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# Trilingualism, Bilingualism and Educational Achievements:
## The Case of Chuvash and Tatar in Rural Russia

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**Abstract.** This study examined the relations among trilingualism, bilingualism, and educational achievements of school students in a rural environment in Chuvashia, Russia. Using our survey results of 913 school students of Chuvash ethnicity (67%) and Tatar ethnicity (28%) and ordered logistic regressions we found weak evidence for any positive association between trilingualism or bilingualism and educational achievements. Socio-economic status, cultural capital (approached with number of books at home), health issues, type of settlement, class grade, number of siblings, and gender were controlled. The results also indicated that fluency in Chuvash and in Tatar, mother tongue proficiency, language used at home, and language of instruction in the elementary grades were not adversely related to educational achievements. On the one hand, these findings partially disagree with previous studies, where a positive association was found. It is probable, that the rural versus urban environment explain these differences. On the other hand, the results confirm previous research in the Volga area of Russia that growing concern among authorities on minority language students' educational achievements is baseless. It rather suggests that policy-makers should be more concerned with increasing the equality of opportunities provided by the education system to persons of different socio-economic levels.

**Keywords:** Trilingualism, bilingualism, educational achievements, language policy, social inequity, rural Russia.

Russia is one of the countries with the highest language diversity in the world, with 97 indigenous languages [Simons, Fennig 2017]. Of these, 33 are reported to be languages of instruction, however, they are used by a small minority of ethnic minority students, and mostly in primary school [Tishkov et al. 2009]. Subsequently, many concerns

have been expressed about the results of the recent educational reforms, especially about the introduction of a new Unified State Exam (USE) for high school graduation, which has been pointed out to be an important cause of the sharp drop in the use of minority languages as a medium of education [Chevalier 2017; Prina 2016; Suleymanova 2018; Tishkov, Stepanov 2017].

The USE aims to be a standardised measurement of academic achievement across the whole Russian Federation. Nevertheless, as of 2018, students are compulsorily examined in only two subjects: Russian language and mathematics. Passing the exam in any language other than Russian is not legally forbidden, but it is not allowed in practice. Consequently, the USE has been interpreted by parents, teachers and school officials as strengthening the position of the Russian language in education at the cost of minority languages. A similar exam has been also set at the end of grade 9 (Final State Attestation) and currently a new one is being implemented at the end of grade 4. These exams have been also pointed out as a harm to minority-language education [Ir☐kl☐ Sămah 2017].

Russian authorities are indeed concerned about school achievement in the Russian language. A draft version of a policy document on the school teaching of Russian language and literature presented minority-language education as a harm for the mastering of the Russian language [Working Group on the Conceptual Foundation of the Teaching of the Russian Language and Literature in the Schools under the Chairman of the State Duma of the Federal Assembly of the Russian Federation 2015]. After a wave of protests this document was drastically reshaped; nonetheless, president Putin stated in July 2017 that it is «impermissible to force someone to learn a language that is not [his or her] mother tongue, as well as to reduce the hours of Russian-language [classes in schools] in Russia's ethnic republics» [Meshcheryakov, Coalson 2017]. Shortly afterward, in August 2017, Putin suppressed, by a mere Presidential order, the compulsory teaching of the regional official languages which existed in several republics of Russia, which has put even more pressure on minority language teaching in Russia. Consequently, it is crucial for the future of minority languages as languages of instruction in Russia to know whether they threaten or support educational achievements, particularly for the Russian language, which is a major concern for federal authorities.

Despite the multiplicity of languages used in the Russian educational system and the concerns they raise, the relationship between bilingualism and educational achievement is an under-researched field in Russia. Using a sample of 2003 school students in Tatarstan, Tovar-García [2014] found that bilinguals outperformed monolinguals. Tovar-García and Alòs i Font [2017] analysed a sample of 709 ethnic Tatar school students from Tatarstan and showed that those who speak Tatar at home tend to outperform their schoolmates with Russian as the family language in both humanistic and scientific subjects.

Alòs i Font [2016] on the basis of a survey of 327 primary school students in Shupashkar/Cheboksary came to the conclusion that the command of Chuvash has positive outcomes, especially in connection with the learning of English. Using a different approach, Tishkov and Stepanov [2017: 422] compared the overall results by region in the USE on the Russian language and found that in the Volga Federal District bilingual regions had similar marks to regions where Russians are the overwhelming majority of the population.

All this suggests that bilingualism is a positive factor for educational achievement, at least in Tatarstan and Chuvashia. Nevertheless, in Russia this research has generally been conducted in an urban environment and with a focus on the correlation between educational achievement and the knowledge of a minority language or its use in family, but not as a language of instruction.

Moreover, assuming that bilingualism is a positive factor, could trilingualism have even more positive outcomes? In the educational literature, trilingualism has been studied basically from two points of view. On the one hand, trilingual educational systems are presented discussing different forms of introducing the languages, their advantages, or disadvantages. On the other hand, various studies discuss whether bilingual students learn a new language better than monolingual students do. Our hypothesis here is different. Bilinguals develop a number of cognitive capacities to a greater extent than monolinguals, for instance, executive control [Bialystok 2011] and language awareness [Rutgers, Evans 2017]. As a result, in certain circumstances that include the support of a student's first language [Cummins 1976], several studies have found that bilinguals obtain better academic outcomes than monolinguals, for example, for speakers of Tatar as discovered by Tovar-García and Alòs i Font [2017] and for speakers of Catalan, Galician and Basque in Spain, and Turkish in Belgium as cited by these authors.

In fact, some studies have suggested that some cognitive capacities could be greater among multilinguals. For instance, Kavé et al. [2008], in comparing bilingual, trilingual and multilingual elderly persons on cognitive-screening tests, found that multilinguals outperformed trilinguals, and trilinguals outperformed bilinguals. More recently, Brito, Sebastián-Gallés and Barr [2015], using an experimental design with 18-month-old infants, found that memory performance is better for bilinguals in comparison with monolinguals, but there are no differences between bilinguals and trilinguals. In the present research we hypothesise that similar positive results should be found on the educational achievements of trilinguals and bilinguals in our sample. We do not necessarily put forward that trilingualism could be a cause of higher academic achievements, but we initially hypothesise a stronger correlation with them.

It should be added that, in the present study, we consider 'bilinguals' or 'trilinguals' respondents that declared a good command of

one or two societal minority languages (Chuvash and/or Tatar), assuming that all students are fluent in Russian. Thus, we are considering 'bilingualism' and 'trilingualism' in terms of *proficiency*, and not of *use* (see Cenoz [2013a]).

## 1. The current study

The present research was conducted in a rural region of Chuvashia, specifically in the Kaśal/Komsomol'skii and Patăryel/Batyrevskii districts (municipalities). We selected these two districts due to the composition of their populations, where Chuvash people are the majority, Tatars are the second ethnic group, and Russians are a minority. In 2010, the population of Kaśal/Komsomol'skii was 26,951. Chuvash accounted for 67.5% of the district's population, Tatars for 27.4%, and ethnic Russians for 4.5%. The population of Patăryel/Batyrevskii was 38,620. Chuvash accounted for 70.7% of the district's population, Tatars for 27.3%, and ethnic Russians for 1.6% (2010 Census). Marriages between Chuvash and Tatars are rare, seemingly because Chuvash are generally Orthodox Christians and Tatars are, as a rule, Sunni Muslims. In our sample, only six students reported this kind of marriage.

Three towns have a little more than 5,000 inhabitants: the two administrative centres of the districts and another village. Almost all villages are monoethnnic. Even in the two administrative centres, the population is largely Chuvash, and the few Tatar families living there arrived recently. However, according to our sample, Chuvash people tend to live in smaller villages (median: 812 inhabitants) than Tatars (median: 1745 inhabitants).

A rural sample is a novelty in Russian studies on educational achievements, which so far have investigated whole regions or urban areas. Since minority-language education in Russia, as a rule, is offered only in villages, it seems better to study its results analysing a sample of village students in order to avoid socio-economic and sociocultural gaps between the urban and rural populations that could hamper the analysis.

Tatar families speak Tatar at home and seldom combine it with Russian. The great majority of Chuvash not living in the administrative centres speak Chuvash at home, but it is not rare that they use some Russian, too. Chuvash in the administrative centres are experiencing a rapid language shift. Although 3/4 of school students' parents of Chuvash ethnicity speak with their own parents mostly in Chuvash, 1/3 of them speak only in Russian with their children, 1/3 mostly in Russian, but also in Chuvash, 1/6 mostly in Chuvash, but also in Russian, and 1/6 only in Chuvash. Russians and the few people of other nationalities, as a rule, live in the administrative centres, speak Russian at home and have a poor command of Chuvash and/or Tatar.

The family language situation correlates with the school education. In Russia, the school system consists of 11 years of education. Grades

5 to 9 correspond to secondary education and grades 10 and 11 to post-secondary (high school) education. Primary school education in the Kaśal and Patăryel district centres is done exclusively in Russian. In all other villages (with a few exceptions in the Kaśal district) children receive their primary education in Chuvash or Tatar. Consequently, almost all Tatars learn in Tatar (except a few who learn in the administrative centres), while Chuvash children may learn in Chuvash or Russian. It should be added that although 20% of the overall population live in the administrative centres, 30% of children learn in the administrative centre schools.

From grade 5 onwards, education shifts to Russian. Chuvash and Tatar cease to be languages of instruction and are taught only as subjects. At the same time, while most Chuvash and Tatar primary schools are in separated villages, from grade 5 some Chuvash and Tatar children living outside the administrative centres come to learn in the same school, sometimes in the same classes. This increases the degree of socialization between Chuvash and Tatars. As a rule, Chuvash and Tatar children speak with each other in Russian, but in some cases Tatar students speak Chuvash with Chuvash classmates (especially where Tatars are a tiny minority in the school).

Chuvash and Tatar are two distant, mutually incomprehensible Turkic languages. Russian is an Indo-European language, lexically, morphologically and syntactically very different from both Chuvash and Tatar. Chuvash, alongside Russian, is an official language of Chuvashia. At the time of the data collection, in the administrative centres it was taught 2 or 3 hours per week from grades 1 to 9, Tatars in Tatar schools or classes studied it 1 or 2 hours per week. In both cases, Chuvash was taught as a 'state language', i. e. students were supposed to have no previous knowledge of it. The results of this kind of teaching of Chuvash are reported to be quite poor in cities, but in the rural environment we study, even in administrative centres, everyday contact with Chuvash is undoubtedly closer than in cities, which results in a better knowledge of it. This explains that no children living in the administrative centre, irrespectively of their ethnicity, report they 'do not understand Chuvash at all', and only 9.6% 'poorly understand it' (for instance, a survey on urban students showed 15.3% that 'do not understand Chuvash at all' after 9 years of learning it, and 26.5% 'poorly understand it' [Alòs i Font 2015: 56].

On the other hand, from grade 5 onwards Russian language and literature are generally taught for the same number of hours in all schools, regardless of the hours they devote to Chuvash and Tatar, which are significantly more outside the district centres. Schools outside the administrative centres sometimes even spend an additional hour per week on Russian language. Seemingly, the growing concern among parents on students' achievement in Russian language is pushing schools to dedicate to Russian part of the hours they are free to allocate.

Nevertheless, it is important to point out that schools in administrative centres are places for intensive socialization in Russian with little room for minority languages. According to our survey, although 80% of the students in administrative centres speak Chuvash or Tatar at home (in different degrees), more than a half of them speak only Russian with schoolmates, and 70% with teachers. For its part, Tatar is learned as a school subject only by Tatars, and mostly only Tatar students know it.

All this creates an interesting variety of language situations in these districts. One case is the students living and studying in the administrative centres that are able to speak only in Russian. Other students from the administrative centres are bilingual in Russian and Chuvash or Tatar. In many cases, they are unbalanced bilinguals with Russian as the dominant language. Chuvash students who live outside the administrative centres are all bilingual in Russian and Chuvash but have different degrees of exposure to Russian depending on how much it is used at home, whether they study in the administrative centre or not, and the proportion of Tatars studying in their school.

Tatars have the least contact with Russian as they mostly only speak Tatar at home and the majority of them live in relatively large ethnically-homogenous villages. We can broadly distinguish two groups of them. A minority learns together with Chuvash children, especially from grade 5. Sometimes they are immersed in a big Chuvash majority, and speak Chuvash with classmates. However, two thirds of Tatars attend the school of their village or a nearby Tatar village where more than 90% of students are Tatars and the vast majority of chats with schoolmates and teachers are in Tatar. Of course, besides school classes, Russian is very present in their everyday life through TV, the Internet, most of what they read, when visiting the doctor or the shops in the administrative centre, etc.

**2. The main variables under analysis and methodology**

In 2016, from February to April, we undertook a survey of 913 school students in grades 7 to 11 from the two mentioned districts. The school students reported information about the level of proficiency in their mother tongues, the language of instruction in their schools, their academic achievements, and several socio-economic characteristics of their families. In the survey, 11 students studied in the mentioned districts, but did not live there, and as a result the used sample consists of 902 students. Of these, 313 are from Kaśal/Komsomol'skii and 589 are from Patăryel/Batyrevskii, from eight and ten randomly selected schools, respectively.

The sample is around 31% of total students (2,984) in grades 7 to 11 in the two districts. Moreover, the structure of the sample highly corresponds with the ethnic composition in both districts, as well as the proportion of students studying in the district centres and outside

them for both districts.[1] Schools were randomly selected, giving them a weight proportional to the number of students and keeping the number of schools in the sample for each district proportional to the number of inhabitants. As a rule, three classes were randomly chosen in every school, trying to always get one post-secondary class. All students present on the day of the polling were surveyed by one of the authors. The survey used an ad-hoc questionnaire which needed 20 to 35 minutes to be completed, basically depending on the age of the students.

Coleman et al. [1996] suggest that the main factors impacting educational outcomes are family resources, including cultural and social capital. Recent research in Russia (e.g Roshchina 2010; Tovar-García 2014; Kapuza et al. 2017) has supported this, and points to parental education and family income as key explanatory variables. Tovar-García [2014] added a language variable to the independent variables, and found that a minority family language has a positive impact in educational achievement in Tatarstan. These findings, as said before, have been further supported by other results in Tatarstan [Tovar-Garcia, Alòs i Font 2017] and Shupashkar/Cheboksary [Alòs i Font 2016]. On the basis of this framework, the variables of the current research are presented in the next section.

**2.1. Dependent variable: Educational achievement**

Students in grades 7 to 9 reported their school grades obtained in the last quarter and students in grades 10 and 11 reported their school grades from the first semester of the school year. In our sample, the students reported school grades from 2 to 5 (whole numbers), where 3 is the minimum pass mark.

To measure educational achievements we use the average grade (expressed as a round whole number) in eight subjects: Russian language, literature, foreign language, history, algebra, geometry, physics, and chemistry. For the full sample, the average grade is 4.16. In addition, we investigate the specific impact of bilingual environment on school grades in mathematics (average grade in algebra and geometry: 4.04), in Russian language (the average grade is 4.04) and foreign language (4.17). See Table 1.

We also use as an additional dependent variable the Final State Attestation (FSA). This is an exam written by students to pass grade 9, reflecting their general educational qualifications. Moreover, FSA is necessary to continue studying in high school; subsequently, only students in grades 10 and 11 reported their results in FSA for Russian language and mathematics. Note that this exam is independent of the school management.

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[1] 67.0% of the respondents considered themselves Chuvash and 28.3% Tatar, while, according to Census data, Chuvash represent 67.5% of the population and Tatars 27/3%. 16.6% of respondents live in the district centres vs. 15.8% of the population.

Table 1. **Descriptive statistics**

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| Average grade | 901 | 4.16 | 0.68 | 3 | 5 |
| Russian language | 899 | 4.04 | 0.73 | 2 | 5 |
| Foreign language | 898 | 4.17 | 0.73 | 3 | 5 |
| Mathematics | 900 | 4.04 | 0.77 | 3 | 5 |
| FSA Russian language | 344 | 4.64 | 0.60 | 3 | 5 |
| FSA Mathematics | 344 | 4.51 | 0.58 | 3 | 5 |
| TRILINGUAL | 902 | 0.05 | 0.22 | 0 | 1 |
| CHUVASHPROFICIENCY | 890 | 2.68 | 1.53 | 1 | 5 |
| TATARPROFICIENCY | 864 | 1.89 | 1.50 | 1 | 5 |
| CHUVASHPROFICIENCY × Chuvash ethnicity | 884 | 2.25 | 1.93 | 0 | 5 |
| TATARPROFICIENCY × Tatar ethnicity | 858 | 1.18 | 1.93 | 0 | 5 |
| CHUVASHUSAGE | 891 | 2.99 | 1.76 | 1 | 5 |
| TATARUSAGE | 900 | 2.04 | 1.70 | 1 | 5 |
| CHUVASHUSAGE × Chuvash ethnicity | 885 | 2.61 | 2.16 | 0 | 5 |
| TATARUSAGE × Tatar ethnicity | 894 | 1.33 | 2.15 | 0 | 5 |
| CHUVASHSCHOOL | 875 | 0.51 | 0.50 | 0 | 1 |
| TATARSCHOOL | 880 | 0.25 | 0.43 | 0 | 1 |
| CHUVASHSCHOOL × Chuvash ethnicity | 870 | 0.49 | 0.50 | 0 | 1 |
| TATARSCHOOL × Tatar ethnicity | 874 | 0.25 | 0.43 | 0 | 1 |
| SES index | 902 | 0.00 | 1.00 | -2.28 | 3.39 |
| Father ISEI | 696 | 31.77 | 14.25 | 16 | 88 |
| Mother ISEI | 605 | 44.17 | 16.04 | 16 | 90 |
| Father works | 857 | 0.69 | 0.46 | 0 | 1 |
| Mother works | 895 | 0.67 | 0.47 | 0 | 1 |
| Father education | 833 | 3.64 | 1.56 | 1 | 7 |
| Mother education | 861 | 4.02 | 1.61 | 1 | 7 |
| Number of books | 897 | 2.99 | 1.02 | 1 | 6 |
| Health issues | 900 | 3.30 | 0.68 | 1 | 4 |
| Living in the administrative centre | 902 | 0.17 | 0.37 | 0 | 1 |
| Studying in the administrative centre | 902 | 0.29 | 0.46 | 0 | 1 |
| Grades 10th and 11th | 902 | 0.38 | 0.49 | 0 | 1 |
| Number of siblings | 891 | 1.49 | 0.92 | 0 | 6 |
| Female | 902 | 0.57 | 0.50 | 0 | 1 |
| Chuvash ethnicity | 896 | 0.67 | 0.47 | 0 | 1 |
| Tatar ethnicity | 896 | 0.28 | 0.45 | 0 | 1 |

*Source:* Authors' calculations

Thus, we have six dependent variables: four school grades (in Russian language, mathematics, foreign language, and the average in eight subjects), and two grades in the FSA (Russian and mathematics). All of these variables were also classified as dummies. First, the variables take the value of 1 for those students reporting grades of 3 (low performing students). Second, the variables take the value of 1 for those students reporting grades of 5 (high performing students).[2]

Descriptive statistics (Table 1) show high grades in all subjects. All dependent variables have a mean over 4 and the FSA scores are the highest with a mean over 4.5. Higher FSA scores are understandable as all of the high-scoring students passed the exam and had high enough grades to feel ready to study in high school. Especially surprising is the almost full lack of grade 2 (fail), which has been reported only in a single school and in a single subject (Russian language).[3] Interviews with teachers in these and other schools have confirmed that teachers avoid grade 2 mostly because of pressures from school and ministry officials.

**2.2 Independent linguistic variables**

We use as a proxy variable of trilingualism the answers to the questions on fluency in Chuvash and in Tatar. For each language, school students selected one of four options: 1) I speak fluently or fluently enough, 2) I speak with difficulties, but I understand, 3) I poorly understand, and 4) I do not understand at all. This variable takes values of 1 for students reporting speaking fluently in Chuvash and in Tatar, and coded 0 otherwise (TRILINGUAL). Of the trilingual students, 42 are Tatars and 6 are Chuvash, this is about 5% of the surveyed students. It is important to recognize this small number of trilingual students. Therefore, the findings on this variable are valid for the region under study, but we should not generalize them.

To test the impact of bilingualism on educational achievements we use three major explanatory variables: proficiency, language used at home, and language of instruction in the elementary grades.

The students reported in the language in which they speak more fluently, in Chuvash (Tatar) or in Russian, selecting one of five options: 1) Much easier to speak in Chuvash (Tatar) than in Russian, 2) A little easier to speak in Chuvash (Tatar) than in Russian, 3) At the same level, 4) A little easier to speak in Russian than in Chuvash (Tatar), and 5) Much easier to speak in Russian than in Chuvash (Tatar). These variables, proficiency in Chuvash (CHUVASHPROFICIENCY) and proficiency in Tatar (TATARPROFICIENCY), were reverse coded (value 5 for option 1, and so

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[2] We used these variables for robustness tests using logit regressions. Only five students reported a grade of 2 in Russian language, and we removed them from this classification.

[3] In fact, the scarce variability of the Russian grade system hinders its effectiveness as a measurement of educational achievement. Research based on it has to cope with this limitation.

on) and included in the regression analysis in the following section as interaction terms between proficiency and ethnicity. That is, the variable is multiplied by a dummy variable on ethnicity (Chuvash or Tatar).[4]

The school students also reported the language used for communication with their relatives: father, mother, and siblings. In the three cases, they indicated the languages they use and, if they speak more than one, which one they use most of all, if any. On this basis we built two 5-level indicators for the use of Chuvash and Tatar, from 1 standing for "I use only another language" to 5 "I use only Chuvash (Tatar)", the value 3 corresponds to students reporting the use of Chuvash (Tatar) and another language (Russian) at the same level. The use of Chuvash at home was calculated as the mean of its use with the father, mother, and siblings, and the same was done for Tatar. The average use of Chuvash at home is 3.0 and among Chuvash people it is 3.9 (CHUVASHUSAGE). Similarly, the average use of Tatar is 2.0 and among Tatars it is 4.7 (TATARUSAGE). This variable is also entered into the regression analysis as an interaction term with ethnicity.

Finally, we coded 1 as school students who entirely studied at elementary school (grades 1 to 4) in their ethnic tongues. Thus, we built two dummy variables, one for students with Chuvash as their language of instruction (CHUVASHSCHOOL) and similarly one for Tatar (TATARSCHOOL). Consequently, schools with Russian language are the reference group, and those students who moved from school to school and studied in different languages (a mix of Russian, Chuvash or Tatar) were excluded.[5] About 50% of the surveyed school students studied elementary school in Chuvash (73% of Chuvash), and about 25% of students studied elementary school in Tatar (87% of Tatars).

**2.3 Control variables**  As control variables of the impact of trilingualism and bilingualism we use indicators related with socio-economic status, number of books at home to approach cultural capital, and an ordinal variable for students' health issues, as recommended by the literature [DiMaggio 1982; Huurre et al. 2006; Kuzmina, Popov, Tyumeneva 2012; Roshchina 2010]. We also include dummy variables controlling for type of settlement, class grade, number of siblings, and gender.

We developed a socio-economic status index (SES) using principal component analysis. [6] This index includes information on parental employment and education as reported by students. Firstly, we built a

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[4]  Students reporting only Chuvash ethnicity (or Tatar ethnicity) were coded 1. Therefore, students reporting two ethnicities were excluded from this classification. As a result, we lost six individuals, but we lost more observations due to non-responses on proficiency.

[5]  Only 13 individuals studied the elementary school in different languages, but we lost more observations due to non-responses.

[6]  This method reduces a large set of variables (correlated) to a small set (uncorrelated) that still contains most of the information (variability) in the large

dummy variable coded 1 for employed parents (mothers and fathers) and 0 otherwise (including students without parents). It is interesting to note the high rate of unemployment: only 68% of fathers and 67% of mothers were reported with a current formal job (there is no information for 5% of fathers and 0.8% of mothers). Later, we classified the reported jobs using the International Standard Classification of Occupation (ISEI) developed by Ganzeboom and Treiman [1996]. In our case, this index takes values from 16 to 90. For mothers, the mean is 44 and the standard deviation is 16; for fathers, the mean is 32 and the standard deviation is 14. Finally, we classified with an ordinal variable from 1 to 7 the level of the parents education, where, 1 corresponds to parents with a school education (9 years or less years of education) and 7 corresponds to parents with a postgraduate education: 33% of fathers and 26% of mothers have school education and 20% of fathers and 30% of mothers have higher education or postgraduate education.

We used an ordinal variable from 1 to 6 to measure the number of books at home, where 48% of students reported having between 26 and 100 books. Similarly, students reported how frequently they got sick, in an ordinal variable (HEALTH) from 1 (frequently) to 4 (never): 1.9% of students reported that they frequently got sick.

We built four dummy variables. First, students living in the administrative centre of the district are coded 1 (17%), and second, students studying in the administrative centre are coded 1 (29%). This controls and allows comparisons between rural areas and the most urbanised locations of the district. Third, students in grades 10 and 11 are coded 1 (38%), which allows comparisons between students in secondary school and students in high school. Fourth, schoolgirls are coded 1 (57%). Finally, we include as a control variable the number of siblings. The number of siblings has been pointed out as adversely affecting education performance, probably as a result of parents' resource dilution (time, money, etc.) [Downey 1995].[7]

**3. Results**  The baseline empirical model is given by equation (1).

(1)  Educational Achievement$_i$ = $\beta_0$ + $\beta_1$TRILINGUAL$_i$ + Bilingual Environment$'_i\beta$ + + Control$'_i\phi$ + $u_i$.

where the subscript $i$ denotes the $i$-th school student, $\beta$ and $\phi$ are vectors of regression coefficients to be estimated, and $u_i$ is the error term.

set. In our case, we reduce our variables on socioeconomic status to only one variable, building an index.

[7]  We built the correlation matrix of the key variables used in this research, but we do not present it here in order to save space.

Educational Achievement includes the six dependent variables described in the previous section. Note that these variables are ordinal, allowing four (ordered) response categories, taking values of 2, 3, 4 or 5. Consequently, the econometric literature suggests the use of ordered logistic models, with robust standard errors, to estimate the regression coefficients. This method can be seen as an extension of the well-known logistic regression that applies to dichotomous dependent variables (used here for robustness checks). These are probabilistic models, that is, the estimated coefficients allow for measuring the probability of an event, in our case, the probability of being classified in one of the grading categories. TRILINGUAL was previously described and Bilingual Environment includes the dependent variables PROFICIENCY, USAGE and SCHOOL for Chuvash and Tatar described in the previous section. We also included their interaction terms with ethnicity, which allows for the avoidance of biases due to ethnic concerns.

Table 2 shows the estimated coefficients and the main results. In general, the variable TRILINGUAL and the variables of bilingual environment do not reach statistical significance, with a few exceptions. Mainly, when the dependent variable is FSA Mathematics, some variables of bilingual environment show statistical significance, yet with mixed and contradictory signs (see column 6 in Table 2). For instance, proficiency in the Tatar language has a positive effect on the probabilities of obtaining higher grades in the FSA Mathematics, yet its interaction term with Tatar ethnicity has a negative effect, which lacks any logic. The variables on the usage of Tatar language and on the attendance of Chuvash schools show similar concerns. Consequently, there is no robust effect.

For their part, most control variables show significant associations with the variables on academic achievements and have the expected signs. The coefficient of the SES index is positive and significant in all regressions, that is, the wealthier students are more likely to obtain the higher grades. We can say the same about the healthier students. The number of books, proxy variable of cultural capital, also predicts good educational achievements, but it lacks statistical significance in the case of the FSA.

As was already found in the literature (for example, Roshchina [2010]), girls outperform boys in academic achievements. Students living in the administrative centre are not more likely to obtain the higher grades, but studying in the administrative centre increases the probability of obtaining higher grades in the FSA. Students in grades 10 and 11 are also more likely to obtain higher grades. As predicted, there is also evidence that the number of siblings has a negative effect on the probabilities of obtaining the higher grades in Russian language, foreign language, and mathematics.

As was expected, there are high correlations between independent variables, particularly between the bilingual variables and the interaction terms. This may be causing contradictory results, as in the

Table 2. **Regression coefficients**

| Independent variables | Pred Sign | Dependent variables | | | | | |
|---|---|---|---|---|---|---|---|
| | | (1) Average grade | (2) Russian language | (3) Foreign Language | (4) Mathe-matics | (5) FSA Russian language | (6) FSA Mathe-matics |
| TRILINGUAL | | 0.42 | 0.26 | −0.24 | 0.39 | 1.56 | 0.73 |
| Bilingual environment | | | | | | | |
| CHUVASHPROFICIENCY | | −0.18 | −0.36** | −0.16 | 0.01 | −0.25 | 0.40 |
| TATARPROFICIENCY | | −0.78 | −0.67 | −0.10 | −1.29 | 2.54 | 3.53*** |
| CHUVASHPROFICIENCY × Chuvash ethnicity | | 0.04 | 0.26 | −0.04 | −0.15 | 0.12 | −0.64 |
| TATARPROFICIENCY × Tatar ethnicity | | 0.66 | 0.63 | 0.01 | 1.14 | −2.34 | −3.32*** |
| CHUVASHUSAGE | | −0.03 | 0.19 | 0.13 | −0.27 | −0.14 | −0.29 |
| TATARUSAGE | | 0.02 | 0.61 | −0.64 | 0.46 | 0.55 | −1.08* |
| CHUVASHUSAGE × Chuvash ethnicity | | −0.03 | −0.12 | −0.13 | 0.17 | 0.21 | 0.47 |
| TATARUSAGE × Tatar ethnicity | | −0.11 | −0.75 | 0.54 | −0.57 | 0.10 | 1.53** |
| CHUVASHSCHOOL | | −1.52* | −0.78 | −1.66** | −1.28 | 0.53 | −1.90* |
| TATARSCHOOL | | −0.14 | 1.26*** | −0.04 | −0.15 | −0.54 | −0.89 |
| CHUVASHSCHOOL × Chuvash ethnicity | | 1.25 | 0.63 | 1.50* | 1.07 | −0.27 | 1.57* |
| TATARSCHOOL × Tatar ethnicity | | Omitted because of collinearity | | | | | |
| Control variables | | | | | | | |
| SES index | + | 0.73*** | 0.56*** | 0.55*** | 0.51*** | 0.31* | 0.46*** |
| Number of books | + | 0.27*** | 0.28*** | 0.21*** | 0.16** | 0.12 | −0.07 |
| Health issues | + | 0.18* | 0.19* | 0.20* | 0.28*** | 0.41** | 0.36** |
| Living in the administrative centre | | −0.38 | −0.21 | −0.16 | −0.23 | −0.53 | −0.41 |
| Studying in the administrative centre | | −0.55* | −0.07 | −0.16 | −0.31 | 1.17** | 0.85** |
| Grades 10th and 11th | | 0.64*** | 0.61*** | 0.56*** | 0.78*** | | |
| Number of siblings | | −0.09 | −0.18** | −0.14* | −0.16** | −0.23 | −0.13 |
| Female | + | 1.55*** | 1.68*** | 1.63*** | 1.10*** | 1.48*** | 0.64*** |
| Observations | | 802 | 800 | 800 | 802 | 317 | 317 |
| Pseudo $R^2$ | | 0.17 | 0.15 | 0.15 | 0.12 | 0.10 | 0.09 |

\* $p > 10\%$; \*\* $p > 5\%$; \*\*\* $p > 1\%$.

case of the FSA Mathematics. First, the literature suggests that collinearity due to interaction terms can be considered as a negligible problem [Friedrich 1982]. Second, the software (Stata 13) automatically removes variables with collinearity concerns. For instance, in our baseline specification the software removed the interaction term between TATARSCHOOL and Tatar ethnicity.

Nevertheless, thinking that collinearity could affect our estimations, we ran several other regressions removing and combining different bilingual variables. The main findings remain qualitatively the same. For instance, Table 3 shows the results using as key independent variables only the interaction terms between bilingual variables and ethnicity. In addition, we built indices for these bilingual variables adding the responses on PROFICIENCY, USAGE and SCHOOL for Chuvash and Tatar and including interaction terms with ethnicity. These indices reach statistical significance only in a few cases and in relation to the Chuvash language, but there are no robust effects (see Table 4). Thus, generally speaking, the results do not suggest that trilingual or bilingual students are more likely to be in the higher categories of the grading system.

As additional robustness checks we estimated very similar models using binary dependent variables classifying students as low performing or high performing, as was described in Section 3. Consequently, we used logit regressions with robust standard errors. The core findings are very similar to those reported in Tables 2–4. There are no robust impacts of trilingualism or bilingualism on the probabilities of being classified as low or high performing student (these results are not shown in tables in order to conserve space).

## 4. Discussion and conclusion

Looking at the results of Tables 2–4, as well as those of the above–mentioned additional regressions, SES had a key role in explaining educational achievements. This is consistent with previous research in developing countries and Russia [Tovar–García 2014; Tovar–García, Alòs i Font 2017; Kapuza et al. 2017]. However, in our case it is important to note that SES is a crucial factor in a rural milieu, where economic stratification is weaker than in cities. We did not expect this result, but it deserves more attention in future studies with a focus on the impact of SES on educational outcomes in rural communities.

The results also showed that school grades for post–secondary students are higher than those of secondary students. It is likely that two factors explain this. On the one hand, the FSA causes a selection of school students, leading the weakest ones to professional schools. On the other hand, the proximity of the Unified State Exam is probably compelling post–secondary students to study harder.

Another interesting result is the relationship between achievement and living or studying in an administrative centre. Living in one of them does not appear to correlate in any way, but studying in one has a pos-

Table 3. **Regression coefficients**

| Independent variables | Pred Sign | Dependent variables | | | | | |
|---|---|---|---|---|---|---|---|
| | | (1) Average grade | (2) Russian language | (3) Foreign Language | (4) Mathe-matics | (5) FSA Russian language | (6) FSA Mathe-matics |
| TRILINGUAL | | 0.30 | 0.06 | −0.34 | 0.37 | 1.19 | 0.91 |
| Bilingual environment | | | | | | | |
| CHUVASHPROFICIENCY × Chuvash ethnicity | | −0.13 | −0.09 | −0.19** | −0.13 | −0.11 | −0.20 |
| TATARPROFICIENCY × Tatar ethnicity | | −0.10 | −0.04 | −0.08 | −0.12 | 0.16 | 0.21 |
| CHUVASHUSAGE × Chuvash ethnicity | | 0.02 | 0.13 | 0.05 | −0.04 | 0.14 | 0.25 |
| TATARUSAGE × Tatar ethnicity | | 0.08 | −0.11 | 0.07 | 0.04 | −0.01 | −0.01 |
| CHUVASHSCHOOL × Chuvash ethnicity | | 0.02 | −0.02 | 0.02 | 0.11 | 0.22 | −0.17 |
| TATARSCHOOL × Tatar ethnicity | | 0.22 | 1.39*** | 0.19 | 0.22 | −0.30 | −0.28 |
| Control variables | | | | | | | |
| SES index | + | 0.75*** | 0.58*** | 0.56*** | 0.52*** | 0.31* | 0.42*** |
| Number of books | + | 0.27*** | 0.28*** | 0.22*** | 0.17*** | 0.09 | −0.08 |
| Health issues | + | 0.20* | 0.20* | 0.21* | 0.31*** | 0.41** | 0.39** |
| Living in the administrative centre | | −0.14 | −0.07 | −0.01 | 0.01 | −0.36 | −0.14 |
| Studying in the administrative centre | | −0.32 | 0.04 | 0.00 | −0.10 | 1.08** | 1.03** |
| Grades 10th and 11th | | 0.62*** | 0.59*** | 0.53*** | 0.78*** | | |
| Number of siblings | | −0.11 | −0.19** | −0.15* | −0.19** | −0.22 | −0.09 |
| Female | + | 1.56*** | 1.69*** | 1.66*** | 1.12*** | 1.46*** | 0.65*** |
| Observations | | 802 | 801 | 801 | 803 | 317 | 317 |
| Pseudo $R^2$ | | 0.17 | 0.15 | 0.15 | 0.12 | 0.09 | 0.07 |

* $p > 10\%$; ** $p > 5\%$; *** $p > 1\%$.

itive impact in all regressions for both FSA on Russian language and mathematics. High school students studying in administrative centres (but not necessarily living in them) have better FSA scores. Since we know only where high school students are currently studying, but not where they used to study in secondary school, and there is a somewhat bigger concentration of students in the district centres during the last years of schooling, we cannot conclude that studying in administrative centres is better for educational achievement than studying in other schools. Still, it is not unlikely that schools in administrative centres have higher qualified teachers and better technical resources that could explain the above mentioned result. In this case, the fact that no

Table 4. **Regression coefficients**

| Independent variables | Pred Sign | Dependent variables | | | | | |
|---|---|---|---|---|---|---|---|
| | | (1) Average grade | (2) Russian language | (3) Foreign Language | (4) Mathematics | (5) FSA Russian language | (6) FSA Mathematics |
| TRILINGUAL | | 0.30 | 0.03 | −0.33 | 0.37 | 1.17 | 0.90 |
| Bilingual environment | | | | | | | |
| Index Chuvash Language × Chuvash ethnicity | | −0.06 | 0.001 | −0.07** | −0.07** | 0.04 | 0.02 |
| Index Tatar Language × Tatar ethnicity | | −0.0002 | 0.04 | 0.004 | −0.02 | 0.03 | 0.06 |
| Control variables | | | | | | | |
| SES index | + | 0.75*** | 0.57*** | 0.56*** | 0.52*** | 0.30* | 0.39*** |
| Number of books | + | 0.28*** | 0.29*** | 0.22*** | 0.17*** | 0.09 | −0.07 |
| Health issues | + | 0.20* | 0.19* | 0.21* | 0.30*** | 0.41** | 0.39** |
| Living in the administrative centre | | −0.22 | −0.07 | −0.10 | −0.06 | −0.42 | −0.06 |
| Studying in the administrative centre | | −0.38 | −0.17 | −0.05 | −0.17 | 1.06** | 1.03*** |
| Grades 10th and 11th | | 0.63*** | 0.59*** | 0.55*** | 0.78*** | | |
| Number of siblings | | −0.12 | −0.19** | −0.15* | −0.18** | −0.21 | −0.08 |
| Female | + | 1.58*** | 1.70*** | 1.67*** | 1.12*** | 1.46*** | 0.63*** |
| Observations | | 802 | 800 | 800 | 802 | 317 | 317 |
| Pseudo $R^2$ | | 0.16 | 0.14 | 0.15 | 0.11 | 0.09 | 0.07 |

\* $p > 10\%$; \*\* $p > 5\%$; \*\*\* $p > 1\%$.

significant correlations for school grades are found would mean that teachers in administrative centres are stricter than in other schools. A similar result was found for teachers in Kazan vis-à-vis teachers from other towns in Tatarstan [Tovar-García, Alòs i Font 2017]. Consequently, if studying in a district centre possibly has a positive impact on educational achievement, a fundamentally important question is whether this may be due to the use of Russian as the only language of instruction, to the Russian-language atmosphere, or to the fewer hours that students devote to minority-language education.

Now, in regard to bilingualism, the regression analysis did not show any consistent impact of family or school bilingualism on educational achievement, neither positive, nor negative. Neither has any correlation been found for trilingualism. These findings differ from previous and recent studies on other languages and bilingual contexts, such as Spanish and English in the USA, or Catalan, Galician, Basque, and Spanish in Spain. In particular, our findings disagree with the pos-

itive impact of the Tatar language on educational outcomes in Tatarstan or the positive impact of the Chuvash language on educational outcomes in Chuvashia [Alòs i Font 2016; Tovar–García, Alòs i Font 2017]. The major difference between our research and the above–mentioned studies is the sample under study. Here, we studied rural students and the cited studies were more focused on urban students, where the ethnic Russian population is larger. Thus, the role of the urban and the Russian populations may explain the lack of evidence for positive impacts of bilingualism and trilingualism.

Nevertheless, there are a couple of results that deserve additional comments. First, on school grades for Russian language, a positive association appears for Tatars with Tatar as the language of instruction in primary schools (see Tables 2 and 3). This could be interpreted as a positive result of learning in the mother tongue, yet it is not supported with similar results in FSA or the average grade, nor by similar results for Chuvash students. Perhaps teachers in Tatar schools tend to give slightly higher grades in Russian language to encourage their students. Second, a negative correlation appears for Chuvash speakers in relation with a foreign language (see Tables 3 and 4). Likewise, there is no backing up of this result in other regressions, and the literature shows, as a rule, a positive correlation between bilingualism and foreign or third language learning (see Cenoz [2013b] for an up–to–date review on the question). Therefore, if there is really a negative correlation between Chuvash bilingualism and foreign language learning (which cannot be concluded from the data), it is likely that this concern lies in a teacher having a lower qualification, or less effective technical equipment in little village schools. We do not have access to this kind of information, so we could not include these factors among the independent variables in the regression analysis. Cenoz [2009: 149, 151] points out that, while "the studies carried out in immersion programs and in other bilingual programs indicate that bilinguals have advantages over monolinguals in the acquisition of an addition languages (…), studies on the influence of bilingualism on third language acquisition carried out in regular programs are more mixed". In our case, we have, according to Baker's [2011] terminology, mainstreaming/submersion education in the district centres, and transitional education for bilinguals outside them, that is, not (full–fledged) bilingual education programs.

An additional possible explanation of the lack of correlation between bilingualism and educational achievement in our study, especially in foreign language learning, may be a certain minimum degree of bilingualism for all school students in this region. Note that only 17 respondents (1.9%) claim a poor understanding of both Chuvash and Tatar, and only 21 respondents (2.3%) have declared no use of Chuvash or Tatar at all with parents, brothers, sisters, grandparents, uncles, aunts, cousins, nor at school, in shops or writing an SMS or in social sites.

A third hypothesis could be that we considered bilingualism and trilingualism as depending on proficiency rather than on use. Although for this particular sample of minority–language speakers there are few cases of respondents proficient in two languages that do not use both in an almost daily basis, this is not the case for many 'trilingual' Tatar who live and study in a predominantly Tatar environment and may seldom use Chuvash outside Chuvash language classes.

In conclusion, the findings suggest no difference in the academic achievements in the Russian language and other subjects, regardless of the language(s) students speak at home or the language in which they learned in primary school. Therefore, parents, school officials, and authorities should not fear the use of minority languages in family or as a medium of instruction, because this will not negatively impact educational outcomes, even on the Russian language. Instead, the results point out noticeable differences depending on the student's SES and the location of the school, suggesting that the Russian educational system has problems in bringing about greater equality of opportunity. Further research should concentrate, on the one hand, on explaining the differences in students' achievement between schools in administrative centres and other villages, and, on the other hand, the SES factors that are playing a relevant role in the rural context, despite the likely low economic stratification of Chuvash (and Russian) villages.

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# School Teachers' Professional Identity in the Context of the Precariatization of Social and Labor Relations in Large Russian Cities

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Abstract

The paper is based on a survey of public school teachers in Russian large cities (Moscow, Rostov-on-Don and Kazan). In 2017 the survey was conducted to study the perception of social and economic situation by teachers, and the estimation of the labor precariatization degree. Based on the assessment of their professional identity according to the selected typological criteria (the occupational prestige, the place of professional identity in the general structure of identification, labor motivation, professional values, job satisfaction, career orientations), the prevalence of pseudo-positive identity with diffusion elements is revealed among teachers. Moscow educators, while they evaluate higher the quality of life and the prestige of their work than teachers from Rostov and Kazan, are characterized by a higher degree of dissatisfaction with the content and results of their professional activity. The polyethnicity of the city's population is not a significant factor in the formation of the interviewed teachers' identity. Corporate loyalty (rewarded by corporate paternalism), socially oriented motivation, socio-economic vulnerability (especially for province teachers) characterize the existing model of the professional identity in the teaching community. Heavy administrative burden for the teachers' corps, the high social demands for the results of their work and the precariatization of teacher's labor create risks for maintaining of the positive professional identity and reduce the reform potential of the school.

Keywords        school teachers, professional identity, structure of self-identity, occupational prestige, labor precariatization, megapolis.

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# Types of Parental Involvement in Education, Socio-Economic Status of the Family and Students' Academic Results

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**Abstract.** The article gives an overview of the theoretical models of parental involvement in education. The peculiarities of parental involvement in Russian education are correlated with the typologies proposed by J. L. Epstein. Comparison of typologies of parental involvement for different parents' socio-economic categories was carried out. Low-income families were especially identified. It is shown that the higher degree of involvement is characteristic of the parents whose children attain better academic results and plan to proceed with higher education after school. The study produced data demonstrating inequality in education, i. e. children from low-income families have lower educational outcomes than average values for the sample. The higher the level of involvement that parents have, the more leveled the difference in educational results becomes.

**Keywords:** family involvement, educational inequality, typologies of parental involvement, students' academic results, low-income families

With the emergence and development of educational institutions in society, the tendency to shift the responsibility for children's education from the family to the school has emerged. As society developed along its historical path, it trusted more to the social educational institutions and a general opinion gradually took hold that school possessed the best teaching and upbringing methods [Mannan, Blackwell 1992]. As the school's functional scope became wider, the role of parents and family was reducing.

Beginning in the 1960s, however, researchers started pointing out the need for emphasizing and increasing parents' intervention in their

children's education. Over the second half of the last century parental involvement in education on the global scale progressed from a deficit model approach (where the school was understood to be supplementing for that which the family could not provide) and a "difference model" (where the school and the family were regarded as two completely different and almost never overlapping realms) to an "empowerment model" [Shepard, Rose 1995] where the parents are viewed as a major source feeding their children's development and education and where the parents play the primary role in helping their children to get accustomed to school life, socialize, and master important life skills.

The empowerment model in various interpretations is the most popular model nowadays. It distinguishes four hierarchical levels of parental involvement in education. The first two levels are *basic communication* (tracking the child's academic results, communicating with the school, talking to teachers, getting feedback on the child) and *home improvement* (creating a learning environment at home, working on discipline skills, homework assistance, reading at home, promoting health consciousness). They reflect the basic involvement of the parents in the education process of their children without much intervention into their children's school life. Two further levels are *volunteering* (involvement and connection with other students and parents at school) and *advocacy* (connecting to local communities and organizations). They imply more active engagement of parents in the life of the educational institution. The highest level, *empowerment*, is achieved when parents develop the capability to define school policy and influence decisions made at school. This level of the parental involvement in their children's education requires confidence, knowledge, and leadership.

Some Russian researchers conclude that since Soviet times Russian parents' participation in the education of their children has been, for the most part, limited to providing the school with supplies and other resources [Khomenko 2006]. Even the teachers who pioneered innovative humanistic approaches and principles in schools (Alexander Tubelsky, Vladimir Karakovsky, Oleg Gazman, and others) never considered parents and family to be either partners of the school or participants of the education process.

The interest in parental involvement in education in Russia began to surface in the early 2000s. An opinion had formed that reforming the education system was only possible through new forms of communication with the public based on dialogue, equality, joint decision-making, and cooperation of schools and parents in particular [Pinsky 2004].

A group of researchers led by developmental psychologist Katerina Polivanova studied the phenomenon of modern parenthood. They make a point that the value of childhood in the public discourse and neoliberal attitudes that imply, among other things, the increased responsibility of the individual, raise the value of the parents' decisions

Table 1. **Types of parental involvement (engagement)**
(after [Epstein 1987])

| Type of involvement | What parents do | What school does |
|---|---|---|
| Parenting | Satisfy child's basic needs, establish favorable home environment to support learning. | Assist families in understanding how they could support the development of their children. Parent education, training for parents, home visits, family-oriented support programs. |
| Learning at Home | Help children at home with homework and other curriculum-related activities, decisions. Participate in goal-setting and planning learning activity. | Information on homework policies and how to monitor and discuss school-work at home. |
| Communi-cating | Continuous two-way communication with the school. Monitoring of children's progress, responding effectively to their problems. | Regular communication on children's progress. Work with parents taking into account their cultural background. |
| Volunteer-ing | Contribute to the development of the school environment and the education process, participate in school activities. | Create favorable conditions for parent engagement, make flexible schedules to enable parents who work to participate, recognize parents' talents and interests. |
| Decision-Making | Participate in school governance. Maintain networks that link all families with parent representatives. | Enable parents to participate in decisions about the governance of the educational institution. |
| Collaborat-ing with Community | Participate in education policy-making at the community level. | Coordinate resources and services from the community, businesses, and partnerships, assistance to families, soliciting support from cultural, healthcare, and other government agencies. |

about their child's life [Polivanova 2015]. In the context of parental in-volvement in education, parental self-efficacy comes to the fore as the parent's perceived competence and capability to contribute to the education of their children [Bandura 1977] (as quoted in [Poliva-nova 2015]). Parental self-efficacy implies confidence in one's efforts and the expectation that these efforts will bring about desired results.

One of the most popular theories on parental involvement existing today is Joyce Epstein's model defining six types of interactions ena-bling school-family-community partnerships [Epstein 1987] (Table 1).

Some researchers criticize this approach for the unjustified 'leve-ling' of the school and the family grounds and a too narrow notion of involvement [Vincent, Tomlinson 1997, Lareau 1996, Auerbach 2007, Galindo, Medina 2009]. They also point at a blinkered view on the school-family partnership and too much focus on the school in it [Ban-

Table 2. **Differences between traditional and partnership orientation** (after [Sheridan, Kratochwill 2007])

| Partnership orientation | Traditional orientation |
|---|---|
| Clear commitment to work together in order to promote child's performance/ achievement | Emphasizing the school role in promoting learning |
| Frequent communication that is bidirectional | Communication initiated just by the school, infrequent and problem-centered |
| Appreciating the cultural differences and recognizing the importance of their contribution to creating the positive learning climate | 'One size fits all'—cultural difference is a challenge that needs to be overcome |
| Appreciation of the significance of different perspectives | Differences are seen as barriers |
| | |
| Goals for students are mutually determined and shared | Goals determined by school, sometimes shared with parents |
| Plans are co-constructed with agreed-upon roles for all participants | Educational plans devised and delivered by teachers |

quedano-Lopez, Alexander, Hernadez 2013]. Despite the criticism, however, this model is praised for being conceptually right [ibid.] and providing a succinct summary of different interactions enabling meaningful cooperation between the school and the family. Most Western research is focused around some 'branch' of that 'tree' or other. Based on the above, it appears relevant to examine how Epstein's model fits with Russian reality.

Researchers Susan Sheridan and Thomas Kratochwill undertook an attempt to develop the Epstein model further by formulating differences between the traditional relations of the school and the family and a partnership approach (Table 2).

The partnership approach consists of three important building blocks defining one another: basis of partnership, actions, and academic outcomes. The *basis of partnership* embraces the approach (acceptance by the school of the family's participation, shared responsibility for the child's academic performance), relations (the school and the family recognizing that together they will achieve much better results, rather than separately), and environment (mutual trust, the school is perceived as a friendly community by the family). *Actions* include strategies and practices aimed at building a successful school-family partnership. Naturally, the partnership brings about better *academic outcomes* (through a more successful learning process and healthy development of the child).

In summary the results of 66 studies Anne Henderson and Nancy Berla concluded that the family is a major contributor to the child's

accomplishments from their early childhood to high school [Henderson, Berla 1994], and that parental involvement has a stronger effect on attainment in primary school than in the secondary school [Jeynes 2007].

The positive influence of parental involvement in education is also discussed in the context of educational inequality. Educational institutions and the government help balance the odds to a certain extent for children from families of different socio-economic status and provide certain compensatory mechanisms. At the same time, the risk of reproduction of social inequality remains. It becomes relevant, therefore, to conduct research that would open up possibilities to overcome educational and social marginalization of the most vulnerable categories of children through their families' involvement in the education process and the everyday life of the educational institution [Gadsden, Davis, Artiles 2009, Zimmer 2003, Brunello, Checchi 2007].

Family involvement in education is addressed as a mechanism to improve the child's academic performance at school and reduce the large gap in attainment between children from low-income families and their wealthier peers. A home environment that is full of encouragement and support, and high expectation as well as the parental engagement in school life both promote student performance regardless of their social, national, cultural, or economic background [Eagle 1989, Dauber, Epstein 1993, Christenson et al. 1997]. Parental involvement in education can also help compensate for the lack of other family resources [Derrick-Lewis 2001]. Whatever the family's socio-economic status and the student's talents, family-school partnerships provide many advantages and, among other things, help tackle educational inequality [Epstein 1987, Caldas, Bankston 1997, Kelleghan et al. 1993].

Different types of families and different categories of parents can have an equally positive influence on the academic performance of children. However, due to their natural differences as well as the difference in opportunity and conditions, they take different approaches to involvement in education. Even though, depending on the conditions and the situation, the same parent will choose different types of involvement, it can be assumed that his/her preferences are dictated by certain characteristics of the family such as its socio-economic status, educational and cultural background.

One of the objectives of this study was to confirm or reject this hypothesis by analyzing different typologies of parental involvement based on Epstein's model [Epstein 1987] adapted to the realities of Russian education. The main line of this analysis is a correlation between the types of participation (involvement) of parents from families of different socio-economic status, the academic results of children from those families, and the educational trajectories of the children.

**1. Empirical Basis of the Study**

For the purposes of this study, a survey of 3,887 parents whose children attend general education institutions was conducted. The survey was undertaken in 2016 as part of the *Monitoring the economics of education* initiative by the Higher School of Economics in 9 federal districts of Russia.

In accordance with the theoretical framework of the study (J. Epstein's model) for each of the six types of parental involvement in education there was a set of multiple choice questions about the parents' participation in school life and in their child's education.

The sample of pre-school and general education institutions was stratified based on the following parameters: (a) geographic location, (b) type of populated place, (c) type of educational institution, (d) form of ownership. The sample was spread over the strata "administrative and geographic attribute" and "type of populated place" in proportion to the population of those strata. The distribution by types of populated places was as follows: Moscow—12.1% (471 people), cities above 1 million people (excluding Moscow)—13.8% (536 people), cities from 100,000 to 1 million people and towns below 100,000 people—26.3% (1,021 people) and 18.2% (709 people) respectively, and urban-type settlements and village settlements together—29.6% (1,150 people). The structure of the sample by the level of education of the mother (stepmother) was the following: general secondary education or lower—4.6% (178 people), elementary or secondary vocational education—33% (1,273 people), higher education not completed or without academic degree—59.4% (2,289 people), higher professional education and higher education with an academic degree—2.5% (98 people).

Distribution by the level of income: Sometimes we do not have enough money to buy necessary foods—1.3% (51 people), We have enough money for food but not for other daily needs—7.5% (290 people), We have enough money for daily needs but not for necessary clothes—14.7% (565 people), We have enough money for food and clothes but not for TV, refrigerator, etc.— 39.4% (1,513 people), We live well but would have to borrow money for a car or an expensive vacation—32% (1,231 people); We live well and can afford a car or an expensive vacation—5% (193 people).

A separate analysis was carried out for the answers of parents belonging to the category "low-income families" in order to study the specific characteristics of the types of parental involvement, children's attainment, and children's educational trajectories in the low-income families. This category consisted of the parents who selected the answers *Sometimes we do not have enough money to buy necessary foods* and *We have enough money for food but not for other daily needs*.

**2. Results of the Study**

**2.1. Representation in the Sample of the Six Types of the Parents' Involvement in the Education and the School Life of Their Children**

Almost all parents participate at the level of the basic types of involvement in *Parenting* and *Communicating* (average values for the sample are 93.3% and 97.9% respectively). Those parents establish a learning environment at home, take their child to school if necessary, and communicate with the school by tracking on a daily basis their child's performance and behavior, and by monitoring school news and classroom activities. The results of a study conducted in the US [Derrick-Lewis 2001] also show an overwhelming majority of parents involved in education at the level of *Parenting* and *Communicating* (96.6% and 93.2% respectively).

A significantly smaller portion of parents in Russia (only 62%) are involved in *Learning at Home* (helping with homework, searching for information on school subjects, guiding through difficulties, helping with planning curriculum activities). In the US, the degree of involvement at the *Learning at Home* level is higher—93.5% of parents control whether their child did their homework or not, and 81.1% of parents help their children with their homework [Derrick-Lewis 2001]. Just a bit less than a half of Russian parents (45.3%) are involved in *Volunteering* in school—they participate in and help with classroom and school activities and events, give help to other children and their parents, and sit on parents' committees (Fig. 1).

The study showed that the Epstein model allows us to classify Russian parents very clearly by the types of their real involvement in education. There are, however, peculiarities characteristic of the Russian cases. For example, according to J. Epstein [Epstein 1986], more than 70% of parents never act as volunteers. The results of our study show that almost half of the Russian parents are involved in *Volunteering*. It obviously should be regarded as the specific feature of the Russian case that is associated with the historically rooted attitudes of the Russian parent community about the importance of participating in school life.

Only a small percentage of the parents are involved in education at the highest levels of *Decision-making* and *Collaborating with Community*. Participation in decision-making on school governance is practiced by 13.1% of the parents. They sit on the governing boards and facilitate communication and information exchange between the parent community, educational institutions, education authorities, etc.

The least popular format of parental involvement in education in Russia is through informal groups of active parents who not only facilitate communication between the parent community, educational institutions, and education authorities but also maintain school-oriented cooperation in the local community. Only 3.4% of the parents are engaged in such formats of involvement.

A comparison of the percentage of involved parents from low-income families with the average sample values showed that involvement in *Parenting*, *Communicating*, and *Learning at Home* is essentially independent of the wealth status. *Volunteering*, however, is

Fig. 1. **Distribution of the six types of parental involvement in the education and the school life of their children**
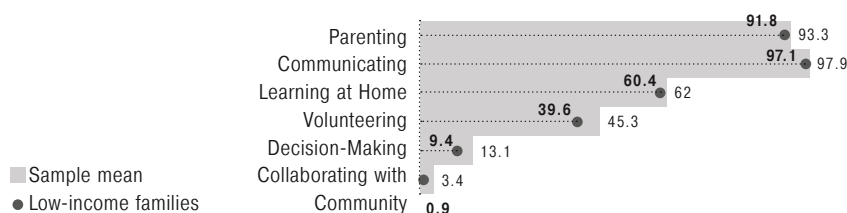


significantly less popular among the parents from low-income families as compared to the average sample values (Fig. 1). The percentage of parents involved in *Decision-Making* and *Collaborating with Community* is generally low, and critically low among low-income families.

Hence, the involvement of the parents from low-income families varies from the average for the sample at three upper levels only. The largest gap is observed in *Collaborating with Community*.

**2.2. Types of Parental Involvement and the Students' Academic Results**

Better academic performance is one of the most important outcomes of parental involvement in education. It becomes vital, therefore, to evaluate how types of parental involvement are reflected in the students' academic results.

According to the survey, in almost every third family where parental involvement does not take any form from the proposed typology, the children mostly get passable or low grades. The percentage of children with passable or low grades is about twice as low (around 15%) in families where the parents are involved in *Parenting*, *Communicating*, and *Learning at Home*. In families where the parents practice *Volunteering* and *Decision-Making* the percentage of underperforming children is even lower—around 10%. The lowest percentage of the poorly performing students—less than 7%—is observed in families where the parents participate in *Collaborating with Community* (Table 3).

The percentage of children mostly getting good grades and always getting good and excellent grades being slightly higher with involved parents compared to uninvolved parents is almost the same, however, among all types of involvement. The percentage of children with only excellent grades is the lowest where the parents are only involved in *Parenting* and *Learning at Home* and is gradually growing at further levels up to *Collaborating with Community*. The study conducted in the US found an irrelevant correlation between the parents' involvement in *Parenting* and *Communicating* and the children's academic results. A better expressed correlation was observed where the par-

Table 3. **Students' attainment depending on the type of parental involvement in school and education** (% of the total number of responding parents)

| Types of parental involvement (after [Epstein 1987]) | Occasion-al very low (E) grades | Normally passable (D) grades | Mostly good (C) grades | Only good (C) and excellent (B, A) grades | Only excellent (B, A) grades |
|---|---|---|---|---|---|
| Not involved | 3.3 | 24.1 | 40.6 | 25.9 | 6.1 |
| Parenting | 3.2 | 11.2 | 46.7 | 36.1 | 2.7 |
| Learning at Home | 3.4 | 10.1 | 47.0 | 37.2 | 2.3 |
| Communicating | 3.4 | 11.7 | 47.1 | 35.0 | 2.8 |
| Volunteering | 2.5 | 8.1 | 46.2 | 39.7 | 3.5 |
| Decision-Making | 3.0 | 6.9 | 46.8 | 39.2 | 4.1 |
| Collaborating with Community | 2.5 | 4.1 | 46.3 | 41.3 | 5.8 |

ents were involved in *Learning at Home*, *Volunteering*, *Decision-Making*, and *Collaborating with Community* [Derrick-Lewis 2001].

The highest percentage of children with excellent academic performance (6.1%) was observed in the group where the parents do not have any involvement in education. It appears that there is a specific category of families with excellent students who do not see any reason to participate in their children's education, and allow them independence, or actively engage in outside school education (tutors, courses, etc.).

Western research [Hart, Risley 1995, Revicki 1981] hsa found that parents with the lowest socio-economic status and the lowest incomes mostly disengage themselves from their children's education, whereas direct involvement in the school life promotes socialization amongst parents and improves the children's educational outcomes irrespective of the parents' income levels.

For the analysis of the situation in the families with different income levels academic performance indices[1] were calculated to reflect the academic results of the children whose parents practice different types of involvement in education. The average academic performance index for the sample was 3.22. For the children from the low-in-

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[1] The index for each answer choice was calculated by assigning a whole-number weight coefficient from 1 (lowest performance) to 5 (highest performance). The index value is the sum of products of weight coefficients and the percentage of the respondents who chose the respective answer. Possible index values range from 1 to 5.

Fig. 2. **Children's academic performance indices depending on the types of parental involvement in education**



Sample mean
● Low-income
families

Average values — 2.93 — 3.22
Collaborating with Community — 3.50 — 3.44
Decision-Making — 3.08 — 3.34
Volunteering — 3.06 — 3.34
Learning at Home — 3.03 — 3.22
Communicating — 2.94 — 3.25
Parenting — 2.97 — 3.24
No involvement — 2.72 — 3.08
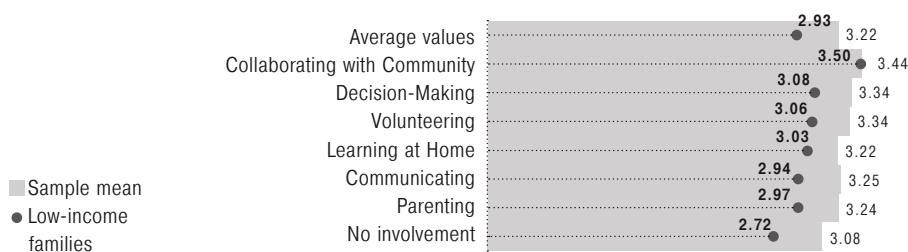
come families this index was lower by 0.29 points, which again proves the existence of educational inequality.

The lowest academic performance index is observed where the parents do not practice any type of involvement in education. For this category of parents, this index has average values of 3.08 for the sample average and 2.72 for low-income families (Fig. 2). The average indices are higher for children whose parents practice *Parenting*, *Communicating*, and *Learning at Home*—3.22–3.25 for the sample average, and 2.97–3.03 for low-income families. The indices are almost the same for children whose parents practice *Volunteering* and *Decision-Making*—3.34 for the sample average, and 3.06–3.08 for low-income families. The highest academic performance is demonstrated among children whose parents practice involvement at the highest level, *Collaborating with Community*—3.44 for the sample average. It is worth noting that in low-income families where the parents are involved in *Collaborating with Community* this index is even higher than the sample average—3.50.

The findings of this analysis lead to a conclusion that where parents are involved in education, the children demonstrate higher academic performance irrespective of the family's wealth status. The more actively the parents are involved in education (from *Parenting* and *Communicating* to *Collaborating with Community*) the higher their children's academic performance indices are, and the smaller the gap in attainment becomes between low-income families and the average values for the sample.

The academic performance of children is higher than the sample average in families with low wealth status (such as large or displaced families) where the parents are socially active and involved in their children's education by not just communicating with their school but collaborating with the whole local community. These findings allow us to assume that a more active parents' position with regard to their children's education can successfully contribute to overcoming edu-

Fig. 3. **Percentage of the parent respondents whose children plan to go to a university after completing schooling**

Sample mean
● Low-income families

| | Low-income families | Sample mean |
|---|---|---|
| Average values | 73.6 | 81.2 |
| Collaborating with Community | 93.3 | 86.5 |
| Decision-Making | 88.7 | 87.6 |
| Volunteering | 78.2 | 83.5 |
| Learning at Home | 76.1 | 80.6 |
| Communicating | 73.8 | 81.2 |
| Parenting | 73.3 | 81.3 |
| No involvement | 40.7 | 72.0 |
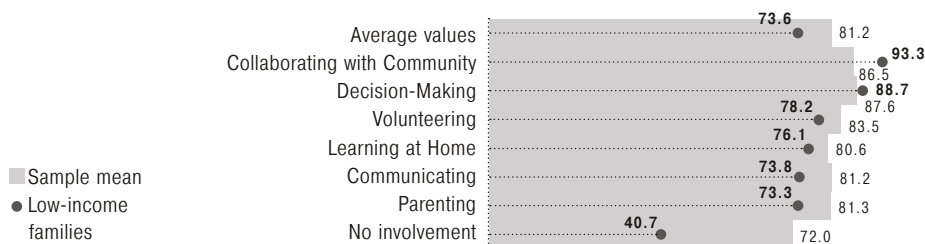
cational inequality. There is not sufficient grounds, however, to judge about the direction of the cause-effect link between these phenomena—whether a higher degree of involvement brings about better academic performance of the children or vice versa. Further research can help solve this problem.

Along with the academic performance index, educational inequality manifests itself in students' educational trajectories, particularly in the orientation towards getting higher education. A comparison of the parents' answers about their children's plans to enroll in higher education with the types of parental involvement reveals a correlation between the parents' involvement in education and the child's educational trajectory.

Parental involvement in education in any form almost doubles the frequency of choices made by students from low-income families to go into higher education after school (from 40.7% to 73.3% and higher). Moreover, when low-income parents are involved in education at the two highest levels, *Decision-Making* and *Collaborating with Community*, their children choose to proceed with higher education more frequently than the average value for the sample.

The likelihood of choosing the educational trajectory "Go to university" significantly increases when the parents are involved in their child's education. The higher the level of involvement, the higher the percentage of children considering going to a university, and the smaller the relevant gap between the values for low-income families and the average value for the sample. Almost all low-income parents who are involved in *Decision-Making* and *Collaborating with Community* responded that their children plan to go to a university (88.7% and 93.3% respectively, which exceeds the average values for the sample, 87.6% and 86.5%).

The motivation for learning and getting the best quality higher education is shaped to a great extent by parenting practices and values. Compared to the groups of parents practicing some type of involve-

Fig. 4. **Percentage of the parent respondents whose children will not proceed with higher education due to the lack of motivation**



Collaborating with Community :0 / 0
Decision-Making **0** / 5.9
Volunteering **4.5** / 4.8
Learning at Home **4.7** / 4.4
Communicating **12.8** / 7.0
Parenting **14.9** / 7.4
No involvement **50** / 13.5

■ Average for the sample
● Low-income families
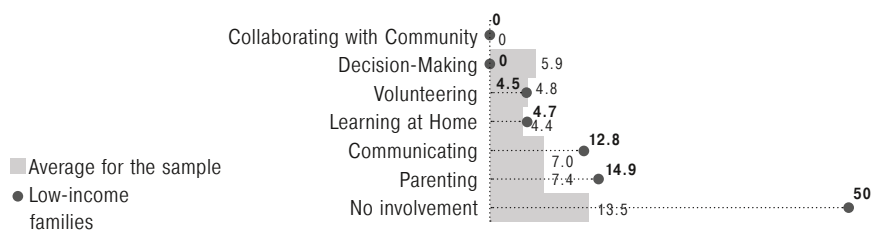
ment or other, the group where the parents are not involved in education at all contains the highest percentage of parents who say that their children do not intend to pursue higher education because of the lack of motivation for learning—13.5%. Among low-income families this percentage is 50% (Fig. 4). Among families where the parents practice *Parenting* and *Communicating*, the percentage of such children is 7%—almost twice as low. Among low-income families the percentage of parents who selected this answer is almost three times as low compared to the group of totally uninvolved parents, but at the same time is almost two times higher than among middle-to-high income families practicing *Parenting* and *Communicating*. Among parents involved in *Learning at Home*, *Volunteering*, and *Decision-Making* only 5% reported the lack of motivation in their child to continue with higher education. In the group of the parents collaborating with community nobody chose this answer. In the low-income families practicing *Learning at Home* and *Volunteering* the percentage of children not intending to pursue higher education is almost the same as in the middle-to-high income families. In the group of the low-income parents collaborating with community nobody reported the lack of motivation for further learning in their child.

The above findings demonstrate that the Epstein model fits for the assessment of parental involvement in education in Russia and for the comparison of the parental involvement types with the students' academic results. Children whose parents are involved in education demonstrate better academic performance in secondary school and will much more likely proceed with higher education than the children of uninvolved parents. Even when the parents only practice basic types of involvement such as *Parenting* and *Communicating*, their children's academic results will be higher compared to the children whose parents do not practice any type of involvement. The children of parents who are involved in *Learning at Home* and *Volunteering* have even higher academic results. The highest academic performance is demonstrated by children whose parents are involved in *De-

Table 4. **Types of parental involvement in education** (distribution by places of residence,%)

| Types of parental involve-ment (after [Epstein 1987]) | Type of place of residence | | | |
|---|---|---|---|---|
| | City above 1 million people | City 100,000–1 million people | Town below 100,000 people | Urban-type settlement, village settlement |
| Not involved | 3.9 | 5.3 | 7.2 | 6.6 |
| Parenting | 92.9 | 92.9 | 92.8 | 94.5 |
| Communicating | 97.9 | 98.0 | 97.9 | 98.3 |
| Learning at Home | 56.3 | 65.3 | 61.5 | 61.5 |
| Volunteering | 43.3 | 47.4 | 40.9 | 45.0 |
| Decision-Making | 17.4 | 13.5 | 10.6 | 11.9 |
| Collaborating with Community | 7.8 | 2.7 | 2.4 | 2.1 |

*cision-Making* and *Collaborating with Community*. Despite generally having lower than average academic results, children from low-income families have better attainment and more often plan to go to a university when their parents are involved. The higher the level of parental involvement, the smaller the gap in the academic results between the values for children from low-income families and the average values for the sample.

**2.3. Types of Parental Involvement Depending on the Place of Residence and the Mother's Education and Occupation**

The representation of each of the six types of involvement in education depends on the family's place of residence. The overall percentage of parents not involved in their children's education does not exceed 10%. It is the highest in small towns below 100,000 people and the lowest in cities above 1 million people. *Parenting* and *Communicating* are distributed rather evenly across different types of populated places—they are practiced by the majority of the parents (Table 4). *Learning at Home* is practiced the least often by parents living in cities above 1 million people. *Volunteering* is practiced much more often by parents living in cities from 100,000 to 1 million people. The most pronounced correlation with the place of residence is observed in the percentages of parents involved in *Decision-Making* and *Collaborating with Community*—the highest levels of involvement are the least often practiced in small towns, urban-type settlements, and village settlements, and much more often in the cities above 1 million people.

Western researchers have collected a substantial body of evidence which highlights that the level of the parents' education, and the mother's education in particular, is one of the main drivers of the students' successful academic performance and educational achieve-

Table 5. **Types of parental involvement in education**
(distribution by the mother's education,%)

| Types of parental involvement (after [Epstein 1987]) | Mother's (stepmother's) education | | | |
|---|---|---|---|---|
| | General second-ary or lower | Elementary or secondary vocational education | Higher education not completed or without academic degree | Higher professional education and higher education with an academic degree |
| Not involved | 10.4 | 5.4 | 4.3 | 5.6 |
| Parenting | 87.5 | 93.4 | 95.1 | 94.4 |
| Communicating | 95.8 | 97.8 | 98.2 | 96.3 |
| Learning at Home | 57.3 | 59.8 | 64.9 | 64.8 |
| Volunteering | 30.2 | 40.5 | 50.3 | 55.6 |
| Decision-Making | 7.3 | 10.0 | 14.1 | 16.7 |
| Collaborating with Community | 3.2 | 2.9 | 3.8 | 9.3 |

ments. The results of our study also show a correlation between the level of parental involvement in their child's education and their educational background.

Among the parents who completed general secondary education or have a lower educational background there are twice as many parents not practicing any involvement in the education of their children than among the parents who completed professional education of any kind (Table 5). The lowest percentage of parents involved in each of the six types of involvement is observed among those parents with the lowest educational backgrounds. The parents with university degrees demonstrate high involvement performance for almost each type of involvement.

The percentage of parents practicing *Communicating* has very little dependence on the mother's education. The parents' education has the most impact at the higher levels of involvement starting with *Learning at Home*, and the impact becomes stronger with every further level upwards. At the highest levels of involvement, *Decision-Making* and *Collaborating with Community*, the percentage of parents with a university degree is two-three times higher than the percentage of parents who completed general secondary education or have a lower educational background.

The mother's occupation also has an influence on the parents' preference for the type of involvement in education. The smallest percentage of parents not involved in education is among the entrepreneur parents who run their own business (Table 5). It appears that

Table 6. **Types of parental involvement in education**
(distribution by the mother's occupation,%)

| Types of parental involvement (after [Epstein 1987]) | Mother's (stepmother's) occupation | | | | |
|---|---|---|---|---|---|
| | Unemployed | Nonprofessional worker, agricultural worker | White-collar worker | Manager | Entrepreneur, company owner |
| Not involved | 6.0 | 6.0 | 4.4 | 6.2 | 2.1 |
| Parenting | 95.4 | 93.4 | 94.1 | 91.7 | 94.8 |
| Communicating | 97.1 | 97.6 | 98.3 | 96.9 | 97.9 |
| Learning at Home | 61.1 | 62.7 | 62.3 | 67.9 | 62.5 |
| Volunteering | 44.8 | 38.6 | 46.1 | 53.9 | 59.4 |
| Decision-Making | 9.6 | 10.8 | 12.4 | 18.1 | 22.9 |
| Collaborating with Community | 3.8 | 3.1 | 3.2 | 4.7 | 6.6 |

the energy and initiative required for starting up a business manifest themselves in other spheres such as the education of the children.

The mother's occupation has a negligible effect on the percentage of parents practicing *Parenting* and *Communicating*. There are a few more managers among those parents who practice *Learning at Home*. Among the parents who are involved in *Volunteering* the ratio of managers and entrepreneurs is the highest and the ratio of nonprofessional workers is the lowest.

Also, the most intensely involved in *Decision-Making* and *Collaborating with Community* are those parents running a company or a sole proprietorship. Managers come second. An obvious conclusion is that the parents capable of starting and running their own business, making decisions and taking responsibility are much more likely to participate in the governance of the educational institutions attended by their children.

**3. Conclusion**     The data obtained from this research confirms and complements certain findings from Western research that does not have parallels in Russia. For example, the correlation between children's academic results and their parents' involvement in education. The correlation is direct—the more active the parents, the better the academic performance of their children. Moreover, the comparison of the types of the parents' involvement in the risk-group families (with low socio-economic status) revealed that the parents' involvement in education carries high potential for overcoming educational inequality.

Utilization of J. Epstein's classical model allowed us to expand the idea of the types of parental involvement in education and prove its fitness for studying the Russian educational reality. According to J. Epstein, there are six types of parental involvement in children's education. They differ by the choice of activity and the degree of involvement and depend on the various characteristics of the family such as the family's financial position, the educational background and the occupations of the family members.

At the same time, the results of the study provide a snapshot of today's situation in Russia. The results for certain types of parental involvement were so close among one another that for the Russian sample, we should say, there are basically three main types of parental involvement in education.

The first—basic level—combines *Parenting* and *Communicating*. The overwhelming majority of Russian parents are involved in their children's education at this level with very little dependence on the place of residence, level of education, and occupation. The children of parents who practice this level of involvement have better academic performance than the children whose parents are not involved in education.

*Decision-Making* and *Collaborating with Community* can be described as the highest level of parental involvement in education that is practiced by only a few parents. Generally, those are the parents with a very high socio-economic status, well-earning and well-educated (with a university degree and very often with a post-graduate degree), working as managers, or running their own business. The possibilities of enhancing involvement at this level are rather limited for objective reasons such as a lack of education boards representing both the government and the public, or any other parent associations, and for subjective reasons such as the fact that only a small number of parents possess the qualities that are necessary at this level of involvement such as leadership, strategic thinking, and making decisions that not only influence the lives of their children but also define the development paths of their children's educational institutions.

The medium level combines *Learning at Home* and *Volunteering* and integrates two of the most important areas of parental involvement, i. e., providing a supportive environment for learning activity at home and participation in the education process in school. Around a half of Russian parents practice *Learning at Home* and *Volunteering*. Hence, this is the level where significant opportunity exists for enhancing parental involvement through attracting more parents and improving the efficiency of the school-family partnerships that already exist.

Here the key role should be played by the educational institutions. It is the attitude of the education system representatives that largely defines the success of the school-family partnerships [Mertsalova, Goshin 2015, 2016].

J. Epstein's typology obviously does not cover every possible type of parental involvement in their children's education and does not elicit the underlying causes and effects, which leaves some factors that may determine the parents' behaviors and the children's academic results undisclosed. This is a subject for further research. A science-based approach to the description of clusters of parental involvement in education allows us to define groups of parents based on their socio-economic characteristics and the types of involvement practiced by them. This information can be useful for education system representatives in the development of targeted initiatives for specific families that will unlock the full potential of each parent.

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# Does Teacher Motivation Lead to Student Motivation?
## The Mediating Role of Teaching Behavior

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**Abstract.** The overarching purpose of this study is to investigate the impact of teacher motivation on teaching behavior and student motivation. The notion of teacher motivation refers to teachers' interests, self-efficacy, and mastery goals orientation. Teaching behavior comprises of mastery-oriented and cognitively activating instructional practices, however, student motivation represents students' interest in subject matter and student mastery-goals orientation. Data were collected from students (n=434) from public sector elementary schools located in the Punjab province of Pakistan, where students were nested within teachers (n=89). Considering the multilevel nature of the data, multilevel analysis was used to test the hypothesized relationship between the constructs. The findings suggest that all facets of teacher motivation are antecedents of instructional practices as well as student motivation. Being a component of teaching behavior, instructional practices (only mastery-oriented) have strong positive links with student motivation suggesting that mastery oriented instructional practices involve a caring attitude towards students' interests and learning which in turn result in enhanced motivation among students. Moreover, beyond the direct positive association between teacher motivation and student motivation, mastery-oriented instructional practices also mediate the effect of teacher motivation.

**Keywords:** Teacher motivation, teaching behavior, instructional practices, student motivation, subject interest, teacher self-efficacy, mastery-orientation

## 1. Introduction

Teacher motivation is receiving the widespread attention of educational researchers and practitioners because of its pronounced effects on teaching behaviors, academic achievements, student motivation, and stress. Teacher motivation acts as a crucial element necessary for optimal human performance in the workplace because highly motivated teachers appear to be more engaged in and satisfied with their work

than those with lower levels of motivation [Skaalvik, Skaalvik 2017a]. Considering this, scholars are devoting substantial amount of energy in understanding the concept itself, its underlying components, and its consequences [Fernet et al. 2008]. Though, there is an agreement that teacher motivation is a multidimensional construct [Butler 2007; Schiefele, Schaffner 2015], yet this stream of research demands further investigation to determine its unexplored components, facets, and/or outcomes. To this end, most scholars have endeavored to uncover its linkages with goal orientation (e. g. [Butler 2007]), self-efficacy (e. g. [Klassen et al. 2009]), enthusiasm (e. g. [Kunter et al. 2008]), teaching behavior (e. g., instructional practices), and occupational well-being (e. g., burnout). Some others (see e. g., [Fernet et al. 2008; Katz, Shahar 2015]), using self-determination theory (SDT) as an underlying mechanism to evaluate teacher motivation from self-determined and controlled motivation perspective, have studied its association with stress and their autonomy-supportive style.

Despite the existence of widespread literature on student motivation and interest, teacher motivation has not been paid that much attention besides deploying traditional motivation theories. The present study considers a nascent construct of '*teacher interests*' as a component of teacher motivation, thus ensuring rationale and edge over existing studies that either considered older constructs for teacher motivation or included only single/fewer dimensions for teacher motivation. Moreover, previous studies (see e. g., [Butler, Shibaz 2008; Retelsdorf et al. 2010; Skaalvik, Skaalvik 2007; Watt, Richardson 2008]) have focused on teachers' well-being (e. g., stress, burnout), and performance (e. g., job performance, goal achievement), while little attention has been paid to exploring the impact of teaching behavior (e. g., instructional practices) on student outcomes. Finally, past research carried out on teacher motivation across Pakistan revolves around either performance/job-related outcomes or occupational well-being, with the aspect of '*teaching behavior*' not succeeding to get any reasonable attention from educational researchers and practitioners.

This study proposes that the motivation levels of teachers roots from their interests in subjects, teaching approach, and overall educational methodology they adopt and practice. Teachers' orientation towards mastery goals and their belief in their own skills and competencies also catalyze their motivation level. Teaching and learning is an interactive process characterized by two-way communication (active interaction between and among teachers and students). In this way, teachers can influence students positively as well as negatively directly, and through teaching behavior.

This paper is organized as follows: The next section elaborates the theoretical background and hypotheses development followed by the methodology and results section. The last section covers discussion, conclusion, study implications, limitations, and future research directions.

## 2. Theoretical background and hypotheses development

### 2.1. Teacher motivation

Teacher motivation refers to the energy, force, and/or desire that compels teachers to perform certain actions. This could also be the direction that leads teachers towards certain behaviors or repeating behaviors or keeping oneself away from specific behaviors [Elliot 2005]. Given that teachers are involved in multiple tasks which they have to accomplish, it seems very difficult to identify motivational processes underlying each task and their impact on the psychological functioning of teachers. Moreover, each work activity may possess a different underlying motivational process depending on its nature, and on the teacher performing that activity [Fernet et al. 2008]. Further, teacher motivation is a multidimensional concept, and has several facets and components. Therefore, the present study considers teachers' self-efficacy, mastery goals, and teachers' interests (relatively new construct proposed by Schiefele et al. [2013]) as components of teacher motivation. *Teacher interests* refer to the interests of teachers in a specific subject or knowledge domain that are relatively permanent attraction towards that domain based upon feelings and value related attributes [Hidi. Renninger 2006]. Subject interest, didactic interest, and educational interest are three dimensions of teacher interests [Schiefele et al. 2013]. Subject interest refers to teachers' interest in subject and its contents being taught (e. g., Physics, Mathematic) as well as broader aspects and concepts relevant to the subject matter. Didactic interest refers to teaching methodology of the subject matter and the preparation of teaching contents. Educational interest encompasses occupational and pedagogical aspects necessary for the teaching profession. Teacher interest is an important component of teacher motivation that functions as an antecedent for teachers' occupational well-being, teaching behaviors, instructional practices and student motivation, which in turn contribute to high academic performance in both teachers and students.

*Teacher Self-efficacy* refers to teachers' belief in his or her own capability to perform a certain task or set of activities [Bandura 1986]. A self-efficacious teacher is, thus, one who possesses strong beliefs that he or she can positively influence the students and their learning. In education, self-efficacy helps students in achieving better performance, challenging goals which in turn enhance their motivation. For teachers, it provides strong feelings regarding positively influencing students learning, better job performance, high job commitments, more work engagement, teaching behaviors, and instructional practices [Schiefele, Schaffner 2015]. Teachers with a relatively lower level of self-efficacy encounter occupational problems such as student misbehavior, burnout, stress, job dissatisfaction, and are found to be pessimistic regarding student learning and academic achievement [Skaalvik, Skaalvik 2017b].

*Teacher Mastery goals orientation* refers to teachers' thirst for mastery skills to seek extended expertise for mastery skills development [Elliot 2005]. Self-determination theory (SDT) suggests that

mastery-goals oriented teachers seek to improve their performance relative to their previous outcomes or according to task demands. Students perceive mastery-oriented teachers helpful in the learning process, friendly when asking them questions, and supportive when seeking help [Butler, Shibaz 2008]. Contrary to mastery goals, teachers focusing on achievement oriented goals strive to increase their competitive performance. Moreover, teachers with mastery-goals orientation are found to emphasize competence gaining and strive to adopt 'mastery-oriented' and 'cognitively activating' instructional practices [Retelsdorf et al. 2010]. Drawing upon achievement goal theory, individuals adopt either performance goals or mastery goals depending upon their perception regarding competence and likelihood of success [Papaioannou, Christodoulidis 2007]. Individuals aimed at performance goals strive to exhibit their competence based upon comparison to others. They make efforts to outperform to show their social superiority over others through their performance.

## 2.2. Teaching behavior—instructional practices

Instructional practices are a dimension of teaching behavior where teachers focus on the adaption of certain policies and procedures in their classroom activities which aim at achieving specific classroom/student outcomes [Wolters, Daugherty 2007. These practices include mastery-oriented, performance-oriented, and cognitively-activating practices [Retelsdorf et al. 2010]. This study considers two types of instructional practices (mastery-oriented and cognitively activating) to explore their antecedents and outcomes. *Mastery-oriented* instructional practices refer to the teacher's efforts, attempts, and exertions on tasks and activities of students' interests in order to enhance their skills and abilities, evaluating students' performance relative to their past progress, and considering students' errors as an opportunity for learning [Meece, Anderman, Anderman 2006]. *Cognitively-activating* instructional practices refer to the teachers' efforts to provide students with a challenging task, coming up with unusual solutions to problems, independent thinking, critical thinking, and embracing fresh ideas [Retelsdorf et al. 2010].

## 2.3. Student motivation

Student motivation refers to the energy, force, and/or desire that compel students to perform certain actions. This could also be the direction that leads students towards certain behaviors or repeating the behaviors or keeping them away from specific behaviors [Elliot, 2005]. Student motivation functions as a key to their academic performance and achievement [Zee et al. 2016]. Past studies show that less motivated students were found to engage in more negative behaviors and emotions and less class participation resulting in poor academic performance [Urhahne 2015]. Furthermore, student motivation levels are also associated with the teachers' perception of interaction and involvement with students in such a way that teachers who perceived students as motivated helped those students to increase their aca-

demic performance. This study conceptualizes student motivation as student subject interest and student mastery-goals orientation.

### 2.4. Relationship between teacher motivation and student motivation

Teacher motivation is measured on the basis of three components-teacher interest, teacher self-efficacy and teacher mastery-goal orientation. Association of each component with student motivation is discussed separately:

#### 2.4.1. Teacher interest and student motivation

Teacher interest is an important factor that may provide the foundation to not only encourage teachers towards teaching but also help them to motivate their students. According to theories of interest, interests work as components that are important in explaining relevant outcomes [Hidi et al. 2006]. For example, the study by Hidi et al. [2006] and Schiefele et al. [2013] considered interest as a component of motivation in a student context. These studies proposed student interest as an important factor playing its role in the promotion of educational outcomes. Likewise, theories of interest provide solid grounds to be studied from the teachers' perspective [Watt et al. 2008]. Teacher interests are an individual's interests in a specific subject or knowledge domain that are a relatively permanent attraction of the individual towards that domain based upon feelings and value related attributes [Hidi et al. 2006]. Simply put, teacher interest is the perception of individuals being positively attached and attracted towards a particular subject domain. Teacher interest has three components; subject interest, didactic interest and educational interest. Each component of teacher interest focuses on particular aspects of subject matter, teaching content, teaching methods and educational issues in the profession. *Teacher interest* helps in propagating values, enhancing social competencies, and facilitates dealing with challenging student and class situations [Hulleman et al. 2010]. Drawing from theories of interest, teacher interest has the potential to positively influence and enhance teacher level outcomes as well as that of the student. Therefore, teacher interest is more likely to play a vital role in defining and promoting motivation among students of those teachers who are found highly interested in their subject domain, didactic and educational aspects. On the basis of the discussions above it is proposed that the teacher interest component of teacher motivation is positively associated with student motivation in such a way that an increase in the level of teacher interest causes a significant rise in student motivation.

*H1 a*: There is significant association between teacher interest and student motivation.

#### 2.4.2. Teacher self-efficacy and student motivation

Self-efficacy refers to the one's belief that one has the capability to perform a certain task or set of activities [Bandura 1986]. A self-efficacious teacher is one who possesses strong beliefs that he/she

can positively influence the students and the learning of the students. Self-efficacy is a crucial element for better individual performance in a variety of settings such as health, education, organization, sports, and work [Klassen et al. 2009]. In education, the self-efficacy of students helps them to challenge goals and achieve better performance and motivation [Schiefele et al. 2015; Skaalvik et al. 2007]. Teachers with a relatively lower level of self-efficacy encounter occupational problems such as student misbehavior, and are found to be pessimistic regarding their students' learning and academic achievement [Caprara, Barbaranelli, Steca, Malone 2006]. More recent studies such as that of de Boer et al. [2016], and Wang et al. [2015], demonstrated that self-efficacious teachers serve as a source of encouragement and student engagement, along with playing important role to motivate their students. On the basis of the discussions above, teacher self-efficacy is proposed as an important predictor of student motivation.

*H1 b*: There is significant association between teacher self-efficacy and student motivation.

**2.4.3. Teacher mastery goal orientation and student motivation**

Mastery goal orientation refers to one's interest in a task or activity for enhancing one's skills and getting oneself mastered in work activities. According to achievement goal theory, individuals adopt either performance goals or mastery goals depending on their perception regarding competence and likelihood of success. Mastery oriented individuals make an effort to get themselves mastered in particular tasks or set of activities rather than to outperform or to show their social superiority over others through their performance. Mastery oriented teachers have a thirst for mastery skills which motivates them to seek extended expertise for mastery skills development which in turn accelerates student motivation [Elliot 2005]. Because mastery-goals oriented teachers seek to improve their performance relative to their previous outcomes or according to task demands, students perceive mastery-orientated teachers helpful in the learning process, friendly when asking questions, and supportive when seeking help [Butler et al. 2008]. Based upon the above stated discussions, teacher mastery-goal orientation fosters motivation among students.

*H1 c*: There is significant association between teacher mastery-goal orientation and student motivation.

**2.4.4. Teacher motivation and instructional practices**

Teacher motivation has been viewed as a direct and indirect predictor of teaching behavior and occupational wellbeing [Klusmann et al. 2008]. Recent evidence (e. g., [Schiefele et al. 2013]) indicates that teacher interest is an antecedent of mastery-oriented practices. Teachers having a higher degree of subject and didactic interest are more likely to apply various teaching methods to ensure enhanced learning and improved student academic performance. The study of

Ross [1998], reported that the self-efficacy component of teacher motivation has a positive association with various types of instructional practices and is open to accepting new methods of teaching. In education, self-efficacy of students helps them to challenge goals and achieve better performance and motivation; for teachers, it provides strong feelings of positively influencing students learning, and instructional practices [Schiefele et al. 2015; Skaalvik et al. 2007]. Mastery-oriented instructional practices derived from teacher motivation help to continuously improve and develop abilities among students. Han et al. [2015] empirically confirmed a positive association between goal-orientation and teacher behavior. He found that mastery-oriented goals are positively linked with attitude towards teaching. More specifically, the findings of Retelsdorf et al. [2010] show that teachers' mastery-goal orientation is positively linked with mastery-oriented as well as cognitively activating practices. Considering the above discussion, we hypothesized that all three components of teacher motivation have a positive relationship with instructional practices.

*Hypothesis 2*: There is a significant association between teacher motivation (teacher interests, self-efficacy, and mastery goals) and instructional practices.

2.4.5. Instructional practices and student motivation

Teachers' instructional behavior is an integral factor for engaging students in the learning process [Pressley et al. 2001]. Mastery-oriented practices help to continuously improve and develop the abilities and skills of students which in turn serve as a source of motivation [Retelsdorf et al. 2010]. On the other hand, cognitively activating instructional practices provide students with challenging tasks and encourage finding unusual solutions to problems, independent thinking, and embracing fresh ideas, thus provoking the urge to perform well in crucial situations. The study of Zee et al. [2016] provides support for instructional strategies and their effect on student level variables. Similarly, Park et al. [2016], and Urhahne [2015] reported empirical support for the causal relationship between instructional practices and student motivation. Based on the discussions above, it is argued that instructional practices are positively linked with student motivation.

*Hypothesis 3*: Instructional practices have positive links with student motivation.
*Hypothesis 4*: Instructional practices mediate the positive effect of teacher motivation on student motivation.

3. Methodology
3.1 Research design

The present study involves the analysis of a survey questionnaire in order to test the hypotheses. The study setting is public sector elementary schools in the province of Punjab, Pakistan. Elementary school is proven to be the place where children learn to make or break their fu-

ture. Hence, this period could not be more helpful for acknowledging the different aspects of teacher and student motivation in teaching and learning. During adolescence, teachers can influence their students in many ways such as forming peer relations, achieving identity in occupation, gender roles, politics and religious maturity [Woolfolk, Hoy, McCune-Nicolich 1980]. All these aspects provide a basis for the grooming of students and eventually form what they would become in the future. Therefore, this study setting provides the most appropriate unit of analysis. The study considers multilevel data where students are treated as level 1 that are nested within their respective teachers who are being treated as level 2. The rationale behind taking data at a multilevel is to identify whether the level of student motivation varies across teacher level motivation and instructional practices. Treating data at the same level would not provide any insight into shared variance which is contributed by level 2 variables to level 1 variables. Thus, multilevel data allows for studying the possible effects of teacher motivation and instructional practices on student motivation considering that student motivation is not uniform across their teacher level [Downer et al. 2015].

### 3.2. Sample and data collection

A total of 679 questionnaires were distributed, out of which 97 questionnaires were distributed to elementary school teachers and 582 to their students. There were six students nested within each teacher. The list of elementary schools was drawn from the website of the School Education Department, Government of the Punjab. Once the schools were selected, the researcher visited each school personally and asked for the consent of teachers for their participation. Those teachers who showed a willingness to provide responses plus six of his/her students were selected through convenient sampling. All six students belonged to the same class of the teacher concerned.

For the teachers, out of 97, 93 participants responded. Four questionnaires were incomplete, and thus unusable for the study. The responses of the students of these four teachers were also excluded to avoid any likelihood of response bias and/or misleading results. For the students, 582 questionnaires were distributed out of which 462 (79.3%) were received. Besides 24 excluded responses of non-respondent students, four questionnaires were incomplete and two were unfilled. Eventually, 434 questionnaires from students were completed form all aspects and useable for further analysis.

### 3.3. Construct Measurement

Teacher motivation was measured on the basis of three components: teacher interest, teacher self-efficacy, and teacher mastery-goals orientation. Teacher interest was assessed by means of the Teacher Interest Scale (TIS) developed by Schiefele, Streblow, and Retelsdorf [2013]. This scale consisted of fourteen items out of which five items were related to subject interest, 4 to didactic interest and 5 were related to educational interest. Teachers' self-efficacy was measured using a nine-item scale developed by Schwarzer, Schmitz, and Day-

Table 1: **Mean, Standard Deviation, Correlation and Cronbach's Alpha of Level-2 Variables**

|  | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | 3.67 | 0.765 | — |  |  |  |  |  |  |  |
| Gender | 1.360 | 0.483 | 0.167 | — |  |  |  |  |  |  |
| Experience | 3.438 | 1.651 | -0.371** | 0.071 | — |  |  |  |  |  |
| Teacher Interest | 4.404 | 0.432 | −0.175 | −0.190 | 0.007 | **0.854** |  |  |  |  |
| Teacher Mastery-Goals Orientation | 4.356 | 0.487 | −0.102 | −0.148 | −0.055 | 0.531** | **0.838** |  |  |  |
| Teacher Self-Efficacy | 4.135 | 0.540 | −0.128 | −0.217* | −0.090 | 0.588** | 0.338** | **0.825** |  |  |
| Mastery-Oriented Practices | 4.329 | 0.553 | −0.160 | −0.384** | −0.029 | 0.469** | 0.502** | 0.472** | **0.771** |  |
| Cognitively Activating Practices | 3.791 | 0.658 | −0.015 | 0.125 | −0.007 | 0.381** | 0.171 | 0.503** | 0.197 | **0.855** |

*Note:* * $p > 0.05$; ** $p > 0.01$. $N = 89$.

tner [1999]. Teacher mastery-goals orientation was measured using a three-item scale developed by Elliot and McGregor [2001].

Instructional practices were measured through two components as cognitively activating practices and mastery-oriented practices. To measure cognitively activating practices, a six-item scale was taken from the project Professional Competence of Teachers, Cognitively Activating Instruction, and the Development of Students' Mathematical Literacy (COACTIV; as adapted by Kunter et al. [2007]). The assessment of teacher mastery-oriented practices was based on the Pattern of Adaptive Learning Scales (PALS; [Midgley et al. 2000]). This scale consisted of four items. Student motivation was measured on the basis of students' subject interest and mastery goals orientation. The same scales, as used for teachers, were used, however, the statements were modified with respect to the students. All of the items were measured on a 5-point likert scale.

## 4. Analysis and results
### 4.1. Descriptive and reliability statistics

Since all the scales used to collect data were pre-developed and validated, we therefore moved directly to analysis. Table 1 presents Mean, Standard Deviation, Correlation and Cronbach's Alpha of level-2 variables. Column one provides demographics and a description of level-2 variables. Column two is about the mean score of each variable. Column three is related to the standard deviation of all the variables. The values of Cronbach's Alpha are given on the diagonal in bold.

Table 2, below, presents the means and standard deviations of variables, and correlations for the dependent variable.

Table 2: **Mean, Standard Deviation, Correlation and Cronbach's Alpha of Level-1 Variables**

|  | Mean | SD | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|
| 1. Gender | 1.29 | 0.454 | — | | | |
| 2. Age | 7.12 | 0.787 | 0.248** | — | | |
| 3. Student Subject Interest | 4.439 | 0.449 | −0.112* | −0.115* | **0.819** | |
| 4. Student Mastery-Goals Orientation | 4.285 | 0.435 | −0.103 | 0.211* | 0.641** | **0.843** |

Note: * $p > 0.05$; ** $p > 0.01$. $N = 434$

**4.2. Hypotheses testing**

Mplus 7 was used to test multilevel direct and indirect relationships. There are a few important things that must be considered before conducting multilevel analysis. First, a Chi-Square test of significance was used to determine if there is variance in level-1 outcome variable(s) by level-2 variable(s). If the Chi-Square test is statistically significant, it provides solid grounds to perform multilevel modeling. Second, Inter Class Correlation Coefficient ($ICC_1$) must be computed before moving towards analysis. ICC represents the amount of variance in student motivation contributed by teacher level variables. Finally, Inter Rater Reliability ($ICC_2$) may also be computed. It is an index of within group consistency also known as inters rater reliability [Chen, Mathieu, Bliese 2005]. The value of $ICC_2$ is suggested to be equal or greater than 0.70 [Nunnally, Bernstein 1994]. For the study, the value of Chi-Square $\chi^2$ (88) = 148.52, p< 0.001 suggests that group level variables cause a variance in individual level variable which implies that teacher motivation and instructional practices have a significant contribution to the level of student motivation. $ICC_1$ for the model is 0.2238 which shows that 22.38% variance in student motivation is because of teacher motivation and instructional practices. A detailed examination suggested that teachers-level determinants accounted for 27.37% and 19.61% variance in student subject interest and student mastery-goals orientation, respectively. The value of $ICC_2$ for teacher motivation is 0.89 which suggests that responses for teacher motivation are consistent among all the teachers. The $ICC_2$ value for instructional practices is 0.68 which is below 0.70 which means that the teachers' responses for instructional practices are less consistent, thus not supporting within level consistency. A detailed analysis of $ICC_2$ shows that the value of $ICC_2$ for mastery-oriented practices meet the criteria ($ICC_2$=0.77) but cognitively activating practices did not meet the criteria ($ICC_2$=0.65). These statistics suggest that there is a cross level relationship between teacher motivation (as a whole) and between instructional practices (in parts, only for mastery-oriented practices) and student motivation. However, we still keep cognitively activating practices at group level. Following the procedure suggested

Table 3: **Multilevel analysis result for direct effects**

| Level and variables | Student Motivation | | | | | |
| | Student Subject Interest | | | Student Mastery-Goals Orientation | | |
| | 1 | 2 | 3 | 1 | 2 | 3 |
|---|---|---|---|---|---|---|
| Level-1 | | | | | | |
| Student Gender | −0.007 | −0.012 | −0.010 | 0.001 | 0.00 | −0.007 |
| Student Age | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 |
| $R^2$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Level-2 | | | | | | |
| Teacher Gender | −0.062 | −0.103† | −0.109* | −0.091 | −0.146† | −0.082* |
| Teacher Age | 0.003 | 0.003 | 0.004 | −0.005 | −0.004 | 0.003 |
| Teacher Self-efficacy | | 0.168* | 0.045* | | 0.083* | 0.034* |
| Teacher interest | | 0.123** | 0.095** | | 0.182** | 0.071** |
| Teacher mastery-goal orientation | | 0.245** | 0.190** | | 0,363** | 0.143** |
| Cognitively activating instructional practices | | | 0.031† | | | 0.027 |
| Mastery-oriented instructional practices | | | 0.144* | | | 0.208* |
| $R^2$ | 0.026 | 0.431** | 0.493** | 0.023 | 0.269* | 0.372** |
| $\Delta R^2$ | 0.026 | 0.405** | 0.062* | 0.023 | 0.246** | 0.103** |

Note: * $p > 0.05$; ** $p > 0.01$. N = 434.

by Preecher and Hayes [2013], a 2–2–1 multilevel mediation was performed using Mplus 7 software. At first, only direct relationships were examined, keeping student motivation (student subject interest, student mastery-goals orientation) as a first-level dependent variable and teacher motivation (teacher interest, self-efficacy, mastery-goals) and instructional practices (mastery- oriented practices and cognitively activating practices) as level-two independent variables. All variables were entered together.

The results showed that all three components of teacher motivation are positively linked with student motivation. Among the three elements, the strongest relationship was between mastery goal orientation and student subject interest (β =0.245, p < 0.01), while the weakest was between teacher interest and student subject interest (β = 0.123, p < 0.01). As for the association between the three components of teacher motivation and student mastery-goal orientation, the strongest relationship was between teacher mastery goal orientation and student mastery goal orientation (β = 0.363, p < 0.01), whereas

Table 4: **Multilevel mediation results**

| | Indirect effect | 95% CI [lower CI, upper CI] |
|---|---|---|
| TSE → MOP → SSI | 0.064* | [0.005, 0.018] |
| TI → MOP → SSI | 0.071* | [0.001, 0.154] |
| TMO → MOP → SSI | 0.067* | [0.008, 0.182] |
| TSE → MOP → SMGO | 0.082* | [0.010, 0.201] |
| TI → MOP → SMGO | 0.093* | [0.009, 0.194] |
| TMO → MOP → SMGO | 0.083** | [0.017,0 .389] |

*Note:* **p<0.01; *p<0.05;
TSE = Teacher Self-efficacy; TI = Teacher interest; TMO = Teacher mastery-goal orientation; CAP = Cognitively activating instructional practices; MOP = Mastery-oriented instructional practices; SSI = Student subject interest; SMGO = Student mastery-goals orientation

teacher self-efficacy has the weakest association with student mastery goal orientation (β = 0.083, p<0.05). The results of instructional practices suggested its partial relationship with student motivation where only mastery-oriented instructional practices have a positive influence on student motivation i. e. student subject interest (β = 0.144, p < 0.01) and mastery-goals orientation (β = 0.208, p<0.01). Therefore, all the hypotheses on direct relationships are supported. The values of ΔR2 suggest the presence of mediation. Besides the traditional Sobel [1982] test of significance, bootstrapping was also used to test the significance of indirect effect. In bootstrapping upper and lower confidence intervals (CIs) are used to judge if effect lies within the significance region. Table 4 presents the results of mediation.

The results suggest a positive partial mediational effect of teacher self-efficacy, mastery-goals orientation, and teacher interest for student subject interest is β = 0.064, p<0.05, β = 0.067, p < 0.05, and β = 0.071, p < 0.05 respectively, and for student mastery-goals orientation is β = 0.082, p < 0.05, β = 0.083, p < 0.01, and β = 0.093, p < 0.05 respectively. Thus, hypothesis 4 was partially supported.

## 5. Discussions and implications

The results of this study suggest that teacher motivation is a strong antecedent of student motivation. These results are consistent with the findings of Schiefele and Schaffner [2015], and Santisi et al. [2014]. Findings advocate that teacher motivation provides a strong foundation to teachers for motivation and helps them to meet emerging job demands and the expectations of students and society and also help them to influence their students' motivation level. As a result, highly motivated students are more likely to perform much better than those

less motivated, thus where teacher motivation is high, students are also highly motivated and produce improved academic performance. Teachers may increase their motivation through increased level of subject, didactic and/or educational interests. A more self-efficacious teacher is more confident regarding his/her belief in the subject matter he/she teaches than those with a low level of self-efficacy. Self-efficacy of teachers is an important factor that contributes to their motivation. Similarly, goal orientation (of particular, Mastery-goal orientation) helps teachers set their goals, which in turn serve as source of motivation. A mastery-goal oriented teacher focuses on his/her professional improvement and tries to perform better than his/her prior performance. Students get inspiration from teachers who strive for their professional improvement rather than those who try to make their performance superior to others.

The findings of this study provide significant support for the effect of teacher motivation on instructional practices $b = 0.763$, p < 0.001. These results are similar to the findings of Wolters and Daugherty [2007], Retelsdorf et al. [2010], and Butler [2012]. The data fails to reject the null hypothesis of no association between the above two variables. Thus, this study accepts a significant positive relationship between teacher motivation and instructional practices. The results from multilevel modeling analysis provided evidence for only one component of instructional practices i. e. mastery-oriented practices. Cognitively activating practices were not found to have any significant effect on student motivation. This result is consistent with the study of Schiefele and Schafner [2015]. In their study, cognitively activating practices were measured at both level-1 and level-2 but neither of the cognitively activating practices were found to be significant with student subject interests. The data only supported mastery-oriented practices hence a partial association of instructional practices with teacher motivation is found. The result is similar to that of Park et al. [2016].

In light of the findings of the study the following suggestions are offered to elementary school teachers in particular and all teachers in general. First, as teacher interest is found to be an important component of teacher motivation, teachers should develop their interest in a relative subject domain. Second, administration should focus on right sizing so that a teacher may get chance to teach the subject he/she is more interested in. Third, teachers must enhance their self-efficacy by indulging themselves in those academic activities which may flourish their professional competencies. Fourth, capacity building of teachers should be the priority in school education sector reforms. Finally, curricular activities must be feasible and according to the nature of the students as the child is the center of the entire educational process.

## 6. Conclusion

On the basis of the statistical analyses and empirical results, the following conclusions are drawn: Teacher motivation is an important predic-

tor of student motivation. Teachers with high levels of motivation (characterized by teacher interest, self-efficacy, and mastery-goals orientation) play a vital role in fostering motivation among students. It is an essential factor for elementary school teachers to ensure optimal performance which in turn enhances work engagement and satisfaction. Similarly, teacher motivation is also positively linked with instructional practices, indicating that a highly motivated teacher is more likely to adopt such instructional practices that focus either on student improvement of the subject matter or coping with challenging situations. Mastery-oriented instructional practices have a positive link with student motivation which implies that elementary school teachers are highly encouraged to adopt such practices that foster interest, enhance skills and improve the learning process among students. However, the data did not support the causal association between cognitively activating practices and student motivation, implying that elementary school students are not comfortable and/or welcoming towards challenging tasks and critically acclaimed activities. Therefore, cognitively activating practices do not serve as a source of motivation to students.

## 7. Limitations and future directions

Although the study has several contributions towards literature and has several implications for practitioners, there are some limitations that restrict the scope and generalizability of the findings. First, this study is cross sectional in nature and the data was collected over a single point in time, therefore it does not provide any variance in the motivation levels of teachers and students from one time point to another. Second, the targeted population of the study consisted of elementary schools only. This restricts the generalizability of the study at national and/or regional level. Third, only subject interest was taken as measure of student motivation, which also restricts our understanding into a single context and does not give any insight into other aspects of student motivation. Fourth, the data on instructional practices are based on the information from teachers' self-reports rather than on the basis of expert observations in the classroom, thus increasing the likelihood of biased responses because teachers are influenced by various classroom and contextual factors. Considering these limitations, future studies could be longitudinal in nature rather than cross sectional. Student motivation may also be measured using parameters of extrinsic motivation e. g. rewards and/ or awards by teachers and/or schools. In addition to that, future research should also control for the potential effect of student academic achievement, which this study didn't do, because previous studies suggest strong ties between students' academic achievements and motivation. Since the sample of students who reported their motivation was not randomized, there may be some shifts which may lead to the fact that a more motivated (more interested in the subject, with higher self-efficacy) teachers are represented by more successful students. There-

fore, they demonstrate a higher level of motivation. Besides students' academic achievement, future studies should also consider the socio-economic status of students and schools, as these attributes can also influence the level of student motivation. Further, teacher motivation can also be studied in context with student wellbeing such as stress, burn out etc. Finally, the population of the study may spread across more than one district or province of Pakistan. Moreover, a comparative study may prove fruitful in providing an insight into teacher and student motivation in different geographic/ cultural areas.

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# From Partnerships to Bureaucracies:
## The Constitutional Evolution of Russian Universities

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**Abstract.** Russian university is treated as a miniature political system in this article. Four hundred charters, statutes and ordinances are analyzed in order to identify three pivotal axes allowing us to classify constitutional frameworks of universities: the axis of independence from the principal the axis of collegiality, or the balance of power between the rector and the Academic Council and the axis of federalization, which shows how decentralized the organizational structure is. Next, it is shown how these variables are interrelated and how their stable sets form types of intra-university political systems—federative, unitary, dual and controlled—which exist or used to exist in Russia. Contrary to the widely held belief that all of the differences between universities can be traced to their position on the scale of "collegiality" (partnership model) vs. "managerialism" (bureaucratic model) and although public universities do resemble bureaucracies more than partnerships today, different elements of their constitutional design seem to have evolved independently and under the influence of different factors. **Keywords:** higher education in Russia, university management, organizational politics, academic power.

This study was designed to create a typology of university governance models in Russian higher education and trace their evolution using university statutes as the major source of information. There are diverse and numerous typologies of academic governance models [Ryan 1972; Cohen, March 1974; Birnbaum 1988; Voegtle, Knill, Dobbins 2011]. Researchers usually follow one of two approaches. One of them implies identifying ideal types of governments which are often compared to historic types of political systems (*academic oligarchy*

or *feudalism* [Ryan 1972; Clarke, Youn 1976; Birnbaum 1988]), while the other consists in identifying the central axes, or dimensions, that set the range of possible variations in the constitutional structure of universities. The latter approach has a higher analytical potential, as dimensions allow building typologies —but it does not work the other way. However, analysis often boils down to only one dimension that opposes *managerialism/bureaucracy* to *democracy/collegiality* in university organization [Kaplan 2004; Masten 2006; Jones 2011; Apkarian et al. 2014; Woessner, Kehler 2018].

The most crucial difference lies in faculty involvement in decision making. The category opposing intra-organizational democracy to bureaucratic rule is a powerful ideological formula, yet empirical studies have often been doubtful as to whether this dimension alone is enough to describe all the variations in the political structures of universities [Apkarian et al. 2014; Tight 2014]. In one of the studies that pioneered this approach, Janice M. Beyer and Thomas M. Lodahl argue that power is distributed between the central administration and departments, on the one hand, and between administrators and faculty within subdivisions on each level. Taking their cue from this, they determine two axes, that of centralization/decentralization on the institutional level and that of bureaucracy-/collegiality-oriented governance within university subdivisions, which yield four combinations of characteristics [Beyer, Lodahl 1976]. For example, they describe the British university of those days as decentralized and bureaucratic at the same time, as it represented a conglomerate of chairs governed exclusively by professors holding those chairs (junior lecturers had no voice). Such universities are "collegiate" only in the rather limited sense that they are run by senior professors, but they are not managerial either. Institutional structures like that have been quite common in the history of science.

A more recent comparative study uses a survey of European university administrators to show the dramatic differences between the countries in terms of how power is distributed among different levels of the university structure. For instance, school-level councils played an important role in Denmark and Germany but had little power in the UK, while university-level councils were vested with significant power in Germany and the Netherlands but played a small part in Sweden, the overall faculty influence being perceived as strong in all cases [Goedegebuure, Boer 1996]. Likewise, a recent study has demonstrated the impossibility of ranking all the United States universities on a single scale of faculty involvement in decision making; in fact, the distribution of power among subdivisions can vary greatly within the same level of faculty participation [Apkarian et al. 2014]. In Russian literature, there have been attempts to compare universities by the level of democracy and centralization, where democracy is understood as involvement of regular employees, such as lecturers, in decision making (zero democracy is by default equaled to bureaucratic

governance) and centralization shows whether power is concentrated at the center or distributed among a number of divisions (schools, faculties, etc) [Sokolov 2016]. It is doubtful, however, that these two dimensions suffice, as they do not allow, for example, distinguishing between democratic universities governed predominantly by rectors and those dominated by Academic Councils.

This article offers a way to identify the fundamental aspects of university political structure and puts forward a more complex system of five axes: (i) degree of independence from the principals; (ii) degree of federalism; (iii) balance of power between collegiate and sole executive bodies; (iv) inclusivity; (v) level of legal protection for faculty. Of these five axes, only the first three demonstrate significant variations in contemporary Russia. Empirical evidence is provided below to prove "realness" of the three dimensions, which will be followed by describing the evolution of the Russian education system in the coordinate system shaped by these dimensions.

## 1. Dimensions of University Political Systems: Theoretical Model

The first of the theoretical axes is *dependence/independence*, which determines the locus of decision making in university life in terms of whether decisions are made within the university or come from outside. Internal or external locus of control corresponds to the most basic understanding of what university actually is: it can be conceptualized either as a faculty and (or) student community or as an institution founded by someone who does not belong to either of the two groups and seeks to accomplish their own goals. In the former case, communities will naturally operate as a self-governed guild, being independent in electing their leaders and new members with the help of certain democratic procedures. In the latter case, it would be logical to assume that the external principal will try to retain control over their institution, which is barely possible without appointing a senior executive and delegating her the right to appoint subordinate administrators and professors while reserving the possibility to intervene into the process if necessary [Masten 2006].

Historic examples of utterly dependent universities include Russian universities of the era where the conservative University Statutes of 1835 and 1884 were in place, enabling the Minister of Popular Enlightenment (*Ministerstvo Narodnogo Prosveschenja*) and the university governor (*popechitel'*) not only to appoint professors but also to dismiss or transfer them to another university. Utterly independent universities include medieval scholastic guilds which had courts and guards of their own (Oxford and Cambridge are the closest analogues these days). The election of a rector is based on democratic procedures that involve a more or less wide range of employees[1].

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[1] Technically, rectors do not have to be elected by voting; an alternative proce-

The appointment of a rector can be performed by three types of actors, acting as principals: (a) the national bureaucracy (as in the Russian Empire), (b) the board of trustees, which may represent the wider community's interests (as in American private universities), and (c) the rector who acts as an entrepreneur establishing the university as a private company. Accordingly, we can speak of *state-run*, *corporate* and *proprietary* universities. Mixed options are also possible, e. g. state universities in the United States are governed by boards of trustees appointed by state governors.

The second axis, *federalism/unitarism*, describes the degree of self-governance on school and department levels, i. e. to what extent "local" actors are vested with real authority and can make decisions in areas that they find important. Actually, in a three-level governance system comprising the levels of university, schools and departments, this dimension can split into three, with a specific characteristic for each level. One could picture, for instance, a university system where the central governing bodies and departments are very powerful, in contrast to schools that embrace those departments (a situation which was probably typical of European universities during the period of integrating another level between university and departments in the two-level model [Beyer, Lodahl 1976; Goedegebuure, Boer 1996]). In politics, similar division of powers is observed between the national, regional and local levels of governance[2].

The third axis describes the *degree of collegiality*, or the balance between collegiate executive bodies (Academic Councils on different levels) and individual executives (rectors, deans or department chairs). Continuing the political analogy and drawing a parallel with parliaments, it can be assumed that collegiate bodies of university governance may be divided into three types depending on the role they play: dominant, autonomous and subordinate (similar to parliamentary governments, according to Matthew Soberg Shugart and John M. Carey [Shugart, Carey 1992]). Dominant governing bodies elect and remove senior administrators and basically reduce administrators' role to executing decisions made by such bodies. Autonomous governing bodies participate in electing the top administrators but have limited control over day-to-day management. However, they make strategic decisions and cannot be dismissed or reorganized by administrators. Finally, subordinate collegiate bodies function as advisory boards that are appointed by administrators and have very little influence on policies.

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dure such as draw may be used. However, this is not found in modern political systems on either national or institutional level. Absence of an external founder implies democracy by default.

[2] A system of four or more levels would require a new dimension for every level added, but such systems are extremely rare, as far as we know.

The fourth dimension that would be important for a broader historical analysis is the degree of inclusivity, i. e. the range of faculty members entitled to their vote, which draws a line between democracies and oligarchies. Before the early 20th century, such rights were reserved ubiquitously to senior professors, but more and more groups were admitted to governance over time, often as a result of social revolutions, as in Russia and Germany in 1918, or massive-scale student protests against any sort of establishment, as in France and Germany in the 1960s and 70s.

The fifth dimension that would play a role in the comparative context describes labor rights and, specifically, availability of tenure appointments. Where professors cannot be fired, the influence of any governing bodies is limited and the overall system is rather poorly controllable. However, no great difference is observed among Russian universities in this aspect, as employee rights are protected everywhere by the same provisions of the Labor Code (relatively poorly, given that extremely short contracts are allowed and no life tenure option is available).

Narrowing these dimensions down to the sole opposition between managerialism and collegiality suggests that university characteristics must be intercorrelated in at least three dimensions—independence, collegiality and inclusion. It is generally believed that university dependence or independence depends on the level of collegiality and inclusion: the guild logic implies broad democratic participation in decision making, whereas managerialism involves a predominance of vertical chains of command. Meanwhile, some of the examples above demonstrate that reality is more complex than opposing democracy/collegiality to authoritarianism/managerialism Whether such oppositions will be observed in every specific case is an empirical question, which this article attempts to answer. At the same time, five dimensions may be not only excessive (if boiled down to fewer in practice) but sometimes insufficient for describing the distribution of powers. A greater or smaller influence of Academic Councils may not necessarily be seen as a monolithic set of characteristics. There are probably universities where Academic Councils play a decisive role in electing professors but have no voice regarding budget allocation, just as there are institutions where Academic Councils are in charge of finance but do not interfere in recruitment issues.

Below, we try to find out, first of all, whether Russian universities differ in the three aforementioned dimensions, whether these dimensions exhaust the variations observed and, finally, whether all the logically possible cells are actually filled.

**2. Data** This study analyzed 400 statutes of 310 public and private universities (for some universities, a few consecutive versions of statutes were analyzed), which is about one third of the entire population of univer-

sities in Russia[3]. Statutes were selected randomly using quota sampling to build a representative sample. Proportions were specified for two criteria: region (Moscow, St. Petersburg, other regions) and specialization, considering the size of each category, in the 2015 Monitoring of Performance of Higher Education Institutions (45 statutes of classical universities, 70 of (poly)technical, 22 of medical, 20 of pedagogical, 35 of universities of culture and arts, 28 of socioeconomic, 9 of law enforcement universities, 27 of agricultural, and 144 in private)[4].

The sample is comprised of statutes dating back to various years between 1993 and 2015. Russian higher education went through waves of statute revisions (the most significant ones falling on 2011 and 2015), which affected most public universities subordinate to the Ministry of Education and Science, so the retrieval of previous versions became a problem. However, search engines often save earlier versions of university websites, which may contain old versions of statutes—this is exactly how many of them were found. While working on the final text of this article in November–December 2017, we consulted the statutes of the selected 310 universities to trace any amendments made to them, but the most recent data used for quantitative analysis was available for no later than 2015.

**2.1. Data Coding** To enable quantitative analysis of the statutes, their texts were quantified. As a rule, statutes assign a list of powers to every governing body. Following the overall political-scientific framework of research, attention was paid to powers related to appointment and removal from office. The list also includes some key powers that have been a subject of previous research [Goedegebuure, Boer 1996; Masten 2006; Kaplan 2004; Apkarian et al. 2014] and play the greatest role in academic governance: financial issues, human resource policies, establishment and reorganization of subdivisions, and research policies. For governing bodies that were not featured in all the statutes (e. g. school councils), it was documented whether or not they were mentioned at all. The powers analyzed were coded into binary (Yes/No) variables. Almost the whole database thus consists of dichotomous variables; besides, there are several numerical variables describing the number of powers listed in the statutes for governing bodies that were usual-

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[3] According to Russian Federal State Statistics Service, a total of 900 universities existed in Russia in 2016, of which 530 were public and 370 private: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/population/education/#. Branch campuses were excluded from analysis, as additional dimensions would have had to be added to the coordinate map.

[4] Strictly speaking, consecutive statutes of the same university can not be treated not as independent cases. The ambition to obtain a few versions of constitutional documents of the same university is explained by the desire to analyze amendment patterns in every single university (which has not been fulfilled so far).

ly assigned a list of powers (e. g. Academic Council). The database was comprised of a total of 46 variables: 4 numerical and 42 dichotomous. However, a lot of the dichotomous variables did not have sufficient variations to be include in statistical analysis, being mentioned either too rarely (the rector's right to dismiss the Academic Council) or, vice versa, almost ubiquitously (the existence of an Academic Council). The resulting list included 31 variables with variances that allowed for statistical analysis.

**2.2. Limitations**

When drawing inferences about university policies from statutes, it is vital to bear in mind that one cannot be absolutely positive about the extent to which statutes regulate university life. As with national constitutions, statutes may only be a façade concealing a different reality. Nevertheless, studies that compared formal documents with university governance practices revealed a high level of consistency between what was stipulated and how the faculty perceived the distribution of powers in their university [Ryan 1972; Woessner, Kehler 2018]. We cannot hope that analysis of statutes alone can be enough to find out the exact degree to which they reflect the real balance of powers in Russian universities, yet the configuration of formal frameworks sometimes allows for making some cautious assumptions, which will be presented at the end of this article.

Another limitation of data extracted from the statutes is that it does not reflect the roles of a number of actors that may have a lot of power in decision making (e. g. student council) or the institutional innovations of the recent years, primarily those in the leading universities (e. g. the creation so-called of Strategic Academic Units). The statute authors probably preferred to mention as few governing bodies and boards as possible, restricting their range to the most conventional ones, represented in standard statutes, as new governance structures were regarded as experimental and not necessarily stable. It can be assumed that universities were trying to avoid readopting their statutes to document the evolution of those new structures. Statutes allow for tracing changes in the relationships among the actors that constitute the traditional backbone of university governance[5].

**3. Political Regime Dimensions: Principal Component Analysis**

Statutes of Russian universities differ essentially in the distribution of powers, but the key governing bodies vested with such powers are always more or less the same. The most important decisions are made by the principal (*uchreditel'*) and the assembly (*conferentcija*). According to the Russian law, every university has a principal; the principal' role may be limited, however, to founding a university without retaining much further control over its development. In the case of

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[5] We are grateful to the anonymous reviewer of *Educational Studies* for this observation.

public universities, the principal may be represented by federal ministries, including the Ministry of Education and Science of Russia, Russia's Government, local governments, etc. Private universities may be founded by businesses, nonprofit organizations, individuals, or groups of individuals. An individual principal is usually also the first rector and, in fact, the sole proprietor of the university. In addition, a university may have a governing body which is designed to represent the principal(s) and can have a variety of names: board of governors, principals' council, board of trustees, board of regents, university board, supervisory board, etc.

The nomenclature of intra-university governing bodies is more unified. On the institutional level, powers are distributed between the Academic Council (*uchenyj sovet*) and rector; on the level of schools (*fakultety*) and departments (*kafedry*), there are school deans (*dekany*), school councils (*sovet fakulteta*) and General Assemblies (*konferentcii*), department meetings, and department chairs (*zavkafedroj*). Their powers are described in much less details in the statutes than those of university-wide governing bodies. However, there are some pivotal issues where the relationships between the "federal" and local levels become a zero-sum game, such as in the election of deans, department chairs, professors and associate professors.

To verify the constructed typology empirically, principal component analysis was run based on binary variables describing the intra-organizational political regime[6]. Principal component analysis is a method of statistical analysis which is most fully in line with the assumption that variances in statute characteristics are not random but follow certain patterns, reflecting the university's position in a space defined by a small number of dimensions. For instance, the presence of all the powers characterizing the Academic Council reflects the university's position in a single dimension of *Academic Council's influence*. If the Academic Council is powerful, the statutes will most likely contain lots of powers, and if it is not, the number of powers will be small. Principal components analysis provides an insight into whether there is evidence to suggest that variance in the characteristics analyzed reflects the presence of a small number of latent dimensions. It

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[6] Analysis captured in Table 1 involves 23 variables, excluding those that correlated weakly with the rest of the variables. The resulting correlations could probably be explained by the simple fact that statutes assigning more powers to governing bodies were greater in length and more detailed. These variables did not change the fundamental structure of the components, simply decreasing the proportion of variance explained (e. g. research approval by the Academic Council). The number of components was restricted to three, as models with more dimensions produced specific components loaded with powers specific to some of the most widespread statutes versions. However, the selected three components, which explain more than half of the variance, do not appear to be associated with any wave of revisions.

also allows for identifying which university characteristics are related to this or that reconstructed dimension, i.e. which variables are "loaded" by each of the dimensions. Variables loaded positively on the same dimension correlate positively with one another and negatively with the negatively loaded variables.

The theoretical axis *dependence/independence* is captured in the first dimension (24.88 percent of variance explained), which shows the highest loadings for the powers of the General Assembly (positive) and principal (negative). The axis also embraces some key powers of the Academic Council, which normally belong to rectors in dependent universities (establishment of subdivisions, election of deans and department chairs), as well as compulsory rector's reports and re-electability of Academic Councils as a form of collegiate governing body's accountability to intra-university constituents. Finally, academic qualification requirements for department chairs and deans also gravitate toward the same component.

Some clarifications are needed here. The statutes did not contain any regulations directly restricting participation of junior professors in decision making (the fourth theoretical axis of *inclusion*), yet some of them limited the range of people to be elected to office, such limitations being manifested most visibly in independent universities and fading away to zero in dependent ones. This observation may be interpreted in two ways, as an attempt to preserve indirect control of the academic profession over key office positions (if a dean must be a professor with a doctoral degree, the rector may not appoint just anyone) and as statement of the fact that private universities, which are usually more dependent, often experience a lack of academic degrees among their faculties.

The second component (17.07 percent of the variance) covers the rest of Academic Council's powers and, quite unexpectedly at the first glance, the requirement that the rector's election should be approved by the principal. Such a requirement is simple to explain, though: the need to obtain the principal's approval is only found in the statutes of universities that practice rector elections and where Academic Councils play a crucial role, selecting candidates to be presented to the principal.

Finally, the third factor (9.77 percent) is loaded with the powers of peripheral actors (schools, departments) and, quite unexpectedly as well, rector's reports to the General Assembly. Such reporting, however, may be interpreted as a characteristic practice of decentralized institutions where rectors are obliged to present the results of their work to the community at large.

The three-component solution is a result of rotation. Prior to rotation, analysis reveals one principal component explaining 34 percent of total variance. It is loaded with independence, collegiality and decentralization and demonstrates that—as a gross generalization—opposition between bureaucracy and democracy in the Russian ac-

Table 1. **Principal Component Analysis Results. Standardized Component Loadings.** Varimax Rotation

|  | Component | | |
|---|---|---|---|
|  | 1 | 2 | 3 |
| Availability of a numbered list of powers of the principal or supervisory board | **−0.598** | −0.312 | −0.089 |
| Approval of candidates for rector's position by the principal | 0.355 | **0.593** | 0.204 |
| Rector is elected | **−0.725** | −0.349 | −0.227 |
| The statutes mention the General Assembly (*konferentsija*) | **0.620** | 0.244 | −0.009 |
| Rector is elected by the General Assembly | **0.760** | 0.322 | 0.219 |
| Academic Council is elected by the General Assembly | **0.612** | 0.084 | −0.072 |
| Statutes are adopted by the General Assembly | **0.674** | 0.340 | 0.168 |
| Rector reports to the General Assembly | 0.181 | 0.123 | **0.529** |
| Rector reports to the Academic Council | **0.575** | 0.201 | −0.117 |
| Deans are elected by the Academic Council | **0.406** | 0.347 | −0.278 |
| Department chairs are elected by the Academic Council | **0.453** | **0.509** | 0.029 |
| Professors are appointed by the Academic Council | −0.033 | **0.875** | 0.103 |
| Associate professors are appointed by the Academic Council | −0.063 | **0.868** | 0.074 |
| Academic Council participates in discussing financial issues | 0.331 | **0.595** | 0.118 |
| Academic Council decides on establishment and reorganization of subdivisions | **0.478** | **0.505** | 0.148 |
| Academic Council administers student allowances | **0.585** | **0.422** | 0.170 |
| Academic Council approves members of the board of regents | 0.312 | **0.506** | −0.061 |
| Statutes allow for preterm Academic Council elections | **0.444** | 0.399 | 0.052 |
| Powers of department chairs are mentioned | 0.007 | 0.011 | **0.738** |
| Powers of the dean are mentioned | −0.005 | 0.078 | **0.789** |
| Powers of school councils (*sovet fakulteta*) are mentioned | 0.105 | 0.097 | **0.585** |
| Formal academic requirements for school deans are stipulated | **0.615** | −0.094 | 0.341 |
| Formal academic requirements for department chairs are stipulated | **0.685** | −0.215 | 0.205 |
|  | 24.88% | 17.07% | 9.77% |

*Note:* Loadings over 0.4 are shown in bold.

ademia has some descriptive value. However, rotation shows that a more comprehensive and informative model implies three dimensions instead of one. It is only in the very first approximation that diversity of intra-organizational regimes can be boiled down to one variable (degree of managerialism).

Figure 1. **Classification of Russian Universities' Political Systems**

Dependence from principal?

*Low*

*High*

**Independent**
Subdivisions autonomous?

**Dependent**
Academic council autonomous or subordinate?

*Yes*          *No*          *Yes*          *No*

**Federalism**   **Unitarism**   **Dual**   **Subordinate**
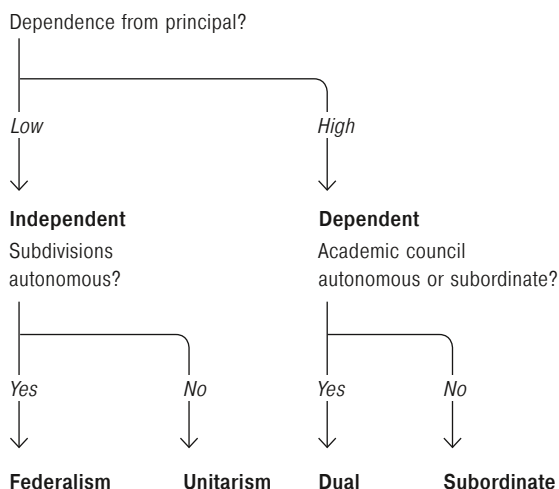
Basically, analysis confirms that the three-dimensional model is sufficient for describing Russian university as a political system. We do not come across a subtype of university where, for example, collegiate governing bodies are more powerful than the rector in one area and less so in another coexisting with a subtype where the situation is opposite[7]. In other worlds, quite distinct variations are observed which allow for stating that the three theoretical dimensions correspond to pretty realistic descriptions of reality. Independence, relative power of collegiate governing bodies, and degree of federalism are real dimensions, and universities may be lower or higher on each of the three scales.

Three dimensions are supposed to yield eight combinations of high and low values of the characteristics analyzed. However, fewer variations are observed empirically. Figure 1 provides a register of such combinations.

First, there are no independent universities with weak collegiate governing bodies, just as in strong presidential democracies. Second,

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[7] Cronbach's α is 0.844 for the five-point scale describing General Assembly's powers and 0.836 for the 12-point scale describing Academic Council's powers (increasing only if two points—research approval and president election—are removed, up to 0.840 in both cases). The measure is only 0.688 for schools and departments' powers (which include academic requirements for deans and department chairs), but it still demonstrates a significant consistency in the relevant characteristic.

there is no combination of federalism and dependence. All dependent universities feature the so-called "power vertical". The basic division of universities is into dependent and independent. Independent ones always have powerful collegiate governing bodies and fall into federated and unitary. Dependent ones are always unitary and fall into subordinate (low collegiality) and dual (high collegiality).

The latter subcategory has to be explained, since its role has expanded greatly. In theory, both the sole executive and the collegiate governing body may be appointed externally (Peter the Great's *collegia* are a good example). However, nothing like that happens in reality: collegiate governing bodies are usually elected (apart from *ex officio* members), and if their powers are significant enough, those of the principal are inevitably limited. Dual unitary universities are characterized by a curious combination of powers: while a rector is appointed, an Academic Council is elected democratically and remains relatively powerful. On the surface, this organizational form approaches the dual authority model of shared governance as it exists in U.S. universities, which involves parallel governance structures, professoriate and administrators appointed by the board of regents [Baldridge 1971; Apkarian et al. 2014; Woessner, Kehler 2018]. There is an essential difference, however: in the American model, decisions are made in a number of stages consecutively by representative and appointed governing bodies, while Russian universities have adopted segmental distribution of powers where collegiate governing bodies and administrators have isolated areas of responsibility. For instance, according to the current statutes of Saint Petersburg State University—where the rector has more powers than in any other public university—central administrators may establish new subdivisions without the Academic Council's approval but may not appoint professors and associate professors to work in them. In fact, control over human resource policies remains in the same hands as always.

The next section will use historical materials to explore how university constitutions evolved during the period covered by this study.

## 4. Public Federations, Private Autocracies: 1993–2005

At the beginning, Russian universities fell distinctly into two extremely opposite categories depending on how much power was concentrated within the institution, in the hands of local constituents, and how much belonged to the external principal. In some of them, administrators were elected and obliged to report to the staff on a regular basis. In others, local constituents did not play any role while governance was carried out directly by the principal or by the rector appointed.

The first category included all public universities, except for law enforcement ones. Their statutes entitled the principal to control the budget, changes in legal forms and major organizational transformations (establishment of branch campuses), but the General Assembly was in charge of approving the statutes and electing the rector, while

budget approval and establishment of new subdivisions were controlled by elected intra-university governing bodies and rector. The principal approved the rector elected and had veto power, but some universities managed to add a provision to their statutes allowing them to override the veto[8]. In addition, some of the universities adopted constitutions that eliminated the risk of having an 'outsider' rector: "*The vacancy of MSU Rector shall be filled by a professor who has been employed with the Moscow University full-time for at least five consecutive years*" (Statutes of Moscow State University, 1998). Back then, General Assemblies in public universities also discussed annual rector's reports, which is an important power allowing the General Assembly and Academic Council to remove rectors from the office before their contracts expired and emphasizing symbolically the rector's responsibility before the personnel.

In each of these cases, university independence and the significant role of the General Assembly coexist with a high level of Academic Council's powers. The rector's powers are stipulated in the statutes in a rather uniform manner, and they are always extensive, so there can be no talk about dominant Academic Councils. An Academic Council's powers, meanwhile, are what actually changes and may serve as an indicator of collegiality.

The axis of *unitarism/federalism* is where the greatest differences among public universities are observed during that period. A model example of a federative governance system is found in the 2001 Statutes of Adyghe State University. The document vests important political powers in deans, school councils and department chairs. Deans are elected by the school council and deal with human resource issues within their schools. School councils select candidates for professor and faculty positions, elect department chairs, approve curricula and establish new subdivisions. In other universities, the right to elect deans, department chairs and professors is vested in the Academic Council, with a reservation that candidates should be "discussed" prior to election, which sometimes involves a vote by secret ballot. Therefore, federated and unitary public universities continued to coexist for some time.

More diversity can be found in the statutes of private universities, as they were not subject to any standards and the Ministry of Justice was likely to register even some very extravagant constitutions. Some of them simply copied the statutes of a public university as the most

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8  "*University Rector is elected by secret ballot by the General Assembly, which includes academic staff, employees of other categories and students enrolled in five-year programs, and then approved by the Ministry of Education of Russia. <...>. In the case of a motivated refusal of the Ministry to approve the candidate elected, a new election is held, where a candidate securing two thirds of the vote cast shall be approved without fail.*" (Statutes of Chernyshevsky Saratov State University, 2001)

legitimate model. A good deal of the statutes of private universities were proprietary in nature, similar to articles of incorporation. Such universities had a sole founding owner (sometimes formally referred to as the "proprietor" (*sobstvennik*), who appointed herself the rector, appointed all of the university's governing bodies single-handedly and performed literally every governance function[9].

Such universities are usually governed by an individual, and the General Assembly and Academic Council do not have any significant powers and may not exist at all, as in the 2010 Statutes of the East European Psychoanalytic Institute in St. Petersburg, or be appointed by the rector. For example, according to the 2010 Statutes of Baltic University of Ecology, Politics and Law, "*The Academic Council of the Institute is elected by the Rector for a five-year term and shall be comprised of at least three members.*" In other cases, the rector establishes the Academic Council at her sole discretion and has the power to veto any of its decisions. Top administrators can adopt all of the functions normally performed by the Academic Council. For example, the 2006 Statutes of the Institute of Social Sciences stipulate that "*the Rector recruits, employs and deploys the faculty and non-teaching staff as well as bears the responsibility for their qualifications.*" However, only a comparatively small fraction of private universities abolished the governing bodies referred to in standard bylaws of a public university; more often than not, such bodies were preserved, but the powers vested in them were pretty much decorative, such as discussion of the institutional Code of ethics.

The private universities that borrowed public university statutes unchanged were probably guided by the high legitimacy of the public university governance structure, and the founding rectors who vested every possible authority in themselves were preoccupied with retaining control over the structures they had created. Apparently, the third category of statutes that became widespread among private universities reflected the ambition to combine these advantages, while at the same time rewarding rectors for all the challenges they had to go through in order to solve every problem manually. This category of dependent university statutes kept an autonomous Academic Council endowed with considerable powers, which fitted into the dual model. Some of those universities explicitly tried to reproduce the Ameri-

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[9] For example, statutes may state that "*The Institute's Founder is Viktor Stepanov, born 1956, natural person and citizen of the Russian Federation <…> The Founder's scope of competence includes: adopting the Institute's Statutes, amendments and additions thereto; appointing the Institute's Rector*" (Statutes of Altai Economics and Law Institute, 2010). This model logically implies the right to transfer the university by hereditary succession, which is stipulated, for instance, in the 2015 Statutes of Taganrog Institute of Management and Economics: "*In the event of the Sole Proprietor's death, the heir will inherit the proprietorship.*"

can type of dual organization (e. g. Moscow School for the Social and Economic Sciences or New Economic School), whereas others created similar authority distribution systems of their own. For instance, the 2007 Statutes of Armavir Linguistic University reserved the same powers to the General Assembly as in most public university statutes, with the exception of a rector election. However, the General Assembly also approved the university statutes and elected the Academic Council, which was entitled to recruit faculty members. The 2009 Statutes of Saint Petersburg University of the Humanities and Social Sciences states: "*The Rector is elected by secret ballot by the Academic Council upon the recommendation of the Board of Regents for a term of up to five years. <…> In case the decision is not made, the Board of Regents shall propose a candidate or candidates within two weeks upon prior consultation with the Academic Council.*" Meanwhile, the same statutes entitled the rector to exercise full control over the composition and work of the Academic Council (in which the representatives of the regents had only a consultative vote) and select candidates for deans and department chairs' positions. The exact reasons for adopting statutes like that are unclear, but the effects are such that the university's self-perpetuating rector Alexander Zapesotsky, who has held this position since 1991, was virtually free from the control of the nominal principal, the Federation of Independent Trade Unions of Russia (which inherited the university, called Higher Trade Union School at the Soviet times, from the All-Union Central Council of Trade Unions). What is never found in dependent universities of either that period or later ones is federalism.

**5. Recentralization, 2006–2011**

The year 2006 marked the beginning of a new era in the constitutional history of public universities as well as in many other aspects of the history of Russian higher education as such. Universities were facing the consequences of the baby bust and at the same time the first zealous interventions of the government which was trying to boost their research productivity and economic growth by increasing the control over their activities in exchange for targeted investments. The innovations involved introducing certifying committees (*attestatsionnaya komissija*) that approved candidates in rector elections and apparently played a great role in the "renewal" of the rectors' community[10]. At the same time, regulations restricting rector candidates to current

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[10] Letter of the Federal Agency for Education No. 18–02–10/08 On University Rector Election Procedure of September 21, 2006 states: "*The University's Academic Council approves the list of rector candidates and submits it to the Certifying Committee of the Ministry of Education and Science of the Russian Federation*"; in addition, "*The rector candidate elected by the General Assembly is further considered by a panel of the Federal Agency for Education.*"

employees could be found less and less often in university statutes (the latest one in the sample is found in the 2011 Statutes of the second-tier Moscow State Pedagogical University). Rectors of public universities were unfailingly elected by General Assemblies up to the end of 2010, when amendments to the statutes of Moscow State University and Saint Petersburg State University were adopted.

In 2006, one of the statutes in the sample introduced for the first time the post of institute director, functionally equivalent to school dean but appointed by the rector (Statutes of Tyumen State Architectural University). The same regulation is found in the 2007 Statutes of Southern Federal University and St. Petersburg University of Film and Television and spreads quickly in the years that followed[11]. At the same time, the statutes entitle councils of structural subdivisions to elect deans and department chairs less and less often (the latest mention in the sample is in the 2011 Statutes of the Far Eastern State Medical University). However, the process of replacing schools with institutes and deans with appointed directors has become dragged out and is still active, just as that of introducing departments with appointed heads. This transformation was not dictated by changes in standard statutes, which touched little upon university governance; rather, it is probably mostly the reflection of initiatives developed locally, not handed down by the Ministry. Unlike with the principal's powers, which were first expanded in federal and national research universities and only later in second-tier universities supervised by the Ministry of Culture and the Ministry of Agriculture, the momentum of recentralization was not spreading in one specific direction, whether from center to periphery or vice versa.

In 2011, public universities supervised by the Ministry of Education experienced a wave of statute revisions that consolidated the centralization of power around campus-level governing bodies, rector and Academic Council. In most cases, schools and departments lost their freedoms and authority, and the overall university organization transformed from federalism to rigid unitarism. Many revisions adopted after 2010 did not even mention discussion sessions preceding the election of department chairs and deans, which had never happened before.

Overall, statutes of public universities adopted since mid-2005 indicate a decrease in the influence of collegiate governing bodies

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[11] "Institute directors" in universities' statutes used to denote directors of universities' research institutes who were also mostly elected by Academic Councils upon discussion in a respective institute; later on, however, institutes were more and more often understood as schools with appointive heads. The 2011 Statutes of Baikal State University of Economics and Law provide a straightforward definition: "*Functions equivalent to those of schools may be performed by institutes and colleges headed by directors appointed by the Rector*."

(General Assembly, Academic Council), yet they still fit into the definition of systems with autonomous Academic Councils given in this article. The sweeping powers of General Assemblies have been preserved, too: they can still approve statutes and elect rectors and Academic Councils. Besides, statutes of some universities keep the reservation about possible early termination of rector's contract[12].

**6. Independence Lost: 2011—** On December 31, 2010, amendments to the statutes of Saint Petersburg State University and Moscow State University held that rectors were no longer elected but appointed by the President of Russia. Other Russian universities joined in soon, adopting statutes that cancelled rector elections and statute approval and clipped some other powers of the General Assembly. The innovations of 2006–2011 include one of the earliest mentions of which is found (somewhat unexpectedly) in the 2010 Statutes of the second-tier Almetyevsk State Institute of Municipal Services: "*ASIMS will establish a supervisory board [popechitel'skij sovet] of seven (7) members: two from among employers, one representative of the Ministry of Land and Property of the Republic of Tatarstan, one faculty member, one parent committee member, one representative of the Ministry of Education and Science of the Republic of Tatarstan, and one representative of Almetyevsk Municipal District*." Later on, this clause gains ground, sometimes including rather specific paragraphs (like the one stating that "*Those having an outstanding conviction or unexpunged criminal record may not become members of the ASIMS Supervisory Board*"), and can be found, for example, in the 2012 Statutes of Southern Federal University, the first one in the sample to abolish rector elections. A supervisory board acts as a buffer zone between university and principal, providing recommendations to both and, in particular, selecting rector candidates to be approved by the agency. Similar statutes were soon adopted by all the universities that were part of the Project 5–100.

Statutes abolishing elected rectors were adopted by most universities supervised by the Ministry of Education (in 2015 for the most part). Second-tier universities, meanwhile, did not even have supervisory boards, they were just assigned a rector appointed by the principal upon discussion by the certifying committee (statutes did not specify who selected the candidates to be considered by the committee). In 2014–2015, statutes stipulating that rectors be elected by the General

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[12] Despite the existing standards and possible external institutional pressures, statutes remained customized in many aspects, and some of them introduced specific points to reflect the unique events in the history of the institution. Nevertheless, different "families" of universities still shared some common typical traits, e. g. agricultural universities remained more decentralized than others.

Assembly were still adopted, but only by universities supervised by the Ministry of Culture (e. g. the 2014 Statutes of the Maxim Gorky Literature Institute, one of the best examples of embodied collegiality) and the Ministry of Agriculture. Later on, some of them adopted amendments to strengthen the principal's role, but, according to the 'Documents' sections on the official websites, a number of old versions were still in force as this article was being finished (late 2017).

Contrary to what is implied by the generalized concept of changing from partnership to bureaucracy, reduced university independence did not involve a considerable decrease in collegiality (understood as the balance of power between rector and Academic Council) for a number of universities, even though General Assemblies had lost their authority permanently and the last traces of direct democracy had faded away in most of them. Supervisory boards limited some powers of Academic Councils (e. g. those concerning establishment of subdivisions), but the balance of powers between Academic Councils and rectors was preserved virtually at the level of 2011. On the whole, the Ministry of Education's initiatives were probably designed solely to strengthen the state's role, so they affected little intra-university organization. As a result, universities supervised by the same ministry and falling within the same category have preserved different internal political regimes. For example, Moscow State University remains much less collegiate than Saint Petersburg State University. Because the statutes of municipal universities largely reproduce those of universities founded by federal ministries, they gradually introduce structural innovations, but the process is very slow.

The segment of private higher education was barely affected by all those changes, continuing to reproduce numerous proprietary universities whose principals controlled every appointment and major decision directly or via appointed rector. Yet, along with this trend, constitutions borrowed from earlier versions of public universities also remain in force. As a result, the most prominent examples of university autonomy are found today in private education. They include, among others, the Statutes of the Stolypin Institute for the Humanities (2010), Institute of Theology and International Relations (2014) and Armavir State Social University (2013), which have preserved election of the rector by the General Assembly, though sometimes in reduced forms (e. g. the Statutes of ASSU state that General Assembly elects the rector "in agreement with the Principal"). A special category is formed by private universities that were among the first to institutionalize rector appointments by the principal (or the principal's representatives in the board of regents) but reserved the possibility of limiting the number of candidates to choose from, thus turning supervisory boards' powers effectively into veto power. A telling example in the sample is the 2015 Statutes of the Moscow School for the Social and Economic Sciences, which entitles regents to appoint the rector "upon the

Table 2. **Comparing Average Scores of the Statutes in Three Dimensions, by Periods (F-test in the last row).**

| Period | Independence | Collegiality | Federalism |
|---|---|---|---|
| 1993–2005 (N=56) | 0.622 | −0.082 | 0.693 |
| 2006–2009 (N=49) | −0.203 | −0.094 | 0.275 |
| 2010–2011 (N=153) | 0.262 | 0.245 | −0.228 |
| 2012– (N=142) | −0.457 | −0.199 | −0.123 |
| F | 25.14*** | 5.35** | 15.00*** |

** $p < 0.001$; *** $p < 0.0001$

recommendation of the Academic Council". In this case, the university creators were probably guided by the Anglo-American institutional model but suggested that dual structure would make the university too dependent from the supervisory board, so they decided to introduce small innovations, which, however, changed the very nature of the whole political procedure.

Table 2 illustrates the transformations that have taken place. For every statute, scores calculated based on loadings for three components show the position occupied by the document on the respective axis, and average indicators for the selected periods are compared. The highest average indicators of independence are observed for the earliest period and the lowest for the most recent one. The third period features a bounce upward, probably induced by the 2010–2011 series of statutes adopted by public universities, which in fact had even more autonomy than private ones at the time. Federalism gradually decreases from the first period to the third one, which is followed by a small (insignificant) climb. No explicit trends can be identified in collegiality variance. The 2010–2012 wave of public university statutes must have provided a certain boost in collegiality, but everything went back to original state very soon.

**7. Conclusion**  The study demonstrates that differences between intra-organizational political regimes in Russian higher education can basically be reduced to three dimensions, namely the degrees of independence, collegiality and federalism. Empirical evidence being available for only four of all the conceivable combinations of high and low values of the three characteristics. University independence implies strong collegiate governing bodies. Universities that make key decisions—such as those related to rector election—independently differ primarily in the degree of federalism in their governance structures. External control over university suggests a high level of centralization but allows variation in au-

tonomy of the Academic Council, which cannot be a dominant force (otherwise the principal's control would make no sense) but can be either autonomous or subordinate. The former is more typical of publicly owned universities, while the latter for private proprietary ones.

A great number of public universities first evolved from federalism to unitarism (by 2011) and then to dualism (mostly by 2015), which allows for talking about a transformation from partnerships to corporations. The very course of this evolution, however, reveals a few independent processes rather than a single one. Contrary to the idea of changing from partnership to corporation as a single process of decreasing collegiality, it becomes obvious that universities' political structures first lost federalism and then independence, but the levels of collegiality remained virtually intact. The wave of losing independence started with the central—in terms of location and significance for the education system—universities and reached the peripheral ones last of all, but nothing like this can be said about recentralization.

What was behind those changes? This question brings us back to the previously stated doubts about "realness" of university constitution. On the whole, the findings of this study challenge the assumption that university constitutions were purely fictitious for the academic community—documents signed blind. If universities had made little of the statutes' content, their statutes would have all been nearly identical (since everyone would have been adopting the same version, trying to save on the cognitive effort), or, alternatively, there would have been an infinite number of variations (if every university had drafted statutes from scratch). However, neither is true. The language of statutes was widely borrowed, as could be seen from the example of private universities, but their overall content bears a clear imprint of the academic community being concerned about the consequences. Even if some statutes have nothing to do with real-life university governance practices, their developers did not have a clue.

So, what were the ideas that guided them? This is where we enter a domain where our findings only allow for conservative assumptions. It is easier to imagine the reasons for changes in university independence than those for recentralization. Dependence of private universities is probably mainly explained by their principals' desire to remain in control of them. In this regard, the situation was less ambiguous for principals of public universities, for whom control also meant responsible decision making (the Ministry is currently responsible for selecting rectors to regional universities—the power that it would probably prefer to divest itself of) and fulfillment of more or less explicit social obligations to the faculty. That is to say, the independence gained by Russian universities at the cusp of the 1990s was probably not so much an achievement of their own but rather a consequence of the government's readiness to shift the responsibility for universities' well-being onto their own shoulders. Following their European colleagues, Russian researchers found out that "autonomy", despite its positive

connotations, often entailed funding cuts. As soon as the state gained possession of the resources that it was willing to invest in academic development, it stipulated regain of control as a condition. Government agencies obviously took formal governance structure seriously and used all available leverage to make universities abandon self-governance. It remains unknown, however, whether its efforts encountered any resistance, and if not, whether it was because the academic staff found the managerial structure more legitimate, or did not take it seriously, or had no resources to protest.

In any case, explanations referring to the role of external agents do not shed too much light on the course of intra-university recentralization. All versions of standard statutes leave internal structure to a university's discretion, and no interference to reduce faculty autonomy was observed on the part of the Ministry until 2012. The findings of this study are thus not enough to provide any definitive answer.

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# Internal Factors of Education Export Performance in Russian Universities

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**Abstract.** A survey was carried out in order to analyze the relationship between the universities' internal factors and the indicators of their education export performance. Quantitative data was collected to describe the activities of Russian universities over recent years. Regression analysis was used to identify correlations between the indicators. The sample consisted of 173 universities from different federal districts of Russia. Achievement of the research goal necessitated the construction and quantitative assessment of various regression model specifications calculated based on how variable values changed over time. Estimates confirm a positive relationship between the number of international network partnerships, the number of double degree programs and the export performance indicators. Diversification of education programs available to international students correlates negatively with international student enrollment. Tuition and the level of commercialization of education for foreign students demonstrate a positive correlation with education export profitability but show no relationship with international student enrollment. No correlation was found between web presence of universities, engagement in transnational education programs and education export performance. The findings are used to discuss promising vectors of education export development in Russian universities.

**Keywords:** higher education exports, international education marketing, university revenues, international students, global education market

International education marketing has become a priority for many Russian universities[1], allowing them to boost their revenues, increase their national and global rankings and qualify for government grants.

Russia's government has been supporting the national universities in their education export activities. The new top-priority governmental project, Development of the Export Potential of the Russian

_Translated from Russian by I. Zhuchkova._

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[1] International higher education marketing, or export of higher education, is a situation where educational services are provided to international students, whether in the university's home country or abroad, via transnational education programs or distance learning degrees.

Education System, approved in May 2017 is aimed at making Russian education more attractive and competitive in the global education market. The project's target goals include tripling both the number of international students in Russian universities and that of international online learners, and providing a fivefold increase in revenues from the export of Russian education. About five billion rubles has been allocated to this project, which is expected to take eight years[2].

University export performance is affected by external and internal factors. The former include the regulatory framework, environmental and socioeconomic conditions, and competitive landscapes of the national and global education markets [Racine, Villeneuve, Theriault 2003; Mazzarol, Soutar 2002; Asaad 2008], while the latter are controlled by universities and include strategic benchmarks in international education marketing, available resources and competencies, the characteristics of educational services offered, and the strategies used to promote them [Ross, Heaney, Cooper 2007; Racine, Villeneuve, Theriault 2003; Mazzarol, Soutar 1998].

According to the Monitoring of Russian Universities' Performance, 267,000 international students were enrolled in 712 universities in the academic year 2015/16. Fifty-six universities had over 1,000 foreign students each, and 13 earned over 100 billion rubles each from the export of higher education[3].

Russian universities have many years of international education marketing experience. Organizational practices and mechanisms for success in education exports can be identified by revisiting this experience and exploring the factors of export performance. Research findings may provide guidelines for developing and fine-tuning the export strategies of Russian universities.

This article presents the results of a study designed to analyze the relationship between internal factors and university export performance in Russia. Internal factors are understood as the processes and characteristics of a university that are under its direct influence. Statistics on Russian universities' activities over the recent years was collected and investigated, and regression analysis was used to explore the relationships between the indicators.

## 1. Neoliberalism as the Theoretical Framework of Research

Recent years have seen changes in Russian higher education affecting university export activities. Government funding has been cut, and

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[2] Passport of the priority project Development of the Export Potential of the Russian Education System: http://static.government.ru/media/files/DkOXerfvAnLv0vFKJ59ZeqTC7ycla5HV.pdf

[3] Information and analytical reports on performance of higher education institutions. Official website of the Main Data Processing Center of the Federal Agency for Education of the Russian Federation: http://miccedu.ru/monitoring/

targeted grants for universities have been introduced, which imply supplementary results-based financing[4]. Governmental agencies assess university performance every year on the basis of quantitative indicators, and some low-performing universities have been reorganized as a result [Melikyan 2014]. The changes have increased the level of commercialization and competition in higher education. Tuition has become one of the primordial sources of revenue for a number of universities, so they have started attracting international students in order to bring their educational activities up to a new level. About half of all the Russian universities had over 100 foreign students each in the academic year 2015/16[5].

The existing environment in which universities operate has found its way into the theory of neoliberalism, which approaches universities as autonomous organizations capable of promoting their services in a competitive market and striving to enhance their performance and competitive position to maximize their revenues [Chirikov 2016].

Neoliberalism has been brought into the ideas of academic capitalism and entrepreneurial university. Academic capitalism is defined as the whole range of university activities to procure additional funds from external sources, in particular by attracting higher-paying students. Academic capitalism manifests itself at the institutional level and at the level of units and individuals [Slaughter, Lesli 1997; Leslie, Oaxaca, Rhoades 2001]. The concept of entrepreneurial university has been born from developing the idea of academic capitalism at the institutional level. Entrepreneurial universities are largely defined as having no fear of commercializing the production and distribution of knowledge [Clark 1998].

Premises of neoliberalism constitute the theoretical framework of this study. Universities are regarded as education market participants that have a certain degree of autonomy and can strengthen and expand their position in the global education market. It is assumed that development of relevant university activities as well as changes in the characteristics of educational services offered and university operation conditions will improve university export performance even in the short term.

Quantitative indicators of scale and profitability are used to evaluate university export performance. Internal factors of export performance include the levels of commercialization and diversification, competitive advantages, and tuition.

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[4] Order of the Government of the Russian Federation No. 2006-r On Approving a Plan of Actions to Develop the Top Universities by Increasing Their Competitive Performance Amongst World-Class Research and Education Centers of October 29, 2012: http://www.garant.ru/products/ipo/prime/doc/70150350/

[5] According to the Monitoring of University Performance: http://indicators.miccedu.ru/monitoring/

## 2. Exploring the Internal Factors of University Export Performance

Tim Mazzarol of the University of Western Australia was among the first to conduct a large-scale study of the relationship between the diverse characteristics of internal university policies and export performance. The sample consisted of a total of 315 international marketing managers and recruiters in educational institutions in Australia, New Zealand, the United Kingdom and United States. Econometric analysis found the most important factor of university export performance to be *Image and Resources*, which embraces the following indicators: possession of strong financial resources, market recognition, reputation for quality, possession of a strong alumni base, and ability to offer a broad range of courses. The second most important factor is *Cooperation and Integration*, which includes the number of international strategic alliances and transnational education programs [Mazzarol 1998].

Vik Naidoo of the University of Sydney performed an online survey of 407 international student recruiters at universities in the United Kingdom, Australia and New Zealand. Econometric analysis confirmed the hypothesis that success of an export strategy depends on the university's readiness to undertake this type of activity, measured by the level of its market orientation. The latter, in its turn, is determined by the marketing competencies of university staff, the level of administrative support, and coordination efficiency [Naidoo 2010].

A team of researchers at Griffith University (Australia) led by Mitchell Ross conducted two studies about international student recruitment efficiency determinants, one qualitative and one quantitative. Econometric analysis of data obtained in an online survey of 302 international student recruiters in Australian universities confirmed a positive relationship between university's market orientation, orientation for teaching, innovative capacity and recruitment efficiency [Ross, Grace 2012]. Semi-structured interviews with education marketing practitioners in five universities and five vocational schools in Australia and New Zealand showed that market orientation, a strong recruitment marketing team and field-specific education of relevant staff correlate positively with the percentage of international students in total enrollment. A negative correlation was revealed between the experience (number of years) in international student recruitment and the proportion of foreign students. The authors conclude that greater international marketing experience affects the flexibility of an educational institution, hindering its export development [Ross, Heaney, Cooper 2007].

Available research findings show that in order to enhance their export performance, universities must develop market orientation, be ready for innovations, expand alliances with foreign universities that are active in the market, and take a professional approach to promotion of educational services by attracting marketing professionals and integrating various education marketing strategies.

**3. Research Methodology**
**3.1. Internal Factors**

The existing findings on the subject, personal empirical and research experience, and accessible information on the export performance of Russian universities provided the basis for selecting eight internal factors that may be related to international marketing activities of universities:

• Diversification of education programs;
• Engagement in international dual degree programs;
• Engagement in transnational education programs;
• Network partnerships with foreign universities;
• Tuition for international students;
• Commercialization of education for international students;
• Web presence;
• Selectivity.

Each factor has been assigned a quantitative indicator to assess university performance in the given aspect.

F1. Diversification of education programs
When a university expands the range of its educational services, it increases the probability of international enrollments growing in number and duration [Mazzarol 1998]. Russian universities offer "no-gap academic tracks", which include preparation for entry tests followed by bachelor's, master's and doctoral degrees on an ongoing basis [Arefyev, Sheregi 2016].
The Herfindahl-Hirschman index was used to evaluate diversification of education programs [Hirschman 1964]. The index is calculated by squaring the percentages of students in different majors in total international student enrollment and then summing the resulting numbers, allowing one to consider the number of types of education programs and international students enrolled in them.
Indicator: Herfindahl-Hirschman index.

F2. Engagement in international dual degree programs
Dual degree programs are popular among international students as they provide the opportunity to get experience studying in different countries and obtain two full-fledged higher education diplomas within the normal program length [West 2015; Knight 2015; Snatkin, Mishin, Karshukhina 2010]. For this reason, engagement in dual degree programs may enhance the export performance of Russian universities.
Indicator: Number of international dual degree programs offered.

F3. Engagement in transnational education programs
World-class universities actively engage in transnational education (TNE) programs. For instance, TNE enrollment in UK universi-

ties is higher that international student enrollment within the country[6]. France has turned its head toward TNE over the past few years too [Ramanantsoa, Delpech 2006]. As for Russia, TNE programs have been unpopular so far, yet some universities have already embarked on promoting this type of education export [Arefyev 2016]. In addition to bringing direct profit, international branch campuses allow for attracting foreign students to the university's home country as well [Mazzarol 1998; Wilkins, Huisman 2011].

Indicator: Engagement in transnational education programs (Yes/No).

F4. Network partnerships with foreign universities

Cross-border university alliances may imply mutual support in international student recruiting and brand promotion [Mazzarol 1998]. Recent years have witnessed an increase in the number of international university networks [Melikyan 2014; Stensaker 2013]. Students can participate in exchange programs offering academic credit or pursue a degree of any level (bachelor's, master's, or doctoral) at any university within the network. Partner institutions may also offer joint and dual degree programs [Yekshikeev 2009].

Indicator: Number of international networks of which the university is a member.

F5. Average annual tuition fees for international students

Average annual tuition fees for international students may vary greatly depending on the university's reputation. Research has shown that high tuition fees may be a barrier for international students and have negative effects on university export performance [Lange 2013, Binsardi, Ekwulugo 2003]. OECD data confirms that increasing the size of tuition fees may reduce dramatically the inflow of foreign students to a country [Sanchez-Serra, Marconi 2018].

Indicator: Average annual revenue per international student.

F6. Commercialization of education for international students

In Russian universities, international students pay for their tuition, unless they study under government-funded or student exchange programs or intergovernmental agreements. The level of commercialization of education for international students may have an influence on university export performance. According to OECD data, the year in which the transition was made to fee-based education for foreign students saw their number fall by 20 percent in Denmark and by 80 percent in Sweden [Sanchez-Serra, Marconi 2018].

Indicator: Proportion of fee-paying international students.

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[6] The Scale and Scope of UK Higher Education Transnational Education, HE Global, 2016: https://www.britishcouncil.org/sites/default/files/scale-and-scope-of-uk-he-tne-report.pdf

F7. Web presence of the university and its courses

Online recruitment has become an important tool for attracting international students. An ICEF study demonstrates that universities have been allocating considerable funds to online marketing recently. It is in the best interest of a university to provide comprehensive and easily accessible information on the available courses and the aspects of academic life on its official website as well as through dedicated education portals and social media[7].

Web presence is assessed based on the position in the Webometrics Ranking[8], which describes web presence and visibility of universities[9]. The Ranking covered over 26,000 universities from over 200 countries in 2017, including 1,223 Russian universities and branch campuses.

Indicator: Position in the Webometrics Ranking.

F8. Selectivity

High levels of university selectivity, i.e. stringent admission requirements, may correlate with export performance. A number of Russian researchers use the average passing USE score to measure college selectivity [Zemtsov, Yeremkin, Barinova 2015; Prakhov 2017]. Foreign students may be admitted to Russian universities not only on the basis of their USE scores but also as Olympiad prize winners or by being awarded competitive scholarships[10]. The average USE score does not directly reflect how selective universities are in recruiting international students, but it is reasonable to assume that a university with a high passing USE score will impose stricter admission requirements on overseas students.

Indicator: Average passing USE score among university students (all modes of study).

**3.2. Control Variables**

In order to consider the relationships between the scale of universities' activities, their financial standing and export performance, the research model includes two control variables, total enrollment (C1) and total revenues from all sources (C2). Control variable *University Location* (C3) will allow for testing the hypothesis that Moscow and St. Petersburg universities market themselves more actively as com-

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[7] Recruiting on Screen. ICEF Insights. Fall 2016. P. 44–46.

[8] Ranking Web of Universities: http://www.webometrics.info/en

[9] Zvezdina P. (2017) *Vosem' rossiyskikh vuzov voshli v top-1000 reytinga Webometrics* [Eight Russian Universities Ranked among the Top 1,000 in Webometrics]. RBC: http://www.rbc.ru/society/04/08/2017/598448d19a794717e25a1729

[10] Admission Requirements for International Students. Official website of the Ministry of Education and Science of the Russian Federation: https://studyinrussia.ru/study-in-russia/step-by-step-guide-to-applying/learn-about-funding-options/

pared to their counterparts in other cities (55 universities in the sample are located in Moscow and St. Petersburg). These two cities accepted 29.3 percent of all international students in the academic year 2015/16 and received 42.5 percent of the cumulative educational revenues from foreign sources. Control variable *University Specialization* (C4) will allow for testing the hypothesis on higher export performance of medical schools (26 universities in the sample are medical). The average percentage of international students in total enrollment and that of foreign source income in total educational revenues are twice as high in medical schools as in any other type of university in the sample.

**3.3. Indicators of University Export Performance**

Various quantitative indicators were used to evaluate university export performance: the proportion of international students (IS) in total enrollment [Ross, Heaney, Cooper 2007], total IS enrollment [Naidoo 2010; Asaad 2015], IS enrollment by students' home country [Racine, Villeneuve, Theriault 2003], revenue from IS tuition [Naidoo 2010], the percentage of revenue from IS tuition in total educational revenues [Asaad 2015; Mazzarol 1998], expected increase in IS enrollment in the next few years [Asaad 2015; Mazzarol 1998], the level of admission competitiveness for international entrants [Mazzarol 1998], and IS satisfaction with the quality of education [Asaad 2015; Maringe 2005].

Russia's national regulations stipulate quantitative indicators of university export performance. The Monitoring of University Performance[11] and the Project 5–100, designed to improve the competitiveness of Russia's leading universities in the global market[12], use the percentage of IS in total enrollment for this purpose. The governmental project Development of the Export Potential of the Russian Education System formulates three target indicators of university performance: the number of international students enrolled in full-time programs, the size of extra-budgetary funds received as a result of education exports, and the number of international students enrolled in online classes[13].

Indicators for assessing university export performance were selected based on the following criteria:

• Repeated use in earlier studies and/or by Russian authorities to assess the export performance of Russian universities;

[11] Monitoring Indicator Estimation Methodology, 2017 (LO-27/05vn of 03/14/2017): http://stat.miccedu.ru/info/monitoring16/LO-27–05vn.pdf

[12] List of Requirements to Reports on Realization of Action Plans by the Universities Selected through Competitive Process for Granting State Support to the Leading Universities: https://5top100.ru/documents/regulations/20114/

[13] Passport of the priority project Development of the Export Potential of the Russian Education System: https://минобрнауки.рф/проекты/1355/файл/9551/passport_-_opublikovannyi.pdf

- Quantitative measurability;
- Public availability of annual statistics on Russian universities for the past three years.

The four indicators selected measure the scale and profitability of universities' international marketing activities and can be classified into absolute and relative.

Absolute indicators:

- R1—the number of international students enrolled in higher education programs;
- R3—revenue from international student tuition.
- Relative indicators:
- R2—the percentage of international students in total enrollment,
- R4—the percentage of international student tuition in total university revenues.

Absolute indicators measure the scale of export activities, and relative ones evaluate university export performance.

**3.4. Research Model**

The relationship between the internal factors and export performance of Russian universities was analyzed using an empirical research model (Fig. 1). The model consists of three modules. Module one contains dependent variables measuring university export performance (four indicators). Module two includes independent variables that provide quantitative measurement of the internal factors allegedly related to university export performance (eight indicators). Module three, containing the control variables (four indicators), is added to consider the scale of international marketing activities, plus the university's financial standing, location and specialization.

The research model has four specifications based on the dependent variables: international student enrollment, the percentage of international students in total enrollment, total revenue from education exports, and the proportion of international student tuition in total educational revenues. Independent and control variables remain the same in all the specifications.

The method of linear regression analysis was used to run a complex analysis of the relationship between the internal factors and each indicator of university export performance in relevant specifications. Analysis is based on the following delay differential equation:

$$R_{i,t} = \beta_0 + \beta_1 F_{i,t-n} + \beta_2 C_{i,t-n} + \varepsilon_{i,t-n},$$

where $i$ is university index, $t$ is the academic year assessed, $n$ is the lag length measured in years, $R_i$ is university export performance, $F_i$ is the vector of internal factors, $C_i$ is the vector of control variables, $\beta_0, \beta_1, \beta_2$ are the vectors of regression coefficients, and $\varepsilon$ is the error.

Figure 1. **Research Model**

| **MODULE 2**<br>**Internal Factors**<br>(independent variables) | **MODULE 1**<br>**Export Performance Indicators**<br>(dependent variables) |
|---|---|

F1. Diversification of education programs
F2. Engagement in international dual degree programs
F3. Engagement in transnational education programs
F4. Network partnerships with foreign universities
F5. Average annual tuition for international students
F6. Commercialization of education for international students
F7. Web presence
F8. Selectivity

R1. International student enrollment
R2. Internationalization of the student body
R3. Revenue from international student tuition
R4. Internationalization of educational revenues

| **MODULE 3**<br>**University Characteristics**<br>(control variables) |
|---|

C1. Total enrollment
C2. Total revenues
C3. Location
C4. CSpecialization

Regression coefficient stability was measured by analyzing models with different time lags and indicator values in different periods of time. All in all, three model specifications with differing $t$ (assessment year) and $n$ (lag length) values were tested:

- Specification 1: dependent variables for the academic year 2015/16, independent variables for the academic year 2014/15 (lag length of one year);
- Specification 2: dependent variables for the academic year 2013/14, independent variables for the academic year 2012/13 (lag length of one year);
- Specification 3: dependent variables for the academic year 2014/15, independent variables for the academic year 2012/13 (lag length of two years);

Sources of data for the research model variables[14]:

- Monitoring of University Performance (R1, R2, R3, R4, F2, F8, C1, C2, C3, C4)[15];

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[14] Short variable names are parenthesized.

[15] Information and analytical reports on performance of higher education insti-

- *Export of Russian Education*, a compilation of statistics by the Ministry of Education and Science of the Russian Federation (F1, F3, F5, F6) [Arefyev, Sheregi 2014; 2016],
- Ranking Web of Universities (Webometrics) (F7)[16],
- Russian universities' official websites (F4).

These sources provide official annual statistics on the performance of Russian universities. To investigate the positive experience of international education marketing in Russia, the sample only includes universities with international student enrollment higher than the country's average[17]: the information on them is available in the database of the Monitoring of University Performance and in the statistical compilation *Export of Russian Education*.

The sample comprised 173 universities, which accounted for 57 percent of the total international student enrollment in Russia in the academic year 2015/16, and received 78 percent of the cumulative university revenues from education exports[18]. The sample represents universities from all the federal districts of Russia, including 31 from Moscow and 22 from St. Petersburg. Three universities in the sample are private, and 138 are multidisciplinary.

Leaving out those universities with lower than average export performance indicators may result in biased regression coefficients. In order to avoid significant bias, a control subsample was created, which contained 28 universities with fewer than 300 international students enrolled in the academic year 2015/16. The subsample included universities with varying international student enrollment rates, including even those with low, very low and zero value indicators. Additional model specifications making allowance for the control subsample were also tested.

The dependent variables in the model are not random but depend on the overall strategy and decision-making policy of a particular university. Econometric evaluation of such models using the method of least squares may induce endogeneity bias, so lagged independent variables were used to minimize the problem.

**4. Descriptive Data Analysis**

Let us now dwell into the descriptive statistics for the variables used in the regression model.

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tutions. Official website of the Main Data Processing Center of the Federal Agency for Education of the Russian Federation: http://miccedu.ru/monitoring/

[16] Ranking Web of Universities: http://www.webometrics.info/en/Europe/Russian%20Federation

[17] Russia's average size of international student enrollment per institution was 301.5 in the academic year 2015/16.

[18] According to the Monitoring of Higher Education Institution Performance.

Table 1. **Descriptive Statistics for the Indicators of University Export Performance During Three Academic Years**

| Indicator | Academic Year | Min | Max | Mean | Standard Error | Median |
|---|---|---|---|---|---|---|
| R1. IS enrollment | 2013/14 | 66 | 5,453 | 683.9 | 606.9 | 500 |
| | 2014/15 | 129 | 4,985 | 779.2 | 626.9 | 585 |
| | 2015/16 | 301 | 5,556 | 878.8 | 677.7 | 683 |
| R2. IS percentage (%) | 2013/14 | 0.9 | 58.01 | 7.3 | 6.4 | 5.6 |
| | 2014/15 | 1.2 | 46.7 | 8.3 | 6.0 | 6.7 |
| | 2015/16 | 1.7 | 32.5 | 9.2 | 5.8 | 7.6 |
| R3. Revenue from IS tuition (mln rubles) | 2013/14 | 0 | 358.9 | 23.3 | 44.7 | 9.3 |
| | 2014/15 | 0 | 485.3 | 30.3 | 61.6 | 12.5 |
| | 2015/16 | 0 | 653.6 | 46.5 | 71.9 | 13.6 |
| R4. Percentage of foreign source revenue (%) | 2013/14 | 0 | 28.1 | 1.8 | 3.2 | 0.7 |
| | 2014/15 | 0 | 39.6 | 2.3 | 4.3 | 1.1 |
| | 2015/16 | 0 | 39.13 | 2.6 | 4.5 | 1.2 |

**4.1. University Export Performance Indicators**

Table 1 presents the descriptive statistics for the university export performance indicators over the past three academic years.

A large spread of values in the data set is observed for every indicator. Overall, positive dynamics over the years is confirmed. Forty-seven universities had zero educational revenues from foreign sources in the academic year 2013/14, as education of international students was funded fully by the government. The number of such universities fell down to 40 in the academic year 2014/15 and then to 34 in 2015/16.

Correlation analysis revealed a statistically significant positive relationship between the university export performance indicators analyzed. A weak positive correlation is observed between international student enrollment (R1) and the size of revenue from international student tuition (R3), the weakness being explained by the fact that universities do not include the revenue received from teaching government-sponsored international students in the *foreign source income* category on their balance sheets.

There is a moderate positive correlation between the number of international students (R1) and their percentage in total enrollment (R2) as well as between foreign source revenue (R3) and its proportion in total educational revenues (R4). Big multidisciplinary universities feature higher international student enrollment and greater revenue from IS tuition while at the same time lower relative export indicators, as

Table 2. **Descriptive Statistics on the Internal Factors (Academic Year 2014/15)**

| | Min | Max | Mean | Standard Error | Median |
|---|---|---|---|---|---|
| F1. Diversification of education programs (Herfindahl-Hirschman index) | 0.18 | 1 | 0.5 | 0.2 | 0.4 |
| F2. Number of dual degree programs | 0 | 131 | 5 | 12.5 | 1 |
| F3. Engagement in TNE programs | 13 of 173 universities engage in TNE programs | | | | |
| F4. Number of international network partnerships | 0 | 4 | 0.3 | 0.7 | 0 |
| F5. Average annual IS tuition (thousand rubles) | 38.3 | 348.6 | 108.1 | 47.4 | 91.1 |
| F6. Percentage of fee-paying IS (%) | 1.9 | 100 | 55.6 | 27.5 | 55.6 |
| F7. University position in the Webometrics Ranking | 215 | 20,010 | 7,112.6 | 5,246.3 | 5,614 |
| F8. Average passing USE score | 49.9 | 93.1 | 64.6 | 7.9 | 62.6 |

growing total enrollment is not balanced by growth in the number of foreign students.

**4.2. Internal Factors of University Export Performance**

Table 2 provides descriptive statistics on the eight factors of university export performance.

F1. Diversification of education programs

International students were enrolled in education programs of nine types (Table 3), including 41 percent in Bachelor's degree programs and 25 percent in Specialist's degrees. Five or more types of education programs were pursued by international students in 142 universities. The Herfindahl-Hirschman index ranges from 0.18 to 1, which means that most universities had international students enrolled in education programs of a few types.

F2. Engagement in international dual degree programs

International dual degree programs are administered by 96 of the 173 universities. Twenty of them offer more than ten dual degrees each. The largest number of dual degree programs is observed in the Peoples' Friendship University of Russia (131), National Research University Higher School of Economics (47) and Moscow Power Engineering Institute (43).

F3. Engagement in transnational education programs

Thirteen universities engage in TNE programs, the leader being Plekhanov Russian University of Economics which administers its programs in seven countries (3,522 international students enrolled in the academic year 2014/15). Lomonosov Moscow State University offers

Table 3. **Distribution of International Students across Types of Education Programs**

|  | Type of Education Program | Proportion of Students (%) |
|---|---|---|
| 1 | Bachelor's degree | 41.0 |
| 2 | Specialist's degree | 25.0 |
| 3 | Internship | 12.2 |
| 4 | Preparation courses | 8.6 |
| 5 | Master's degree | 8.6 |
| 6 | Research degree | 3.0 |
| 7 | Residency | 1.1 |
| 8 | Medical internship | 0.4 |
| 9 | Doctoral degree | 0.1 |

TNE programs in five countries, Russian State Social University in two, and the other ten only in one country each. As we can see, this type of international marketing activity is not too popular among the universities sampled.

F4. Network partnerships with foreign universities

Thirty-seven universities are members of international university networks. The highest networking activity is demonstrated by St. Petersburg State University (four networks), the People's Friendship University of Russia (three networks), Southern Federal University (three networks) and Russian State Humanities University (three networks). The other 22 universities are members of only two or one international network each.

F5. Average annual tuition for international students

Average annual tuition for international students ranges from 38,300 to 348,600 rubles. The most expensive programs are offered by Moscow State University, Moscow State Institute of International Relations and Moscow State Technical University, where international students pay on average 300,000 rubles per year. In half of the universities, tuition varies between 80,000 and 120,000 rubles.

F6. Commercialization of education for international students

The proportion of fee-paying international students varies between 1.9 and 100 percent across the sample, exceeding 50 percent in 101 universities and 90 percent in 27.

Table 4. **Descriptive Statistics for the Control Variables (academic year 2014/15)**

|  | Min | Max | Mean | Standard Error | Median |
|---|---|---|---|---|---|
| C1: Total enrollment | 1,992 | 32,720 | 10,859.1 | 6,439.4 | 9,186 |
| C2: Total university revenues (mln rubles) | 166.7 | 23,014.9 | 2,518.5 | 2,971.2 | 1,467.7 |
| C3: University location | 55 universities are located in Moscow or St. Petersburg, the other 118 make the reference group | | | | |
| C4: University specialization | 26 universities are medical, the other 147 make the reference group | | | | |

F7. Web presence of universities and their courses

In the Webometric Ranking, Russian universities are ranked between 215 and 20,010[19], Moscow State University and St. Petersburg State University being the highest climbers. Only eight universities make it to the top 1,000. It can be thus assumed that Russian universities pay little attention to creating and updating the content on their official websites.

F8. Selectivity

The average USE score in all modes of study varies between 49.9 and 93.1 with the arithmetic mean of 64.6 and standard error of 7.9.

Descriptive analysis of the eight internal factors shows a large dispersion of values in each of them. Universities differ greatly in their web presence, tuition, and level of commercialization. Over half of the universities engage in dual degree programs, but very few participate in international university networks or administer TNE programs. Nearly all the universities enroll international students in education programs of more than one type.

**4.3. Control variables**

Table 4 displays the descriptive statistics for the control variables.

The sample is heterogeneous at the scales of total enrollment (C1) and total university revenues (C2). Both indicators demonstrate a great variation between the maximum and minimum values as well as high values of standard error. Fifty-five universities are located in Moscow and St. Petersburg, and 26 universities in the sample are medical.

There are correlations among some of the internal factors and control variables (Table 5).

The position in the Webometrics Ranking (F7) correlates negatively with the number of dual degree programs (F2), total enrollment (C1)

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[19] The lower the indicator value, the higher the position in the ranking.

Table 5. **Correlation Coefficients among the Independent Variables**

|    | F2 | F3 | F4 | F5 | F6 | F7 | F8 | C1 | C2 | C3 | C4 |
|----|----|----|----|----|----|----|----|----|----|----|----|
| F1 | −0.354** | −0.066 | −0.262** | −0.160** | 0.073 | 0.311** | −0.029 | −0.314** | −0.314** | −0.234** | 0.360** |
| F2 |    | 0.162* | 0.301** | 0.229** | −0.137* | −0.428** | 0.145** | 0.343** | 0.372** | 0.201** | −0.313** |
| F3 |    |    | 0.162* | 0.165** | 0.020 | −0.196** | 0.176** | 0.121 | 0.216** | 0.191* | −0.059 |
| F4 |    |    |    | 0.214** | −0.069 | −0.328** | 0.283** | 0.316** | 0.371** | 0.214** | −0.137 |
| F5 |    |    |    |    | 0.141** | −0.216** | 0.412** | 0.154** | 0.391** | 0.476** | 0.133* |
| F6 |    |    |    |    |    | 0.128* | 0.120* | −0.077 | −0.006 | 0.117 | 0.374** |
| F7 |    |    |    |    |    |    | −0.261** | −0.457** | −0.535** | −0.098 | 0.198** |
| F8 |    |    |    |    |    |    |    | 0.065 | 0.390** | 0.336** | 0.346** |
| C1 |    |    |    |    |    |    |    |    | 0.483** | 0.075 | −0.360** |
| C2 |    |    |    |    |    |    |    |    |    | 0.343** | −0.006 |
| C3 |    |    |    |    |    |    |    |    |    |    | −0.069 |

Kendall's tau coefficients, significance level (p-value): ** 1%; * 5%.

and total revenues (C2). These correlations can be explained by the fact that information on large universities with ample financial resources and competitive education programs is widely available on the Internet, so they are ranked higher in Webometrics.

The average annual tuition for international students (F5) correlates positively with the average USE passing score (F8) and university location (C3). That is to say, education is more expensive in highly selective universities located in Moscow and St. Petersburg.

Therefore, there are some correlations among the independent variables but no explicit multicollinearity (strong linear relationships among independent variables). Correlation coefficients never exceed 0.5, which means that the correlations are weak, very weak or statistically insignificant.

## 5. Regression Analysis Results

Analysis involved four regression models with different dependent variables (R1–R4) and a common set of independent (F1–F8) and control (C1–C4) variables. Table 6 outlines the model specifications with the dependent variables for the academic year 2015/16 and the independent variables for the academic year 2014/15.

All the regression models constructed are statistically significant, and their quality criteria are acceptable for further interpretation of the results. Let us now dwell into the relationships between each of the internal factors and different indicators of university export performance, one by one.

## Table 6. **Regression Analysis Results (models 1–4)**

| Independent Variables | Dependent Variables | | | |
|---|---|---|---|---|
| | MODEL 1<br>R1: Number of IS Enrolled in Higher Education Programs | MODEL 2<br>R2: Percentage of IS in Total Enrollment | MODEL 3<br>R3: Revenue from IS Tuition | MODEL 4<br>R4: Percentage of Revenue from IS Tuition in Total Educational Revenues |
| Constant | 541,9<br>(516,6) | 2.3<br>(5.1) | 86,118.9<br>(57980.1) | 0.12<br>(4.5) |
| Internal factors: variable coefficients, their significance and standard error (in parentheses) | | | | |
| F1: Diversification of education programs (Herfindahl-Hirschman index) | **608.6**<br>**(239.6)\*\*** | **7.2**<br>**(2.4)\*\*\*** | 15,940.8<br>(26886.6) | 1.8<br>(2.1) |
| F2: Number of dual degree programs | **28.9**<br>**(3.5)\*\*\*** | **0.2**<br>**(0.03)\*\*\*** | **3,398.9**<br>**(392.2)\*\*\*** | **0.06**<br>**(0.03)\*\*** |
| F3: Engagement in TNE programs | 107.3<br>(145.5) | 0.9<br>(1.4) | 9,013.4<br>(16326.9) | 0.5<br>(1.3) |
| F4: Number of international university partnerships | **117.2**<br>**(63.2)\*** | 0.8<br>(0.6) | **15,805.5**<br>**(7096.4)\*\*** | 0.7<br>(0.6) |
| F5: Average annual tuition for international students | 0.001<br>(0.001) | 0.0001<br>(0.0001) | **0.5**<br>**(0.2)\*\*\*** | **0.0001**<br>**(0.0001)\*\*\*** |
| F6: Percentage of fee-paying international students | −1.4<br>(1.5) | −0.009<br>(0.02) | **630.9**<br>**(170.9)\*\*\*** | **0.06**<br>**(0.01)\*\*\*** |
| F7: Position in the Webometrics Ranking | 0.005<br>(0.009) | **0.0001**<br>**(0.0001)\*\*\*** | 0.5<br>(1.04) | 0.0001<br>(0.0001) |
| F8: Average USE score | −11.3<br>(7.9) | 0.03<br>(0.08) | **−2,552.3**<br>**(896.1)\*\*\*** | −0.06<br>(0.07) |
| Control variables: variable coefficients, their significance and standard error (in parentheses) | | | | |
| C1: Total enrollment | **0.05**<br>**(0.009)\*\*\*** | **−0.0001**<br>**(0.0001)\*\*** | −0.5<br>(0.97) | −0.0001<br>(0.0001) |
| C2: Total revenues | 0.0001<br>(0.0001) | 0.0001<br>(0.0001) | 0.002<br>(0.002) | −0.0001<br>(0.0001) |
| C3: University location (1 for Moscow or St. Petersburg, 0 for other) | −35.3<br>(110.4) | −1.1<br>(1.1) | **−28,068.2**<br>**(12,390.5)\*\*** | **−3.2**<br>**(0.9)\*\*\*** |
| C4: University specialization (1 for medical, 0 for other) | **364.9**<br>**(156.4)\*\*** | **3.7**<br>**(1.5)\*\*** | **29,428.6**<br>**(17,550.6)\*** | 0.2<br>(1.4) |
| Criteria of model quality | | | | |
| R2 (adjusted R2) | 0.565<br>(0.533) | 0.420<br>(0.377) | 0.515<br>(0.478) | 0.260<br>(0.205) |
| F (p-value) | 17.3<br>(0.000) | 9.7<br>(0.000) | 14.1<br>(0.000) | 4.7<br>(0.000) |

**Bold** type indicates statistically significant regression coefficients. Significance level (p-value): \*\*\* 1%; \*\* 5%; \* 10%.

1. The universities offering a variety of education programs to international students at different levels of education (those with low Herfindahl-Hirschman indices) demonstrate lower numbers and proportions of international students. Reducing the diversification of education programs by 10 percent is estimated to bring on average 61 additional international students and increase their proportion in total enrollment by 0.7 percent. The hypothesis that the factor analyzed is related to the indicators of university export profitability is thus not confirmed.

2. The number of dual degree programs offered by universities is positively related to all four export performance indicators. According to estimates, adding another dual degree program will increase the number of international students on average by 29, their proportion in total enrollment by 0.2 percent, revenue from education exports by 3.3 mln rubles, and its percentage in total educational revenues of the university by 0.06 percent.

3. TNE programs are administered by 13 universities in the sample, including those with low export performance. Quantitative analysis is not enough to assess the relationship between engagement in TNE programs and university export performance.

4. The number of international university partnerships correlates positively with the absolute indicators of export performance, i. e. international student enrollment and revenue from IS tuition. Joining a global university network will increase the number of international students on average by 117 and revenue from education exports by 15.8 mln rubles.

5. Average annual tuition for international students determines universities' export pricing policies. This indicator is positively correlated with revenue from education exports and its percentage in total educational revenues. Increasing the size of tuition per international student by 1,000 rubles is estimated to increase a university's annual foreign source revenue on average by 500,000 rubles and its proportion in total educational revenues by 0.1 percent. Data analysis did not reveal any correlation between tuition and the number or proportion of international students. It can be assumed that a small increase in the size of tuition will not have a significant effect on the flow of international students.

6. The more commercialized the education for international students is, the greater the university revenue from export and its proportion in total educational revenues. A one-percent increase in the level of commercialization will increase annual revenue from education exports on average by 631,000 rubles and its proportion in total educational revenues by 0.06 percent. The hypothesis about this factor being related to the number and percentage of international students is not confirmed. It can be assumed that an increase in the number of government-sponsored places for international students will not influence their enrollment greatly.

7. Analysis did not reveal any significant correlation between the position in the Webometrics Ranking and the export performance indicators. The regression coefficient is significant yet very low in the model specification with the dependent variable *Percentage of international students in total enrollment* being insignificant in the rest of the specifications. Therefore, the hypothesis that the web presence of a university is related to how successfully it attracts international students is not confirmed.

8. High university selectivity correlates negatively with revenue from education exports. An increase in the average passing USE score by one point results in an average reduction by 2.5 mln rubles in revenue from foreign sources. This factor is not related to the other indicators of university export performance. The implication is that high university selectivity may become a barrier for fee-paying international students but will not affect total international student enrollment significantly.

Analysis of correlations between the control and dependent variables shows that total enrollment correlates positively with the number of international students and negatively with their proportion. That is, large universities have more international students, but the proportion of such students in total enrollment is lower than in small and medium-sized universities. According to the findings, an increase in total enrollment by 1,000 students will result in the number of international students growing on average by 50 and their percentage in total enrollment reducing by 0.1 percent. The control variable *Total university revenues* does not correlate with university export performance.

Moscow and St. Petersburg universities demonstrate, on average, lower export profitability than universities in other cities, while there are no statistically significant differences in international student enrollment between them. Medical universities perform better in three of the four export performance indicators, so medical degrees are obviously more popular among international entrants.

Standardized regression coefficients were calculated in order to identify key factors of university export performance and compare the strength of relationship between each factor and the export performance indicators[20]. Analysis reveals that the number and proportion of international students correlate the most with two factors: the number of dual degree programs and the diversification of education programs for international students. Revenue from education exports and its proportion in total educational revenues is related the most with average annual tuition for international students and the level of commercialization of education for them.

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[20] When calculating the standardized regression coefficients, values of all the variables analyzed are transformed into z-scores.

Table 7. **Specifications of Models 1.1–1.4.**
Dependent Variable: International Student Enrollment

| Independent Variables (Academic Year 2012/13) | Dependent Variable | | | |
|---|---|---|---|---|
| | MODEL 1.1. Academic Year 2013/14 (One-Year Lag) | MODEL 1.2. Academic Year 2014/15 (Two-Year Lag) | MODEL 1.3. Academic Year 2013/14 (Control Subsample Included) | MODEL 1.4. Academic Year 2014/15 (Control Subsample Included) |
| Constant | 201.9 (464.4) | 22.7 (489.2) | 206.4 (396.1) | 12.3 (415.6) |
| Internal factors: coefficients, their significance and standard error (in parentheses) | | | | |
| F1 | 259.1 (279.02) | 181.2 (293.9) | 3.6 (225.7) | −70.7 (236.8) |
| F2 | **32.7 (3.5)*** | **30.1 (3.7)*** | **31.8 (3.3)*** | **29.3 (3.5)*** |
| F3 | **282.9 (138.7)** | 215.2 (146.1) | **276.6 (126.3)** | 209.9 (132.5) |
| F4 | 58.9 (61.1) | 69.6 (64.3) | 63.2 (58.1) | 74.6 (60.9) |
| F5 | **−0.002(0.001)*** | **−0.001 (0.001)** | **−0.002 (0.0001)*** | **0.001 (0.001)*** |
| F6 | −0.018 (0.329) | −0.13 (0.35) | −0.06 (0.3) | −0.17 (0.33) |
| F7 | 0.01 (0.009) | 0.009 (0.009) | 0.008 (0.008) | 0.007 (0.008) |
| F8 | −3.2 (7.2) | 1.4 (7.6) | −1.9 (6.03) | 2.8 (6.3) |
| Control variables: coefficients, their significance and standard error (in parentheses) | | | | |
| C1 | **0.034 (0.008)*** | **0.04 (0.008)*** | **0.035 (0.007)*** | **0.04 (0.008)*** |
| C2 | −0.0001 (0.0001) | 0.0001(0.0001) | −0.0001 (0.0001) | 0.0001(0.0001) |
| C3 | 134.9 (89.9) | 15.7 (94.7) | **151.1 (81.4)*** | 54.4 (85.4) |
| C4 | **299.8 (143.5)** | **253.3 (151.1)*** | **407.2 (122.1)*** | **368.4 (128.1)*** |
| Criteria of model quality | | | | |
| $R^2$ (adjusted $R^2$) | 0.520 (0.484) | 0.500 (0.463) | 0.538 (0.508) | 0.531 (0.501) |
| $F$ ($p$-value) | 14.4 (0.000) | 13.4 (0.000) | 18.2 (0.000) | 17.8 (0.000) |

**Bold** type indicates statistically significant regression coefficients.
Significance level (p-value): *** 1%; ** 5%; * 10%.


In order to test regression coefficient stability, alternative models were estimated with the internal factors for the academic year 2012/13 and time lags of one and two years, i. e. the export performance indicators were taken for the academic years 2013/14 and 2014/15.

Additional models based on an extended sample were calculated to ensure that there was no bias in estimates of the regression coefficients. The extended sample included a control group of 28 randomly selected universities, which had fewer than 300 international students enrolled in the academic year 2015/16. Tables 7–10 display the estimates for the additional models.

Table 8. **Specifications of Models 2.1–2.4.**
Dependent Variable: Percentage of International Students in Total Enrollment

| Independent Variables (Academic Year 2012/13) | Dependent Variable | | | |
|---|---|---|---|---|
| | MODEL 2.1. Academic Year 2013/14 (One-Year Lag) | MODEL 2.2. Academic Year 2014/15 (Two-Year Lag) | MODEL 2.3. Academic Year 2013/14 (Control Subsample Included) | MODEL 2.4. Academic Year 2014/15 (Control Subsample Included) |
| Constant | 8.8 (5.9) | 5.5 (5.6) | 8.1 (5.3) | 4.9 (5.02) |
| Internal factors: coefficients, their significance and standard error (in parentheses) | | | | |
| F1 | 4.3 (3.6) | 3.7 (3.3) | 0.3 (3.01) | −0.8 (2.9) |
| F2 | **0.17 (0.04)\*\*\*** | **0.15 (0.04)\*\*\*** | **0.16 (0.04)\*\*\*** | **0.14 (0.04)\*\*\*** |
| F3 | 1.4 (1.8) | 0.8 (1.7) | 1.3 (1.7) | 0.7 (1.6) |
| F4 | 0.5 (0.8) | 0.4 (0.7) | 0.5 (0.8) | 0.4 (0.7) |
| F5 | −0.0001(0.0001) | −0.0001 (0.0001) | −0.0001(0.0001) | −0.0001 (0.0001) |
| F6 | −0.002 (0.004) | −0.002 (0.004) | −0.003 (0.004) | −0.002 (0.004) |
| F7 | **0.0001(0.0001)\*\*** | **0.0001(0.0001)\*\*** | 0.0001(0.0001) | **0.0001(0.0001)\*** |
| F8 | −0.08(0.09) | 0.006 (0.09) | −0.04 (0.08) | 0.04 (0.08) |
| Control variables: coefficients, their significance and standard error (in parentheses) | | | | |
| C1 | **−0.0001 (0.0001)\*** | **−0.0001 (0.0001)\*\*** | **−0.0001 (0.0001)\*** | **−0.0001 (0.0001)\*** |
| C2 | 0.0001 (0.0001) | 0.0001 (0.0001) | 0.0001 (0.0001) | 0.0001 (0.0001) |
| C3 | **2.4 (1.1)\*\*** | 0.8 (1.1) | **2.9 (1.1)\*\*\*** | 1.7 (1.03) |
| C4 | **4.1 (1.8)\*\*** | **3.3 (1.7)\*** | **5.9 (1.6)\*\*\*** | **5.4 (1.5)\*\*\*** |
| Criteria of model quality | | | | |
| $R^2$ (adjusted $R^2$) | 0.295 (0.242) | 0.289 (0.236) | 0.251 (0.204) | 0.248 (0.200) |
| $F$ ($p$-value) | 5.6 (0.000) | 5.4 (0.000) | 5.3 (0.000) | 5.2 (0.000) |

**Bold** type indicates statistically significant regression coefficients.
Significance level (p-value): \*\*\* 1%; \*\* 5%; \* 10%.

No significant differences are observed between regression co-efficients in models with different specifications; however, there are some deviations. In particular, the models of earlier periods feature no significant correlation between diversification of education programs, the number of international university partnerships and international student enrollment or between diversification of education programs and the percentage of international students. The models estimated

Table 9. **Specifications of Models 3.1–3.4. Dependent Variable: Educational Revenue from Foreign Sources**

| Independent Variables (Academic Year 2012/13) | Dependent Variable | | | |
|---|---|---|---|---|
| | MODEL 3.1. Academic Year 2013/14 (One-Year Lag) | MODEL 3.2. Academic Year 2014/15 (Two-Year Lag) | MODEL 3.3. Academic Year 2013/14 (Control Subsample Included) | MODEL 3.4. Academic Year 2014/15 (Control Subsample Included) |
| Constant | 3,140.2 (40,559) | 31,928.5 (55,845.1) | 2,644.8 (33,490.1) | 17,912.3 (46,169.6) |
| Internal factors: coefficients, their significance and standard error (in parentheses) | | | | |
| F1 | 22,266. 9 (24,366.6) | 32,050.3 (33,549.9) | 12,200.4 (19,079.8) | 13,810.7 (26,303.4) |
| F2 | **2,088.3 (303.8)\*\*\*** | **2,609.8 (418.3)\*\*\*** | **2,065.9 (278.9)\*\*\*** | **2,562.6 (384.5)\*\*\*** |
| F3 | 16,868.9 (12,110.9) | 16,014.6 (16,675.5) | 17,727.9 (10,674.8) | 13,924.1 (14,716.3) |
| F4 | 4,390.1 (5,332.03) | **12,621.1 (7,341.6)\*** | 4,627.2 (4,909.7) | **12,143.7 (6,768.6)\*** |
| F5 | 0.006 (0.05) | 0.004 (0.07) | 0.004 (0.04) | −0.003 (0.06) |
| F6 | 13.5 (28.7) | **70.9 (39.5)\*** | 11.5 (26.4) | **69.7 (36.4)\*** |
| F7 | −0.2 (0.8) | 0.5 (1.1) | −0.08 (0.7) | 0.4 (0.9) |
| F8 | −208.6 (627.1) | −90.3 (863.4) | −157.9 (510.6) | −549.3 (703.9) |
| Control variables: coefficients, their significance and standard error (in parentheses) | | | | |
| C1 | **1.2 (0.7)\*\*** | 1.01 (0.96) | **1.2 (0.6)\*** | 1.04 (0.86) |
| C2 | **−0.005 (0.02)\*\*** | −0.001 (0.003) | **−0.005 (0.02)\*\*\*** | −0.001 (0.002) |
| C3 | 12,871.7 (7,850.5) | −2,041.2 (10,809.2) | **12,657.3 (6,884.6)\*** | −912.9 (9,491.2) |
| C4 | **35,635.3 (12,527.9)\*\*\*** | **44,846.3 (17,249.5)\*\*** | **39,365.3 (10,324.1)\*\*\*** | **47,915.7 (14,232.8)\*\*\*** |
| Criteria of model quality | | | | |
| $R^2$ (adjusted $R^2$) | 0.324 (0.273) | 0.325 (0.274) | 0.335 (0.293) | 0.332 (0.287) |
| $F$ ($p$-value) | 6.3 (0.000) | 6.4 (0.000) | 7.9 (0.000) | 7.8 (0.000) |

**Bold** type indicates statistically significant regression coefficients.
Significance level (p-value): \*\*\* 1%; \*\* 5%; \* 10%.

for later periods demonstrate statistically significant correlations between the specified indicators.

Neither do the models of earlier periods show statistically significant correlations between average annual tuition, average passing USE score and revenue from education exports or between average annual tuition, commercialization of education for international students and the percentage of foreign source revenue in total educational revenues. However, such correlations are observed in the models of later periods.

Table 10. **Specifications of Models 4.1–4.4.**
Dependent Variable: Percentage of Foreign Source Revenue in Total Educational Revenues

| Independent Variables (Academic Year 2012/13) | Dependent Variable | | | |
|---|---|---|---|---|
| | MODEL 4.1. Academic Year 2013/14 (One-Year Lag) | MODEL 4.2. Academic Year 2014/15 (Two-Year Lag) | MODEL 4.3. Academic Year 2013/14 (Control Subsample Included) | MODEL 4.4. Academic Year 2014/15 (Control Subsample Included) |
| Constant | −2.01 (3.3) | −0.4 (4.4) | −1.9 (2.8) | −1.1 (3.6) |
| Internal factors: coefficients, their significance and standard error (in parentheses) | | | | |
| F1 | 1.9 (1.9) | 2.01 (2.6) | 0.6 (1.6) | 0.5 (2.1) |
| F2 | **0.05 (0.03)*** | **0.06 (0.03)*** | **0.05 (0.02)**** | **0.06 (0.03)*** |
| F3 | 0.7 (0.9) | 0.7 (1.3) | 1.1 (0.9) | 0.6 (1.2) |
| F4 | 0.4 (0.4) | 0.6 (0.6) | 0.4 (0.4) | 0.6 (0.5) |
| F5 | 0.0001 (0.0001) | 0.0001 (0.0001) | 0.0001 (0.0001) | −0.0001 (0.0001) |
| F6 | 0.002 (0.002) | 0.002 (0.003) | 0.002 (0.002) | 0.002 (0.003) |
| F7 | 0.0001 (0.0001) | 0.0001 (0.0001) | 0.0001 (0.0001) | 0.0001 (0.0001) |
| F8 | 0.04 (0.05) | 0.008 (0.07) | 0.04 (0.04) | 0.03 (0.06) |
| Control variables: coefficients, their significance and standard error (in parentheses) | | | | |
| C1 | 0.0001 (0.0001) | 0.0001 (0.0001) | 0.0001 (0.0001) | 0.0001 (0.0001) |
| C2 | **−0.0001 (0.0001)**** | −0.0001 (0.0001) | **−0.0001 (0.0001)**** | **−0.0001 (0.0001)*** |
| C3 | 0.2 (0.6) | −0.7 (0.8) | 0.2 (0.6) | −0.6 (0.8) |
| C4 | **1.7 (1.02)*** | **2.8 (1.3)**** | **2.3 (0.9)***** | **3.5 (1.1)***** |
| Criteria of model quality | | | | |
| $R^2$ (adjusted $R^2$) | 0.134 (0.069) | 0.140 (0.076) | 0.135 (0.080) | 0.136 (0.081) |
| $F$ ($p$-value) | 2.1 (0.02) | 2.2 (0.01) | 2.4 (0.006) | 2.5 (0.005) |

**Bold** type indicates statistically significant regression coefficients.
Significance level ($p$-value): *** 1%; ** 5%; * 10%.

Such deviations may indicate instability of these regression coefficients. However, quantitative indicators of universities' activities over a longer period of time should be analyzed to confirm this hypothesis, which currently does not seem possible as there is no publicly accessible data on the activities of Russian universities for earlier periods.

To ensure that there was no bias in the regression coefficients, additional models were estimated, which included a control group of 28 randomly sampled universities with low and very low export performance indicators. Analysis of regression coefficients in the alterna-

tive model specifications did not reveal any meaningful differences as compared to the base models; differences between the significant regression coefficients are minimal. It can be thus safely assumed that no meaningful bias is observed in the linear regression coefficients.

## 6. Conclusion and Implications

The study allowed for empirical assessment of relationships between the preselected internal factors and export performance of Russian universities. Analysis revealed statistically significant correlations between six of the eight factors and the export performance indicators.

The strongest correlation observed is the positive one between the number of dual degree programs and the indicators of university export performance. Dual degree programs are in high demand among international students. Engagement in such programs demonstrates that a university is able to build meaningful long-term partnerships with foreign universities and that the quality of its education is recognized globally. Universities offering international dual degree programs possess the necessary international marketing competencies that provide them with a competitive edge in the global education market, which has a positive effect on export performance overall.

The study confirmed a positive relationship between membership of international university networks and the absolute export performance indicators. A university normally should have achieved a specific degree of maturity in international education marketing to join an international university network and cooperate actively within that network to maintain the status of an effective partner. Such competencies contribute to education export performance in themselves.

A negative correlation was observed between diversification of education programs and export performance, which allows for concluding that education exports are more likely to be successful among universities that focus on a limited number of international education programs and avoid excessive diversification.

Annual tuition for international students correlates positively with university revenues, yet this factor is not related to the number or percentage of international students. Otherwise speaking, demand for higher education among international students is perfectly inelastic. This can be explained by the differences in higher education costs across countries: even the highest tuition payments in Russian universities are usually lower than those of most American and European universities. Besides, the recent ruble crash has made education in Russia financially attractive for students from a whole lot of countries. For this reason, differences in the size of tuition fees among Russian universities are not too significant for international entrants.

Analysis showed that Russian universities engage insufficiently in the development of transnational education programs and networking with overseas research and educational institutions, which makes

it difficult for them to succeed in many sectors of the global market of higher education.

The education export performance of Russian universities is greatly influenced by external factors. Therefore, positive results may only be achieved by using an integrated approach that implies both the active involvement of universities and governmental measures to attract international students and provide them with a supportive environment.

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## Modern Approaches to Teacher Performance Assessment
*An Overview of Foreign Publications*

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Abstract

The need to develop a national teacher growth system requires that the existing approaches to assessing the quality of teaching be analyzed. This article provides an overview of foreign publications devoted to the problem of teacher performance assessment. Two major approaches are described: assessing teacher performance through student achievement and formative assessment based on teacher observation and follow-up feedback. Foreign researchers believe that there is no reason to expect that student achievement will be in complete alignment with the size and quality of teacher effort, as too many factors beyond the teacher's control are in play. Some researchers suggest ways to increase the validity of using student attainment data in assessing teacher performance. Formative assessment of students is being gradually introduced into instruction processes, but formative assessment of teacher performance is only beginning to emerge in school practices. This article explores the methods and techniques of formative teacher assessment and presents the first findings on their opportunities and limitations. Most authors of the publications discussed here agree that the system of teacher performance assessment should be organized to foster the professional and personal development of teachers.

Keywords

school teachers, teacher assessment, formative assessment, feedback, professional growth.

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# Family-School Communication:
## The Key Features at the Current Stage

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**Abstract.** A number of foreign studies in family–school relationships have shown that effective parent–school communication is a crucial factor of parental school involvement, which, in its turn, has a positive impact on the whole schooling process. In Russia, there is little empirical data on the communication between parents and schools. The article describes the findings of an exploratory research that involved school administrators and parents of students at different levels of school education (elementary, middle and high school) in a megalopolis of the Central Federal District. Interviews with parents and school representatives as well as parent questionnaire results are used to describe the most popular ways in which parents communicate with schools, the main problems they encounter in such communication, and the degree of parental involvement in school life. Direct contact with teachers is found to be the most efficient channel of parent–school communication. Parents see the main communication problems in disagreement about instruction and education issues and in the disengagement of schools or individual teachers. These problems become more acute in middle and high school. On the whole, the existing level of parental involvement in school is measured as low in this study.

**Keywords:** school, family–school communication, parental involvement, educational policy.

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## 1. Family-school communication as a condition for parental involvement in the education process

The family-school communication has been actively studied in many countries in recent decades. Good communication between school and family is an important condition for high parental involvement in school life [Loudová, Havigerová, Haviger, 2015], which contributes to students' academic achievements, positively influences the behavior of children in the classroom—their motivation, self-esteem and the child's interest in education—and positively affects the process of teaching, contributing to better understanding between parents and

children [Epstein 1983; Grolnick, Kurowski, Gurland 1999; Hill, Taylor 2004; Hoover-Dempsey, Ice, Whitaker 2010; Pomerantz, Moorman, Litwack 2007; Wilder 2014]. The concept of "parental involvement in the educational process" includes various types of actions and behaviors of parents that are directly or indirectly related to the education of their children. Parents can demonstrate involvement at home: for example, listening to the child reading out loud or observing the child working on his or her homework. Parents can also demonstrate involvement in school [Antypkina, 2017] by visiting parent training sessions and parent-teacher meetings. Parental involvement in the education of their children is also defined as "communication of the family with the school and with their children to promote academic success" [Hill, Taylor 2004]. There is an emphasis on finding and developing effective communication channels and tools with families of students in educational institutions in many countries.

In the process of family-school communication, expectations about each other are not always clearly expressed [Glasgow, Whitney 2009; Kruger, Michalek 2011]. Communication can be a source of tension because of teachers being afraid of parental evaluation, their desire to maintain their professional autonomy, their personal lack of time and the lack of support from the principal [Grant, Ray 2013]. The stress experienced by the teacher in connection with parents can be caused by excessive and contradictory demands from parents and by the fact that teachers do not receive explicit nor sufficient recognition in return [van der Wolf, Everaert 2005]. The empowerment of parents exacerbates existing conflicts between teachers and parents, especially when parents are from privileged backgrounds, and their power as clients can affect the autonomy of teachers [Driscoll 1998]. During in-depth interviews, the teachers of Israeli urban primary schools admitted that although teachers were supportive of parental involvement, they confessed to feeling vulnerable under the increased influence of parents and their intrusion into their professional field [Addi-Raccah, Elyashiv-Arviv 2008]. Teachers try to keep well-educated parents at a distance in order to protect their professional autonomy [Baeck 2010].

In Russia, there is little empirical data on communication between parents and schools. Throughout the history of the development of Soviet and Russian education, there has been a transition from the school monopoly in issues regarding teaching and educating children to the importance of building productive communication with parents, and their involvement in the educational process [Mertsalova, Goshin 2015].

There is the principle of information openness of the school established in Art. 3 of the Federal Law No. 273-FZ "On Education in the Russian Federation". This postulates the need to ensure a two-sided information exchange between participants of the educational process. The reform of the educational system that has taken place in recent years necessitates the creation of new forms of communication

*Translated from Russian by A. Gurariy.*

between the school and society, based on the principles of equality, dialogue and joint decision-making [Chernobay 2015].

In conditions of information "closeness" the school does not have the opportunity to discuss any vital problems with parents [Valdman 2013]. The ways to ensure information openness are the following: public report of the principal, webpages of educational organizations and management structures, managing councils, boards of trustees, databases, electronic journals and diaries, information platforms of regional educational authorities, and school and municipality rankings. However, there is no information about the degree to which the above listed practices contribute to building effective communication with parents [Kuzminov 2013]. Parents are not indifferent to the relationship with the teachers and administration of the school their children study in: they note the lack of opportunities for discussing important issues with the school representatives and pay attention to the school's "closeness" [Mertsalova, Goshin 2015].

New trends in parenting have led to the desire of some parents to actively participate in the school life of their child [Polivanova 2015]. The trend is particularly evident among well-educated parents in schools located in large cities. At the same time, a significant number of teachers believe that the family remains uninvolved in the child rearing process [Sobkin, Adamchuk 2016]. This contradiction is due to the high differentiation among parents in terms of their involvement in the educational process; however there are no effective methods of identification and providing differentiated requests of different groups of parents in the current work practices of educational organizations [Mertsalova, Goshin 2015].

Under these circumstances, the urgent need is to find and to build new ways and channels of family-school communication, which will contribute to the growth of parental involvement in the educational process.

While conducting the study, the following was investigated:

- which communication channels with the school are most common among parents and which one appears to be the most effective;
- what difficulties parents of students experience in communication with school;
- how actively parents are involved in school life.

**2. Organization and research methods**

There were two stages while conducting the empirical study: the qualitative research stage (semi-structured interview with parents of students, teachers and representatives of the school administration, N = 13) and the quantitative research stage (interviews with parents of students, N = 3576). The interviews allowed us to outline the main aspects of the issue and check the list of questions in the questionnaire. The main family-school communication tools and channels, the

key difficulties in communication and parental satisfaction with this process, as well as the degree of their involvement in school life were determined with the help of the interviews. Data collection took place in several districts of one of the megacities of Central Russia.

**2.1. Organization and qualitative research methods**

Interviews were conducted with teachers and parents of students studying at different levels of general education (primary, secondary and upper secondary school) in 2016. The main topics discussed in the interviews were the following: issues discussed with school representatives; communication tools and channels; the parental attitude towards different communication tools; the difficulties parents and school are faced with while communicating with each other; parental satisfaction level regarding the communication process with the school and ways to evaluate it. There were 13 interviews in total with an average duration of 30–40 minutes.

**2.2. Organization and quantitative research methods**

The survey among parents was organized jointly with the school administration and took place in May-June 2017 in nine territorial educational complexes located in different parts of the city. The families of 2nd-10th grade students took part. The continuous nature of the survey allowed for providing an online or a printed questionnaire to family members of each student. Any member of the child's family could take part in the survey. In most cases, this was the mother of the child (89.7%), in 7.4% of cases—the father of the child, 1.8%—the grandmother of the child, the remaining cases—someone else from the family.

**3. Research results**
**3.1. Interviews with parents (N=7)**

While conducting the interviews with parents/representatives we were faced with two types of behavior. It was hard for one section of the parents to answer the questions and to provide full information despite their interest in the conversation. It could be noted that this was their first time thinking about the family-school communication process and the difficulties they have with it.

Another portion of the parents participated in conversation actively because they were interested in the topic in general. Most of the interview questions about family-school communication addressed the issues the parents had problems with.

Parents usually contact the school regarding academic issues (academic success, homework etc.); organizational issues (medical certificates, documents, parent-teacher meetings, charitable activities etc.); additional education (clubs and trainings); their child's behavior and his or her communication with other children. Both parents and school may initiate the communication process. The three possible family-school communication models were singled out.

1. The school initiates the communication process. Parents show a passive attitude only responding to requests from an education-

al organization. Such types of answers are typical for parents of secondary and upper secondary school students. One mother of a 5th grade student said: "It is the school which initiates the communication. They call me when there is some trouble caused by my child".

2. Both parents and school initiate the communication process.
3. The parents initiate the communication process. This is mostly typical for primary school, probably due to the bigger parental involvement of those students who attend it. Parents complain about tension in communication with head teachers and also point to insufficient levels of communication with them: "The teacher welcomed students in the mornings at the beginning of the school year. While she was at the hall it was an opportunity to ask some questions. I tried to clarify the meaning of the notes she makes in the notebook. What do they mean? The assessment system is unclear. The teacher refused to explain anything, because it is the child who must do it…Then we couldn't meet her either in the morning or in the afternoon. Some parents tried to call her, to find out something, but she provided limited information" (mother of one 1st grade student).

The main family-school communication channels are the following: direct communication with the teacher; telephone conversations, SMS-messages, e-mail, messenger; records in the electronic diary; printed information sheets; receiving information through the parent committee; parent-teacher meetings. Parents prefer direct communication with the teacher—personal contact, contact by phone, or via e-mail. These are the channels providing opportunity for resolving the issues important for parents, because parent committees and parent-teacher meetings are dedicated to general issues. However, channels of direct communication are not always available, especially when a teacher is not open to communication: "teacher doesn't give their telephone number"; "teacher says, it is expensive to use SMS"; "teacher cannot connect Viber"; "teacher doesn't write e-mails"; "I want to contact PA-teacher, but I don't know how to do it". The electronic diary is not used by each parent: "I forgot my password, use my child's account to check the academic results"; "I do not check electronic diary, my child does it by himself". What was emphasized by parents is the fact that the electronic diary is a one-way communication channel: it is the information published by the school regarding notes, schedule, charitable actions, announcements etc.

The mobile applications are used the most and considered by the parents to be the most effective communication channel. Mobile apps are used to create chats to provide communication between parents and head teachers. There are lots of questions to discuss: learning activities, extracurricular activities, events organization etc. However, parents pointed out that there are teachers who don't use mobile apps.

School websites as communication channels are hardly used by parents. They just use them to gather information about the school they want their child to be enrolled in. As a result, an educational organization website doesn't affect the family-school communication process, whereas it could be one of the sources to increase the level of information openness. Information presented on websites is seen to be too general, which is why parents are not interested in it.

Most often parents communicate with the head teacher, this mostly takes place in primary school. The relationship with the head teacher determines the whole nature of communication with the school at this educational level. Thus, the mother of a 5th grade student, noting the difference between primary school and the next educational levels, says: "The difference is that in primary school everything is subordinated to the head teacher, he or she is ruling there, like "the king of the mountain". In secondary school there are many teachers and many opinions, this greatly facilitates the process of interaction". The difficulties experienced by parents in communicating with the school, which are presented below, are largely related to communication problems with the head teacher.

Parent-teacher meetings are perceived by many parents as a formality. The issues discussed do not have any practical significance for them; meetings take place at an inconvenient time: "I perceive it as a formality. I attend to check in. If I need to know something about my child, I go directly to the teacher at another time" (mother of a 5th grade student). The preferences regarding the form of the meetings are different: someone prefers to discuss general issues first, and when the meeting is over to contact the teacher directly regarding their child. Others, on the contrary, would like to hear more specifics about their child, they are not satisfied with the general phrases.

Concerning the difficulties parents face in communicating with the school, the most emotional issue is the lack of contact, a tense relationship or conflict with the teacher (usually with the head teacher): "the communication vacuum between the teacher and the parent", "there is no contact with head teacher". This type of feedback comes mostly from parents of primary school students. Some parents emphasize that a bad relationship with the teacher during primary school is the reason for their limited contact with school during the next educational levels. The reasons parents see problems are as follows:

• Teacher's unwillingness to communicate: «doesn't want to interact», «teacher's readiness to communicate is 2–3 points out of 10»;
• Teacher doesn't pay attention to the child's distinctive features: «At first we had a very strict teacher. She set high standards and did not take into account personal characteristics. Two months later, the child began to have hysterics and sleep problems. We had to change the class" (a mother of a 5th grade student);

- Teacher requires parents to be involved in homework and to control the academic achievements, and parents do not want or are not ready to be involved in the learning process. There is also another situation: parents want to take part in their child's educational process, but teachers do not provide the required communication level.

Concerning the difficulties in communication with the school, parents also note that their opinion is not important and there is no qualified help from the school psychologist. The family-school communication process is also difficult because of the school security (it is impossible to go through the checkpoint without the passport). This system makes the school even more "closed" from the parents' points of view.

**3.2. Interviews with teachers and school administration (N=6)**

Almost all the surveyed principals and teachers emphasized that the organization of family-school communication depends on the school local conditions and the contingent of parents. These are the most common communication forms and channels with families:

- direct head teacher-parents communication;
- the activities of the managing councils;
- parent-teacher meetings. There are different forms of organization depending on the school.
- The most efficient forms of communication are the following:
- school meeting as an opportunity to directly contact different teachers besides discussing general issues;
- question and answer section on the school website;
- electronic school journal and electronic school diary;
- school internal information and education environment allowing staff, students and parents to unite school in a common interactive space;
- different school events involving children and their parents in joint activities.

According to teachers and principals, parents show an interest in their children's educational activities mostly in primary school. After the 4th grade, parents are less interested in their children's academic achievements. Parents often come to principals to discuss the education conditions: food, security, material and technical equipment of the class, etc. A popular issue is also the relationship between classmates, which is often the reason for tension between parents themselves, and which may lead to a child's transfer to a new class.

School representatives emphasize that communication with parents does not cause any difficulties, if it is regular. There are problems in those schools, which do not comply with the rule: "The lack of communication with the school and teachers is the parents' problem"; "Schools seem to be open, but it is not common to communicate with

parents. There is no direct contact, and modern parents are not used to online communication, they need direct contact"; "It was necessary to build a certain communication model at different administration levels"; "Problems are connected with the format of local communication, there is expansions of the conflict rather than its solving. Much depends on behavior and reaction of the teacher, who directly interacts with the parents".

The school representatives see the causes of emerging problems in communication with families in the parental negative attitudes towards the school and its teachers formed by the media, as well as in the low customer orientation of the school administration, teachers, and their unwillingness to communicate.

Some educational organizations conduct special surveys in order to evaluate the parental satisfaction with the school communication process. Principals emphasize that the criterion of parental satisfaction is the reduction in the number of constructive complaints from parents.

Preliminary interviews made it possible to find out that the head teacher's direct work with parents constitutes the basis of family-school communication. The main problem in communicating with the school, as seen by parents, is the lack of communication with teachers. School representatives realize that most of the difficulties in interacting with parents are due to the format of their communication with the head teacher. When the communication is regular, many problems in communication are avoided.

## 3.3. The questionnaire results

The analysis of the questionnaire results indicates that, in general, parents are satisfied with the school communication process:

- it is easy for them to contact the teachers of their children (85% of those who answered the question);
- teachers are attentive to their opinion (61%);
- parents discuss together with teachers their child's relationships with classmates (55%);
- teachers pay attention to a child's distinctive features during educational process, for instance his or her personal pace of work etc. (49%) and to child's mental condition and his or her personality during educational process (53%).

Parents and legal representatives of the child discuss with teachers their child's academic failures (69%, N = 3084), which means that they trust teachers and believe that they better understand the specifics of the teaching process, which directly affects their children (Figure 1). In this case, parents believe that teachers respect their views.

The correlation analysis of variables represented family-school communication level and parental involvement-at-home intensity identified the following patterns (Table 1).

Fig. 1. **Agreement with the statement «Parents discuss together with teachers the academic achievements and failures of the child»**



9%—Strongly disagree

3%—Disagree

9%—Neither agree nor disagree

10%—Agree

69%—Strongly agree
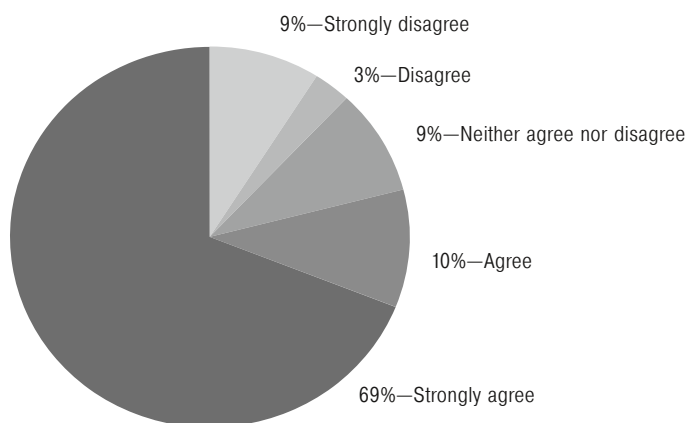
- the older the child, the less often parents think that teachers are attentive to their opinion;
- the older the child, the less often parents discuss with teachers the peculiarities of the child's relationship with his classmates;
- the more time family members jointly spend with the child during the workday, the more they discuss with teachers the peculiarities of the child's relationship with his classmates;
- the more free time the child has on his typical workday, the more likely his parents feel that their opinion is significant for teachers;
- the older the child, the less the child's academic achievements or failures are discussed with his teachers;
- the older the child, the less often the parents indicate that teachers take into account the child's mental condition and his or her personality during the educational process.

Parents of boys contact teachers more often than parents of girls regarding the issues of their child's school life (Table 2).

Family involvement in the child's education is measured by the number of visits to the various family-school communication platforms: class/group parental meetings, school meetings, parent conferences, as well as assistance on a voluntary basis (events management, excursions, interior and exterior renovation of the school etc.). Class/group parental meetings take place every school quarter; they are the most traditional way of involving parents in school life. School meetings (parent conferences) are held twice a year; not all parents take part in them, just the members of the class committees. At such

Table 1. **Correlation analysis of variables representing family-school communication level and parental involvement-at-home intensity**

| | What grade is the child in? | How much free time does the child have during a typical workday in your opinion? | How much time does the child spend alone at home during the workday (approx.)? | How much time do family members jointly spend with the child during the workday (approx.)? |
|---|---|---|---|---|
| It is difficult for me to contact my child's teachers | | | | −0,063** |
| My child's teachers are attentive to my opinion | −0,127** | | −0,063** | 0,043* |
| We discuss together with teachers my child's relationships with classmates | −0,168** | | −0,054** | 0,069** |
| Parental opinion is not important for teachers | 0,057** | −0,069** | | |
| We discuss together with teachers my child's academic success or failure | −0,117** | | −0,079** | 0,071** |
| Teachers pay attention to my child's mental condition and his or her personality during the educational process | −0,166** | 0,071** | −0,078** | 0,075** |
| Teachers pay attention to my child's distinctive features during the educational process (personal pace of work etc.) | −0,159** | 0,077** | −0,074** | 0,078** |
| Please rate the frequency of your class meetings attendance | | −0,066** | −0,050** | 0,051** |
| Please rate the frequency of your school meetings/ parent conferences attendance | | | | 0,056** |
| Please rate the frequency of your assistance on a voluntary basis in support of the school (events management, excursions, interior and exterior renovation of the school etc.) | −0,219** | −0,044* | −0,117** | 0,120** |

Significance level of correlation is ** 0,01; * 0,05 (bilateral).

meetings, general school issues are discussed, for example, parents are informed about innovations in the educational system. According to the results of the survey, the level of parental involvement in school life is not high (Table 3). As our study reveals, 52% of respondents have not provided assistance on a voluntary basis in support of the school. Although such forms as joint child-parent preparation for various school events contributes to strengthening family ties: parents are more aware of the interests and experiences of their children, and about what is happening in the school [Child Trends Data Bank, 2013].

Table 2. **Parent/another family member-teacher communication frequency regarding the issues of their child's school life depending on the child's gender** (response rate,%)

|  | Female | Male |
|---|---|---|
| 1–2 times a week | 15 | 18 |
| 1–2 times a month | 20 | 26 |
| 1–2 times a school quarter | 26 | 26 |
| 1–2 times a semester | 16 | 14 |
| Less often than once a semester | 9 | 6 |
| Not sure | 14 | 10 |
| Total (person) | 1715 | 1630 |

Table 3. **Frequency of different family-school communication platforms attended by parents since the beginning of the school year**

|  | Attendance of class meetings | Attendance of school meetings/ parent conferences | Assistance on a voluntary basis in support of the school (events management, excursions, interior and exterior renovation of the school etc.) |
|---|---|---|---|
| Total (person) | 3376 | 3130 | 3031 |
| I haven't participated / I haven't attended (response rate,%) | 4 | 19 | 52 |
| 1–2 times (response rate,%) | 38 | 51 | 33 |
| 3–4 times or more (response rate,%) | 58 | 30 | 15 |

Such factors as family structure, car availability, the reading of foreign literature by the parents of the child, and the child having a separate room are not statistically related to the family-school communication frequency[1]. At the same time, a university degree, the gender of the child, and the socioeconomic status of the family are related to the communication frequency with the school and the parental involvement in the school life. The more family members with university

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[1] Based on chi-squared test for contingency tables. Significance level of chi-squared criteria is > 0,05.

Table 4. **Parent-teacher communication frequency regarding the issues of their child's school life depending on the child's age** (%)

|  | Elementary school (1st-4th grades) | Middle school (5th –7th grades) | High school (8th –10th grades) | Total |
|---|---|---|---|---|
| 1–2 times a week | 27 | 12 | 8 | 16 |
| 1–2 times a month | 29 | 22 | 17 | 23 |
| 1–2 times a school quarter | 20 | 28 | 30 | 26 |
| 1–2 times a semester | 10 | 15 | 21 | 15 |
| Less often than once a semester | 4 | 9 | 10 | 8 |
| Not sure | 10 | 14 | 14 | 12 |
| Total | 100 | 100 | 100 | 100 |

degree, the more often the family provides assistance on a voluntary basis in support of the school.

There is a strong connection between the variables that reflect parental involvement-at- school, and the variables that depict parental involvement-at-home (the amount of time on a weekday that family members jointly spend with the child and the amount of time the child is without adult control): the older the child, the more time he or she spends without an adult at home and the less often the parents provide assistance on a voluntary basis in support of the school; the more time the parents spend with the child in joint activities on a weekday at home, the more often they provide assistance on a voluntary basis in support of the school. If the family is involved in the child's life at home, they will be also involved in school life.

As the child grows up, the family gradually "leaves" the school: less contacts with teachers, less involvement in school events, most parents of upper secondary school students have never provided voluntary support. In primary school there are 27% of parents or other family members, who communicate once or twice a week with someone from the school, most often with the head teacher, but in upper secondary school (8th–10th grades) there are only 8%, while in the secondary school there are 12%. Only 14% of the parents of primary school students answered that they communicate with teachers less often than once in six months or once or twice during the semester, whereas among groups of parents of 5th-7th grade-students and 8th-10th-grade-students these figures are 25% and 30%, respectively (Table 4).

The frequency of communication with the school is influenced by the university degree of parents: parents without a higher education often choose the answers that indicate a rare communication with the

Fig. 2. **Family-school communication and parental involvement-at-school intensity depending on students' age**
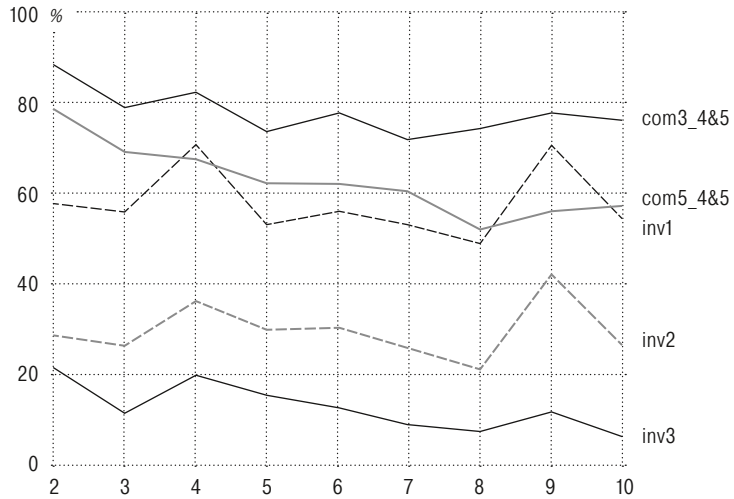


com3_4&5  We discuss together with teachers my child's relationships with classmates (rate the statement on a scale of 1 to 5)

com5_4&5  We discuss together with teachers my child's academic success or failure (rate the statement on a scale of 1 to 5)

inv1  Please rate the frequency of your class meetings attendance (1  didn't take part, 2  one-two times, 3  three-four times and more)

inv2  Please rate the frequency of your school meetings/ parent conferences attendance (1  didn't take part, 2  one-two times, 3  three-four times and more)

inv3  Please rate the frequency of your assistance on a voluntary basis in support of the school (events management, excursions, interior and exterior renovation of the school etc.) (1  didn't take part, 2  one-two times, 3  three-four times and more)

*Note:* "Response rate 4 and 5" and "Response rate 3" indicate the number of respondents who chose the response options that reflect the most agreement with the allegation.

school, for example, "less often than once in six months", parents with higher education respond more often that they communicate with the school once or twice a week[2].

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[2]  "More often" means the existence of a positive local interconnection, that is, the probability of finding the collectively combination of features is statistically significantly higher than in the condition of their independence; "Less often" means the existence of a negative local interconnection, that is, the probability of finding the collectively combination of features is statistically significantly lower than in the condition of their independence. It is determined based on the value of the adjusted balance; the interconnection is significant at 95% with the remaining value of $> |1,65|$.

Figure 2 shows the dynamics of involvement of students' parents in school life and family-school communication, namely, the degree of parental satisfaction with communication with the school.

Indicators of involvement in the education of children, as well as communication with the school, are highest among parents of 2nd grade students, and then these indicators begin to decline. Peaks of parental school involvement in the process of education are due to the transitional stages in the education of their children: this is the 4th class, i. e. the end of primary school and the transition to secondary school, and the 9th grade because of the passing of the General State Examinations (OGE), the choice between leaving school and continuing schooling. At the same time, communication with the school, namely, the parental satisfaction with it, has been steadily declining since the 2nd grade.

**4. Conclusions**     The most common and effective communication channels with the school, as seen by parents, are direct contact with the teacher and communication through a phone call or e-mail. The other communication channels (a school diary, an electronic school journal, a school website, class and school meetings) are more suitable for sending and receiving formal information. The openness of the school, as seen by parents, is first and foremost the willingness of the teacher to communicate. Thus, the many forms of openness and communication channels provided by the school are less attractive to parents than traditional face-to-face conversation. This conversation is necessary for parents first of all if there is a problem or difficulty; in such a situation the initiative comes from the parents as they are looking for the fastest and most traditional way to establish contact, which is usually a phone call.

In the process of family-school communication there are difficulties due to the clash of opinions and positions of parents and teachers. If earlier it was the school, which was an expert on all issues related to education and the child rearing process, today the level of education of parents is growing, they are familiar with the literature on education, and modern parents have the opportunity to find a reference group (model) in matters regarding rearing and the education of their children using the Internet. Parental expectations for the educational organization are formed based on received information, and they note that the school does not always take into account the child's personality.

Parents believe that teachers only pay attention to a child's distinctive features during the educational process in primary school. It can be assumed that there are several factors to form this point of view. First, the family itself is much more attentive to the child in primary school. Secondly, the primary school period is a time of much higher parental involvement in the school life, and the academic suc-

cess of primary school students is traditionally higher. With the child's transition to secondary school, parental involvement in the education of their children declines. Also the student's academic achievements are getting worse and there are problems due to the physical changes in the child. These objective difficulties of education are "naturally" connected with the school. This is the important moment for the school and the family not to stop the communication process, in order to find and eliminate the child's problems.

Communication barriers include the unwillingness of some teachers to communicate, as well as the fact that the school is not always attentive to parental opinion. From our perspective, the barriers described by the parents are psychological. In part, they can be explained by the negative attitudes of parents towards the school and a lack of confidence in it caused also by the media. Communication with the school, according to parents, is complicated because of the school security.

The indicators of parental involvement in the educational process, obtained in our study, turned out to be rather low. The low interest of parents is evidenced by the low attendance of parent-teacher meetings and various events organized by the school. Parents are not always satisfied with the way the school organizes and conducts parent-teacher meetings, conferences, holidays, excursions, etc. Using traditional forms of communication with families, the school needs to find out the range of issues that really concern parents, and to seek the most appropriate forms of conducting parent-teacher meetings, conferences, holidays and school competitions. There is a need to take into account the great variability in the preferences of parents: they are no longer satisfied with the general approach of the school regarding communication with children and their families.

The answers gathered while conducting the interviews and questionnaire were very contradictory. This means that the organization of communication requires additional efforts on the part of educational organizations. The parental demand of school is increasing. Such a traditional communication platform as the parent-teacher meeting is no longer a suitable method for parental involvement in the educational process in secondary and upper secondary schools.

Therefore, there is a challenging issue for school to maintain family involvement in the education of children during secondary and upper secondary school, and to find communication channels that will increase the level of family involvement in the school life of their children. This is a new issue for the school, in fact this is a question not only about new communication channels but also about educating parents on the specifics of modern school education.

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# Accessibility of Preschool Education

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**Abstract.** The article presents the latest changes and modern mechanisms in providing accessibility of pre-school education that relate to the tasks in the formation of norms and values of early childhood development. It explores the issues related to developing private entrepreneurship in the field of child care and education, and the regulation of legislative changes aimed at increasing competition between private and municipal kindergartens. It assesses parents' basic demands for modern accessibility mechanisms when electronic services for admission to the pre-school institution are introduced; it analyses various aspects of increasing pre-school education accessibility with regard to the selection of a kindergarten, the regime of day-care programs, the number of children per group, and the work of the day-care assistants. Special attention is paid to comparing public (municipal) pre-school educational institutions and private kindergartens in order to evaluate the different opportunities which enable parents to have a free choice of pre-schools institutions. The article describes the vectors in the development of pre-school education accessibility, and in levelling the starting opportunities for successful educational strategies.
**Keywords.** pre-school education, child care, accessibility, accessibility mechanisms, private kindergartens, competition, choice of kindergarten, electronic queueing solutions.

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Under the current education system, preschool educational institutions are being granted more and more freedom in choosing the content, methods, and techniques of the education they provide. It boosts the diversity of kindergartens, enabling them to implement innovative educational technology and unique customized curricula.

Families today recognize the importance of preschool as the base level of education and share the responsibility for their children's education with preschool institutions. There is evidence that parents have been putting more trust in preschool institutions, their professionalism and quality lately. As one of the development strategies, preschool establishments seek to engage with parents and skillfully promote a

meaningful dialogue in the best interests of children, their development, health improvement and maintenance.

Accessibility of early childhood education is determined by the availability of places in preschool institutions and the capability of households to pay for relevant services. Right now, children as a demographic cohort are at the highest risk of poverty, which is twice as high as the average rate. For many parents, sending a child under three years of age to a preschool educational institution becomes a true challenge.

Accessibility is quite often understood as a quantitative characteristic, or metric (for an extensive overview of such studies, see [Geurs, van Wee 2004; Páez, Scott, Morency 2012]). Application of a specific metric is contingent on the subject of research. Normally, accessibility is measured in three dimensions: social (socioeconomic characteristics of a family), spatial (location of home, educational and transport infrastructure), and motivational (factors motivating families to move for the choice made or eliminating such necessity) [Niedzielski, Boschmann 2014]. Quantitative education accessibility research methods are used in academic research to adequately operationalize the concept of accessibility and assess the pros and cons of the selected indicators as well as methods of their calculation and application.

However, quantitative parameters are sometimes not enough to provide a comprehensive analysis. Regardless of how elaborated an accessibility improvement policy may be, its implementation in real life often has to deal with unexpected and hard-to-realize barriers, which are not always subject to quantitative evaluation [Curl, Nelson, Anable 2011]. For instance, it will be rather difficult to relieve social tension in a preschool institution if no allowance is made for how the latter is perceived by families, i. e. its direct consumers. Accessibility as a multifaceted characteristic of the education system can be unraveled by finding out how it is perceived by the parties involved and concerned.

The poor infrastructure of preschool education and the lack of efficient support for nonpublic institutions eager to improve it are the main barriers to solving the problem of the accessibility of early childhood education in Russia today.

This research paper studies the efficiency of the existing mechanisms for providing accessibility of preschool education and the opportunities for promoting equalization of educational opportunities among children from different social backgrounds and population groups. Such opportunities are contingent on expanding the private sector of early childhood education. The results of the Monitoring of Education Markets and Organizations, conducted by National Research University Higher School of Economics in cooperation with Levada Center by order of the Ministry of Education and Science of Russia, are used to measure the extent to which national preschool education support strategies are consistent with parental demands and social realities as well as to assess the reception of legislative

transformations in preschool education. The Monitoring studies behavior and performance of the key actors in education and the impact of personnel policies on improving accessibility of quality preschool education.

The article is structured as follows. Section one introduces the characteristics of education accessibility and various participation rates which are crucial for early childhood education. Section two provides an insight into the existing financial and economic mechanisms for improving accessibility of preschool education, in particular the differences in preschool education funding across countries, including the involvement of parents, the nonprofit sector, and businesses. Section three zeroes in on the main requirements that parents expect the education system to meet in terms of access to preschool education as well as their attitudes to modern accessibility improvement methods in the context of dealing with the online preschool registration system. Special focus is placed on comparing public and private preschool educational institutions and seeking ways to equalize children's chances for quality education. Section four is devoted to the development of preschool education infrastructure. It presents the results of implementing a national public preschool management model that implies cooperation between kindergartens and parents and their constructive interaction in the best interests of children.

## 1. Preschool Education: Contemporary Challenges

Early childhood education is designed to provide early socialization of children, develop age-specific 21st-century competencies and creative skills in them, and teach them to establish relationships with adults and peers. Attending early childhood education classes is not just a popular trend anymore but rather a social prerequisite for a successful start in life. Besides, preschool institutions enable economically active parents to get back to their careers without losing many of their skills. International studies show that development of the collective and individual nursing care system is a pivotal component of family policies [Vincent, Ball, Kemp 2004; Mollborn et al. 2014; Wong et al. 2014]. Such a system makes it as easy as possible for a woman to re-enter the workforce after giving birth to a child [Stooke 2012; Ertas, Shields 2012], whereas long maternity leave, unavoidable in the absence of such a system, reduces the probability of giving birth to more children, thus having adverse effects on the demographic situation.

Preschool education issues have become particularly pressing in present-day Russia: on the one hand, parents have actually developed a higher demand for preschool education and a higher level of trust for preschool institutions; on the other hand, the shortage of places in kindergartens has exacerbated the problem to an extreme degree, provoking negative attitudes. As a result, the focus of public and expert attention has shifted towards making preschool education accessible. The problem is especially acute in large cities, where most

preschool institutions are overcrowded. Early childhood education is the most actively developing sector of education today. In this context, municipalities and education authorities need to improve accessibility by supporting both public and nonpublic establishments.

According to the Monitoring of Education Markets and Organizations, Russia has been developing new forms of preschool education but they are not always supported by parents [Abankina, Rodina, Filatova 2017]. What matters for parents is the cumulative effect of education, socialization, and skills for building peer relationships. Preschool education is clearly dominated by the public sector: principals of municipal kindergartens report feeling no competition from the private sector. It means that competition as a mechanism for improving quality and attractiveness does not work with preschool education. In fact, it is families' demands and requirements that can motivate preschool institutions to improve the quality of their services. A survey of preschool principals confirms that the influence of parents on the performance of preschool institutions has increased and many kindergartens have become more family-oriented and made their management systems more transparent.

Families recognize the importance of preschool education as the base level and seek to share the responsibility for raising and educating their children with preschool educational institutions. Over recent years, a number of countries with the highest school achievement indicators—including Finland, Sweden, England and Australia—have adopted new programs and standards for preschool education, strengthening their focus on early childhood development. These countries design their policies with due regard for the high return on investment in early human capital, substantiated by Nobel prize winner James Heckman [Heckman, Layne-Farrar, Todd 1996; Heckman et al. 1997].

Subjective perceptions of accessibility are represented in society, i. e. by every individual or family as a holder of the right to education. With regard to preschool education, such holders are preschoolers and their parents (or other legal guardians). Declared universal access implies that all children have equal access to preschool education. In addition, the law prescribes that the government should adopt education standards and requirements to allow for curriculum diversity and the opportunity to design curricula of various complexity and specialization depending on students' educational needs and capabilities.

Therefore, accessibility of preschool education involves equal access to education for everyone, on the one hand, and the right for choosing one's own educational trajectory, on the other. Equal access and choice variety are the key qualitative characteristics of contemporary preschool education. However, society is heterogeneous in many ways: levels of income, lifestyles, occupations, leisure preferences, etc. As a result, perceptions of accessible and quality preschool education vary across different social groups.
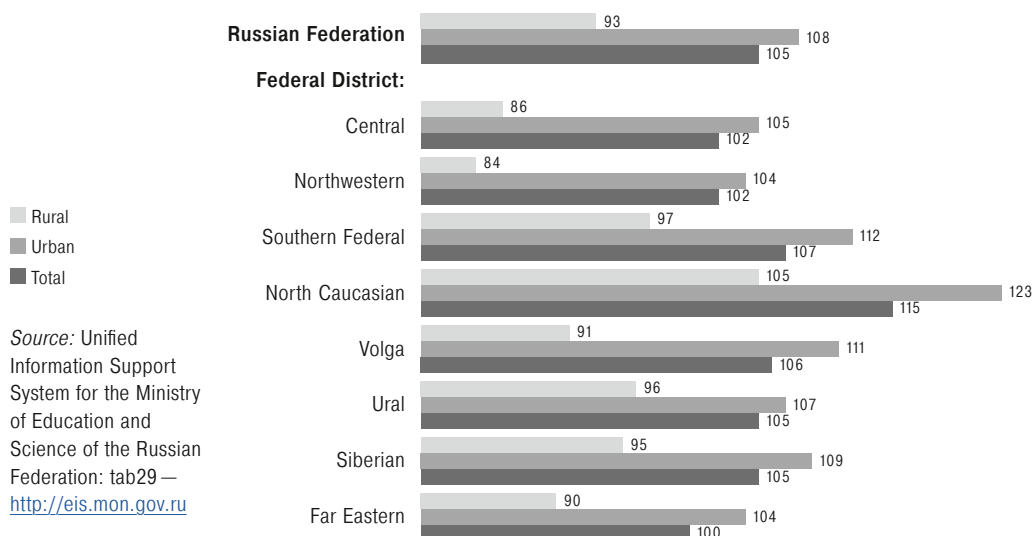
David Konstantinovskiy and his co-authors suggest measuring accessibility of preferred education by the presence or absence of any barriers to it, whether sociocultural, territorial, economic, institutional, informational, or motivational [Konstantinovskiy et al. 2006]. Measures to remove those barriers should be an overriding priority when implementing social policies. Meanwhile, variance of demand for education is contingent not so much on particular barriers as on the diversity of consumers' preferences and beliefs about education.

Every preschool educational institution is characterized by a specific geographical range of accessibility, which depends on the adopted enrollment rules. There are basically two major enrollment models used globally: choice-based, similar to a free market, with parental choice as the driving force, and strictly neighborhood-based. For instance, the United States and Great Britain have traditionally applied the neighborhood-based model. There is evidence that this enrollment model sometimes leads to stratification of preschool educational institutions, which become dependent on the socioeconomic status of families in the neighborhood. Society quite often sees such stratification as unwelcome. The cure can be found in the so-called liberal models, among which choice-based enrollment models are classified, although their effects are not always unambiguous [Gibbons, Silva 2006; Hoxby 2000].

Another way of boosting competition among educational institutions is proposed by the economic theories of monetarism and neoliberalism, underlain by Milton Friedman's ideas. It is assumed that the government reserves the only leverage to itself—that of controlling the amount of money in education—allocating it proportionally to the number of students enrolled. By doing so, it creates a quasi-market environment for educational institutions, granting them a lot of autonomy in choosing the content of education and solving their academic issues [Friedman 2006]. As a result, the number of students becomes the key factor, prompting institutions to swell their groups, especially now that the maximum group size requirements, formerly stipulated in sanitary regulations, have been abolished. Some institutions may merge to jointly maintain their administrative structures and other departments, which is known as economies of scale. A few studies analyze the effects of enrollment rate on economic efficiency (for a comprehensive overview of such studies involving American schools, see [Leithwood, Jantzi 2009]). No distinct relationship, however, can always be found. For example, a study on financial indicators of New York educational institutions found that per student spending was the highest in schools with capacity from 600 to 2,000 [Stiefel at al. 2000]. However, few studies have focused on the effects of kindergarten mergers so far.

Variable demand for education results in variable offers, at least in those countries that implement reforms designed to promote competition in education or did so in the past, such as the United States and Great Britain [Gibbons, Silva 2006]. Yet, school diversity does not

Fig 1. **Number of students per 100 places in institutions providing services in preschool education and childcare, 2016**



Rural
Urban
Total

*Source:* Unified Information Support System for the Ministry of Education and Science of the Russian Federation: tab29 — http://eis.mon.gov.ru

necessarily imply equal educational opportunities; in fact, it may even make social segregation worse.

The overall accessibility rate[1] of preschool education for children aged between 3 and 7 is gradually growing in Russia: from 92.71% in 2013 to 98.94% in 2016. Some regions, however, have not succeeded in ensuring a level of accessibility that would not only consider all children who need preschool education but also ensure vacant places for everyone. Some of them even resorted to a rather questionable way of reaching the performance targets, making their preschool education groups as large as possible. For instance, there were 123 children per 100 places in preschool educational institutions of urban localities in North Caucasian Federal District in 2016, which is higher than in any other federal subject (Fig. 1).

About 7.3 mln children attended preschool educational institutions in Russia in 2016. The average participation rate of children aged from 2 months to 7 years[2] in preschool education provided by educational

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[1] Preschool education accessibility rate is defined as a ratio of the population of children aged between 3 and 7 receiving preschool education in the current year to the sum of the population of children aged between 3 and 7 receiving preschool education in the current year and the population of children aged between 3 and 7 on the waiting list for preschool education in the current year.

[2] Participation of children in preschool education is defined as the ratio of the

institutions subordinate to federal subject's executive authorities was 57.4%. The rate grew by 1.4% to 56% in 2015, being much higher in urban localities (63.2%) than in rural ones (42.2%). These urban and rural participation rates increased in 2016 by 1.1% and 1.4%, respectively. Short-stay early childhood education groups were attended by 2.35% of all children attending municipal preschool institutions in 2016.

The low participation of children in preschool education is explained by the limited capacities of the regions and the lack of demand for relevant services caused by the peculiarities of ethnic cultures and local traditions. In particular, North-Caucasian families prefer educating their children at home.

Promotion of nonpublic institutions' services in preschool education also makes it more accessible. Private education has been growing rapidly due to significant changes in the legal framework in terms of granting governmental funds to relevant institutions so that they could cover their expenses on implementing preschool education programs as well as removing excessive administrative, financial, information and other barriers to establishing private preschool institutions. The national sanitary regulations have been cleared of a number of restrictions and overly detailed wording that impeded the multi-purpose use of various preschool institution rooms and premises and the development of private preschool education. On the whole, 102,622 students (1.4% of the total population of students attending preschool educational institutions, including branches) were enrolled in private preschool institutions in Russia in 2016[3].

The most rapid growth of the nonpublic preschool education sector has been observed in Samara Oblast, where private institutions are attended by 12.7% of children in the respective age cohort. High growth rates have also been demonstrated by the Sakha Republic (7.4%), Yamal-Nenets Autonomous Okrug (4.8%), and Khabarovsk Krai (4.1%).

Russian law allows educational institutions to set up preschool family courses to satisfy the population's need for early childhood family education. According to the Russian Federal State Statistics Service (Rosstat), there were 2,345 preschool family education groups in Russia as of January 1, 2017, attended by 19,540 children including those aged under three. It also appears advisable to provide preschool courses under institutions of higher-level education, which has already been practiced by 26 colleges in 12 regions. However, this initiative has been facing funding problems so far, the problem still awaiting a legislative resolution.

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population of children attending preschool educational institutions to the total population of children aged from 2 months to 7 years inclusive, adjusted for the population of children of the respective age attending schools.

[3] Unified Information Support System for the Ministry of Education and Science of the Russian Federation: tab39p (UISS MESR) http://eis.mon.gov.ru

**2. Ways of Ensuring Accessibility of Preschool Education**

Preschool education is becoming an essential component of national education systems in the OECD countries, so the latter develop and implement various institutional structures and funding mechanisms to make it more accessible. The key role in funding this level of education is played by local authorities which cover the best part of the expenses on teacher salaries and property maintenance. Private businesses are invited to provide peripheral and auxiliary services, i. e. supply preschool institutions with meals, medical, transport and administrative services. In addition to governmental measures designed to attract money from different sources, education accessibility is enhanced by rational use of acceptable funding methods and wise resource allocation.

There are a variety of funding mechanisms for early childhood development programs, and every country finds an approach of their own which is best matched with their national education system and the environment it operates in. These approaches differ in the size of contributions from service suppliers (property and staff suppliers) and consumers (parents) as well as in the role played in service supply and funding by partners from the public, private and community sectors. Thus, the following major early childhood education funding models can be identified:

- *Centralized government funding.* This is the direct funding of children's education via rent of premises, personnel recruitment, etc. (e. g. in France);
- *Decentralized government funding.* The government allocates block grants to municipalities (a sum of money granted without specifying the expenditure items) for specific needs or to be used at the beneficiary's discretion, and municipalities implement children's education programs (e. g. in Sweden or Germany);
- *Government incentives (result-based funding).* The government funds suppliers of early childhood education services through block grants or per capita financing. The size of grant depends on the level of performance, kindergartens with higher levels of national accreditation being financed more heavily (e. g. in some U.S. states);
- *Mixed model and market formation.* The government dissociates itself from early childhood education as much as possible, allowing parents and non-governmental organizations to finance most of the services. Yet, it renders supplementary services, such as informing and consulting parents, and provides transportation between school and home for children (England is now actively creating market conditions in addition to other funding models);
- *Government subsidies for families and private funding.* The government grants sizeable subsidies (education vouchers or monetary payments) to allow low-income parents to pay for early childhood education services provided by private businesses or

nonprofit organizations. If subsidies are large enough, they guarantee viability of private suppliers (e. g. in New Zealand).

Governments of a number of countries recognize the importance of investing in preschool education and childcare—such investments increase the level of social justice in society. In most OECD countries, especially those in Europe, governments participate actively in preschool education funding, exerting a great influence on its development [OECD2017]. Out of ten three-year-olds, seven are enrolled in preschool institutions in such countries (as compared to eight in Russia), and the rate among four-year-olds amounts to almost nine out of ten (which is nearly the same as in Russia). As for two-year-olds, 40% attend preschool institutions in the OECD countries (as compared to 48% in Russia). About 75% of the OECD countries pursue integrated early childhood education and care programs, spending from 0.1% to 2% of their GDP on this sector [OECD2016]. Institutional structure and the size of government spending are only two of the factors determining accessibility of preschool education, which is also contingent on the involvement of nonprofit organizations, private businesses and households in funding of this education level. Studies show that the nonpublic sector can play a crucial role in providing accessibility of services in preschool education and early development of children between 18 months and 3 years of age [West 2006; Hu, Roberts 2013; Song 2016; O'Connor et al. 2016]. Participation of the nonpublic sector may take diverse and flexible forms: family courses offered by self-employed entrepreneurs, nonprofit day care centers, leisure and sports centers, etc.

The ratio of sources of preschool education funding varies greatly from country to country (Fig. 2). The governments of Belgium, Luxembourg and France cover nearly all the costs of early childhood education, while parental contribution is higher in Great Britain, the US, Germany and Slovenia than in other countries. In Estonia and Israel, childcare services are fully compensated from private sources of finance. The Lithuanian, Spanish and Austrian governments cover from 4% to 23% of the costs of early childhood care services. In Russia, parents of preschool-aged children have their expenses on such services partially reimbursed both in the public (municipal) sector of preschool education and in private kindergartens[4] [OECD2017].

Private funding in the OECD countries covers on average 31% of spending on early childhood education programs and 17% of spending on preschool education programs [OECD2016]. Meanwhile, government investments still account for about 90% of all funding used to maintain kindergartens, i. e. to pay teacher salaries, maintain the property, buy and develop methodological and educational materials, pro-

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[4] Unified Information Support System for the Ministry of Education and Science of the Russian Federation: http://eis.mon.gov.ru/education/SitePages/Дошкольное_формы.aspx

Fig. 2. **Sources of funding of early childhood education and care institutions, 2013** (%)
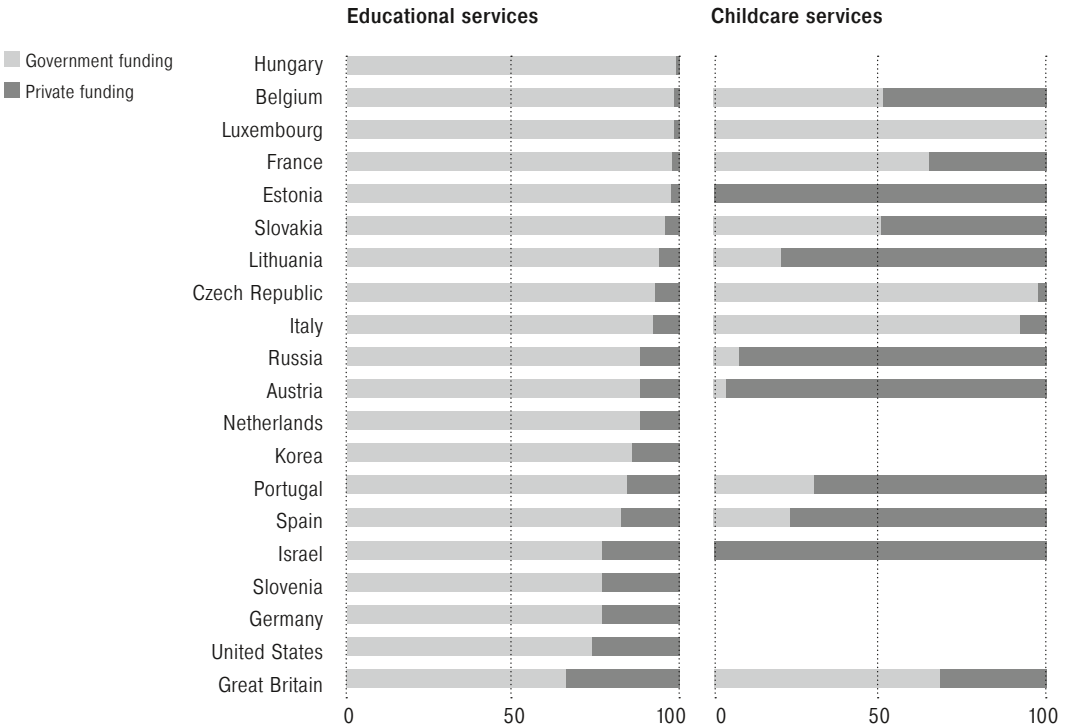


vide general administration, and other types of activities. Money from private sources of finance covers the best part of expenditure (about 54% on average) on peripheral services, i. e. meals, medical services, and transportation. In some countries, such as Estonia and Israel, all auxiliary services, which include administration, are fully covered by private investors.

In Australia, Colombia and Denmark, the governments actively support private structures and households in their preschool education organization efforts. Twenty percent of preschool education programs are funded by the private sector in these countries, while the governments lend considerable financial support to private institutions in the form of transfers that account for over 5% of all the government spending on preschool education.

Intergovernmental transfers serve to support early childhood education in most countries. Financial transfers granted by national and regional structures to local authorities in the OECD countries normally account for about 13% of total government spending on education. By delegating preschool education funding and decision making to local authorities, the government brings them closer to families' needs.

Local authorities make the greatest contribution to public funding of early childhood education in the OECD countries, covering on average 48% of the total government spending on this education sector, even before transfers from national and regional authorities are taken into account. Government funding of preschool education is structured differently across the OECD member and partner countries, from education fully subsidized by federal governments (e. g. Costa Rica, Ireland and New Zealand) to education nearly fully funded by local authorities (Estonia, Norway, Iceland, Slovakia and Great Britain). Regional authorities play a significant role in Argentina, Spain and Belgium. As for Russia, funding of the major preschool education programs has been handed over to the regional level since 2014, so municipal authorities now only provide financial support to kindergartens, i. e. pay their utility and property maintenance bills.
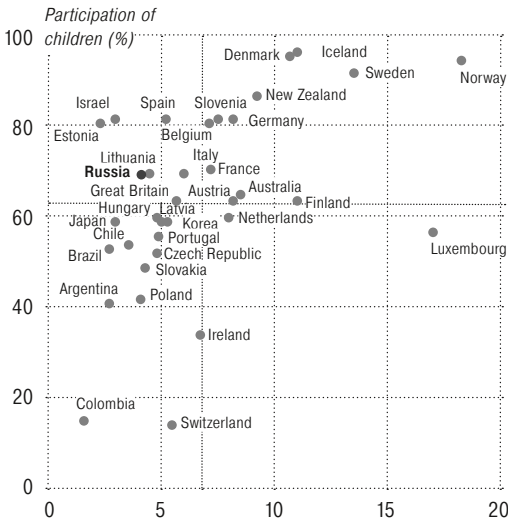
A comparison of the participation of children aged 2–4 in preschool education with the level of government spending on this sector confirms the correlation between these two indicators (Fig. 3). Countries like Denmark, Iceland, Norway and Sweden, where overall government spending on preschool education per child is the highest, show participation rates of over 90%, whereas low spending per student in Ireland and Switzerland correlates with low participation rates.

A number of countries have managed to achieve high participation rates in preschool education—over 80%—despite relatively low levels of government spending. These include Israel and Spain, where almost 25% of total preschool funding is covered by the private sector. It should be noted, however, that the Israeli standard of compulsory preschool education for children aged 3 and older implies only short-term four-hour courses that do not include childcare services.

Heavier spending on preschool education has no unambiguous effect on the pupil-teacher ratio (Fig. 4). For instance, total spending per child from all sources is pretty much the same in Slovenia and the Netherlands, yet there are 16 children per preschool teacher in Slovenia and only 8 in the Netherlands. The Netherlands invest more in teacher salaries, while most funds in Slovenia go to property maintenance, purchase of study materials, meal arrangements, and rent of premises. Therefore, wise allocation of funds among teacher salaries, property maintenance, material supplies, meal arrangements and other expenses is required to provide accessibility of preschool education and achieve an optimal pupil-teacher ratio.

Russia retains a significant differentiation in the cost of childcare services between private and public (municipal) kindergartens. However, it is not explained by differences in the quality of services but by different environments in which private and public (municipal) preschool institutions operate, their unequal access to budgetary resources, and high expenses, first of all rent. Consequently, parents sending their children to private and public kindergartens find themselves in unequal conditions.

**Fig. 3. Comparison of children's participation in preschool education with total government spending per child, age 2–4, 2013**

*Participation of children (%)*



Total spending per child in preschool education (USD based on purchasing power parity) in Russia was estimated using the findings of studies by Mark Agranovich [Agranovich, Poletaev, Fateeva 2005; Agranovich et al. 2009].

**Fig. 4. Comparison of the number of pupils per preschool teacher with total government and private spending per child, 2013**

*Number of pupils*



*Total government spending (thousand USD based on PPP)*

**Fig. 5. Average cost of childcare services in public (municipal) and private preschool institutions** (rubles)



2014 — 2,198 / 10,164
2015 — 1,885 / 11,237
2016 — 1,694 / 11,388

Public (municipal) preschool institutions
Nonpublic (private) preschool institutions
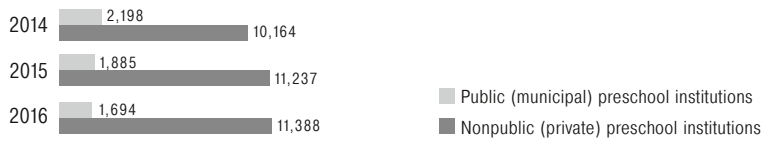
The cost of childcare services in the private sector of preschool education decreased by 10% in 2016 as compared to the previous year, while rising by 17% in public (municipal) preschool institutions, still being 4.6 times higher in the private sector than in public (municipal) preschool institutions (Fig. 5). The gap in parent fees between preschool institutions of different forms of ownership is thus reducing every year: it used to be 6 times in 2015 and 7 times in 2014[5].

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[5]  Here and elsewhere in this section, we cite findings of the sociological sur-

As prices surge, parent fees increase unevenly (or sometimes decrease), thus intensifying the differentiation and inequality in access to high-quality preschool education across regions. Parent fees may be not enough to cover food expenses, so many parents try to pay extra to provide their kids with better meals (3.7% of parents whose children attend public (municipal) preschool institutions and 3% of those whose children attend private kindergartens). Not everyone can afford additional meal expenses, first of all due to limited family budgets. Another reason is that preschool institutions often outsource meal arrangements, and parents often have no opportunity to contact third-party suppliers directly or sometimes do not even know who they are. That is why menus in kindergartens often contain substitute products, which leads to the degradation of the food quality and, subsequently, the children's health.

Families whose children attend private preschool institutions reduced their expenses on extracurricular studies dramatically in 2016, spending less than in 2013. In the future, when deciding on the development of the fee-based segment of extracurricular studies for preschoolers, it is necessary to take into account how much parents are ready to spend on them. This sum is about 20,000–25,000 rubles yearly, or 2,500 rubles monthly. Less than one third of families are ready to incur such costs, regardless of whether their children attend a public (municipal) or private kindergarten. Thus, the potential for further development in this direction appears to have been exhausted.

**3. Parental Choices and Preferences**

Long preschool waiting lists represent an acute social problem in Russia today. Kindergartens currently seek out every opportunity to increase their capacity, swelling their groups, revising the functional purpose of their premises to accommodate as many groups as possible, rebuilding and extending sports facilities and music rooms to free up more space.

As judged by the 2016 Monitoring of Education Markets and Organizations, more than half of the parents whose children attend kindergartens were choosing from two or three options. Eleven percent of parents made advance arrangements to enroll their children in a corporate or public (municipal) kindergarten in 2016, as compared to 15% in 2015. Twelve percent of preschoolers' parents had no choice, as there was only one kindergarten in their populated locality. A choice of two or three preschool educational institutions was most often available to families in Moscow (83%) and least often to families in rural towns and villages (30%), where about 54% of the respondents reported having one kindergarten only.

vey of parents of preschool pupils conducted as part of the 2016 Monitoring of Education Markets and Organizations.

Fig. 6. **The most important responsibilities of kindergartens, as seen by parents** (%)



Public (municipal) preschool educational institutions

Provide childcare services

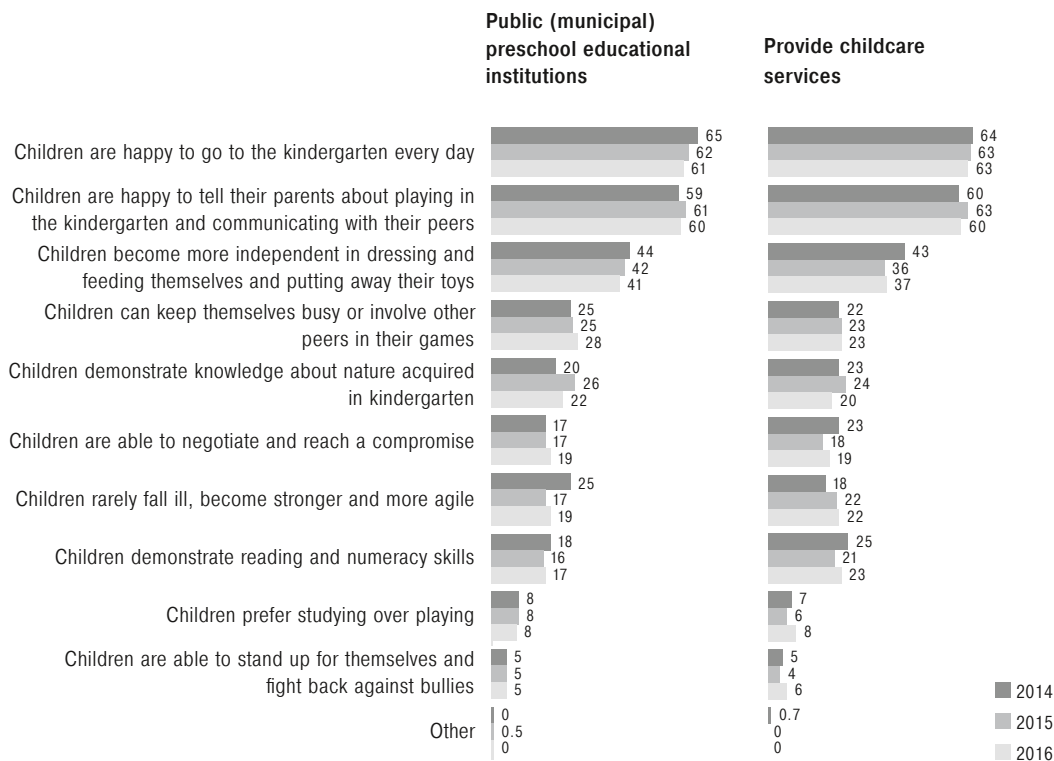| | | |
|---|---|---|
| Provide childcare services | 58 / 59 / 57 | 63 / 56 / 64 |
| Promote intellectual development | 46 / 44 / 46 | 53 / 56 / 49 |
| Promote children's socialization, engage them in communication with adults and peers | 41 / 41 / 39 | 43 / 37 / 39 |
| Get children ready for school | 40 / 38 / 39 | 36 / 34 / 33 |
| Develop creative skills | 34 / 35 / 37 | 41 / 39 / 34 |
| Maintain and improve children's health | 30 / 26 / 30 | 28 / 25 / 29 |
| Create conditions for interesting and pleasant leisure activities | 26 / 28 / 26 | 19 / 31 / 22 |
| Provide correctional physical and mental health programs | 16 / 15 / 14 | 17 / 13 / 13 |
| Other | 0.2 / 0.3 / 0.3 | 0.2 / 0.2 / 0.0 |

■ 2014
■ 2015
☐ 2016

Proximity to home is the most widespread factor in choosing a particular preschool institution. Most parents are concerned about teachers' competencies, childcare conditions, the institution's reputation, and the level of readiness for school it provides. When choosing a private kindergarten, parents have been paying more attention to affordability. Parents see the most important responsibilities of preschool institutions in providing childcare services, promoting children's intellectual development and socialization, and preparing them for school, whether their children attend a public (municipal) or a private kindergarten (Fig. 6).

When parents assess the performance of a kindergarten, they first of all consider their children's attitude: whether they want to go there, whether they are happy to tell their parents about playing in the kindergarten and communicating with their peers, etc. Besides, parents find it important that their children learn to be independent and develop self-care skills in kindergarten (Fig. 7).

Most children attending public (municipal) kindergartens reach them by foot (60%). Slightly less than one third of children are driven to their kindergartens by their parents, relatives or acquaintances, and 9% use public transport. Sixty percent of children from private kindergartens get to their destination by car, public transport, or kindergarten bus (Fig. 8).
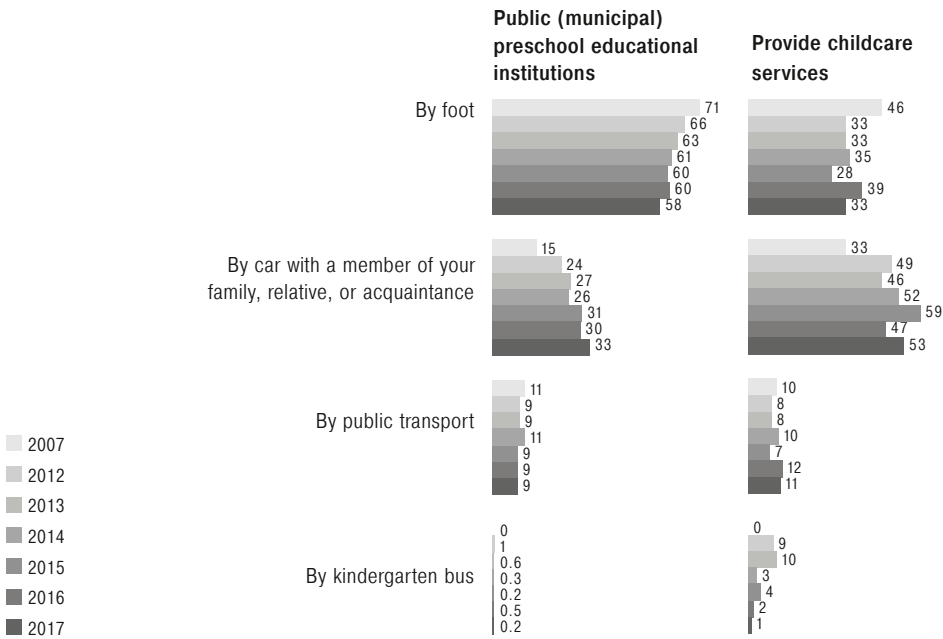
Fig. **7. The most important indicators of kindergarten performance,
as seen by parents** (%)



|  | Public (municipal) preschool educational institutions | Provide childcare services |
|---|---|---|
| Children are happy to go to the kindergarten every day | 65 / 62 / 61 | 64 / 63 / 63 |
| Children are happy to tell their parents about playing in the kindergarten and communicating with their peers | 59 / 61 / 60 | 60 / 63 / 60 |
| Children become more independent in dressing and feeding themselves and putting away their toys | 44 / 42 / 41 | 43 / 36 / 37 |
| Children can keep themselves busy or involve other peers in their games | 25 / 25 / 28 | 22 / 23 / 23 |
| Children demonstrate knowledge about nature acquired in kindergarten | 20 / 26 / 22 | 23 / 24 / 20 |
| Children are able to negotiate and reach a compromise | 17 / 17 / 19 | 23 / 18 / 19 |
| Children rarely fall ill, become stronger and more agile | 25 / 17 / 19 | 18 / 22 / 22 |
| Children demonstrate reading and numeracy skills | 18 / 16 / 17 | 25 / 21 / 23 |
| Children prefer studying over playing | 8 / 8 / 8 | 7 / 6 / 8 |
| Children are able to stand up for themselves and fight back against bullies | 5 / 5 / 5 | 5 / 4 / 6 |
| Other | 0 / 0.5 / 0 | 0.7 / 0 / 0 |

■ 2014
■ 2015
□ 2016

The transport accessibility of a kindergarten implies the organization of kids' transportation using public or private transport. In this case, specific requirements should be elaborated for every kindergarten to optimize the way they arrange their premises and organize the adjacent grounds. Hardly any parking lots, embussing or debussing points are provided around kindergartens and educational complexes with preschool departments. It is vital to change the standards for design, construction, reconstruction and overhaul of approach routes and adjacent areas as well as for traffic organization. Regulatory documents have been falling dramatically behind the modern structure of the network of educational institutions, the existing methods of delivering children to kindergartens, and the ways children move within educational complexes between their core and supplementary courses.

Online waiting lists have recently been introduced as a way to reduce social tension caused by long waiting lists for preschool educational institutions, particularly in urban localities. This way, the authority to control the fill rate of preschool institutions (assignment and enrollment of children to specific institutions) has been transferred

Fig. 8. **Walking and transport accessibility of public (municipal) preschool institutions and private kindergartens**
(% of all parents surveyed)

|  | Public (municipal) preschool educational institutions | Provide childcare services |
|---|---|---|
| By foot | 71 / 66 / 63 / 61 / 60 / 60 / 58 | 46 / 33 / 33 / 35 / 28 / 39 / 33 |
| By car with a member of your family, relative, or acquaintance | 15 / 24 / 27 / 26 / 31 / 30 / 33 | 33 / 49 / 46 / 52 / 59 / 47 / 53 |
| By public transport | 11 / 9 / 9 / 11 / 9 / 9 / 9 | 10 / 8 / 8 / 10 / 7 / 12 / 11 |
| By kindergarten bus | 0 / 1 / 0.6 / 0.3 / 0.2 / 0.5 / 0.2 | 0 / 9 / 10 / 3 / 4 / 2 / 1 |

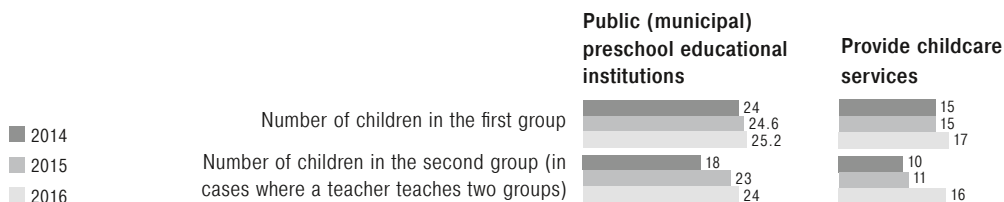Legend: 2007, 2012, 2013, 2014, 2015, 2016, 2017

from the level of kindergarten administrators to that of the founders, i. e. municipal education authorities, in order to prevent abuse, make the process of enrollment more transparent, and ensure equity.
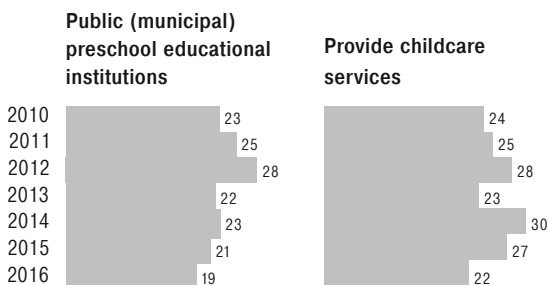
More than half (60%) of the families with preschool-aged children used online waiting lists to obtain places in public (municipal) preschool institutions. In 27% of the cases, families did not use online waiting lists because there was no need to do so. Only 7% of the families did not use online waiting lists because they had no such opportunity. Online services develop all the time, and the proportion of parents who experience difficulty using online waiting lists to enroll their children in public (municipal) kindergartens is constantly reducing. However, such services are not yet used to their full potential due to the lack of parent awareness of preschool group formation procedures, insufficient representation of the network of kindergartens in databases, ambiguity about the rules of movement on waiting lists, and hence the lack of understanding by parents of their own rights and the authorities' scope of responsibility for providing accessibility of preschool education. No online waiting lists are offered to enroll in nursery groups.

Groups in public (municipal) kindergartens are constantly growing in size: an average group comprised 25.2 children in 2016, as compared to 24.6 in 2015. Teachers in private kindergartens also report

Fig. 9. **Average group size in public (municipal) preschool institutions and private kindergartens, based on a survey of preschool teachers**

| | Public (municipal) preschool educational institutions | Provide childcare services |
|---|---|---|
| 2014 | | |
| 2015 | | |
| 2016 | | |

Number of children in the first group — Public: 24, 24.6, 25.2 — Provide childcare services: 15, 15, 17

Number of children in the second group (in cases where a teacher teaches two groups) — Public: 18, 23, 24 — Provide childcare services: 10, 11, 16

Fig. 10. **Average duration of classes in public (municipal) preschool institutions and private kindergartens, 2010–2016, based on a survey of preschool teachers** (hours/week)

| | Public (municipal) preschool educational institutions | Provide childcare services |
|---|---|---|
| 2010 | 23 | 24 |
| 2011 | 25 | 25 |
| 2012 | 28 | 28 |
| 2013 | 22 | 23 |
| 2014 | 23 | 30 |
| 2015 | 21 | 27 |
| 2016 | 19 | 22 |

an increase in the size of their groups by up to 17 children on average (Fig. 9).

Teachers in public (municipal) kindergartens encounter a larger administrative load and additional responsibilities from year to year. The average amount of time devoted to actually engaging with children keeps decreasing in both the public (municipal) and private sectors of preschool education, yet it remains greater in private kindergartens (Fig. 10).

As can be seen, classes become ever shorter and groups taught by teachers in public (municipal) kindergartens keep expanding. As a result, preschool teachers become overloaded, which prevents any quality implementation of preschool education programs.

Preschool teacher performance is contingent, in particular, on financial incentives [Klyachko, Avramova, Loginov 2015]. The results of teacher performance evaluation by parents are used in preschool institutions to calculate incentive payments (as reported by 24% of public (municipal) preschool teachers), to decide on sending teachers to advanced training courses (confirmed by 23% of teachers), and to allocate non-recurring financial incentives in 16% of the cases.

## 4. Development of Preschool Education Infrastructure

Barriers in access to kindergarten services directly affect birth rate as a critical demographic indicator. A sample survey of reproductive intentions in 30 federal subjects of Russia conducted by Rosstat in 2012 revealed that inability to enroll a child in a kindergarten or daycare nursery ranked third among the top reasons against having another child, preceded by financial difficulties and housing issues. Moreover, among the governmental measures affecting the decision to have more children, compensation for expenses on childcare services is regarded by parents as more significant than childbirth allowance or paid parental leave and nearly as important as multiple-child allowance and subsidized home loans.

This problem is especially acute in large cities, where the network of preschool institutions has reduced dramatically since the 1990s. Various mechanisms are used to develop a new network: greenfield development, reconstruction, major overhauls, retrieval of previously transferred buildings, development of flexible home-based daycare centers, assistance to businesses, and development of corporate kindergartens. The network of preschool educational institutions is rigid, consisting of over 80% public and municipal kindergartens. Other sociocultural institutions engage little in providing preschool education services, yet this segment has excess capacity in a number of municipalities. The rapid growth of the network is thus fraught with some inevitable challenges.

At the same time as infrastructure is being developed, the problems of transition to a new quality level of preschool education are being solved. Since preschool education was recognized as a full-fledged level of education, an urgent need has arisen, i. e., to reach public consensus on the goals of its development as well as on acceptable and relevant forms of its organization. Preschool education is designed to solve issues in both education and childcare. What parents expect from the preschool education system is not only the education of their children under a specific program but also a childcare schedule that they would find appropriate and comfortable for themselves. Ways of combining alternative approaches to childcare with various models of early childhood education into an integrated system are being investigated and tested around the world [Freitas, Shelton, Tudge 2008; Rode 2009].

Integrating preschool education and childcare services into "packages" in Russia imposes high requirements on the infrastructure, including sanitary and epidemiological standards and regulations. Preschool education facilities must be adapted to accommodate children for 12 hours a day, which implies high infrastructure costs. However, neither kindergarten staff nor parents are interested in more flexible ways of rendering services. Construction of new kindergartens is the most desired way of preschool infrastructure development for the population. Meanwhile, requirements to preschool education facilities in Russia are comparable to and often higher than those in the

OECD countries with much higher levels of per capita income. Not infrequently, regions compete in building modern kindergarten facilities, including swimming pools, special-purpose rooms, etc. While this policy is quite in line with the population's needs, it requires heavy resource investments and eventually deepens inequality instead of making education more accessible.

An entirely different infrastructure is needed to provide preschool education only (excluding childcare services), as in short-stay groups. Their use varies greatly across regions of Russia, but they have not been widely recognized anywhere yet. This vector of preschool education development seems rather promising but it suggests adjusting preschool education, culture and sports facilities to short-term classes in the morning hours. Flexible formats of preschool education on the basis of either municipal or private kindergartens can be implemented using funding models based on inter-municipal agreements, which allow integrating and consolidating resources of the whole sociocultural industry in order to promote preschool education.

Private preschool institutions as an alternative to public or municipal kindergartens do not account for more than 2% of the total number of preschool educational institutions in Russia. This is very different from the situation in other countries. In Australia, for example, private-owned companies provide 46% of preschool education and childcare services [Tayler 2016]. Estimates of the number of nonpublic preschool institutions in Russia may be inaccurate: first of all, many of them get incorporated as nursing and care businesses, thus falling out of the educational statistics; besides, such services are often rendered by self-employed entrepreneurs without founding a legal entity at all. An essential part of such entrepreneurs (equal to or even exceeding the official one) is working outside the legal framework, either incorporated to "provide social services to population without accommodation" or organize "leisure clubs" or not incorporated at all.

Barriers to establishing private preschool educational institutions significantly increase the startup capital requirements for anyone willing to invest in this business. Before the changes in legislation provided equal access to public funding for private preschool institutions, some federal subjects of the Russian Federation had used the practice of placing municipal orders for preschool education services with non-municipal service providers (in Perm from 2007, in Lipetsk and Kaliningrad Oblasts) and subsidizing private kindergartens (in Perm, Lipetsk and Pskov Oblasts, the Sakha Republic (Yakutia), and Kemerovo). As soon as the law was amended, more regions began to grant subsidies to private kindergartens (Samara, Moscow Oblast) and sometimes reimburse parents for part of their expenses on child care services in private kindergartens (Tomsk Oblast).

Searching for an optimal model of public or home-based kindergarten is technically searching for an optimal model for the creation of preschool education infrastructure or conditions for its development.

This is not restricted to elaborating funding strategies or legislative improvements. For instance, the problems experienced by the private preschool education sector in Vologda Oblast indicate that most entrepreneurs lack the motivation to develop their businesses and promote their services [Leonidova, Svirelkina 2016].

Affordable daycare nannies could be one type of service rendered by private companies in preschool education. They would definitely be in high demand among families with toddlers. When children reach the age of 18 months, parents stop receiving a care allowance. This is when young families find themselves at risk of falling into poverty, as mothers cannot get back into the workforce: they have no one to leave their children with and no opportunity to send them to kindergarten [Abankina et al. 2016].

The public sector in preschool education thus faces the task of reconciling funding with accessibility of services and the quality of education and childcare, i. e. adopting performance-based funding instead of meeting expenses. However, this is harder to achieve in preschool education than in any other industry. At the current stage of preschool education development, it appears important to find concise indicators of quality associated not only with the education of children but also with accessibility of services, improvement of children's health, implementation of correctional programs, and consideration of individual preferences in meals, outdoor activities, and learning materials for different children.

**5. Conclusion**  Attending a kindergarten today becomes a social standard regardless of place of residence and family income. Over recent years, a number of countries with the highest school achievement indicators have adopted new programs and standards for preschool education, strengthening their focus on early childhood development. These countries design their policies with due regard for the high return on investment in early human capital. In Russia, making preschool education accessible to all categories of the population is impossible today due to the insufficient development of preschool infrastructure and the lack of actual support for nonpublic preschool institutions. Steps in this direction can be an effective tool for reducing social tension and strengthening Russia's status as a country with high-quality preschool education, which is one of the crucial factors of social wellbeing.

Early childhood development determines school achievement to a large extent, which, in its turn, is critical for later success in life. Being concerned about the social stability and quality of the workforce, many developed countries invest actively in preschool education, paying special attention to children from low social backgrounds. In order to keep the early development of Russian children apace with the indicators of the advanced economies, it is necessary to expand the sys-

tem of public preschool education, ensure psychological and pedagogic support of infants, and provide assistance to family education by raising parent awareness.

The lack of state-guaranteed right for preschool education that would equalize children's opportunities (irrespective of attending a kindergarten) results in considerable heterogeneity in first-grade pupils in terms of their psychological, social and cultural readiness for school. This heterogeneity is intensified with the spread of fee-based school preparation courses for children aged 5–6, which are only available to relatively affluent families and vary greatly in their quality.

The costs of childcare services remain very different between public (municipal) preschool institutions and private kindergartens, putting parents in unequal situations. Such a huge gap, however, is not explained by differences in the quality of childcare services but by different conditions in which private and public (municipal) preschool institutions operate, their unequal access to budgetary resources, and high expenses, primarily rent.

The high cost of private preschool education services is not inducing real competition yet, and neither does it drive public (municipal) kindergartens to improve the quality of their services—market mechanisms are barely involved here. Equalization of parents' expenses on private and municipal (public) kindergartens will promote competition as an important mechanism for enhancing preschool education quality.

While developing the financial strategy of supporting early childhood development and preschool education, it should be kept in mind that offloading the best part of expenses onto parents is impossible, as household income in young families varies greatly across regions. An increase in parent fees, outrunning the rate of inflation, has been observed in nearly one third of preschool educational institutions in rural towns and villages, where purchasing power is the lowest. This means that financial load associated with maintenance and education of children in preschool institutions is transferred from local authority budgets to household ones, which is partly caused by the imbalance of municipal budgets that are supposed to fund preschool education.

Preschool education is the most expensive education industry in Russia, the costs exceeding even those in professional education. This is because preschool institutions have assumed too much responsibility—not only for education programs but also for nursing, care, and health improvement services. Preschool funding decision-makers should understand that investment in early childhood development yields the highest return on investment in human capital. By providing children with places in kindergartens, not only do we simply help working parents but we also encourage the development of the country's youngest generation.

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# Assessment of the Impact of an Effective Contract Introduction on the Publication Activity of a University Faculty:
The Case of a Regional University

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Abstract   The introduction of an effective contract into the Russian public sector was due to the need to ensure compliance regarding wages and the quality of services provided. A review of existing studies on contract relationships within academia and practices to stimulate publication activity in Russian and foreign universities has shown that the key factors influencing scientific activity by university teachers are internal motivation, favorable academic environment, and relationships in a team. This paper analyzes two systems of stimulation of publication activity in higher education: a rating of scientific activity and a system of the effective contract. To analyze the introduction of an effective contract in educational organizations, researchers primarily use methods of content analysis of normative legal acts and sociological surveys. Based on data about the publication activity of teachers of the Institute over 6 years (3 years before the introduction of an effective contract and 3 years after), the authors conducted an econometric study of the impact of an effective contract on the quantity and quality of publications. To test the hypothesis the authors used a fixed effect model, a random effects model, and pooled ordinary least squares and least squares dummy variable. In this article the authors suggest a methodology for assessing the impact of an effective contract on the publication activity of university teachers. The authors conclude that salary and incentive payments, as well as participation in conferences and teacher training, have had a significant positive impact on the number of publications. The quality of publications was significantly influenced by incentive payments and professional development. The introduction of an effective contract had an impact only on the total number of publications.

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## Art History and Archeology in the Educational Space of Revolutionary Russia:
Two Unknown Projects of 1917

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Abstract

A discussion on the reform of higher education in humanities in Russia in the spring of 1917 is analyzed. At the center of this discussion, questions regarding the organization of the teaching of general history of arts and archeology at Petrograd University and in technical colleges are considered. This discussion reflected the long process of delimitation of a number of disciplines (classical philology, history of art, archeology) and the formation of their own research and teaching field. Two earlier unknown documents are published: a letter from S. A. Zhebelev to V. N. Rakint, the Scientific Secretary of the Institute of History of Arts, and a note by V. Ya. Kurbatov "About teaching of the history of art in the higher technical educational institutions" from the funds of the Central State Archive of Literature and Arts. These documents expand our ideas of the history of the reforming of the higher school in 1917–1922, and the final delimitation of history of arts and archeology not only as academic disciplines, but also as educational directions. Zhebelev's letter and Kurbatov's note characterize the atmosphere in the Russian pedagogical environment of 1917–1922, when large-scale and effective reforms of the higher school were possible. It is obvious that some of the ideas stated during the given discussion and realized during the formation of the faculty of social sciences of Petrograd University are relevant today as well: curricula, training of teaching staff, emphasis on practical use of theoretical knowledge, and a polydisciplinary approach in the educational process.

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# The Past, Present, and Possible Future of the Russian Education Assessment System

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**Abstract.** The article describes the key stages in the development of the educational assessment system in Russia: certification of educational institutions, participation in international comparative studies, implementation of the Unified State Examination (USE) and Basic State Examination (BSE), and emergence of a community of education assessment experts. The most urgent goals in the development of the Russian education assessment system are seen in switching to competency-oriented USE and BSE (with the subject-specific component preserved), developing national monitoring studies to compare education quality across regions and municipalities, tracing the socialization patterns of school graduates, elaborating various models of in-class and in-school assessment, and providing tools to measure individual progress of students. Meanwhile, the lack of competent interpretation of measurement results appears to be the main challenge in educational assessment.

**Keywords:** schooling, Russian educational assessment system, certification of educational institutions, international comparative studies, USE, BSE, monitoring, ratings, rankings, Russian Nationwide Tests.

Education quality has been receiving more and more attention recently, a transition being made from supervision and control to education quality management. Naturally, more and more speculations arise around the issue, so I find it desirable to look into the history of its evolution. School education will be my sole focus, as preschool, vocational and tertiary education should each be described separately.

## The Key Components of the Russian Education Assessment System

Long before the very notion of the *Russian education assessment system* was adopted by educators, some components of this system had already been discussed. Back in the early 1990s, World Bank experts from the Netherlands and Great Britain proposed analyzing the existing national examination and monitoring systems and attempting to create one in Russia. That was a pretty inconceivable scenario, given that teachers in Russia were hardly even paid their salaries at the time.

Nevertheless, the 1992 Law on Education already defined the idea of *certification of educational institutions*, which implied establishing how well the quality of graduates complied with the requirements stipulated in the national learning standards (this term was also defined for the first time in the law of 1992). An institution was considered certified if at least 50 percent of its graduates demonstrated the knowledge and skills required by the standard. It was not until 2004 that the first learning standard was actually developed (the reasons for this are beyond the scope of this article), and still institutions were certified on a regular basis. Every region came up with their own graduate assessment materials to test conformance with the basic education plan and program recommendations—instead of learning standards. The quality of those materials was non-negotiable, and there were no experts to design and evaluate measurement tools and procedures. Consequently, any general speculations on the quality of schooling were out of the question.

Russia became a regular participant in international comparative studies in 1995, beginning with the Trends in International Mathematics and Science Study (TIMSS). It has also participated in the Programme for International Student Assessment (PISA) since 2000 and the Progress in International Reading Literacy Study (PIRLS) since 2001. In addition, there were now experts who could create and test measurement tools and procedures. Russia performed great in the TIMSS and PIRLS, scoring below the OECD average in the PISA. Results obtained by Russian students in the international assessments were used to develop recommendations for curriculum methodologists, upgrade advanced teacher training programs, and adjust the content of textbooks, e. g. by adding tasks testing various literacies and competencies. Later on, the approaches adopted for the development of international assessment tests were used to design the standards of school education. It can be said therefore that the results of international comparative studies became a tool of school education quality management in Russia.

In 1996, centralized school-leaving testing was introduced, which used unified measurement materials (multiple-choice tests) and a unified procedure to exempt school graduates from having their knowledge of school subjects tested twice within a month (first when leaving high school and then when entering college). Since centralized testing was not obligatory for school leavers (moreover, participation was fee-based) while schools and colleges were the ones to decide whether to credit the scores as passing for graduation or admission, there was not much debate over the quality of test measures or objectivity. Colleges mostly accepted centralized testing scores in non-major courses, e. g. a lot of engineering universities happily credited scores in Russian language. No inference on education quality could possibly be drawn from the outcomes of centralized testing.

*Translated from Russian by I. Zhuchkova.*

It was only in 2001, when the experiment with the Unified State Examination (USE) began to unfold, that education quality started becoming a big deal.

It might be useful to remind the reader of what actually prompted the emergence of the USE. By the year 2000, it had become blatantly obvious that grades in the certificates of graduates from even two neighboring schools did not make it possible to compare the level of those graduates' knowledge and competencies. In a situation where the number of gold medalists was forced up to boost privileges in college admission, it was no use talking about the quality of school education.

College admission procedures were no less a matter of concern. Every college designed entrance examinations of their own, which led to proliferation of 'under-the-counter' college prep tutoring, meaning that college tutors and prep courses only taught the topics that the candidates would find in a specific exam. There was a huge mass media coverage of abuse in entrance exam procedures, when pre-tutored candidates were guaranteed admission and everybody else could only make it into the college if there were still vacancies left. Many colleges also had secret understandings with specific schools, accepting results of their low-supervised exit examinations to admit graduates. Clearly, a child 'off the street' had almost no chance of being enrolled in a school like that. As a result, intra-national student migration rates plummeted in the top universities of Russia, where only 25 percent of newly-enrolled students were non-residents in 2000, as compared to the Soviet rate of 75 percent. The proportion of rural students in regional colleges reduced a lot, too.

The USE was designed to provide assessment of individual attainment of high school graduates and thus college applicants in school subjects regardless of which school they studied at or which college they applied to. A study of global practices followed by extended discussion resulted in a decision that two school exit exams, Russian and mathematics, will only be available for taking as USE tests, while students could still choose between the USE and conventional examination format for the rest of the subjects. Understandably, their choice was predetermined by the array of admission tests in every specific major in every specific college. As soon it was all set with the mandatory and optional exams, it was time to decide on the format of questions. Again, analysis of the results of a number of international assessments as well as national tests and monitoring studies in different countries, first of all Australia, Great Britain, the Netherlands and the United States, resulted in the following structure of test materials: Part A contained multiple-choice tests, Part B contained short-answer questions, and Part C suggested giving extended answers (argumentative, essay, problem solving, etc.). Part A and B tasks were checked by a computer, whereas the checking of Part C tasks was carried out by experts.

While international experience could be used to develop the structure of test materials, the policies and procedures were created entirely from scratch: there had been no precedent of virtually simultaneous countrywide testing in a country covering ten time zones.

When the USE integration experiment was launched in 2001, only four federal subjects of Russia took up voluntary participation in it, test materials were available for eight school subjects only, the scores were accepted by 16 colleges, and 45,000 man-exams were conducted. The aim of the experiment was to hone the technology used for designing the test materials and procedures, from the unified regulations for interaction among specifically-established federal and regional agencies, through involvement of public monitoring groups, to the appeal investigation procedure. In 2008, when the experiment stage was nearing its end, the Unified State Examination involved 84 federal subjects of Russia as voluntary participants, featured test materials in 13 school subjects, had its results accepted by 1,800 colleges and their branches, and boasted a record of 2,665,000 man-exams successfully conducted.

Alongside the USE, the middle-school student academic achievement test has been in place since 2003 (originally called the State Final Examination and then renamed into the Basic State Examination). Test materials were developed at the federal level, but, unlike with the USE, the exam procedure was designed and supervised by the relevant federal subjects—as interregional mobility is extremely low among middle school graduates, there is practically no concern about the equivalence of assessment results across the federal subjects.

Thus, the key component of the Russian educational assessment system was constructed, that being the independent assessment of academic achievement of middle and high school graduates. The process of construction involved establishing a network of regional information processing centers, which later evolved into centers for educational assessment. In addition to making quality higher education more accessible to children from remote regions and rural localities, the USE performed another important function of providing teachers and curriculum methodologists with valuable information on the level of understanding of specific topics within the subjects included in the USE. Annual reports contained test materials and detailed analysis of student performance, which were then actively used for the purposes of advanced teacher training. Similar activities were carried out at the levels of federal subjects, municipalities and individual schools, which undoubtedly had an effect on the quality of Russian education.

A fact that cannot be ignored though is that USE and BSE results have been continuously misused since the first year of the experiment despite federal education authorities issuing a number of messages, explaining that such practices are unacceptable. Results of high-stakes testing—which is a term adopted for tests with important consequences for the test taker (in this case, in terms of obtain-

ing a school leaving qualification and/or entering college)—began to be used to directly assess the performance of teachers, schools, municipalities, regions and even governors as well as to build ratings of all sorts. However, evaluating performances of any type without making allowance for the context (socioeconomic status, whether home language is different from the language of instruction, the level of educational infrastructure available, etc.) is simply wrong and fraught with punishment of the innocent and reward for the uninvolved. In fact, analysis of test performance shows that nearly all 100-point scorers use out-of-school resources to prepare for the test (dedicated courses, including those online, tutorship, etc.) and students scoring below the required minimum often come from low socioeconomic backgrounds and live in depressed or remote districts. Misuse of USE and BSE results prompted schools, municipalities and regions to ensure highs student scores at all costs, which resulted in numerous attempts to falsify test results.

Since USE-based evaluation of governors and later mayors was abolished (regions' average USE scores used to be a criterion of governor and mayor performance) and as a result of the unprecedented measures taken over the last two years to enhance security during examinations, objectivity and reliability of the test results have improved dramatically.

It has to be admitted, however, that misuse of USE results has some substance behind it: decision-makers simply do not dispose of any other remotely reliable information that would allow them to assess the effectiveness of teachers, schools, municipalities, etc. For this reason, the concept of the Russian Nationwide System of Educational Assessment was developed in 2006, yet it was never approved due to staff changes in the industry. Along with improving the USE and BSE measures and procedures (including discrimination between the basic and advanced levels in obligatory subjects), the concept implied creating national studies of not only academic achievement but also socialization of students and school leavers, testing diverse models of in-school assessment, and designing programs to instruct teachers and school administrators to use and interpret results of different types of tests with a view to improving education quality. A number of the concept provisions became part of the 2012 Law on Education and other regulatory documents, which certainly fostered the evolution of the Russian educational assessment system.

An important role in this process was played by Russia Education Aid for Development (READ), a project launched in 2008 as part of cooperation between Russia's government and the World Bank to support developing countries. One of the paramount goals of the project was to foster a professional community that would deal with education quality problems and carry out tests, assessments and studies in Russia and the CIS countries. Measures used to achieve that goal included conducting regular webinars on the pressing issues of educational

assessment, holding dedicated conferences, and publishing a journal. Events held as part of the project were attended by hundreds of professionals from all over Russia and the CIS countries. READ assisted the development of a number of measurement materials that can be used to evaluate and monitor both the individual progress of students and the performance of educational institutions. Unfortunately, unlike their regional-level colleagues, federal education authorities showed very little interest in the project.

**Monitoring in Educational Assessment**

Most researchers understand monitoring as regular observations and description of the state of an object(s) using a small number of specific parameters. Monitoring results are often presented as ratings (rating being understood as one-dimensional comparison by a preselected criterion).

Educational ratings are normally used to identify and spread the best practices as well as to spot risk zones, i. e. schools, municipalities or federal subjects with consistently low learning outcomes, which require targeted action plans to improve the situation.

In Russia, educational monitoring is represented first of all by various international assessments, of which Russia has been a regular participant and the results of which have been used to develop recommendations on improving the quality of Russian education. The integration of the USE was immediately followed by attempts to use its outcomes as the basis for monitoring the quality of school education at the national, regional and municipal levels, which resulted in a shower of ratings of all sorts. Two fundamental errors were committed along the way. First, everyone ignored the fact that high-stakes tests cannot be used as indicators of schools', municipalities' or regions' performance unless contextual parameters are taken into account. Second, no allowance was made for the fact that USE scores of different years just cannot be compared due to the changes in test design (the division into the basic and advanced levels in mathematics and abolishment of multiple-choice tests for no good reason) and to the test conditions growing ever stricter over the recent years (which is totally justifiable). Otherwise speaking, one cannot judge on education quality improving or worsening from a mere comparison of USE performance in different years. What is more, the "politically" motivated refusal to use multiple-choice tests, which have been and will continue to be widely used in all international studies, has resulted in the minimum passing USE scores permanently going down.

Ratings based on results from the same year yielded no more information as they did not differentiate between schools, municipalities and regions with different socioeconomic and cultural parameters. The resulting ratings were topped by the so-called "governor's schools", while schools educating predominantly students from low socioeconomic backgrounds were lagging far behind. It would hardly

make sense to talk about spreading the best practices of the "governor's schools" to underfilled rural schools in depressed districts as an implication of such ratings. Consequently, it would also be very hard to contemplate any education quality improvements based on them.

It was only in 2014 that the National Survey of Education Quality (NSEQ) was launched, implying regular assessments of the quality of schooling in specific subjects, at specific levels of school education, in specific classes. However, the implications of the findings remain utterly limited. Results of the NSEQ, performed at the national level, cannot be compared to any global outcomes. Localized school samples are not representative of the federal subjects of Russia, making it impossible to compare performance or draw generalized conclusions on the quality of education in regions, municipalities and individual schools. Besides, no fixed intervals for NSEQ in particular school subjects have been established so far, which makes it impossible to monitor trends in subject-specific teaching. As a result, it is not so clear who can use NSEQ findings to improve education quality and how.

A number if regions conduct monitoring assessments of their own, which most often use the READ tools or those applied by the Center for Educational Assessment of the Institute for Strategy of Education Development.

## Current Issues in the Development of the Russian Educational Assessment System

I will start with the innovation that has been probably the major concern in the educational community lately. The Russian Nationwide Tests, which represent tests for school students at the end of every year of schooling, have been the most massive evaluation procedure in the Russian education system. About three million school students and nearly 40,000 schools took part in the first round in April–May 2017, which only involved 4th, 5th and 10th grades. The way this assessment procedure is organized raises a whole lot of red flags.

First, the Russian Nationwide Tests are claimed to use the tasks developed at the federal level in compliance with the Federal State Education Standard and to provide uniformity of assessment criteria, although schools are the ones in charge of the tests. However, the standards are based on stages, not grades, and do not contain subject-specific performance requirements, so the law allows every school to develop education programs of its own. That means, in fact, that the Russian Nationwide Tests will again overregulate school activities and experimental schools will again be stigmatized as incompliant. As for unified criteria, the experiences of international Baccalaureate schools and of USE integration have made it obvious that a great deal of effort should be invested in elaborating such criteria and teaching in order to use them.

Second, the implications of the Russian Nationwide Tests' results remain unclear. Allegedly, teachers are supposed to use them to evaluate academic achievement of students and develop individual learn-

ing plans. In other words, the tests provide material for diagnostics, thus being a service for teachers and schools. But why then should the procedure be regulated that much? This degree of regulation may result, and it already does, in teachers and schools being compared on the basis of performance in the Russian Nationwide Tests. Fraud and punishment of the innocent are predictable consequences, as the tests are run by schools. It is also very likely that the results will be used for rating.

That way, the Russian Nationwide Tests turn out to be a weird hybrid of materials for in-school assessment (but why then so much external regulation?), monitoring (but why then test every single child? And how could it be viable without external control?) and high-stakes testing (because there will inevitably be high and low achievers).

This assessment monster consumes an awful amount of finance, time and human resources, diverting attention from the actually challenging issues in the Russian educational assessment system, which I believe include the following:

· Transition to competency-oriented USE and BSE, while keeping in line with the middle and high school standards and preserving the subject-specific component;
· Development of national monitoring studies to compare education quality across regions and municipalities, not only by the level of students' knowledge but also by the level of soft skills they have developed, and monitor the socialization patterns of school graduates and at-risk teenagers;
· Elaboration of various models of in-class and in-school assessment and creation of tools to measure individual progress of students, not only in subject-specific knowledge but also in terms of how they develop various competencies.

Meanwhile, the lack of competent interpretation of measurement results at all levels appears to be the main challenge in educational assessment today. The critical step in using test findings consists in switching from ratings to rankings, i. e. multi-parameter comparative assessments that allow users to sort the assessment results by any parameter that might be of interest to them and thus provide for a whole array of ratings, and preparing thoughtful managerial decisions on education quality enhancement based on such rankings.

Some really good practices have been developed in all of the abovementioned fields, but they are all results of enthusiastic effort and never receive the priority attention from education authorities. Therefore, the prospects for the development of the Russian educational assessment system depend on solving the problems described above.

As for the Unified State Examination as the central component of this system today, I speculate that it will disappear in its current

form, surrendering much of its infrastructure to centers that will carry out independent evaluation of the level of subject-specific knowledge, various literacies and soft skills (the OECD and the WorldSkills have already started working in that direction). Such centers will issue certificates that people will collect into portfolios and use when enrolling in postsecondary education and competing for jobs. Some prototypes of such centers already exist, one of those being TOEFL testing locations.

Overall, the weight of education quality assessment issues is certain to continue growing in the education system evolution agendas, both in Russia and globally.