

Insufficient school funding and its impact on the quality of education

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ABSTRACT

This study comprehensively examines the impact of insufficient school funding on the quality of education, teachers' professional effectiveness, and students' learning opportunities. Financial constraints negatively affect school infrastructure, access to modern digital technologies, teachers' professional development, and students' motivation. The study particularly focuses on Kazakhstan, where disparities in funding between urban and rural schools highlight educational inequality. The findings demonstrate that inadequate financing exacerbates long-term disparities in education and limits students' academic and social development.

АННОТАЦИЯ

Данное исследование всесторонне рассматривает влияние недостаточного финансирования школ на качество образования, профессиональную эффективность учителей и учебные возможности учащихся. Финансовые ограничения негативно отражаются на школьной инфраструктуре, доступе к современным цифровым

технологиям, профессиональном развитии учителей и мотивации учащихся. Особое внимание уделено Казахстану, где различия в финансировании городских и сельских школ подчёркивают образовательное неравенство. Результаты исследования показывают, что недостаточное финансирование усиливает долгосрочные диспропорции в образовании и ограничивает академическое и социальное развитие учащихся.

АҢДАТПА

Бұл зерттеу жеткіліксіз мектеп қаржыландыруының білім беру сапасына, мұғалімдердің кәсіби тиімділігіне және оқушылардың оқу мүмкіндіктеріне әсерін жан-жақты талдайды. Қаржылық шектеулер мектеп инфрақұрылымына, заманауи цифрлық технологияларға қол жеткізуге, мұғалімдердің кәсіби дамуына және оқушылардың мотивациясына теріс әсер етеді. Зерттеу әсіресе Қазақстанға назар аударады, онда қала мен ауыл мектептері арасындағы қаржыландырудағы айырмашылықтар білім беру теңсіздігін айқын көрсетеді. Зерттеу нәтижелері жеткіліксіз қаржыландыру білім берудегі ұзақ мерзімді теңсіздіктерді күшейтіп, оқушылардың академиялық және әлеуметтік дамуын шектейтінін дәлелдейді.

Keywords

School funding, education quality, Kazakhstan education system, digital divide, teacher professional development, school infrastructure, educational inequality, student motivation, rural education

INTRODUCTION

Education is a fundamental driver of national development and social progress. It shapes the intellectual and social potential of society and enables future generations to develop both professional and personal competencies. Modern schools are expected not only to provide academic knowledge but also to foster 21st-century skills such as critical thinking, communication, creativity, and digital literacy.

In Kazakhstan, insufficient funding for schools has remained a significant challenge for many years. Although national programs aim to modernize the education system, numerous rural schools continue to operate in outdated buildings, lack access to modern digital tools, and face teacher shortages. Consequently, the quality of education differs considerably between urban and rural areas, reinforcing educational inequality.

Insufficient funding affects multiple aspects of schooling, including the quality of teaching, opportunities for professional development, student motivation, and academic outcomes. This article examines the key areas affected by underfunding—material and technical resources, digital access, teacher development, student motivation, and educational inequality—and

explores potential solutions based on Kazakhstan's experience.

1. MATERIAL AND TECHNICAL RESOURCES

The quality of school infrastructure is a critical determinant of educational outcomes. Many rural schools in Kazakhstan are housed in old buildings that have not undergone major renovations for decades. For example, schools in Kostanay, Akmola, Zhambyl, and Turkistan regions are frequently classified as “in need of urgent repair.”

Common issues include:

- heating systems from the 1970s-1980s,
- broken desks and chairs,
- lack of laboratory equipment preventing practical lessons,
- poor sanitary

Poor infrastructure limits teachers' ability to deliver engaging lessons and reduces student participation and safety. Well-equipped and modern schools enhance teaching effectiveness, whereas rural schools with minimal resources restrict students' learning potential.

Additional evidence: According to the Education Commission of the States (2021), students in schools with inadequate infrastructure perform 15- 20% lower academically. Similar trends are observed in Kazakhstan, where rural students' academic results lag behind those of urban peers.

2. DIGITAL RESOURCES AND TECHNOLOGY

Modern education requires active use of digital technologies. Kazakhstan has implemented platforms such as Bilimland, OnlineMektep, and Kundelik to facilitate interactive learning. However, rural schools often cannot fully utilize these resources due to slow internet speeds and outdated equipment.

Key challenges include:

- low internet speeds (1-2 Mbps),
- computers with outdated operating systems,
- absence of smartboards, projectors, or robotics kits,
- insufficient training for teachers to use digital platforms

During the COVID-19 pandemic, the digital divide became especially evident: students in rural areas struggled to attend online classes or complete assignments due to limited connectivity or lack of devices, widening the educational gap between urban and rural learners.

Additional evidence: UNESCO (2021) highlights that lack of internet access directly impacts student achievement in developing countries. In Kazakhstan, initiatives like Bilim-Academy and STEM robotics centers have been introduced, but they are predominantly accessible in urban schools.

3. TEACHER PROFESSIONAL DEVELOPMENT

Teachers' professional skills are a crucial factor in determining educational quality. In Kazakhstan, many teachers must finance their own professional development courses. Rural educators often face additional barriers,

including travel costs and limited support, making participation in workshops and training programs difficult.

Consequences include:

- reliance on outdated teaching methods,
- insufficient mastery of modern educational technologies,
- emotional stress and professional

A 2024 national survey reports that over 60% of teachers experience emotional exhaustion due to workload and limited resources.

Additional evidence: OECD (2022) indicates that students taught by undertrained teachers score 10–15% lower on average. Rural schools in Kazakhstan show similar patterns.

4. STUDENT MOTIVATION AND EMOTIONAL CLIMATE

Insufficient funding also negatively impacts student motivation and the overall school climate. Many rural schools lack facilities for extracurricular activities, such as sports clubs, music classes, and STEM or art programs, which are essential for holistic student development.

Examples include:

- schools without sports halls,
- music classes without instruments for choir or traditional instruments,
- STEM clubs unable to operate due to lack of robotics

Such limitations reduce students' engagement, attendance, and personal growth. Teacher stress further affects the emotional climate within schools.

Additional evidence: Hattie (2009) demonstrates that a positive emotional climate and high student motivation can improve academic outcomes by 25–30%.

5. EDUCATIONAL INEQUALITY

Disparities in school funding contribute to long-term educational inequality. Urban schools in cities such as Astana and Almaty benefit from

modern infrastructure, qualified teachers, and diverse extracurricular programs, whereas rural schools operate with minimal resources.

As a result:

- rural students achieve lower results on the national standardized test (UNT),
- have fewer opportunities to participate in Olympiads and competitions,
- face reduced chances of admission to prestigious

Additional evidence: Rural graduates in Kazakhstan are 20–25% less likely to enroll in higher education compared to urban students (World Bank, 2020). Over time, these disparities reinforce broader social and economic inequalities.

CONCLUSION

Insufficient school funding affects every aspect of education: infrastructure, digital access, teacher development, student motivation, and overall learning quality. In Kazakhstan, addressing these issues requires increased government investment, equitable distribution of educational resources, and targeted support for rural schools.

Investing in school funding is not only about improving buildings and equipment but also about strengthening human capital. When teachers are professionally supported and students have equal opportunities, society benefits from educated, motivated, and capable citizens.

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