' performance in terms of achieving specific proficiency levels**



of basic skills in mathematics and science is more typical of students with non-college-educated mothers.

By contrast, the percentage of students below the baseline level in the PISA is higher in all domains than the proportion of high performers (Fig. 5). Unlike in the TIMSS, the dynamics of the percentage composition of students with different proficiency levels in the PISA varies from domain to domain. About one fourth of students with low cultural capital never made it to Level 2, and high levels were only achieved by less than 5%. The percentage of students with high proficiency levels in science had even dropped by 2015 against the background of the stagnant proportion of those below the baseline level. As a result, the percentage of high performers became almost the same in groups with different cultural capital. As for reading, about one fourth of students with high cultural capital and over one third of

Figure 5. **PISA 2003–2015: Russian students' performance in terms of achieving specific proficiency levels**



those with non-college-educated mothers did not achieve the baseline proficiency level. However, the proportions reduced sharply after 2009. At the same time, high levels were only achieved by a small portion of school students, their percentage being more or less the same in both social categories.

Just as in the TIMSS, the proportion of students below the baseline proficiency level was lower among children with high cultural capital in all domains. However, the percentage of high performers with college-educated mothers did not exceed the percentage of successful students with lower cultural capital in all domains as dramatically in the PISA as it did in the TIMSS.

3. Regional inequality in education

Russian students' scores in international assessments vary widely in all domains depending on the size of populated locality. The dynamics of indicators is positive here too, with inequalities between students from different social backgrounds reducing. Yet, each of the two studies has its subtleties.

Regional inequalities mostly decreased in the TIMSS (Fig. 6). Populated localities were divided into two groups, so there were disparities in test scores between students in large cities and those in small settlements throughout the whole period of observation. However, the gaps in mathematics and science reduced, largely due to a more dynamic improvement in the performance of students from rural localities.

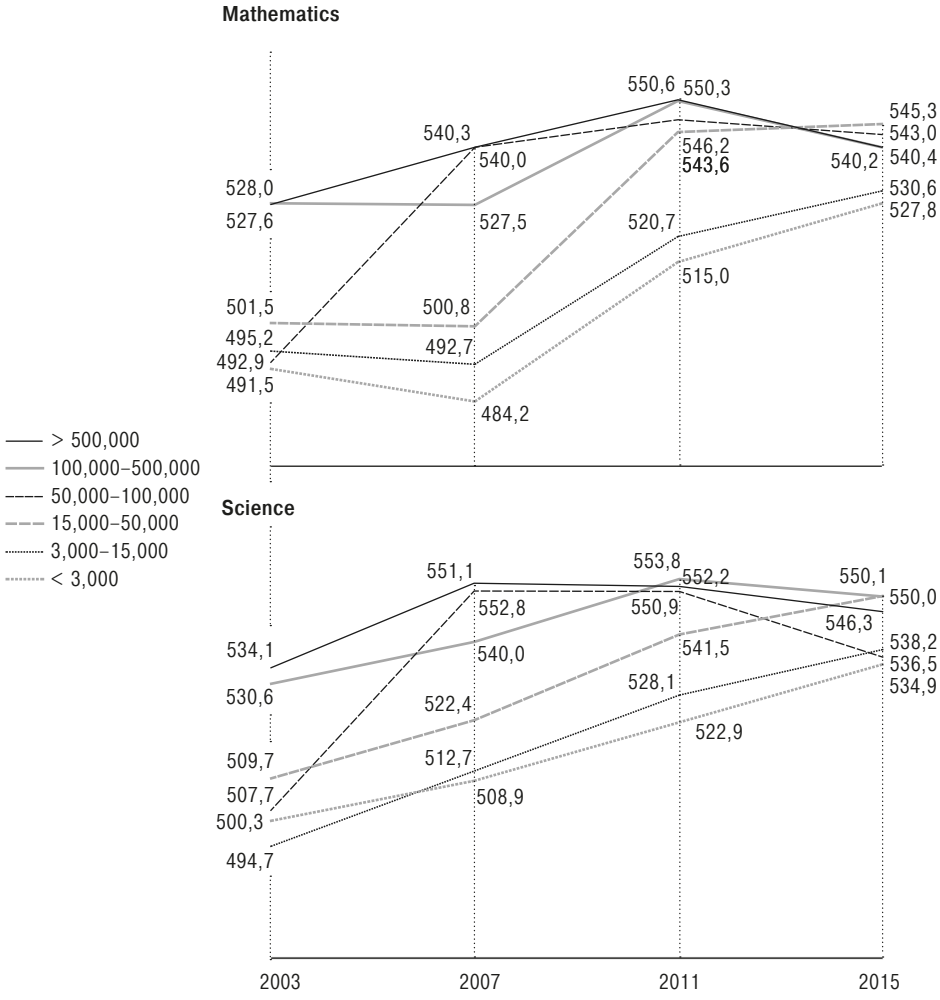
The dynamics of PISA performance also showed some reduction in regional inequalities (Fig. 7). As in the TIMSS, a more intensive growth was demonstrated by students from small localities, while the scores of students in the major population centers did not change significantly in mathematics and dropped in science in 2012–2015. This resulted in a disparity in PISA performance between the two groups of populated localities in 2015 (the inequality had been less different in 2003).

PISA reading performance was improving consistently in settlements of all types (with the exception of large cities in 2012–2015). Therefore, regional inequalities in reading literacy changed less than in other domains. Meanwhile, the groups of localities are less identifiable in this test.

In order to analyze the changes in student distribution among proficiency levels, the two extreme groups were compared: students from rural settlements of less than 3,000 and those from large cities (over 500,000 in the TIMSS and over 1 mln in the PISA).

Students from large cities achieved high levels more often than they scored below the baseline level in the TIMSS, in contrast to their rural peers (Fig. 8). The percentage of students below Level 2 was decreasing in both mathematics and science throughout the whole period (starting from 2007 in mathematics), yet faster in small localities.

Figure 6. **The dynamics of TIMSS performance depending on population**



As a result, regional disparities in the proportion of children with no basic skills in these domains had reduced somewhat by 2015. The percentage of students with high proficiency levels, on the contrary, was growing in 2003–2011 in settlements of both types. It continued doing so in rural schools up until 2015, while plummeting in large cities. This way, the proportions of students with high proficiency levels in rural settlements and large cities became equal in both domains in 2015.

Proportions of students below the baseline level and those above the high level in the PISA were almost the same (Fig. 9) in all domains (starting from 2009 in reading) in large cities and changed little over time, especially in mathematics. There were a lot of students who did not make it to Level 2 and very few with high proficiency levels in rural

Figure 7. **The dynamics of PISA performance depending on population**

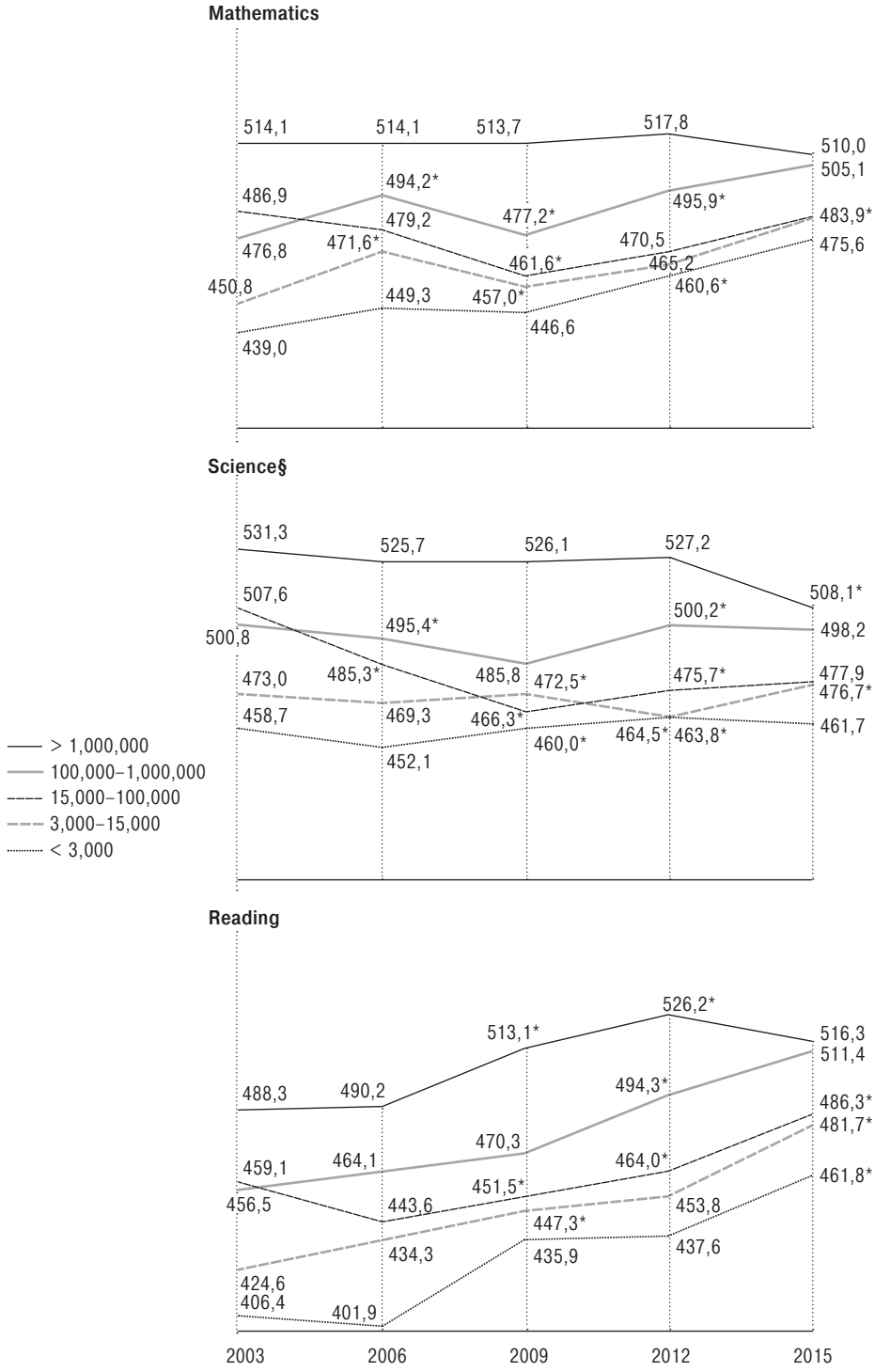
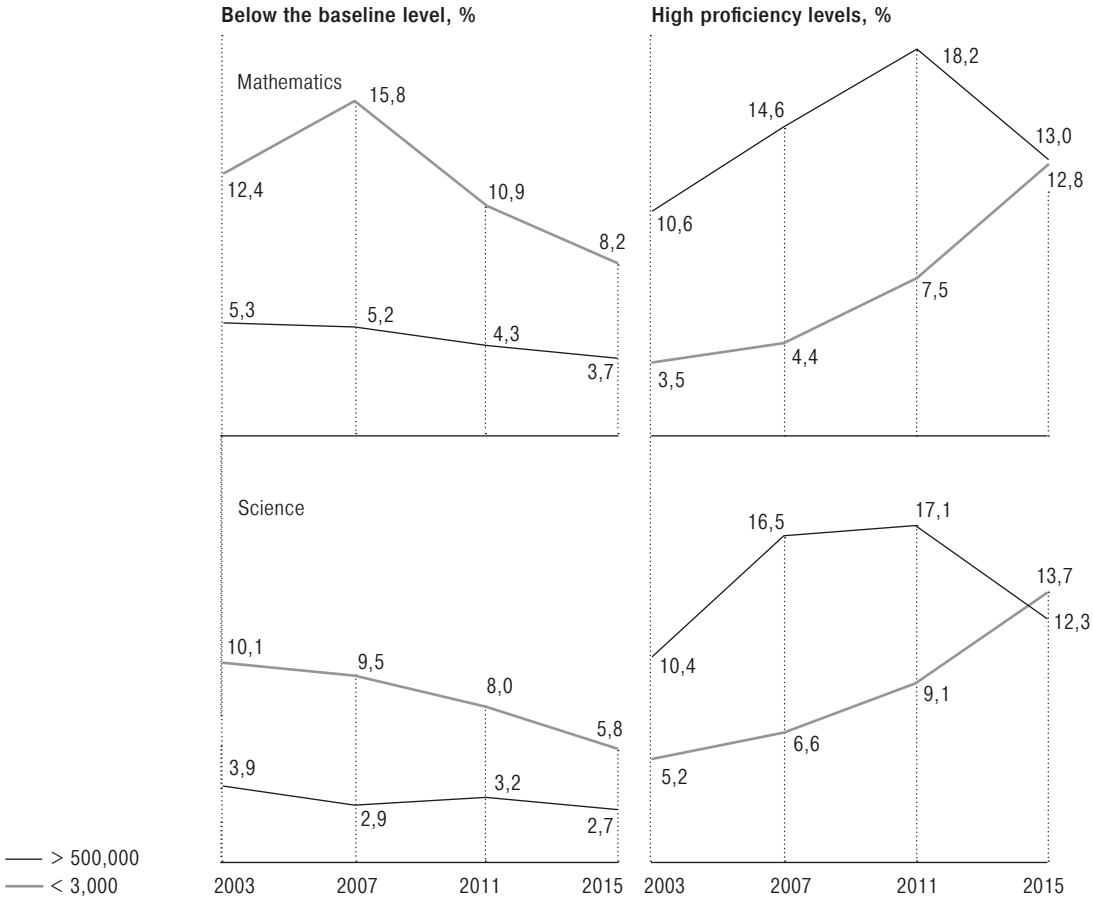


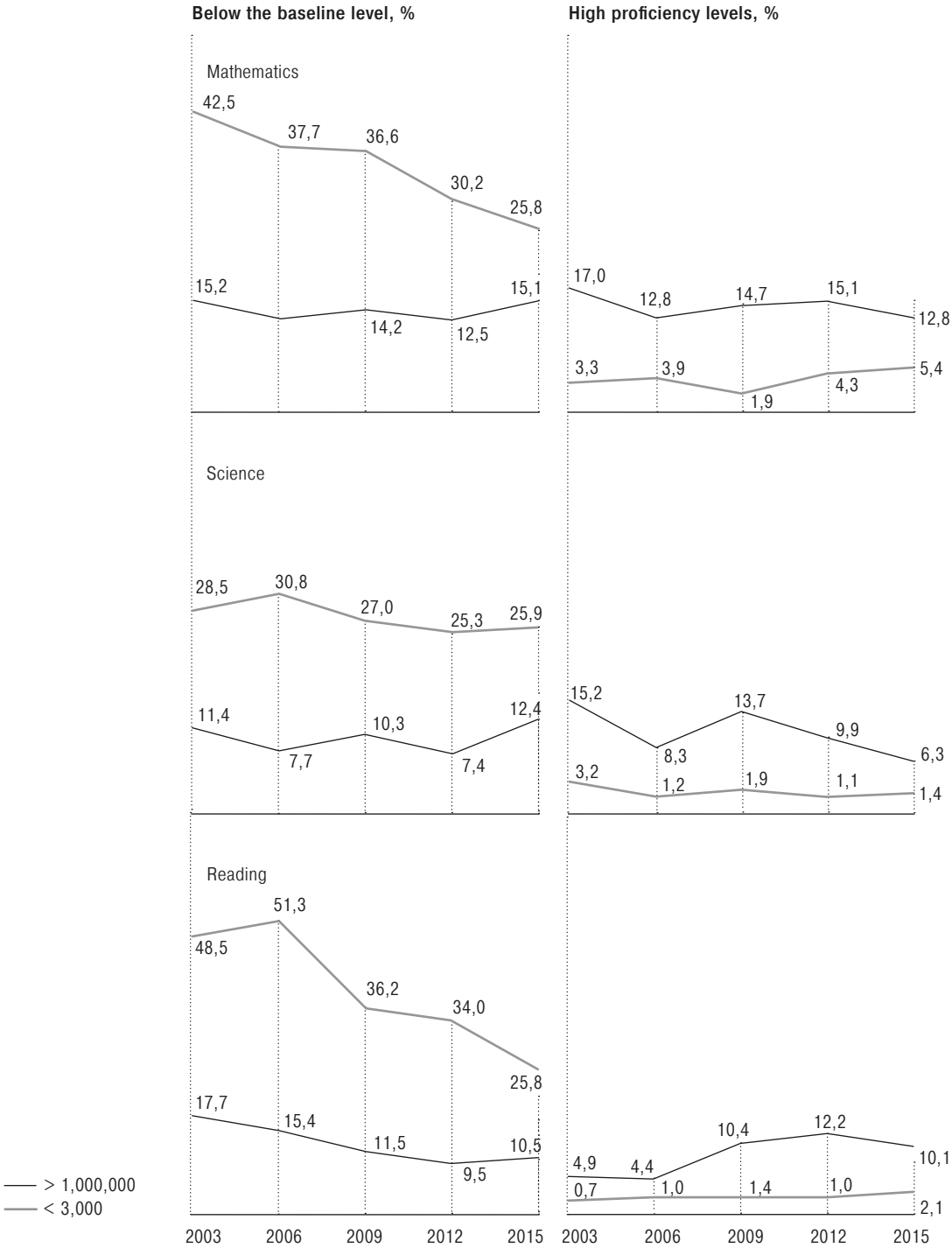
Figure 8. **TIMSS2003–2015: Proficiency levels among students in rural settlements and large cities**



schools. However, rural students showed more perceptible positive dynamics: the percentage of functionally illiterate school children was falling throughout the whole period in mathematics and starting from 2006 in reading (the changes in science were insignificant, in 2009–2015 particularly). The proportion of top scorers in rural areas did not change much in any of the domains.

In general, a few important patterns can be identified when analyzing the dynamics of Russian students' TIMSS and PISA performance. First of all, science performance stagnated in both tests. Next, there was no improvement in PISA scores among students from families with high cultural capital and those in large cities, i. e. students from more advantaged socioeconomic backgrounds. This marks a certain ceiling in the education system. At the same time, the performance of students with low cultural capital and those from rural areas improved, reducing the overall educational inequality. Possible causes of the ob-

Figure 9. **PISA 2003–2015: Proficiency levels of literacy among students in rural settlements and large cities**



served dynamics in Russian students' TIMSS and PISA scores as well as the meaning of the tendencies revealed were discussed in interviews with the experts mentioned above.

4. Possible reasons for changes in TIMSS and PISA performance

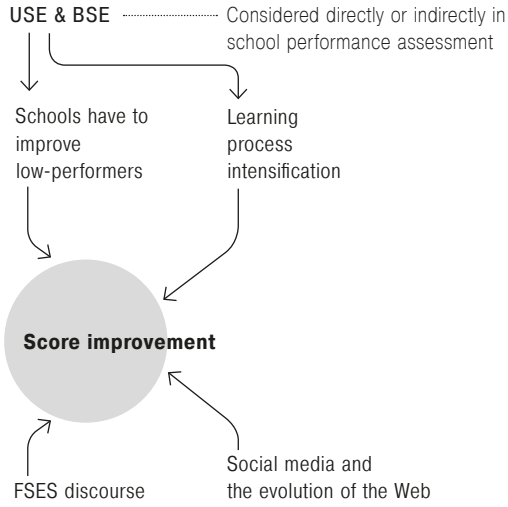
4.1. Improvement in mathematical and reading literacy among students with low cultural capital and rural students

The experts consider the development and intensification of external control policies as well as the introduction of the USE (Unified State Exam) and the BSE (Basic State Exam) as the fundamental assessment criteria to be among the most critical reasons for literacy improvements among students who had traditionally been low performers (Fig. 10). As they point out, there used to be a group of schools and students that literally slipped out of the education authorities' control. However, as soon as high-standard examinations were introduced and came to be used as a school assessment tool, and at the same time the number of diagnostic tests increased, educational institutions had to ensure at least some minimum improvements. School teachers and administrators faced the need to reduce the number of low performers and underperformers, which entailed an increase in scores achieved by Russian students in international assessments. As the experts note, the effects of introducing the BSE, for example, extend not only to ninth-graders but also to earlier stages of school education: "…They don't start from Grade 9 but earlier—from Grade 6, 7 or 8"; "The requirement to improve exam performance allowed schools to intensify the learning process, which could contribute to the increase in PISA scores."

Naturally, "The USE and BSE are largely based on obsolete knowledge standards and hardly assess how knowledge is applied in real-life situations", the experts admit. Nevertheless, they believe that the introduction of these assessment tools could help increase the overall level of literacy. In addition, the BSE has used reading and experiment-based tasks over recent years, so PISA performance can be expected to improve in the years to come.

The experts also point out that attempts have been made, albeit to an insufficient extent, to stimulate the improvement of teacher quality or at least reorient teachers toward more advanced methodologies. These changes are potentially more significant for students from disadvantaged social groups, whose learning is more contingent on teachers and school. The teacher pay reform attracted some young teachers and subject-specific professionals with no teaching degrees to schools. Such specialists normally have a broader professional outlook, find themselves more open to experimenting, and bring in innovative ideas. The split of salary structure into base wage and incentives prompted teachers, one way or another, to upgrade their teaching practices: "Say, participation in Olympiads. When salaries depend on children's participation in Olympiads, teachers have to engage and prepare their students—and standard textbooks are not enough here. Although it may be not too efficient, it's still better than nothing."

Figure 10. **Factors of improvement in mathematical and reading literacy among students with low levels of cultural capital and rural students**



Beyond that, professional online communities and distance advanced training courses have been emerging actively over the last decade. Such communities have become an effective resource for rural teachers, allowing them to obtain professional assistance from leading Russian experts. Similar results have been achieved by the Estonian teacher education reform [Khavenson, Carnoy 2016].

The introduction of the second-generation Federal State Education Standard (FSES) is considered by the experts to be another factor of performance improvement among students with traditionally low scores. The new standard centered more on the skills measured by the PISA. Meanwhile, its influence was not direct: even in the academic year 2016/17, upgraded curricula were only applied to sixth- and seventh-graders. Besides, a number of experts point out that the sign of compliance to the new standard does not always mean that the textbook's content has changed: "As a result, 'knowledge-based' textbooks have been brought into mass use." However, the educational discourse has changed: "It is not what we communicate to students in the classroom, not the range of topics we should cover, but what we should teach them that matters." The what-to-cover attitude has been forced out by the orientation towards what knowledge and competencies students should come out with. The most proactive teachers have started looking for new ways of teaching.

The introduction of the new standard involved funding for advanced teacher training courses, procurement of new equipment, textbooks, and other study materials: "For example, computers were

purchased for primary school to meet the standard in 2012, but they have been used by everyone, not only elementary students." "Higher-end" schools tend to benefit the most from the allocation of funds, the experts observe. Nevertheless, rural schools and schools in challenging social contexts have been provided the opportunity to improve their resource base too.

Finally, the experts often mentioned a non-school factor of performance improvements in assessments such as the PISA. Living in today's world implies that tons of diverse information on the Web are consumed and analyzed and children engage in ongoing communication in social media. Such activities promote the development of reading literacy, as measured by the PISA. As the digital world and the Internet are becoming ubiquitous, web interactions are starting to involve children from families with different cultural capital as well as from settlements of different population sizes. Often, this communication is of high quality, e. g. interest groups, educational channels, etc.

4.2. No performance improvement among students from large cities and families with high cultural capital

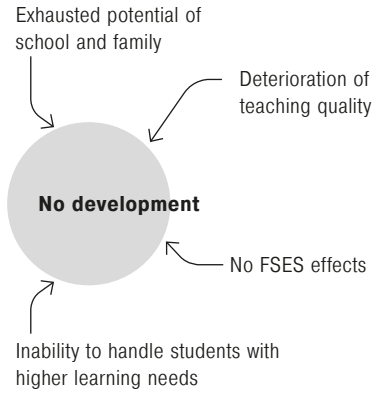
The experts believe that students with traditionally high TIMSS and PISA scores have reached their ceiling in the existing educational context. Stagnant results in both tests, the PISA particularly, indicate that the existing system has no potential for further growth and the necessary conditions develop too slowly. The major reasons for this include the overall deterioration of teaching quality, teachers' predominant focus on weak learners, and, most importantly, purely formal implementation of the FSES into teaching practices, the experts hold (Fig. 11).

The decrease in teaching quality is especially conspicuous in lyceums and gymnasiums, which are often attended by children with high cultural capital, the experts find: "The Social Navigator project reveals that specialized schools perform worse than they used to." The situation is almost impossible to improve with the existing education program, since "If we stick to it [the already complicated program] and add PISA-measured requirements, we'll just need more [working] hours. Intensification is unable to solve the problem."

The established education system suggests that teachers focus on low performers. Institutional signals imply that "punishment" for low BSE and USE scores overweighs incentives for good scores or Olympiad prize winners: "A regular teacher doesn't focus on top-performers, but instead, on areas where they can get penalized—most often, late or missed assignments." In addition, teachers are overloaded and have no time for high-performing students who express higher learning needs. It is tacitly assumed that such students can cope on their own and teachers should "tinker with weak learners and boost up their performance to avoid unsatisfactory outcomes."

Deterioration of teaching quality is also captured in teachers' inability to work beyond the standard education program. In order to prepare students for Olympiads and challenging USE tasks, they need to embrace additional new knowledge which is rarely offered in advanced

Figure 11. **Reasons for stagnant TIMSS and PISA performance among students from large cities and families with high cultural capital**



training courses. For this reason, most teachers find themselves unable to handle students with higher learning needs.

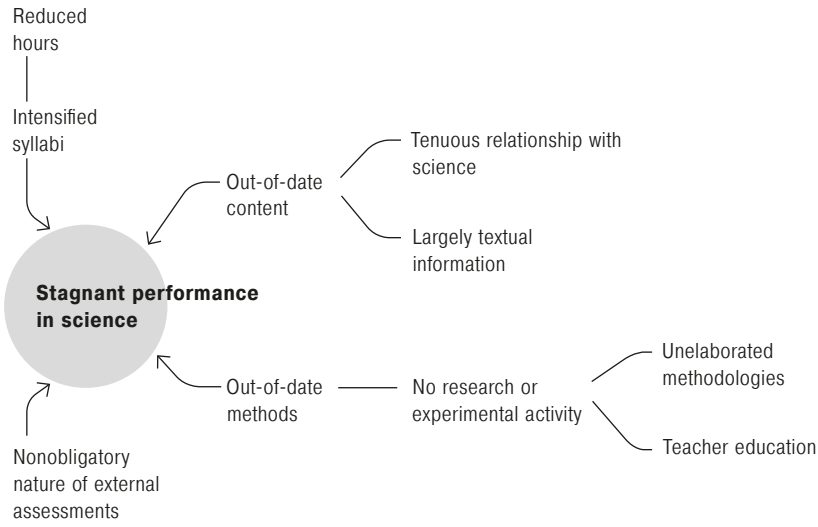
It is too early to expect any significant effects on international rankings from the new standards, especially in terms of high-potential students. It is schools with traditionally good performance in the knowledge-oriented education program that the FSES has permeated the least. Such schools have got into the habit of considering their teaching practices successful and leading to desired outcomes. In addition, the existing system of advanced teacher education has also failed to prove effective in convincing teachers that using the new standards is helpful and relevant: "No one talks to teachers in their language. FSES standards are just imposed with no explication given."

Finally, a number of general economic factors had an impact on the dynamics of educational outcomes. It was urban population and families with high cultural and economic capital that were the first to be affected adversely by the financial and economic crises of 2008 and 2012. Families of these types had always invested as heavily as they could in their children's education, and the crises ripped them of the possibility to increase their investments. "Educational outcomes in these groups are determined by two factors: family and school. While families keep doing their part, nothing has changed in schools. As a result, children did their best right from the beginning and had no potential for further development because nothing changed."

4.3. No score improvement in science

The causes of stagnant science performance identified by the experts can be divided into three categories: related to the content of education, to the teaching methods, and to the external assessment system (Fig. 12).

Figure 12. **Reasons for stagnant performance in science**



The content of science education has essentially turned obsolete, the experts believe. Performance in the TIMSS and even more so in the PISA could be affected by an excessively theoretical teaching of natural sciences. The experts pin some of their hopes on the FSES, admitting, however, that the general syllabus guidelines for this domain are changing very slowly. As a result, syllabi and textbooks have little to no research or experimental components in them. "Teaching geography and biology does not involve any problem solving, being restricted to inculcating some catalogue-type knowledge; it also offers little application and no explanation at all."

Russian students' performance in international assessments could also be affected by the intensification of science education, meaning that hours allocated for these subjects reduced whereas no relevant change in syllabi or the teaching conception took place: "They are trying to cram the same material, cram being the key word, rather than teaching the scientific vision"; "In fact, we have [only] compressed the learning process, as no hours have ever been added and the syllabi haven't changed much." A situation where teaching is intensified while preserving the old content organization policies is unfavorable for score improvement, the experts are convinced.

The experts insist that there is a critical need to change the existing teaching practices. It is in science that advanced extracurricular teaching methods can find their broadest application, which they do not. Field trips and observations, excursions, and many other types of activities can be used in such subjects as biology or geography. Lots of museums and scientific institutions are willing to offer their training

modules for chemistry and physics classes. However, these opportunities have hardly been used.

Teachers are not prepared for teaching contemporary science. Meanwhile, relevant teaching qualifications and skills are indispensable in promoting students' experimental activity: "The 2017 All-Russia Tests on geography, physics, chemistry and biology involved reading, context problems, and experimental design—and teachers don't know how to deal with tasks like that." Teachers have "no habit of running experiments or observations." As a result, even when schools upgrade their lab equipment for experimenting, the efficiency of using it in the learning process is questionable: "It remains unclear how this equipment is used—there is no evidence of its relevance." It is not only school syllabi but also teacher education methods and textbooks, including those on the methodology of teaching, that have seen their day, the experts argue.

Finally, unlike mathematics, science could not be influenced strongly by the introduction of external assessment tools. Students who take the BSE and USE in natural sciences are not that numerous: "Children who are able to solve complex problems in our domain probably do well in the PISA too… Another question is… These are optional subjects: about ten percent choose chemistry and about twelve, biology." Otherwise speaking, few school students learn to solve high-complexity science problems.

5. Conclusion and discussion

According to international studies, disparities between TIMSS scores of Russian students with high and low cultural capital did not reduce in 2003–2015, i. e. the changes in performance in these groups were synchronous. In other words, factors associated with TIMSS performance affect both groups of school students equally.

In the PISA assessment, students with low cultural capital improved their scores. In contrast, the performance of students from families with high cultural capital showed no progress. As a result, the gap between PISA scores in these two groups reduced (with the exception of reading literacy).

As for regional inequalities in education, they gradually decreased in the TIMSS: the difference between students from large cities and their rural peers was extremely small. It can be suggested that the education program is implemented more or less in the same way, no matter where students live. Meanwhile, the PISA, which measures knowledge application skills, reveals a different dynamic: inequality in this test has definitively transformed into a significant difference between large cities and all other types of settlements.

The improvement of performance among students with low cultural capital and rural students as well as the related decrease in educational inequality can be regarded as a positive trend in Russia. However, stagnation and even a slight decline in the scores of students

from large cities and families with high cultural capital are a negative sign for the education system. Students in the latter group perform worse than their foreign peers [Carnoy, Khavenson, Ivanova 2015]. The dynamics observed indicates that school is unable to satisfy higher learning needs. If the existing trends persist, school will have no potential to achieve any truly outstanding educational outcomes.

Expert interviews reveal the most important educational initiatives in recent years which could influence directly or indirectly the dynamics of Russian school students' performance in comparative international assessments. The introduction and expansion of external assessment tools is considered by the experts to be a crucial and mostly positive factor. It has had a particularly significant impact on the performance of students from families with low cultural capital and those living in rural areas. Teachers' closed-mindedness and unwillingness to integrate new things appear to be a very common barrier on the way towards the modernization of education, the experts are convinced. In their opinion, the process of implementing the FSES and upgrading the content of education is extremely slow, fragmentary, and largely formal. As a consequence, innovations stall and only partly reach schools. It is important to consider that changes in policy do not affect practice right away due to the system inertness. Besides, changes in students' performance are not always related directly to education policies. For instance, the information environment is becoming heavily saturated as social media evolve and the Internet spreads around the globe, which is expected to develop information skills and improve literacy in students.

Russia is not a unique case in terms of measures undertaken to improve the quality of education in general and the performance in international studies in particular. The PISA assessment was launched in the early 2000s, making the best part of the participating countries face the need to reform their national education systems. The political approaches they opted for turned out to be similar in many ways: publication of PISA results drove the development and design of national assessment tools as well as the renewal of education standards in Germany, Denmark, Japan, Switzerland, Hungary, Norway, Luxembourg, and other countries [Breakspear 2012].

It is vital today that school, as a tool of mass education, changes its teaching practices. Modern economies want professionals who are not only conversant with theory but also able to apply their knowledge in diverse real-life contexts. The ability to analyze and interpret information and a high level of functional literacy are the best guarantee of the ability to solve problems in professional and social life, open-mindedness, and aptitude for learning.

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