# The Fragile Centrality of Teachers: Demographic and Institutional Strains in the Russian Education Workforce

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Abstract

Teachers occupy a paradoxical position in contemporary societies: they are central to social reproduction and economic development, yet their profession remains structurally fragile. This article reports on demographic and institutional pressures shaping the teaching workforce in Russia between 2016 and 2024, situating the findings within global debates and the BRICS context. Drawing on national statistical data and institutional reports, we trace three interlinked dynamics: demographic ageing, workload intensification, and professional role transformation. The share of teachers aged 60 and above increased markedly in 2016–2024, while pupil-to-teacher ratios rose to nearly 20 in urban schools, highlighting escalating pressures on the staff. At the same time, teachers expanded their responsibilities becoming mentors, mediators, and digital administrators, reinforcing tendencies toward role overload and burnout. Interpreting these developments through the sociology of professions, human capital theory, and institutional resilience, the article argues that Russia exemplifies how demographic and organisational forces intersect to reconfigure teaching as a "semi-profession". While these processes mirror global trends, the Russian case reveals distinctive patterns shaped by uneven regional development and state-centered governance. The study contributes to comparative education by integrating demographic and institutional perspectives, thereby illuminating the fragile centrality of teachers in transitional education systems.

Keywords

teaching profession, Russia, ageing workforce, teacher shortages, work intensification, sociology of professions, institutional resilience, BRICS, comparative education

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## 1. Introduction

Few occupations embody such a striking paradox as school teaching. On the one hand, teachers are celebrated as the linchpin of future societies: they are entrusted with preparing educating citizens, cultivating skills for knowledge economies, and sustaining cultural reproduction. On the other hand, the profession is persistently marked by fragility — relatively low salaries, chronic shortages, high turnover, and an ever-widening set of responsibilities. The combination of symbolic centrality and institutional vulnerability makes teaching a revealing area for studying the tensions of contemporary labour markets and welfare states and renders the profession unusually sensitive to demographic and organisational pressures [Ingersoll, 2001; Ingersoll, Strong, 2011; Sutcher, Darling-Hammond, Carver-Thomas, 2016].

These pressures are global. Comparative evidence documents persistent shortages, often prevailing in mathematics and science and in upper-secondary tracks, where labour-market demand outpaces supply [OECD, 2019; 2021; 2023] The teaching workforce is ageing across many systems. While attrition among early-career teachers remains high, the role expectations have broadened — from subject expertise towards mentoring, pastoral care, digital reporting, and conflict mediation [OECD, 2020; Worth, van den Brande, 2020]. The growing misalignment between the breadth of teachers' work and the incentives to assume it is frequently discussed through the lenses of work intensification and burnout [Apple, 2005; Maslach, Leiter, 2016], and it intersects with long-standing debates about teaching as a "semi-profession", the boundaries and autonomy of which are persistently contested [Etzioni, 1969; Abbott, 1988].

In Russia, these tensions have been brought into sharp focus. Between 2016 and 2024, the number of school-age children grew by nearly one-fifth, while the teacher workforce remained broadly flat. At the national level, pupil-to-teacher ratios have increased noticeably in recent years, with the growth particularly pronounced in urban schools [Zair-Bek, Anchikov, 2022]. At the same time, the share of teachers aged 60+ rose from 11% to 16.4%, with particularly high numbers in physics and chemistry and notable regional disparities. Such developments resonate with international evidence on ageing and shortages, yet they are sharpened in Russia by uneven territorial dynamics: large metropolitan regions increased staffing, while several peripheral regions experienced double-digit declines in the number of teachers. Beyond headcounts, formal role expansion — mentoring, conflict mediation, and digital accountability — has continued, with administrative load being a recurring theme in institutional documents [OECD, 2020]. Placing Russia within a broader comparative frame clarifies the relevance. Across emerging economies, BRICS included, systems confront similar structural pressures — ageing, shortages, STEM imbalances — while mobilising distinct institutional responses [OECD, 2019; 2023; UNESCO, 2023]. In India and South Africa, for instance, research points

to persistent pupil-to-teacher ratio stresses, uneven regional staffing, and the need to replace mathematics and science teachers in the long run [Kingdon, 2020; Spaull, 2013] Brazil continues to debate the attractiveness of teaching and uneven staffing across states [Gatti, Barretto, André, 2011], while China is taking measures to mitigate local shortages and expand mentoring and induction [Liu, Onwuegbuzie, 2012; Yuan, Devos, Tormey, 2016]. Although institutional architectures differ, the constellation of pressures is recognisably shared.

This paradoxical positioning invites a more conceptual reflection. Rather than treating demographic ageing, workload intensification, and professional transformation as discrete problems, we approach them as mutually reinforcing issues, which apparently redefine what it means to be a teacher. The sociology of professions alerts us to the interplay between expanding duties and constrained autonomy in "semi-professions", a tension that helps explain teachers' contested jurisdiction over pedagogical and pastoral work [Abbott, 1988; Etzioni, 1969][1]. From the perspective of human-capital and demographic economics, ageing simultaneously signals a reservoir of accumulated expertise and a looming replacement gap; early-career attrition magnifies the risk that knowledge will not be reproduced at scale [Ingersoll, 2001; Sutcher, Darling-Hammond, Carver-Thomas, 2016]. Institutional theory, in turn, suggests that the combined dynamics of demographic ageing, intensified workload, and expanding professional roles are not merely labour-market arithmetic: they are stress tests for the resilience of schooling as an organisational field. These tests are increasingly indicative of the current state of affairs in teaching [Apple, 2005; OECD, 2020; Worth, van den Brande, 2020]. Seen this way, Russia is not just another national case but also a strategically positioned instance in which global pressures intersect with a transitional, state-centered governance legacy, producing distinctive entanglements of demographic, institutional, and professional change.

The novelty of this article lies in tracing demographic, institutional, and professional factors explicitly. Empirically, we provide a longitudinal account (2016–2024) of demographic shifts, workload, and role expansion in Russia, using disaggregated statistics and institutional sources. Conceptually, we integrate insights from the sociology of professions, work-intensification and burnout research, and comparative education to interpret how these forces jointly reconfigure teaching. In addressing this integration, we respond to the following research gap: while international scholarship has richly documented shortages, ageing, and attrition in high-income settings (e.g., [OECD, 2019; 2023; Ingersoll, 2001; Maslach, Leiter, 2016]), far less is known about how

[1] The term semi-profession [Etzioni, 1969] refers to occupations, such as teaching, nursing, or social work, that possess significant social responsibility but only limited professional autonomy, authority, and control over entry or standards, compared with full professions, such as medicine or law.

these processes combine in transition economies, where demographic change, uneven regional development, and state-centred governance produce distinctive patterns of strain and adaptation [Kingdon, 2020; Spaull, 2013; Yuan, Devos, Tormey, 2016]. By examining Russia through the composite lens, we aim to contribute to both an empirically grounded account of recent transformations and a conceptual clarification of how demographic and institutional pressures co-produce professional change.

This article continues a line of analytical work over the past decade, showing that pressures on the teacher workforce — shortages, weak retention, and expanding role demands — have endured or even deepened. International monitoring reports have repeatedly documented these patterns [OECD, 2019; 2020; 2023; UNESCO, 2023; European Commission, 2019], while country-level studies confirm that similar challenges persist across both high-income and emerging contexts [Sutcher, Darling-Hammond, Carver-Thomas, 2016; Worth, van den Brande, 2020; Kingdon, 2020; Spaull, 2013; Gatti, Barretto, André, 2011].

The goal of this research is to analyse how demographic, institutional, and professional pressures have transformed the Russian teaching workforce over the past decade, and to interpret these processes within broader theoretical and comparative frameworks. Specifically, the study seeks to examine how workforce ageing, workload intensification, and evolving professional roles interact as interconnected dynamics that influence the sustainability of the teaching profession.

Accordingly, the research addresses the following questions:

1. How have demographic and institutional changes affected the structure and composition of the teaching workforce in Russia since 2016?
2. In what ways have teachers' professional roles, workloads, and responsibilities expanded, and how do these shifts relate to attrition and retention?
3. How do the Russian trends compare with those observed in the other BRICS countries and internationally, and what do they reveal about the resilience of education systems facing similar pressures?

These questions anchor the article's central concern: to explain the fragile centrality of teachers within contemporary education systems. By connecting demographic, institutional, and professional dynamics, the study seeks to illuminate how the very foundations of the teaching profession are being redefined under conditions of strain. This approach bridges empirical analysis with theoretical reflection and leads into the following discussion of how similar processes have been understood in international research.

## 2. Literature review

The teaching profession has long been the subject of scholarly concern, precisely because it encapsulates a paradox of high symbolic importance and structural fragility. Comparative and national studies consistently underscore how teacher shortages, demographic ageing, workload intensification, and contested professional identities intersect in shaping the sustainability of education systems [Ingersoll, 2001; Maslach, Leiter, 2016; OECD, 2020]. This section reviews four strands of literature most relevant to the present study: teacher supply and attrition, demographic ageing, work intensification and burnout, and the sociology of professions.

Research on teacher labour markets highlights persistent imbalances between supply and demand. For example, in the United States, as Ingersoll [2001] demonstrated, teacher turnover, rather than recruitment shortfalls alone, is a major driver of staffing instability. The subsequent paper by Ingersoll and Strong [2011] emphasised the role of induction and mentoring in improving retention. The Learning Policy Institute's report by Sutcher, Darling-Hammond, and Carver-Thomas [2016] provided a comprehensive model of teacher supply and demand, predicting a "coming crisis" without systemic reforms. European analyses reach similar conclusions: shortages in mathematics and science teaching remain widespread, with some systems relying heavily on underqualified staff [European Commission, 2019].

The BRICS countries face comparable challenges. Kingdon [2020] notes that India struggles with uneven pupil-to-teacher ratios across states, while Spaull [2013] documents chronic staffing shortfalls in South Africa, particularly in mathematics and science. In Brazil, according to Gatti, Barretto, and André [2011], the profession remains unattractive due to low salaries and limited career progression, contributing to teacher shortages in key regions. These findings resonate with Russian evidence of high attrition among young entrants and persistent regional disparities [OECD, 2019; 2020; Mertsalova et al., 2022].

Ageing has emerged as a critical feature of teacher labour markets. OECD [2019; 2023] reports highlight the rising share of teachers aged over 50 across Europe and Asia, raising concerns about replacement needs. Worth and van den Brande [2020] analyse longitudinal workforce data in England, showing that older teachers are overrepresented in some subjects, with implications for succession planning. Demographic economics interprets ageing as a dual-edged process: while experienced staff embody significant human capital, the scarcity of younger entrants jeopardises intergenerational knowledge transfer [Hanushek, Rivkin, 2007].

Comparative research illustrates how different systems respond to ageing. In the case of China, Liu and Onwuegbuzie [2012] link ageing and stress to turnover intentions, while Yuan, Devos, and Tormey [2016] emphasise mentoring structures to integrate younger teachers.

South African projections warn of looming replacement gaps as older cohorts retire [Spaull, 2013]. The Russian case mirrors these global trends but exhibits sharper territorial imbalances: ageing is concentrated in smaller, rural regions, particularly with regard to physics, chemistry, and mathematics teachers [OECD, 2019; Zair-Bek, Anchikov, 2022; Zair-Bek, Mertsalova, Anchikov, 2020].

A parallel body of literature emphasises the intensification of teachers' work. Apple [2005] described the expansion of audit cultures and accountability regimes, situating teachers within broader neoliberal transformations of education. This aligns with analyses of workload expansion beyond teaching into bureaucratic and pastoral duties [Day, Gu, 2010]. The psychological dimensions are captured by burnout research: Maslach and Leiter [2016] identify workload, role conflict, and emotional demands as central risk factors.

Evidence from BRICS adds nuance. Indian studies point to administrative overload and low autonomy as drivers of teacher dissatisfaction [Kingdon, 2020]. In China, rising work stress is associated with higher turnover intention, especially among younger teachers [Liu, Onwuegbuzie, 2012]. In Brazil, qualitative research documents frustration with excessive administrative tasks and insufficient institutional support [Gatti, Barretto, André, 2011]. Similar patterns of workload intensification have been observed in Russia, where national monitoring and education statistics point to a steady rise in teaching hours, especially among mathematics and science teachers, reflecting global tendencies toward role expansion and work overload [OECD, 2020; Kolesnik, Boyarkina, 2024].

The sociology of professions provides a conceptual framework for interpreting these empirical trends. Etzioni [1969] described teaching as a "semi-profession", highlighting its partial autonomy and contested jurisdiction. Abbott's [1988] "system of professions" theory situates teaching within a competitive division of labour, where boundaries shift under institutional pressures. More recent scholarship has re-examined teaching through the lens of professionalisation, accountability, and role conflict [Hoyle, Wallace, 2005].

This literature illuminates why teaching often combines high social value with weak institutional protections. The Russian case underscores these tensions: teachers are tasked with increasingly complex roles, namely, a mentor, mediator, and digital administrator, while their authority remains bounded by bureaucratic oversight [OECD, 2020].

Taken together, the four strands establish a clear baseline: teacher shortages, demographic ageing, work intensification, and contested professional status are global phenomena. Yet much of the empirical and theoretical literature remains anchored in high-income contexts [Crossley, Watson, 2003; Connell, 2007]. Less is known about how these processes intersect in transition economies, where demographic decline, uneven regional development, and state-centred gover-

nance create distinctive constellations of strain. Russia offers a unique vantage point: it exemplifies global pressures while revealing nationally specific dynamics, especially sharp regional disparities and the persistence of Soviet legacies in governance. By integrating insights from the sociology of professions, human capital theory, and institutional resilience, the present study addresses this gap, situating Russian evidence within international debates.

## 3. Methodology and data

### 3.1. Research design

This study combines national statistical analysis with institutional sources to identify transformations in the Russian teaching workforce between 2016 and 2024. Our methodological approach is explicitly longitudinal and multi-scalar: we track changes in the aggregate size and structure of the profession, disaggregate these by subject, age group, and region, and interpret patterns through the lens of the sociological research results. We also use institutional documents such as regulations and laws stipulating the evolving role of teachers. By situating descriptive statistics within broader conceptual debates, we aim to move beyond "headcount" analyses of supply and demand toward an integrated account of how demographic, organisational, and professional pressures intersect.

### 3.2. Data sources

The empirical foundation of this study rests on a combination of official statistics (Russian Federal State Statistics Service; The Ministry of Education of the Russian Federation), sociological surveys and policy analysis, enabling a comprehensive and dynamic analysis of the Russian teaching workforce. The primary source is the federal statistical observation of schools aggregated on the regional and federal level. The Ministry of Education of Russia publishes these forms annually[2]. These statistical forms provide unified methodological tools for collecting information on teacher age, qualifications, work experience, employment trajectories, and staff schedule. Its continuity allows to track longitudinal changes and reliably capture structural shifts in the composition of the workforce.

To contextualise these patterns, we draw on demographic and socio-economic indicators published by The Federal State Statistics Service[3], which situate teacher labour dynamics within broader population and economic trends. These contextual data are essential for interpreting regional disparities and understanding how broader demographic shifts and fiscal conditions shape school staffing.

[2] https://edu.gov.ru/activity/statistics/general_edu

[3] https://rosstat.gov.ru/statistics/accounts; https://rosstat.gov.ru/folder/12781; https://rosstat.gov.ru/labor_market_employment_salaries; https://rosstat.gov.ru/statistics/price

In the quantitative stage, 245 expert questionnaires were collected from eight regions of Russia; after data cleaning, 197 valid responses remained (20% were discarded). The respondents included 55% school principals and 45% deputy principals. Two-thirds had held administrative posts in their current schools for more than five years. By school type, 70% represented secondary schools, 18% general schools, and 12% advanced schools such as gymnasia and lyceums. Average school size varied from 265.5 students in basic schools, 615.6 in secondary schools, and 857.1 in secondary schools with advanced programs. A majority of respondents (54%) worked in rural settings. The age profile followed national patterns, with most administrators aged 40–59 and women constituting 92% of the sample. The survey instrument contained around 40 questions, organised into six thematic blocks: school characteristics; resource provision; teacher workforce composition and working conditions; teacher trajectories and attrition factors; managerial practices for teacher retention; and peculiarities of the territory. The questionnaire was administered electronically via the Anketolog.ru platform.

The qualitative stage comprised 36 semi-structured interviews with key stakeholders: 9 school leaders (including 5 from rural schools), 8 representatives of teacher-training institutions (5 from pedagogical colleges), 7 regional education officials, and 12 municipal administrators (4 from urban municipalities; 8 from mixed ones). The interviews followed a flexible guide, focusing on the scale and drivers of teacher attrition, the typical "profile" of teachers leaving the profession, retention practices at school and municipal levels, and the role of teacher-training institutions. Each interview lasted on average 50–70 minutes, was audio-recorded with participants' consent, and subsequently transcribed for analysis.

Quantitative data were processed using SPSS 28 and Excel. The analysis relied primarily on descriptive statistics, including frequency distributions, cross-tabulations, and measures of central tendency and dispersion. Qualitative data were analysed in Atlas.ti 23 through the multi-stage coding strategy. Open and axial coding were employed to derive the initial categories and then consolidate them into broader analytical dimensions, enabling us to establish linkages between the themes. Co-occurrence analysis was used to trace intersections of categories (e.g., workload with health, or remuneration with career decisions). To ensure analytical robustness, coding was conducted independently by three researchers, followed by triangulation to reconcile discrepancies and refine category structures.

This design provides both breadth, through statistically interpretable survey data, and depth, through qualitative accounts that capture institutional logics, professional identities, and regional policy environments. Quantitative surveys and interviews provide information on aspects that cannot be fully observed in statistical registers,

such as teachers' motivations, professional trajectories, and the institutional mechanisms underpinning recruitment and attrition. These data help illuminate how educators themselves interpret role expansion, workload intensification, and salary dynamics, complementing the structural evidence from administrative sources.

## 4. Results

### 4.1. Education policy focus on teachers

Historically, the teacher workforce has been central to Russian educational policy considering teaching profession as a strategic resource for national development. Since the mid-2000s, a sequence of national projects has sought to address both quantitative and qualitative aspects of the profession. The National Project "Education" (2005) introduced supplementary payments for homeroom teachers and bonuses for outstanding teachers, directly linking teacher motivation to material incentives. The project for the Modernisation of Education (2007) went further by reforming remuneration systems, shifting general schools to per-capita financing, and investing in teacher professional development. A subsequent programme, the national educational initiative "Our New School" (2010), emphasised improving the teacher corps through a mix of moral and material incentives, recruitment of new specialists, systematic certification of teaching and managerial staff, and the modernisation of both initial and continuing teacher education.

The federal focus on teachers was reinforced by Presidential Decrees of 2012 and 2016, which expanded responsibilities for regions in aligning salaries and performance management with national benchmarks. These initiatives culminated in the 2018 Presidential Decree, launching the National Project "Education", which introduced the national system of professional growth for teachers and the flagship programme "Teacher of the Future". The programme institutionalised new mechanisms of early-career support, including structured assistance during the first three years of work, and created a system of voluntary independent assessment of professional qualifications.

Over the past decade, these overlapping initiatives have converged in three key reforms: the institutionalisation of the professional standard for teachers; the introduction of the federal model of certification, shifting from regional, tenure-based systems to competency-based evaluation; and the expansion of teachers' formal functions to include administrative work, mentoring, and psycho-pedagogical support. While these changes have clarified expectations and created new career trajectories, they have also increased workload by broadening the substantive scope of teachers' labour.

Finally, remuneration reform has remained at the centre of debate. Since 2018, federal policy has moved toward a unified national model of pay with a clear division between base (70%) and performance-related (30%) components, aiming to reduce regional disparities and provide transparent criteria for incentive payments. Together, these

measures illustrate how teacher workforce policy in Russia has been consistently embedded within priority projects, with teachers remaining a constant focus of national education reform.

In recent years, many of these initiatives have continued to develop. Since 2023, the implementation of the teacher professional standard and the associated certification model has been normatively supported at all levels. The Institute of Mentorship, which existed in Soviet times, has been reinstated in a modernised format, with clearly defined and regulated functions. The institute is expanding and substantially shapes opportunities for horizontal career growth, not only vertical advancement through category levels.

Remuneration reform also warrants attention. Long-standing grievances concern both levels of pay and the mechanisms for determining fair remuneration. A gradual shift is under way, designed to equalise conditions across regions and schools by defining basic principles in a unified national model, including a standardised relationship between base and incentive components and uniform criteria for awarding bonuses.

This regulation has benefits, but it has also become a source of increased workload because labour functions have expanded. The policy landscape forms both the context for system analysis and institutional basis for understanding the state of teacher corps.

### 4.2. A snapshot of teacher corps

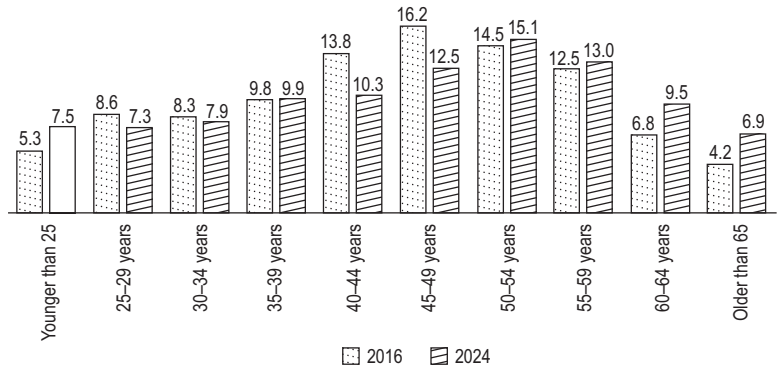
Despite sustained policy attention to the teaching workforce, significant challenges and tensions persist. Over the past two decades, federal and regional initiatives have sought to professionalise, regulate, and support teachers, positioning them as a cornerstone of national development. Yet the current state of the teacher corps reflects a complex interplay of demographic pressures, institutional reforms, and socio-economic constraints.

In the 2024–25 school year, Russia employed approximately 1.13 million teachers. Of this number, around 63,500 worked as external part-timers or on civil-law contracts, indicating that the effective pool of full-time teachers is significantly smaller. Since 2016, the number of teachers in state schools has declined by about 2.2%, while that in non-state schools has increased by 28.2%. Regional cases of teacher workforce dynamics differ sharply. Between 2016 and 2024, the scale of change ranged from the steepest declines of 15–17% in several regions to significant increases of 15–20% in others. For instance, the number of teachers grew most notably in Moscow (+22.0%), St. Petersburg (+20.9%), Leningrad Oblast (+17.3%), the Chechen Republic (+17.0%), the Republic of Ingushetia (+16.0%), and Sevastopol (+15.7%). By contrast, the sharpest contractions were observed in the Republic of Mordovia (–17.5%), the Komi Republic (–14.9%), Smolensk Oblast (–15.7%), and Kurgan Oblast (–14.9%).

At the same time, the student cohort has expanded by 18.5%, from 15.2 million to 18 million. This mismatch between stagnant or declining staff numbers and rising pupil numbers has produced a sharp increase in the pupil–teacher ratio. In 2016, the ratio stood at 14.1 students per teacher; by 2024 it had risen to 16.8. The OECD average is 13.0, indicating that Russian teachers now carry heavier student loads than their counterparts in most advanced education systems.

Another key characteristic to understand the state of teaching staff is age structure. The ageing of the teacher workforce is one of the most visible structural trends (Fig. 1). Over ten years, the number and share of pre-retirement and retirement-age teachers increased, especially those aged 60+. In 2016, 11% of teachers were over 60; by 2024, this figure had risen to 16.4%. The losses are not concentrated among the oldest or the youngest cohorts, rather, they fall in the "effective" middle-age segment defined as teachers aged 35–59 — the share of this group shrank from 67% to 61% over the same period. This cohort is the most productive segment of the workforce, and its decline signals weakening of the system's core human resources.

Fig. 1. **School teachers age structure dynamics, %, 2016 and 2024**




Teacher vacancies offer another lens to understand the shortage of teachers. Official data report that only 2.8–3.4% of teaching posts remain unfilled. Notably, these figures include positions covered by external part-timers. Once these are excluded, the effective vacancy rate rises to 7.4%, more than double the official figure. Schools rely heavily on multiple jobholding to cover teaching hours, either by assigning extra loads to internal staff or by contracting external part-timers. The subject profile of vacancies shows acute imbalances. STEM fields are hardest hit: physics posts show a 9.8% vacancy rate, mathematics 9.7%, and computer science 9.5%. These are precisely the disciplines prioritised by national education policy as strategic for Russia's economic development, yet they suffer the sharpest shortages.

Next, we consider the dynamics of class numbers and class sizes. In recent two years, the number of classes has not grown, while the number of students per class has increased. This indicator is not merely descriptive but political — an instrument of state policy to regulate teacher workload — linking to our next metric measured in teaching load (the norm of working hours for one rate is 18 hours per week). We compute teaching load as the ratio of occupied staff rates to the number of teachers. The limitation is that this captures only in-class teaching; actual workload includes extra-class activities and other duties that are not fully visible.

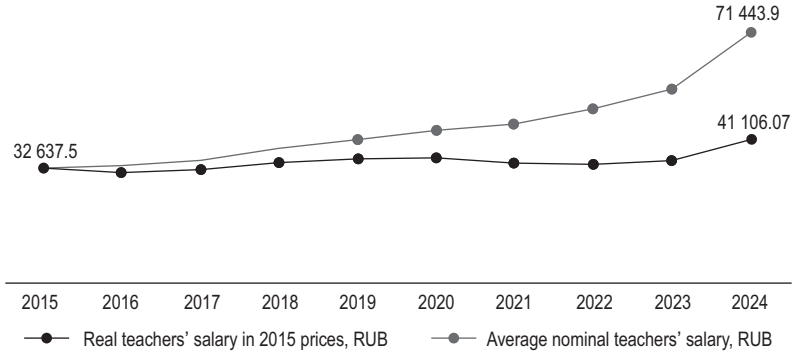
Even so, we observe a substantial rise over the decade. The average number of hours taught increased from 1.2 teaching load in 2016 to 1.48 in 2024. Consequently, the Ministry of Education set a target ceiling of 1.4 teaching load per teacher; currently there is some exceedance. Growth differs across subjects, but it is particularly alarming in mathematics, a core discipline, where teachers are compelled to take on more hours (1.6 teaching load), which is reflecting acute staff shortages and the high demand for mathematics instruction. Regional variation is striking and sometimes hard to explain without reference to regional education and policy factors: average loads range from 1.07 to 1.86 teaching load across regions. Principals, under pressure, sometimes resort to practices that are difficult to characterise as fully lawful, loading teachers heavily and not always formally accounting for hours that exceed a double teaching load.

Remuneration issues are another relevant aspect to understand the state of teacher corps, especially in the context of ageing workforce and increased workload. Teacher remuneration in Russia consists of several components that vary by region, qualification, tenure, and school characteristics. The base salary represents a fixed rate, calculated according to the teaching load (one full-time equivalent equals 18 hours per week), qualification category, and level of education; it typically accounts for about 30% of total income. Compensatory payments are added for work in special conditions, such as rural areas or regions with adverse climates, and for additional responsibilities, including homeroom teaching, working disabled students, or combining positions. The scope and amount of such payments are determined at the regional and school levels. Performance-based incentives depend on teacher achievements, including student results, participation in competitions, or the use of innovative teaching methodology; school governing boards define the criteria for these bonuses. In addition, teachers may receive one-off awards, for example for exceptional service.

By 2023, only four regions had not achieved parity between teacher salaries and the average wage in the regional economy. Since the fourth quarter of 2024, relevant statistics have been closed, limiting monitoring. Between 2015 and the first half of 2024, the gap between

the nominal average school teacher's salary and its real value (measured in 2015 prices) increased by a factor of 1.74 (Fig. 2). While the nominal salary rose substantially from 32.6 to 71.4 thousand rubles, the real salary in 2015 prices grew far less — from 32.6 to only 41.1 thousand rubles. In terms of purchasing power, teacher salaries changed little: the number of standard consumer baskets affordable to a teacher increased only marginally, from 2.4 to 3 over the decade. This stagnation in real income underscores one of the key sources of dissatisfaction in the profession and highlights why salary reforms remain central to debates on teacher retention and workforce stability.

Fig. 2. **Real and nominal teacher salaries dynamics, 2015–2024**




The proportion of teachers with additional sources of income, such as tutoring (about 16.5%), or teaching and administrative work at other educational institutions (about 4%), remains relatively constant [Zair-Bek, Anchikov, 2022]. The need for part-time work remains high.

School leadership plays a critical role in shaping the conditions under which teachers work. Principals allocate workload, manage incentives, and implement professional standards. The director corps, however, faces its own demographic and competency challenges. The number of school administrators declined by 23.4 thousand between 2016 and 2024. The cohort has also aged markedly: the proportion of administrators over 60 has increased by 55%, while the share of younger leaders under 35 has fallen by one-third. Few young administrators enter the profession. Principals struggle with the expanded demands of school management in an era of accountability, reporting, and reform. Schools have changed fundamentally over the past decade, but leadership renewal has not kept pace.

These deficits in quantity, age structure, and competencies directly affect the teaching workforce. Principals who lack up-to-date managerial skills may overburden their staff, fail to implement mentorship effectively, or misalign incentives. Thus, leadership gaps amplify the structural pressures already documented.

### 4.3. Beyond statistics: Sociological insights into the teaching profession

While statistical evidence reveals the structural contours of the teacher workforce, these aggregate trends give an incomplete picture. They identify the scale of the challenge but do not fully capture the lived experience of teachers or the mechanisms driving retention and attrition. To deepen understanding, it is necessary to complement statistical analysis with sociological evidence, which illuminates the factors shaping teacher satisfaction, professional trajectories, and decisions to remain in the profession or leave it.

Sociological evidence provides further depth to the statistical picture, highlighting the multiple factors that influence teacher retention and exit. Survey respondents and interviewees frequently echoed the concerns long noted by experts and the media: low pay, excessive pedagogical and bureaucratic workload, and burnout.

> The workload is extremely heavy because of the shortage of teachers. Everyone is aware of this, and it is a serious problem not only here but across the country. On average, our teachers carry 28–30 hours a week. The heaviest loads are in the Russian language, mathematics, and physical education. We cannot formally assign more than two full-time equivalents, so we record the hours beyond that limit only on paper, but in reality teachers do teach them. Of course, they lose out in terms of pay, since no additional compensation is provided for these hours. But what choice do we have?
>
> (Principal of a rural lyceum)

> In the past couple of years, I have clearly seen the impact of rising prices—on food, on fuel, on everything. The salaries of our teaching staff simply do not keep pace. Even though the government raises wages, the increases cannot match the growth of living costs.
>
> (Male teacher, urban school)

> Primary school teachers here often have to teach two classes. This is exhausting, almost unbearable work. They work in two shifts and come home very late in the evening, with no strength or energy left for their personal life.
>
> (Representative, pedagogical college)

However they also placed strong emphasis on personal and life-course circumstances, including family obligations (often linked to relocation) and health-related issues. The latter were closely connected to the cumulative effect of high emotional strain, physical exhaustion, and chronic fatigue. These findings resonate with quantitative evidence: in rural areas, one in four school principals reported teacher exits on medical grounds.

> Marriage often means relocation, and that is one of the main reasons young teachers leave. I wouldn't say that salary is always their primary concern at the start.
>
> (Female teacher, rural school)

A further theme that emerged prominently in the interviews was the perceived inadequacy of teacher preparation. Among the most frequently mentioned deficits were the ability to build constructive relationships with parents, to work effectively with students from "special" categories (including children with disabilities, migrant children, or children from socially disadvantaged families), and to adapt to increasingly diverse classrooms.

> How can one organise the teaching and educational process when facing not just 25 pupils, but 25 very different individuals? These may include migrant children, who do not speak the language, students with special educational needs, and, at the other extreme, gifted children. Each of these groups requires a distinct approach, and the challenge is how to build effective interaction with all of them.
>
> (Male representative, municipal education authority)

The psychological climate of the staff room also emerged as an important determinant of teacher retention.

> To be honest, the atmosphere in female-dominated staffrooms can sometimes be quite difficult, and not every school is welcoming to young specialists. That is one reason they leave.
>
> (Female student, pedagogical university)

> The role of the administration and the union committee is critical for keeping relations friendly and supportive. Of course, personalities differ, as in any workplace, but much depends on the leadership's attitude.
>
> (Female teacher, rural school)

> Over my 23 years of work, I've seen many staffrooms and many types of relationships. Where there's a sense of family, solidarity, and mutual support, one doesn't want to leave. Yes, there are difficulties, but I know that I'm supported.
>
> (Representative, pedagogical college)

The trajectories of teacher exits reflect this interplay of systemic and individual factors. Many teachers remain within the profession but seek improved conditions by moving to schools with higher salaries,

better infrastructure, or more favorable locations. Beyond the school system, career shifts often follow local opportunities: where manufacturing or entrepreneurial niches exist, especially in creative industries, younger teachers show readiness to leave education altogether.

> Teachers often leave for tutoring centres. This is a major outflow.
>
> (Female representative, regional education authority)

> Many teachers resign from public schools and move into private education or tutoring as self-employed specialists. These are often highly qualified professionals, with the highest certification category and long experience. A frequent trigger is conflict with parents, whose expectations can be unrealistic; under such pressure, teachers choose to leave.
>
> (Female school administrator, urban school)

> Some teachers, particularly younger ones, shift into creative professions or entrepreneurship. They may develop personal projects or businesses, drawing on their talents — for example, design work or starting their own ventures.
>
> (Female representative, municipal education authority, urban)

> There are also unusual cases. For instance, some move into funeral services as masters of ceremonies. The skills teachers develop — working with people, speaking to an audience — prove useful even in such unexpected professions.
>
> (Male representative, municipal education authority, mixed district)

Survey data also shed light on how teachers experience workload. The respondents emphasised that workload extends far beyond homeroom teaching to include lesson preparation, implementation of new educational standards, extracurricular and pastoral activities, and administrative reporting. This aligns with the regulatory expansion of the teacher's role over the past decade. Federal frameworks now codify not only subject teaching but also responsibilities of a homeroom teacher, mentoring, methodological guidance, and psycho-pedagogical support. The reformed national certification system reinforces this expanded conception by linking evaluation to competency-based criteria rather than tenure or honours. While such measures aim to professionalize the workforce, they also deepen the perception of overload. Teachers consistently describe bureaucratic requirements as excessive, and despite significant governmental attempts to reduce them, policymakers themselves acknowledge that reforms have not yet achieved the desired effect.

### 4.4. Regional inequalities in the teacher workforce: A shared BRICS challenge

While national-level statistics capture the overall scale and structure of the Russian teaching workforce, they mask substantial internal heterogeneity. The uneven distribution of teachers across regions adds a crucial dimension to understanding workforce dynamics. Territorial disparities influence not only the availability of staff but also the quality and stability of educational provision. This issue resonates strongly with broader BRICS context, where regional inequalities in teacher distribution and professional capacity represent a systemic challenge to educational equity and quality [Anchikov et al., 2025]. Examining Russia through this lens makes it possible to situate national developments within global discussions, with special emphasis on specific territorial cases, which combine strategic significance with particularly complex contextual conditions.

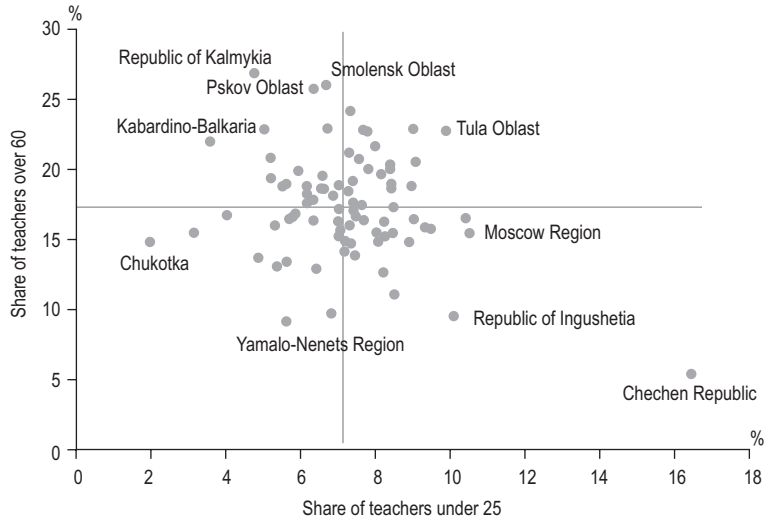
Regional differences add another layer of complexity, and it is crucial for understanding the state of teacher corps in Russia. Between 2016 and 2024, some regions lost up to 15–17% of their teachers, while others gained 15–20%.

The pupil-teacher ratio also demonstrates sharp regional disparities. In 2024, the gap between the regions with the highest and lowest ratios exceeded 12 points, ranging from just above 10 pupils per teacher to almost 23. These differences have remained relatively stable since 2016, when the spread was already substantial. Regional variation in growth rates proved much greater: some regions recorded increases of over 30% in the pupil-teacher ratio, whereas others showed almost no change or even a slight decline. It is demographic expansion of the school-age cohort, efforts to eliminate third shifts, and fiscal optimisation policies that account for these divergences. Projections by Federal Statistical Service suggest that the overall child population will decrease by more than six million by 2040, yet this decline will remain uneven across territories. As a result, certain regions will continue to experience rising pupil-teacher ratios, requiring targeted policy interventions to mitigate risks for educational quality.

Urban and rural schools show divergent patterns. The number of teachers in urban schools increased modestly by 1% between 2016 and 2024, but this growth fell far short of the rise in student enrolments. Rural schools experienced a decline of 6.3% in teacher numbers, continuing a long-term contraction that began in the 1990s with the closure of rural schools and the outflow of rural youth.

An important illustration of regional disparities is the balance between the youngest cohort (under 25) and the oldest cohort (over 60) (Fig. 3). Regions with a high share of older teachers combined with a very limited inflow of young staff (upper-left quadrant) face the greatest risks of workforce instability in the medium and long term. In 2024, nearly one-quarter of Russian regions fell into this category, highlighting the systemic challenge of renewing the teaching profession in parts of the country.

Fig. 3. **Share of teachers under 25 and over 60 in general education schools by region, %, 2024**




These differences reflect uneven demographic dynamics, fiscal optimisation policies, and region-specific educational strategies [Zair-Bek, Anchikov, 2022; Zair-Bek, Mertsalova, Anchikov, 2020].

For Russia, the Far East and the Arctic region are a specific instance. On the one hand, they embody the archetype of remote territories with complex socio-economic and natural contexts: vast distances, harsh climatic conditions, infrastructural underdevelopment, and sparse settlement patterns. On the other hand, they constitute a national development priority, supported by dedicated institutions and large-scale investment programs. This dual status makes them highly visible in both policy discourse and strategic planning.

The crucial question, however, concerns our specific focus: does the teaching workforce in the Far East and Arctic exhibit distinctive characteristics compared to that in the rest of Russia? Or, conversely, are the observed trends in these territories simply variations of the broader national patterns? Examining this question allows us to better understand whether Russia's most remote regions represent a unique challenge for teacher policy or rather an acute manifestation of systemic issues present nationwide.

Far East and Arctic zones occupy vast areas of the Russian Federation but are sparsely populated and subject to extreme natural conditions. Together, these territories cover over 60% of the country's landmass (40.6% in the Far East and 22% in the Arctic) yet are home to only 5.6% and 1.6% of the population, respectively. Harsh climatic factors, including permafrost, very low average annual temperatures, polar day-night cycles, and fragile tundra ecosystems, combine with underdeveloped infrastructure, long distances from industrial centres,

and low settlement density to create uniquely difficult living and working conditions.

Overall, in 13 out of the 18 regions of the Far East and Arctic the number of teachers decreased between 2016 and 2024. However, the dynamics of workload indicators present a more nuanced picture. In 2024, only four regions of the Far East and Arctic reported a pupil-teacher ratio above the national average, while in most territories this indicator remained lower than the latter. Moreover, the growth of the ratio since 2016 has proved less dramatic than the national trend: only two regions experienced increases exceeding the national average. A similar pattern appears in other dimensions such as the share of unfilled teaching load (excluding part-timers), age composition of the workforce, and teacher turnover. Roughly half of the Far Eastern and Arctic regions show values above the national level, while the other half demonstrate lower or more favourable dynamics. This relative stability contrasts with widespread perceptions of systemic crisis in the peripheries, underscoring the differentiated character of the challenges.

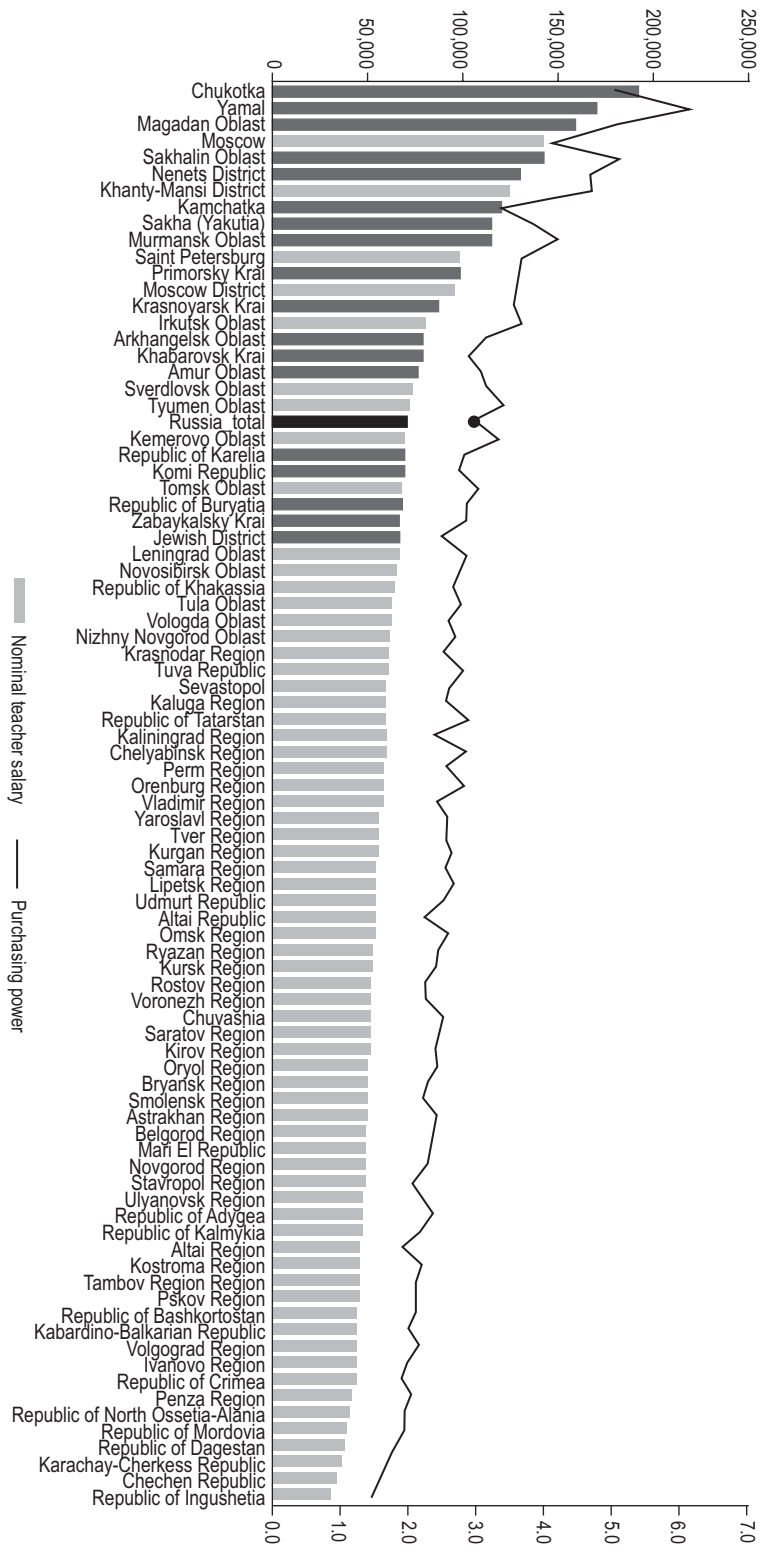
Schools in the Far East and Arctic operate within small and dispersed communities, where they face persistent difficulties in attracting and retaining staff. The combination of geographical remoteness, socio-economic vulnerability, and demographic decline undermines the long-term sustainability of local educational systems. From this perspective, one could expect to observe consistently depressed indicators of teacher availability and stability in these territories. However, the data tell a more nuanced story. At first glance, the Far Eastern and Arctic regions do not appear as a single, uniformly disadvantaged cluster in terms of the size and characteristics of their teaching workforce. Instead, they display considerable internal differentiation: while some regions suffer from acute shortages and high workloads, others perform at or even above the national average. The specificity of these zones, therefore, lies less in a shared structural crisis than in the heterogeneity of their conditions.

The observed disparities align more closely with general socio-economic determinants than with geography itself. Resource endowments, fiscal capacity, demographic and migration trends exert decisive influence on teacher workforce dynamics. In this sense, the Far East and Arctic reflect the same structural logics that shapes teacher availability across the rest of the country, rather than forming a distinct, geographically determined “periphery”.

What stands out is that contrary to expectations of a uniformly adverse situation, the overall picture is not just acceptable but, in some cases, even favourable. This relative stability can be attributed to the particular financial policies applied to these territories.

Far East and Arctic have long been designated as priority zones of national development, supported by special fiscal regimes and compensation measures. One of the key instruments is the system of re-

Fig. 4. **Average nominal salaries of schoolteachers and their purchasing power across Russian regions[4], 2024.**




[4] The bars show average nominal monthly salaries (rubles); the line indicates purchasing power expressed as the number of consumer baskets affordable. Regions of the Far East and the Arctic are highlighted in a different color (purple).

gional ("northern") coefficients. These supplements increase base salaries by substantial margins, depending on latitude and remoteness. As a result, teacher salaries in these territories are among the highest in the country. In 2025, eight of the top 10 regions with the highest monthly wage of schoolteachers are those in the Far Eastern and Arctic zones. For example, the average teacher salary in Magadan district, Yamal, and Chukotka is 160-190 thousand rubles, well above the national average of around 71,400 rubles (Fig. 4).

Not only do these high figures compensate for adverse living conditions and elevated costs of goods and services, they also confer a purchasing power advantage relative to most Russian regions. Even accounting for higher consumer prices in the Far East and Arctic, the real disposable income of teachers — measured as the number of consumer baskets affordable — remains above Russian average (3.0) in the majority of zone regions.

It is, therefore, plausible that these financial measures contribute to both sustaining local residents in the profession and attracting teachers from other regions. Yet the extent of their impact remains an open question. In this sense, the Far East and Arctic provide an important case for further research: to what degree can targeted financial incentives mitigate the structural challenges of remote territories, and how effective are they in supporting not only teacher retention but also professional development and renewal?

## 5. Discussion

This study has examined the state of the Russian teacher workforce between 2016 and 2024, situating national dynamics within broader international debates on teacher shortages, ageing, and attrition. By combining statistical evidence with sociological insights, we highlighted the composite pressures shaping the profession: declining or stagnating staff numbers alongside rising student cohorts, the ageing of the workforce, expanded professional responsibilities, and uneven remuneration.

Teacher shortages and rising workloads are not unique to Russia but reflect a global phenomenon. According to UNESCO, by 2030 every world macroregion will face growing demand for teachers, regardless of demographic or economic circumstances. These global trends show that education systems in both developed and developing contexts struggle to maintain a sufficient supply of qualified teachers.

The underlying causes of teacher shortages differ but often converge around three factors. First, many countries experience ageing of their teaching workforce. In Lithuania, for example, retirement outpaces the entry of younger teachers [OECD, 2025]. Second, attrition is driven by fatigue and dissatisfaction with working conditions. In Denmark, declining satisfaction with workload and institutional support contributes to high turnover [Ibid.]. Third, many systems fail to retain novice teachers: in several European countries,

a substantial share of new teachers leave the profession within the first five years [Ibid.]. Three patterns — ageing, dissatisfaction, and early-career attrition — interact differently across contexts, but they strongly resonate with the Russian case.

In Russia, given its scale and diverse socio-economic and cultural conditions, all three factors contribute to shortages. The teaching profession remains central to the functioning of the education system, but its demographic profile, working conditions, and career dynamics generate persistent vulnerabilities. What distinguishes Russia is not the presence of these problems but their specific interaction with institutional legacies and regional disparities. In central regions, large urban agglomerations, such as Moscow and St. Petersburg, attract both pupils' families and teachers with higher salaries, stronger educational infrastructure, and professional development opportunities. Metropolitan cities and their surrounding areas do not face declining student cohorts or acute teacher shortages, often replenishing their staff with teachers migrating from more remote regions. Conversely, peripheral areas remain unattractive for young teachers on economic and social grounds, resulting in more intense ageing of staff and increasing shortages even as student numbers decline.

Federal and regional policies seek to enhance the prestige of the profession. Most initiatives focus on material support: during the first three years of work, young teachers receive salary supplements, housing benefits, or access to subsidised accommodation. Legislative changes also allow pedagogy students to begin teaching before graduation. These measures have boosted enrolment in teacher training and the inflow of young teachers into schools. However, the support is short-term, while workloads for novices remain heavy and working conditions demanding. Surveys show that young teachers often feel disregarded by administrators, face dense timetables, and are tasked with extracurricular responsibilities, while also confronting parental pressure and lack of trust. As a result, retention remains low [Zair-Bek, Anchikov, 2022; Mertsalova et al., 2022; Zair-Bek, Mertsalova, Anchikov, 2020].

Another notable trend concerns exits among teachers in their effective mid-career (ages 35–50), driven by burnout and intensifying bureaucratic demands. Having emerged during the COVID-19 pandemic in 2021, this trend has gradually strengthened. Teachers in this age group perceive the expansion of duties — particularly in administrative, extracurricular, and methodological domains — without adequate compensation as misaligned with their qualifications and experience.

Governmental measures to support experienced teachers focus mainly on performance-based incentives, rewarding preparation of competition winners, exam outcomes, or methodological innovations. Yet such measures often benefit teachers in selective schools, who already have little intention of leaving. Many other teachers perceive salary systems as insufficient, non-transparent, and unfair.

At the same time, dissatisfaction with pay is not the sole or decisive driver of shortages. In contexts where schools have limited capacity for financial incentives, non-material factors become crucial: supportive leadership, collegiality, trust from students and parents, and professional autonomy. A favourable school climate mitigates attrition, whereas its deterioration, combined with professional fatigue, amplifies the structural drivers of teacher shortages—retirements among older staff and departures of younger teachers.

## 6. Limitations

This study has several limitations that must be acknowledged. First, the sociological component relies on expert surveys and interviews with school administrators and stakeholders, which provides valuable managerial perspectives but does not capture teachers' voices directly. As a result, certain dimensions of everyday classroom practice and individual professional experiences remain underrepresented. Second, the survey sample, while geographically diverse, does not cover all Russian regions, limiting the generalisability of findings to the entire country. Third, the statistical data used are constrained by the availability of official reporting, with some indicators, such as teacher salaries after 2024, no longer publicly disclosed. Finally, the qualitative analysis, despite applying triangulation and systematic coding, inevitably reflects the interpretative lens of the researchers. These limitations suggest that the results should be seen as an empirically grounded but partial picture of the dynamics shaping the Russian teacher workforce.

## 7. Future research

Expanding the scope of sociological inquiry to include rank-and-file teachers would help to capture more nuanced understandings of professional satisfaction, attrition, and career motivations. A particularly important direction would be a systematic study of teachers who have already left the profession. Such research could explore the reasons behind their exit, their subsequent career choices, their levels of satisfaction with the decision, and the conditions under which they might consider returning. Insights from this group would provide a deeper understanding of structural push and pull factors and help to design more effective retention and re-entry policies. Comparative studies across Russian regions could further disentangle the role of demographic, socio-economic, and policy factors in shaping teacher supply and demand. At the international level, embedding Russian data within broader BRICS or OECD comparative frameworks would clarify how national specificities interact with global patterns of teacher shortages, ageing, and attrition. Finally, deeper integration of education research with health, labour market, and migration studies may offer new insights into the systemic pressures influencing teacher careers and the sustainability of the profession.

## 8. Conclusion

These factors — low and "unfair" remuneration, excessive pedagogical and bureaucratic workload, ageing and declining health, family-related circumstances and relocation, adverse local living conditions, and burnout — combine to create both visible strains and adaptive responses within the system. Quantitative evidence reveals structural imbalances: a shrinking core of mid-career teachers, high pupil–teacher ratios, and uneven regional distribution. Qualitative and sociological findings complement this by exposing how these pressures are experienced at school level — through fatigue, emotional strain, and constrained professional agency — but also through resilience, collegial support, and local coping practices. Taken together, the mixed-method evidence shows a profession negotiating between institutional fragility and social indispensability.

This integrative approach underscores that Russia's teaching workforce, while embedded in global patterns of ageing, overload, and uneven distribution, is shaped by distinct governance legacies and territorial contrasts. Addressing these challenges requires policy measures that go beyond salary reform — toward systemic workload regulation, equitable staffing mechanisms, and improved health and social protection for educators. Strengthening professional development and leadership capacity could mitigate attrition and enhance resilience, aligning national reforms with the broader BRICS objective of reducing educational inequalities through investment in teachers.

Taken together, the findings underline both the progress and fragility of Russia's teacher workforce. Historically central to national education policy, teachers continue to be positioned as strategic actors in social and economic development. Yet sustaining this role requires not only financial incentives but also systemic measures to reduce overload, ensure equitable distribution, and strengthen training and leadership. Findings suggest that effective teacher policy must be linked not only to education reform but also to broader health and social policies, providing preventive care, occupational health monitoring, and adequate medical support. These challenges point to the need for stronger systems of teacher training and professional development, extending beyond subject expertise to encompass broader pedagogical and social competencies.

Addressing these challenges would contribute not only to national goals but also to the shared BRICS agenda of reducing educational inequalities through investment in teachers.

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