OECD Reviews of School Resources

Kazakhstan

Anna Pons, Jeremie Amoroso, Jan Herczyński,
Igor Kheyfets, Marlaine Lockheed and Paulo Santiago



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Foreword

This joint OECD-World Bank report for Kazakhstan forms part of the OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools (also referred to as the School Resources Review, see Annex A for further details). The purpose of the Review is to explore how resources can be governed, distributed, utilised and managed to improve the quality, equity and efficiency of school education. School resources are understood in a broad way, including financial resources (e.g. expenditures on education, school budget), physical resources (e.g. school buildings, computers), human resources (e.g. teachers, school leaders) and other resources (e.g. learning time).

Kazakhstan was one of the countries which opted to participate in the country review strand and host a visit by an external review team. Members of the review team were Anna Pons (OECD Secretariat), co-ordinator of the Review; Jeremie Amoroso (World Bank); Jan Herczyński (Institute for Educational Research, Poland); Igor Kheyfets (World Bank); Marlaine Lockheed (Princeton University, United States); and Paulo Santiago (OECD Secretariat). The biographies of the members of the review team are provided in Annex B. This publication is the report from the review team. It provides, from an international perspective, an independent analysis of major issues facing the use of school resources in Kazakhstan, current policy initiatives, and possible future approaches. The report serves three purposes: (1) Provide insights and advice to Kazakh education authorities; (2) Help other countries understand the Kazakh approach; and (3) Provide input for the final comparative analysis of the OECD School Resources Review.

The OECD review team is grateful for the support provided by: the Minister of Education and Science of the Republic of Kazakhstan, Mr. Aslan Sarinzhipov, and the staff of the Ministry; by Serik Irsaliyev, President of the JSC "Information-Analytic Center" (hereafter IAC), Yerlan Shulanov, Vice-President of IAC, and their staff. Kazakhstan's involvement in the OECD Review was co-ordinated by Assem Satmukhambetova, then Director of the Department for Secondary Education Development of the IAC, from September 2013 until May 2014; and, from June 2014 on, by Zhannat Mussina, Leading Analyst, Department for Secondary Education Development of the IAC.

An important part of Kazakhstan's involvement was the preparation of a comprehensive and informative Country Background Report (CBR) on school resources authored by the IAC. The CBR is an important output from the OECD project in its own right as well as an important source for the review team. Unless indicated otherwise, the data for this report are taken from the Kazakh Country Background Report. The CBR follows guidelines prepared by the OECD Secretariat and provides extensive information, analysis and discussion in regard to the national context, the organisation of the education system, the use of school resources and the views of key stakeholders. In this sense, the CBR and this report complement each other and, for a more comprehensive view of the effectiveness of school resource use in Kazakhstan, should be read in conjunction.

The Review visit to Kazakhstan took place on 31 March – 8 April 2014. The itinerary is provided in Annex C. The visit was designed by the OECD and the World Bank in collaboration with the Kazakh authorities and involved a preparatory visit on 3-4 March, 2014. During the Review visit, the team conducted 53 meetings (with about 52 hours of discussions), visited 6 schools, and interviewed

268 people. The review team held discussions with a wide range of groups at all levels of government (central, regional and local). At the national level, the review team met with Aslan Sarinzhipov, Minister of Education and Science; other officials of the Ministry of Education and Science of the Republic of Kazakhstan (hereafter MESRK) and its main subordinated organisations (i.e. National Center for Educational Statistics and Evaluation, the IAC and the Financial Center); officials of the Executive Office of the President; the then Ministry of Economy and Budget Planning; the Ministry of Finance; and an elected representative to the Senate. At the regional and local levels, meetings were held with educational and finance authorities of the cities of Astana and Almaty, the region of Akmola, and the municipalities of Arshaly and Talgar. In addition, the visit included meetings with researchers in both Almaty and Astana, and the national teacher union. The Team also attended a half-day roundtable on 'Improving Education Quality' organised by the Kazakh Ministry of Education and Science and the World Bank. The intention was to provide the review team with a broad cross-section of information and opinions on school resource use and how its effectiveness can be improved.

The review team wishes to record its grateful appreciation to the many people who gave time from their busy schedules to inform the review team of their views, experiences and knowledge. The meetings were open and provided a wealth of insights. Special words of appreciation are due to the National Co-ordinator at the time of the visit, Assem Satmukhambetova, for going to great lengths to respond to the questions and needs of the review team. The review team was impressed by her efficiency and expertise and enjoyed her pleasant company. This gratitude extends to her team for providing excellent support to the review team, in particular to Zhannat Mussina and Timur Buldybayev, Analysts of the IAC. The review team is also grateful to Zhannat Mussina for her support as of June 2014 as National Co-ordinator, which greatly benefited the preparation of this report. In addition, the review team also wishes to express its appreciation to Irina Burlak, Senior Analyst, and Assylkhan Suyundikov, Junior Analyst, of the IAC. The courtesy and hospitality extended to us throughout our stay in Kazakhstan made our task as a review team as pleasant and enjoyable as it was stimulating and challenging.

The School Resources Review of Kazakhstan is the result of a fruitful collaboration between the OECD and the World Bank. The review team is grateful to peer reviewers and colleagues at the OECD and the World Bank for providing insightful comments and engaging in stimulating discussions. From the World Bank, Scherezad Latif, Dorsati Madani and Suhas Parandekar provided insightful and constructive comments while Cristian Aedo, Alberto Rodriguez, Ludmilla Butenko and Sebnem Akkaya provided guidance and support. Special gratitude is also extended to Aliya Bizhanova (World Bank) for her invaluable help with her country knowledge and assistance during the review team's visits to Kazakhstan. From the OECD, Deborah Nusche and Claire Shewbridge provided advice and feedback while Yuri Belfali and Michael Davidson provided guidance and support. Eléonore Morena and Liz Zachary (both from the OECD Secretariat) provided key administrative, editorial and layout support. Francesc Masdeu (OECD Secretariat, on secondment from the Jaume Bofill Foundation) also provided valuable statistical support. Gratitude is also extended to Ian Whitman and Mihaylo Milovanovitch (both formerly with the OECD) who initiated Kazakhstan's involvement in this Review and provided guidance in its initial stages.

It should be noted that the scope for the analysis in this report is limited to school resource use in general school education (primary, lower secondary and upper general secondary education). While references are made to early childhood education and vocational/technical secondary education, these sectors were not the focus of this Review. Also, the analysis presented in this report refers to the situation faced by the education system in April 2014, when the review team visited Kazakhstan. A number of significant education policy changes occurred in late 2014 and early 2015 as a result of macroeconomic developments. While these are signalled in this report, they have not been the subject of further analysis.

This report is organised in five chapters. Chapter 1 provides the national context, with information on the Kazakh school system, main trends and concerns as well as recent developments. Then Chapters 2 to 5 analyse the effectiveness of school resource use along its main dimensions: governance, distribution, utilisation and management, presenting strengths, challenges and policy recommendations. The policy recommendations attempt to build on and strengthen reforms that are already underway in Kazakhstan, and the strong commitment to further improvement that was evident among those the review team met. The suggestions should take into account the difficulties that face any visiting group, no matter how well briefed, in grasping the complexity of Kazakhstan and fully understanding all the issues. Of course, this report is the responsibility of the review team. While the review team benefited greatly from the Kazakh CBR and other documents, as well as the many discussions with a wide range of Kazakh personnel, any errors or misinterpretations in this report are its responsibility.

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Acronyms and abbreviations

ADB	Asian Development Bank
AEO	Autonomous Education Organisation
ASRK	Agency of Statistics of Republic of Kazakhstan
CBR	Country Background Report
CCFES	Committee of Control in the Field of Education and Science
CEECIS	Central and Eastern Europe and the Commonwealth of Independent States
EASA	External Assessment of Student Achievement
ECEC	Early Childhood Education and Care
ECTS	European Credit Transfer System
EFA	Education for All
FTE	Full-time Equivalent
GDP	Gross Domestic Product
GKP	*Gosudarstvennyye Kommunal'nyye Predpriyatiya* – State Communal Enterprises
GU	*Gosudarstvennyye Uchrezhdeniya* – State Institutions
IAC	JSC Information-Analytic Center
ICT	Information and Communications Technology
IEA	International Association for the Evaluation of Educational Achievement
IMF	International Monetary Fund
MENA	Middle East and North Africa
MESRK	Ministry of Education and Science of the Republic of Kazakhstan
NCESE	National Center for Educational Statistics and Evaluation
NCPD	National Center of Professional Development
NGO	Non-Governmental Organisation
NIS	Nazarbayev Intellectual Schools
OECD	Organisation for Economic Co-operation and Development
PIRLS	Progress in International Reading Literacy Study
PISA	OECD Programme for International Student Assessment
PPP	Purchasing Power Parity
RK	Republic of Kazakhstan
SABER	Systems Approach for Better Educational Results
SPED	State Program for Education Development in the Republic of Kazakhstan for 2011-20
STEM	Science, Technology, Engineering and Mathematics
TALIS	OECD's Teaching and Learning International Survey
TDT	Targeted Development Transfer
TIMSS	IEA Trends in International Mathematics and Science Study
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNT	Unified National Test
VET	Vocational Education and Training
WTO	World Trade Organization

Executive summary

The primary and secondary education system in Kazakhstan has accomplished significant achievements. It has managed to reach almost universal access to primary and secondary education, and few differences are observed in enrolment by geographical location, socio-economic background and gender. Although the level of education attainment of the population is high, the performance of Kazakh 15-year-olds in PISA (Programme for International Student Assessment) 2012 suggests that there is considerable room to improve the quality of student learning outcomes. In mathematics, Kazakh students are on average two years behind their peers in OECD countries and about 45% of them are low performers, a proportion significantly above the OECD average (23%). The language of instruction in schools, school location and the socio-economic background of students and schools make a difference in student performance. National and international assessments also suggest marked differences in educational outcomes between urban and rural areas.

Kazakhstan has embarked on profound reforms to improve the quality of the education system and is increasingly looking to international standards and best practices. Reform initiatives include the expansion of the pre-primary education network, the development of new mechanisms of school financing (including a new per capita funding scheme), the creation of resource centres to support small-class schools, further investment in school infrastructure and a wider use of information technologies in schools. In this context of reforms, while there is an apparent desire to increase resources devoted to education and awareness that spending per student remains markedly lower than the OECD average and that of other neighbouring countries, there remains an official reluctance to expand public expenditure on education. This is linked to concerns about both the sector's efficiency and its absorptive capacity. This report analyses the effectiveness of the Kazakh school system and identifies policy areas with potential efficiency gains or requiring further public investment.

The following policy priorities were identified to improve the effectiveness of resource use in the Kazakh school system.

Increase overall public spending on education as the sector gains absorptive capacity, while addressing key inefficiencies

Kazakhstan underinvests in education in comparison with other countries with similar income. The lack of adequate resources is reflected at a range of levels such as low enrolment rates in pre-primary education; poorly remunerated teachers; overcrowded urban schools; and poorly equipped small-class schools. At the same time, there is considerable scope for a more efficient management of resources in areas such as the

school network and the teaching workforce. A gradual increase in public spending is needed to meet the ambitions set out in the sector's strategic documents. Additional resources should be prioritised where these can have the greatest impact: early educational years and support to low performing and disadvantaged schools.

Achieving considerable efficiency gains and ensuring that additional resources are well-spent, however, would require changes in governance structures. There is a need to strengthen the capacity to effectively manage and monitor the use of resources across all levels. In particular, insufficient local and school autonomy hinders effectiveness of resource use. Schools and *rayons* (local authorities) have little flexibility to invest more in human resources (by increasing staffing levels or by raising teacher salaries) if these are more acutely needed, or alternatively to invest in physical resources (school buildings, school equipment such as smart boards), if the present ones are insufficient or outdated. In addition, local and regional governments have very little spending discretion as norms determine how resources should be allocated and intergovernmental transfers have a very limited equalisation effect. A gradual increase of autonomy coupled with accountability and capacity building mechanisms could enable a more effective use of resources at the local and school level.

The distribution of resources to schools is currently decided on a discretionary and incremental basis by *rayons* in consideration of national norms but steps have been taken towards the development of a per-student school funding scheme. This is a positive move as a well-designed funding formula can, under certain conditions, be the most efficient, equitable, stable and transparent method of funding schools. Before national roll-out, the formula could be refined to take greater account of students' needs, capture better differences in class size across the country and increase its simplicity.

Review the organisation of the school network and lengthen the school day

A wide-ranging review of school network organisation could shed light on potential expansions or downsizings of school facilities in light of demographic trends. A vision for the provision of education in rural areas could be developed to improve the quality, equity and efficiency of the large number of small-class schools, which are a result of a policy to ensure universal access to compulsory schooling. Kazakhstan should sustain the efforts to remove three-shift schools and explore ways to minimise the impact of double-shift schools on younger students. There is also a need to adjust the norms for instructional hours to be more in line with OECD averages for official instructional time, particularly for students in grades 1-4. Having a relatively short school day, in terms of hours of instruction, may place children, particularly those from disadvantaged backgrounds and those who may be struggling, at risk of failure.

Support disadvantaged students and schools

More and more, the focus needs to shift towards providing education that promotes equity by recognising and meeting different educational needs. There is no systematic policy to support students who are falling behind. There is little provision of early support to prevent students falling behind, with personalised and intensive intervention. A greater focus on addressing underperformance is needed in Kazakhstan. Ensuring that schools provide their students with adequate and timely support is essential to enable struggling students not only to stay at school but to get the most out of their schooling years. Schools

should be encouraged to use early warning systems to identify students at risk and support them as early as possible. This is in contrast with the overemphasis placed on top-performing students. Also, schools in Kazakhstan appear to be making slow progress in accommodating children with disabilities.

Improve teacher quality and school leadership

There is scope to strengthen the quality of teachers and school leaders. Professional standards could be developed to clarify expectations of what systems of initial education and professional development should aim to achieve, serve as a framework for the selection of candidates in recruitment processes, offer the credible reference for making judgements about their competence, guide professional development, and provide the basis for career advancement. Initial teacher education and professional development opportunities could be reviewed to ensure that these provide a solid foundation for teachers and adequately respond to their needs. In the case of school leaders, improvements in their recruitment, professional development and appraisal are needed to tap into their potential role in leading school improvement.

There is an imperative need to reconsider the number of staff and their remuneration. Current student-teacher ratios indicate that there might be some oversupply of teachers in the system. Increasing student-teacher ratios and class sizes could free up resources to further invest in teachers' professionalisation and remuneration. Also, the concept of teacher employment, whereby basic compensation is associated uniquely to the teacher's teaching load (*stavka* system), is a source of concern as it does not appropriately recognise the many tasks a teacher accomplishes beyond teaching and reduces his or her engagement in school activities. As a result, teacher employment needs to be re-conceptualised and the *stavka* system should be discontinued. The objective is to raise the professionalism of teachers, which can also be supported by better and more restricted selection into the profession and possibly fewer teachers with better salaries.

Use evaluation and information systems to foster improvement and accountability

Kazakhstan recognises the importance of teacher and school evaluation but there is scope to strike a better balance between the currently prevailing accountability function and the improvement one. Clearly, there needs to be a stronger emphasis on teacher and school evaluation for development purposes, where evaluation results lead to genuine professional discussions about effective teaching and teachers and schools receive advice for the improvement of pedagogical practices.

There is ample room to improve the external and independent monitoring systems of Kazakhstan's education system. The current monitoring approach is compliance-driven and entails no analysis of educational performance. As such, it is limited in the way it evaluates efficiency, equity, and value for money. An external independent monitoring system for school resource use should be a priority. External and independent bodies would strengthen the analysis of the ample data generated by existing monitoring systems. Enhancing the transparency and reporting framework is also likely to help reduce the opportunities for misallocation of resources and corruption that exist throughout the system, although a complementary policy to reduce loopholes in the system of norms is also needed.

The improvement of data collection systems and practices is also needed. In particular, procedures to ensure the quality of the data should be introduced at every step of the collection and processing of the data. Furthermore, Kazakhstan needs to improve the dissemination of information about activities at the school and local levels, including information on school and local education budgets. This could include school attestation reports. Similarly, school principals should disseminate their schools' activity reports and financial plans, in accessible language, by posting them on the web or on school bulletin boards, thus increasing transparency. Also, the existence of school Boards of Trustees, while still a nascent change, opens up avenues for improved transparency and reporting procedures at the school level.

Assessment and Recommendations

Education system context

The primary and secondary education system in Kazakhstan has accomplished significant achievements. It has managed to reach almost universal access to primary and secondary education, and few differences are observed in enrolment by geographical location, socio-economic background and gender. Although the level of education attainment of the population is high, the performance of Kazakh 15-year-olds in PISA (Programme for International Student Assessment) 2012 suggests that there is considerable room to improve the quality of student learning outcomes. In mathematics, Kazakh students are on average two years behind their peers in OECD countries and about 45% of them are low performers, a proportion significantly above the OECD average (23%). The language of instruction in schools, school location, and the socio-economic background of students and schools make a difference in student performance. National and international assessments also suggest marked differences in educational outcomes between urban and rural areas.

Kazakhstan has embarked on profound reforms to improve the quality of the education system and is increasingly looking to international standards and best practices. Reform initiatives include the expansion of the pre-primary education network, the development of new mechanisms of school financing (including a new per capita funding scheme), the creation of resource centres to support small-class schools, further investment in school infrastructure and a wider use of information technologies in schools. In this context of reforms, while there is an apparent desire to increase resources devoted to education and awareness that spending per student remains markedly lower than the OECD average and that of other neighbouring countries, there remains an official reluctance to expand public expenditure on education. This is linked to concerns about both the sector's efficiency and its absorptive capacity. This report analyses the effectiveness of the Kazakh school system and identifies policy areas with potential efficiency gains or requiring further public investment. The following policy priorities were identified to improve the effectiveness of resource use in the Kazakh school system.

Strengths and challenges

There are clear directions for the system but limited capacity to foster greater effectiveness

Grand vision plans place education as one of the top priorities in Kazakhstan and a strategic programme sets out ambitious reforms to boost the quality of the education system. Some of the recent flagship initiatives include the introduction of a per student financing scheme and the extension of the number of compulsory schooling years. Improving the capacity of the education administration is one of the major challenges

ahead to build a more effective education system. At the national level, several steps have been taken in recent years to reinforce the capacity in the Ministry or create specialised agencies to, for example, promote compliance with operational norms and analyse educational and financial data.

The extensive central planning and a detailed system of norms are two key features of the Kazakh education governance system inherited from Soviet times, which provide a clear direction for the sector, policy continuity and enable monitoring progress towards the achievement of policy goals. However, norms constrain the ability of schools and local governments to match resources to their specific needs, and in consideration of their conditions and context. Schools and local authorities (*rayons*) have little flexibility to invest more in human resources (by increasing staffing levels or raising teacher salaries) if these are more acutely needed, or alternatively to invest in physical resources (school buildings, school equipment such as smart boards), if the existing ones are insufficient or outdated. Overall, local and regional governments have very little spending discretion as norms determine how resources should be allocated and intergovernmental transfers have a very limited equalisation effect. Another issue of concern is the lack of consultation with stakeholders, which means that education strategies might not fully reflect the rich diversity of the country.

Spending on education is relatively low

The overall level of public resources devoted to education is low compared to the OECD average as well as to that of other countries with similar levels of economic development. The amount devoted to school education, 2.1% of GDP, is considerably below the OECD average of 3.6%, although the latter also encompasses post-secondary non-tertiary expenditures. At 11% of GDP per capita, Kazakhstan's 2013 public spending per student was significantly below the OECD average. The lack of adequate resources in schools can hamper the quality of learning environments. While larger education budgets are no guarantee of better education quality, a minimum level of spending is necessary for ensuring good quality education provision. A school system that lacks quality teachers, adequate infrastructure and enough textbooks will almost certainly fail to promote quality education. Underinvestment in the school system can also result in educational inequalities, as disadvantaged areas or schools receive scarcer resources. The government is aware that public spending is low but concerns about both the sector's efficiency and its absorptive capacity prevent increases.

The per student funding formula is a positive move ahead that requires further development

The distribution of resources to schools is currently decided on a discretionary and incremental basis by *rayons* in consideration of national norms but steps have been taken towards the development of a per-student school funding scheme. This is a positive move as a well-designed funding formula can, under certain conditions, be the most efficient, equitable, stable and transparent method of funding schools. The scheme under piloting in 2014 has considerable scope for improvement. For instance, the envisaged new funding scheme provides no room for local governments to adjust the allocations to local needs and excludes some types of schools (e.g. gifted, small-class schools). Also, the formula proposed does not clearly identify groups of students for whom additional per student amounts should be allocated, which means that it cannot be considered a genuine per

student formula. Despite the fact that the formula is overly complex, it might not capture with enough accuracy class size, which greatly varies in Kazakhstan and strongly influences the costs of provision. Furthermore, there are also indications that the development of the new scheme would benefit from a broader timeline and a thorough analysis of its impact before national roll-out.

The specific needs of disadvantaged students and schools need to be taken into consideration

The limited attention to the specific needs of students and schools in the distribution of resources results in inequities. There are very few programmes and resources targeted at students from a disadvantaged background or with learning difficulties. This is partly explained because the current concept of disadvantage is too narrow as it focuses only on disabilities and extreme socio-economic disadvantage, and thus a relatively small number of students are entitled to receive support. In contrast, OECD countries recognise that schools with higher proportions of disadvantaged students are at greater odds of suffering from a myriad of social and economic problems that can inhibit student learning and have developed mechanisms to support them. This means that, for example, schools might not have enough resources to adequately support students who are falling behind with personalised and intensive early intervention. The case of students with special needs and disabilities is of particular concern as most of them continue to be educated in separate "correctional" schools or home learning schemes rather than in mainstream schools.

The overemphasis on preparing top-performing students for participation in academic Olympiads and prioritising "gifted children" is detrimental to other students. Teachers might focus on higher performing students and thereby direct less effort to lower performing students. Schools tend to group students by ability, a practice that doesn't improve the overall performance and can be particularly harmful if lower quality teachers are allocated to lower performing children. In addition, schools that cater to gifted students, such as the Nazarbayev Intellectual Schools, receive considerably higher levels of funding than mainstream schools. It can be questioned, however, whether the most talented students of the country attend these schools as disadvantaged students have more limited access to extracurricular classes to prepare for admission. Moreover, the proportion of top-performing students in international assessments remains very small while a large number are falling behind their peers in other countries. The most rapidly improving education systems in PISA show that improvements at the top and bottom of the performance scale can go hand in hand. However, it is reductions in the number of low performing students which are particularly effective to raise the overall performance of the system.

The extensive school network raises concerns

A distinctive feature of the school network is its large geographical coverage as a result of a strong policy to ensure universal access to compulsory schooling. The large number of small-class schools, which account for half of all public schools, might not be the most cost-effective option to deliver education services in rural and remote areas. In addition, students in small-class schools tend to suffer from poorer learning environments. Some evidence suggests that the teaching quality in small-class schools, as measured by teachers' professional category and highest qualification, is significantly lower than in other schools. In addition, the strict application of staffing norms squeezes school budgets

as low student-to-teacher ratios are at the expense of either the quality of teachers, maintenance, equipment and instructional materials. To respond to the challenge of small-class schools, the Ministry of Education and Science has created resource centres to support them but a clear strategic vision or plans for consolidation have not been developed yet.

The extensive school network also results in a large number of sparsely populated school buildings which are very costly to maintain. Considerable efforts have been undertaken in recent years to upgrade school infrastructure and address the chronic underinvestment in maintenance of schools which left many buildings in need of modernisation. In spite of this, several challenges remain. Old buildings that fail to heat properly in the winter, or are too expensive to heat, threaten students' health and ability to learn in one of the world's coldest climates. Schools that lack basic equipment, instructional materials or without indoor toilets are alarmingly common in rural areas. In areas with declining student rolls, school facilities that were built for a larger student population are not being used to their full capacity and require high maintenance costs. In contrast, in urban areas, two-shift schools are the norm and three-shift schools are still in some parts of the country.

There are concerns about teacher and school leader preparation

The lack of national standards for teachers and school leaders, which provide a clear and concise statement or profile of what they are expected to know and be able to do, hinders their potential. Teaching and school leadership standards can be useful mechanisms for clarifying expectations of what systems of initial education and professional development should aim to achieve, serving as a framework for the selection of candidates in recruitment processes, offering the credible reference for making judgements about their competence (as in their attestation), guiding professional development, and providing the basis for career advancement.

Initial teacher education raises both quality and efficiency concerns. The fact that the required degree for primary-school teaching can be obtained at the secondary and post-secondary non-tertiary level and that there is an oversupply of initial teacher education programmes raise concerns about its quality. There are also indications of an oversupply of graduates, which in 2013 corresponded to 11.4% of the entire teaching workforce. Other concerns relate to the high level of specialisation of degrees which limits the flexibility of the teacher labour market, the lack of specific assessments to identify teaching potential and assess motivation for the profession as the basis for entry, and the limited autonomy of institutions of teacher education in designing their teacher education programmes as these are regulated at the central level (e.g. specialisations, curriculum, structure of programmes).

There are indications that the current framework for teacher professional development is not responding adequately to teachers' needs. The frequency of professional development is questionable, as teachers are only eligible for external-to-the-school professional development activities once every five years. Incentives to engage in professional development seem to be increasingly related to salary increases and career advancement rather than the genuine improvement of teaching practices. In spite of this, the frequency and intensity of school-based professional development opportunities in Kazakhstan seems to be significant and school principals play a greater role in instructional leadership than on average in OECD countries.

There is scope to better recruit and prepare school leaders to foster school improvement

The formal allocation of school leadership responsibilities among several staff is a strength of the Kazakh school system as strategic and pedagogical leadership cannot be exercised over time by one person alone. In practice, however, the distribution is dictated by norms and the level of interaction and shared vision is questionable. Moreover, school leaders might not be sufficiently focused and prepared to foster school improvement. Recruitment focuses on their educational qualifications and experience rather than leadership ability. Few opportunities exist to take up professional development and most of them are disconnected from their daily practice in schools. Lack of professional development opportunities is of concern as a large proportion has been in the system for a long time and might face difficulties in keeping up with current practices.

There is a need to reconsider the number of staff and their remuneration

Analysis of class size and student-teacher ratios as well as of the structure of leadership teams in Kazakhstan provides indications that, compared to the situation in OECD countries, the overall number of teachers and school leaders can be considered excessive. The large number of teachers and school leaders is driven by the significant proportion of small-class schools in the country and strict staffing norms. The large number of staff squeezes school budgets, creates rigidities and crowds out investments in other areas. About 93% of school expenditure in rural schools is devoted to staff compensation. This means that budgets are very tight and that principals have very limited room for manoeuvre to manage resources in a more efficient way or invest in school development activities. In particular, the large number of staff discourages improvements in their compensation which is considered low in Kazakhstan, although the complexity of the teacher salary structure hinders its analysis. The definition of class sizes is a recurrent trade-off that has a great impact on expenditure due to the labour-intensive nature of education: small class sizes require a large number of teachers whilst greater class sizes can free up resources to improve teaching quality. Research has found that higher teaching quality has a greater impact on student achievement than smaller classes. Another issue relates to the concept of teacher employment, whereby basic compensation is associated purely to the teacher's teaching load (*stavka* system), and might not appropriately recognise the many tasks a teacher accomplishes beyond teaching and his or her engagement in school activities (e.g. reflection on own practices, mentoring of less experienced teachers, communication with parents and professional development).

The official instruction time might be insufficient, particularly for disadvantaged students

In Kazakhstan, the official instructional time is provided with few disruptions and complemented with widespread after-school activities. Classes are orderly, without loss of time due to student behaviour or teacher absenteeism. However, there are some concerns about the management of instructional time: multi-shift teaching, which is prevalent in Kazakhstan, might reduce the official instructional time; the school calendar is not adjusted to local conditions and needs; and instructional time for students in primary grades may be inadequate for students who come from disadvantaged backgrounds. While increasing the amount of time, alone, cannot guarantee improved student learning, insufficient time spent on early learning may account for lower achievement.

The introduction of teacher and school evaluation processes is a positive move that can be further strengthened

Teachers benefit from a clearly established career structure with four steps associated with a teacher certification (or attestation) process. The existence of a teacher attestation process conveys the important message that the guiding principle for career advancement is merit and can provide incentives for teachers to perform at their best, bring recognition to effective teachers, support professional learning, and help recognise and spread good practice more widely. However, the combination of the accountability and developmental functions in a single process of teacher evaluation raises a number of challenges. The accountability function often prevails when teachers are confronted with high-stakes consequences as they are less likely to reveal weak aspects of their practice. Moreover, the evaluation process is not clearly linked to professional development opportunities to improve teacher performance and, as a result, might be perceived as a meaningless exercise that encounters mistrust or apathy. The lack of teaching standards can also hamper the consistency of internal teacher evaluation processes across schools and the inability of the system to ensure the quality of such processes.

There is a clear commitment to accountability with a regular cycle of external school evaluations. Some aspects of the approach to external school evaluation are adequately designed such as its structured approach and the consideration of a broad array of evidence including classroom observation. There is, however, scope for further refinement as there is limited attention to the developmental function of school evaluation. The external school evaluation is predominantly an assessment of how legal requirements are met, or how stipulations in the education standards are being fulfilled. There is not enough focus on school improvement strategies and follow-up is limited to schools which are not granted the attestation in their original evaluation. Also, school self-evaluation has not been recognised as a key instrument for school improvement yet and its penetration across the school system remains at an early stage of development.

A problematic issue in Kazakhstan is the use of raw student achievement data (i.e. results of standardised assessments such as the Unified National Test (UNT), student prizes at Olympiads and other competitions) to judge and compare the performance of individual teachers, schools, *rayons* and regions. UNT results or results in Olympiads carry much more than the impact of the evaluated teacher and also reflect, for instance, the impact of the student's family, the student's previous learning or school and local resources. Clearly, this leads to unfair comparisons as it puts certain teachers – such as those in more advantaged schools – at an advantage *vis-à-vis* other teachers in terms of receiving a positive evaluation. The same happens at the school, local (*rayon*) and regional (*oblast*) level. Comparisons between teachers, schools, *rayons* and *oblasts* are of little use if not conducted on a "like-with-like" basis and can encourage strategic responses such as "teaching to the test" and "narrowing of the curriculum".

More reliable data, transparency and accountability could enable a more effective management of school resources

Increased attention has been paid to creating, collecting and making data available. Numerous data collection exercises exist (administrative, performance, stakeholder surveys, indicators). Recent positive developments include the creation of a national database of education information, the computerisation of data collection processes, and the reduction of the administrative burden of data collection that falls on schools and local

authorities by more than halving the number of forms to be filled out from 467 to 162. However, a recurrent problem with education data in Kazakhstan is the lack of processes to ensure their quality and validity. This is of concern as lack of reliable data impedes its use in the formulation and evaluation of education policies.

The existence of detailed norms provides clear expectations for what should be achieved and how resources should be managed, and thus facilitates their monitoring. There are multiple mechanisms to check compliance and gauge progress towards national objectives, notably the State Program for Education Development in the Republic of Kazakhstan 2011-20 (SPED). However, the monitoring approach is compliance-driven and does not entail analysis of educational performance. Similarly, the control of budget implementation is inadequate and lacks transparency, as detailed and accurate cost estimates are rare. Moreover, an independent and external evaluation agency that strengthens the analysis of the ample data generated by existing monitoring systems does not exist. As a result, there is a general lack of high quality cost-benefit analyses of different educational policies and programmes at school and educational authority levels, meaning that schools and governments often make decisions with minimal attention to the efficiency or effectiveness of their likely education outcomes.

Greater transparency is also an important challenge ahead in order to increase accountability. Budget transparency is lacking at the local level as the majority of schools do not have their own budgets due to centralised accounting; and budget information is generally not disclosed to parents and the principal. At the national level, limited information and detail is disclosed on the national government's budget and financial activities. Weak transparency and accountability mechanisms open up opportunities for corruption and misuse of resources at different levels of the education system. These can jeopardise efficiency and performance, damage the most disadvantaged in particular and fuel attitudes and values such as favouritism, bribery, and fraud. Similarly, the involvement of parents and other key stakeholders in fostering school improvement and holding the school accountable is still incipient. Reports on the annual activities and results of the attestation process of schools are not currently published and widely disseminated. The creation of Boards of Trustees opens up avenues for improved transparency and reporting procedures at the school level, but their roles are still unclear.

Policy recommendations

Increase overall public spending on education, while addressing key efficiency concerns

A gradual expansion of public spending should be envisaged to meet the ambitious sector's strategic plans and lean towards OECD standards (5-6% of GDP). Additional funds need to be spent wisely and go alongside improving the efficiency of public funds' use. Investments should be prioritised to the early educational years as well as to equity- and quality-enhancing aspects. Another priority should be the strengthening of the performance monitoring and accountability mechanisms in the education system. Also, the budget envelope should be increased only slowly, in parallel with the increase of the capacity of the system to absorb new programmes and new approaches.

Redesign the system of intergovernmental transfers

Kazakhstan should explore how to further reform the system of intergovernmental transfers in order to improve its efficiency and equity. Specific areas to consider affecting the education sector include: (i) ensuring a clearer distribution of responsibilities for

education financing across levels of government; (ii) using formulas with transparent indicators and coefficients to allocate resources; (iii) enabling greater equalisation of resources across *oblasts* and *rayons* to ensure that poorer areas receive adequate financing to provide high-quality education services; and (iv) introducing specific reporting categories in the budget classification to ensure that various targeted funds and off-budget resources are adequately and fully reported and accounted for.

Explore ways to gradually increase local and school autonomy

Kazakhstan can explore ways to gradually provide more autonomy to schools and lower levels of government to enable them to foster improvements in education. Certain decisions are best left to local authorities and school principals, who best know their schools' needs, to ensure a more optimal allocation of resources. More autonomy would imply relaxing the current system of norms, which could be used to set minimum standards rather than detailed mandates. Increased autonomy is likely to exacerbate the existing differences between schools and local governments, and mechanisms to disseminate best practices and support those who need to improve should be introduced. In this regard, it will be necessary to strengthen the improvement function of the school evaluation system.

Sustain the efforts to increase capacity and move towards evidence-based planning and monitoring

Kazakhstan needs to develop a culture of using evidence and evaluation as the basis for future reform initiatives, both in the design phase (when analysing what type of reforms are required) and in the implementation phase (when deciding on the best way of putting reform concepts into practice). The best way to start this type of reflection is by reviewing the experience of recent policy initiatives and obtaining and publishing the assessment of the successes and limitations encountered in their implementation. The current major policy initiatives should be reviewed. The impact of the per-capita financing pilot, Boards of Trustees, resource centres for small-class schools, e-learning, and other initiatives should be analysed and the results of these analyses shared with a broad range of stakeholders throughout the education system. Evidence gathered from these reviews should be published and used as a basis for professional discussions regarding future steering of reform initiatives.

Give greater attention to low performing and disadvantaged students and schools

Enhancing equality of educational opportunity requires additional emphasis on improving the performance of disadvantaged students. A rebalancing of resource provision between initiatives catering to elite students and everybody else is needed. In particular, little rationale exists for heavy public investment into the training of elite students for academic Olympiads. Limited public resources should instead be concentrated on the majority of students, as well as those who fall behind academically. Concrete policy measures to address this challenge include broadening the concept of disadvantage to ensure that all children receive a basic minimum quality of education, reviewing the equity of the current distribution of resources and providing greater funding for low performing or disadvantaged students.

Schools should be encouraged to identify and support such students as early as possible. Once identified, a systemic policy should also be implemented to support these students throughout their academic life cycle. This may imply the need for additional resources to target schools, classes, or individual students at risk of falling behind. Expectations for all students should be raised system-wide, and grouping of students into separate classes by ability should be discouraged. Every student should be given the support and opportunity to reach his or her full potential with those falling behind receiving additional mentoring or coaching. Special attention should also be paid to students at risk of dropping out and proactive policies should be put in place to mitigate that risk.

Postpone and refine the roll-out of school formula funding

The national roll-out of the new envisaged funding scheme should be postponed until the new mechanisms have been refined. Adequate preparation for the rollout of a new funding scheme is a necessary condition for its success. An in-depth study of the pilot should be conducted and its results published and publicly discussed. The findings should be used to define a new funding scheme, which should then be developed with reliance on the existing international experience. For the pilot project itself, proper monitoring procedures by an agency different from the one implementing it need to be introduced.

Improve the organisation of the school network

A national vision for education provision in rural areas should be developed. The current reliance on small-class schools scattered across Kazakhstan's vast rural areas is unsustainable and leads to serious concerns about its quality, equity and efficiency. The strategy should have four main pillars: (i) a national strategic direction and plan to consolidate some small-class schools; (ii) greater flexibility to allow rural schools to manage their resources more efficiently; (iii) greater equity and fairness in the distribution of resources to rural schools; and (iv) mechanisms to monitor the quality of education in small-class schools. The current initiative to use resource centres in order to support small-class schools needs to be independently reviewed and assessed.

Improve the management of human resources

Kazakhstan should take steps towards the development of a high quality teaching and leadership force. First, there is a need to raise the bar to enter the profession by introducing interviews and tests to assess the aptitude and motivation of candidates. The number of places in initial teacher education could be limited to levels closer to the needs of the school system. Second, it is also imperative to improve the quality of initial teacher education programmes and institutions and require a higher education qualification to enter the teaching profession at all educational levels. The number of teacher specialisations should be reduced to enable teachers to teach multiple subjects, and in this way allow efficiencies in the management of human resources. Third, the development and wide dissemination of standards for teachers and school leaders are key to ensure a common understanding of what it means to be a good teacher or school leader in Kazakhstan. Finally, moving from a concept of teacher employment whereby compensation is based on a teaching load to a concept whereby compensation is based on a work load could be an important first step to improve teacher professionalism. The overall number of staff employed as well as their compensation level also needs to be reconsidered.

Provide structured, regular and meaningful opportunities for professional development for teachers and school leaders

There is a clear need for professional development to become a more regular practice among teachers in Kazakhstan, with a greater diversity of activities, led by school development plans and with a supply which reflects teachers' developmental needs. There must be a recognised and explicitly stated definition of what constitutes good teaching, and teachers should be encouraged and empowered to reach those goals. A systemic approach to the development of school leaders is also needed. A diagnosis of the skills of current leaders can help inform the next steps in identifying professional development needs for current and future leaders. This is particularly important in light of the planned rollout of the new school financing mechanism, which will require greater capacity on the part of school leaders to understand the principles of financial management.

Review the use of learning time in schools

Kazakhstan should sustain the efforts to remove three-shift schools and explore ways to minimise the impact of double-shift schools on younger students. In multi-shift schools, all primary grades should be taught during the first shift, which would have the result of benefitting both the younger students and the older students whose learning is enhanced by starting school later in the day. While multi-shift schooling can facilitate access to education when rapid demographic changes stress existing facilities or the construction of new schools is difficult, it can have a negative impact on the quality of learning.

Kazakhstan should also adjust the norms for instructional hours to be more in line with OECD averages for official instructional time, particularly for students in grades 1-4. Having a relatively short school day in terms of hours of instruction may place children, particularly those from disadvantaged backgrounds and those who may be struggling, at risk of failure. Lengthening the school day has been found to benefit young learners. Schools could also be encouraged to explore different ways of organising the learning time in the school. Different learning time options can include the organisation of after-school and holiday programmes, study support or breakfast clubs, or take other forms.

Encourage greater participation of the school community and more collaboration between schools

A greater scope for the involvement of parents and other key stakeholders in holding schools accountable and fostering further educational improvements exists. The expansion of the use of Boards of Trustees is a step in the right direction. However, multiple channels can be made available for parents and community members to more actively participate in school life. The use of school facilities by the broader community, for example, is uneven; despite few legal prohibitions, school leaders are either unwilling or unable to maximise the use of their facilities for communal use. Greater collaboration between schools and the community, as well as among schools, could also facilitate a more effective use of resources in Kazakhstan. School leaders could be encouraged to take a more active role in collaborating with other schools and fostering the improvement of the broader education system, including through the use of shared facilities, staff, and equipment.

Use teacher, school leader and school evaluation to foster the improvement of practices

Evaluation and assessment practices can be strengthened in several areas to enhance the effectiveness of resource use. First, the developmental function of teacher attestation can be strengthened. A process internal to the school, carried out by line leaders, senior peers, and school management, which accounts for the school objectives and context, should become systematic in all schools. The main outcome would be feedback on teaching performance which would lead to an individual plan for professional development for each teacher in the school. An external validation of this internal process would then take place to ensure the soundness of the respective school's processes. Second, all school leaders should be required to undergo a meaningful appraisal exercise. This would involve designing specific criteria, guidelines and consequences for the appraisal system. It should provide school leaders with feedback to foster improvement, recognise their achievement and identify those that might need more support. To be effective, the appraisal should be well-rounded rather than based in narrow measures of school performance. Also, more rigorous processes to inform professional development opportunities as well as recognise performance are needed.

School evaluation should become a key lever for sustained improvement in schools. External school evaluation processes should strengthen their focus on school development and move away from the current compliance-driven model. This could involve the separation of school attestation into two detached processes: (i) external evaluation focussing on teaching and learning processes at the school; and (ii) an audit process to assess the school's compliance with regulations, possibly including financial regulations. The external evaluation focussing on teaching and learning processes would involve providing advice for improvement to each school on the basis of transparent, nationally agreed criteria. Processes to organise external evaluations could also be made more efficient than is currently the case in Kazakhstan by considerably reducing the size of evaluation commissions, simplifying the content and structure of the evaluation report, reducing the paperwork involved and ensuring the school's self-evaluation report feeds into its own self-improvement process. Identifying and disseminating good practices and strengthening the schools' self-evaluation process are two additional areas in which further refinement is needed to bring Kazakhstan closer to evaluation practices common in OECD countries.

Contextual information on schools should be developed and published alongside student results. It is recommended that any publication of UNT results at the school level should be presented in ways that take account of underlying differences including, for example, the socio-economic background of students. Also, it needs to be recognised that the UNT, as mostly a higher education entrance examination, has not been designed to evaluate individual schools and is taken on a voluntary basis by students who want to enter higher education. It is therefore unclear whether such tests can actually capture the value each school has added to the learning of its students, which raises questions about the interest of their publication at the school level.

Introduce incentives to encourage a more effective use of resources

Moving from the present system of mandatory norms to a system of effective incentives that encourage efficiency is a difficult process. Still a gradual transition away from a compliance mentality to one that emphasises creative problem-solving and greater autonomy in decision making is needed. By relaxing the current system of prescriptive

norms, education authorities at all levels can be empowered to use resources to address their most pressing issues in the ways that make sense given the local conditions. In the short term, this can be encouraged by allocating a specific freely disposable budget amount to be used according to each school's own priorities. Any savings generated in previous years may be rolled over as contributions to this freely disposable amount. Further efforts are needed to implement performance-based budgeting, which provides incentives for greater efficiencies in resource use and holds budget holders accountable for the results they achieve.

Improve monitoring mechanisms and data collection

The development of external and independent monitoring systems would strengthen the current monitoring framework in the Kazakhstan education sector. Once such systems are in place, benchmarking and monitoring indicators of school resource use would allow national authorities to rapidly assess the education system, leading to improved policy planning and implementation. External and independent bodies would strengthen the analysis of the ample data generated by existing monitoring systems.

At the same time, improvement of data collection systems and practices is also needed. In particular, a unified Education Management Information System for the sector should allow for in-depth analysis of school-level information by policymakers to inform resource allocation decisions. Procedures to ensure the quality of the data should be strengthened to improve their validity and reliability.

Lastly, the financial reporting arrangement between levels of government can be strengthened. National education authorities should have a clear view of the total amount of resources, both public and private, spent on the education sector. This information should be readily available by sub-sector (i.e. pre-primary, general secondary, vocational, etc.), expenditure type, and detailed geographic designation of where the money is spent. Analysts at the Ministry of Education and Science – and indeed at all levels of the education system – should be able to compare per student expenditure amounts, class sizes, staffing levels, and other relevant indicators with stated Government priorities to judge the allocative efficiency of resource use.

Analyse the effectiveness of resource use

Stronger analytical capacity would ensure that the Government is able to implement the designed policy changes more effectively. By enhancing analytical capacity in accounting, budgeting, monitoring, and supervision, Kazakhstan's policymakers could do more to base their decisions on information regarding resource use. While the current monitoring system is heavy on quantitative indicators embedded in the State Program for Education Development 2011-20 (SPED), it does little in the way of measuring the effectiveness of resource use in relation to performance. At the subnational level little performance-based monitoring takes place. A budgeting process that is better informed by the tracking of relevant outcomes at all levels of the education system will go a long way to increasing the effectiveness of resource use.

Proactively disclose information and increase transparency

Kazakhstan needs to improve dissemination of information about activities at the school and local levels, including information on school and local education budgets. While dissemination of reports may be viewed as another burden in the reporting process, school oversight bodies should consider using a single nationally-developed format to

ensure that parents and voters know how schools operate in their community and how school resources are used. This could consist in the publication of school attestation reports (or parts of them) in language accessible to the wider public. This publication should avoid publishing private information as, for example, the identification of those individuals liable for the violations demonstrated in the school attestation report. Similarly, school principals should disseminate their school's activity reports and financial plans, in accessible language, by posting them on the web or on school bulletin boards, thus increasing transparency.

The usefulness of Boards of Trustees can be further enhanced through the training of their members to build capacity on educational resource use issues. Boards of Trustees should receive greater guidance from national and local authorities regarding their mandates and particular care should be taken in the selection of their members as the Boards would require a range of competencies. Capacity development efforts should focus on increasing the knowledge of the Boards in areas such as: (i) understanding existing transparency and reporting mechanisms; (ii) monitoring school resource use; (iii) operating independently from local authorities; and (iv) understanding equity and efficiency issues in education resource use.

Tackle and reduce opportunities for corruption

Reducing opportunities for misuse of resources and corruption should be an urgent priority. A holistic approach requires a balance between monitoring the compliance with the rules governing resource use and the implementation of adequate transparency and reporting frameworks. Promoting integrity in public life and encouraging all stakeholders to root out acts of fraud and corruption are key policy initiatives to be considered. To tackle opportunities for corruption, authorities must identify the causes of corruption, raise awareness and encourage whistleblowing, and close existing loopholes in the system of norms that allow for potential misuse of funds.

Chapter 1

School education in Kazakhstan

Kazakhstan has a highly centralised top-down system that leaves little political, administrative and fiscal authority to lower levels of a clearly delineated hierarchy. This is reflected in the education system, which is characterised by an extensive system of planning and norms. Kazakhstan uses national strategic planning to broadly set out a vision for the country, but also to regulate every aspect of the education system at the central level. A number of strategies and planning documents, notably the State Program for Education Development in the Republic of Kazakhstan for 2011-20 (SPED), ensure consistency and guide policymaking. The Executive Office of the President of the Republic of Kazakhstan plays an important role in the definition of education strategies and in the development of key initiatives while the Ministry of Education and Science concentrates on the design of policies to implement education strategies. Regions (oblasts) *and districts* (rayons) *are responsible for the delivery of education services in schools. Primary and secondary education is compulsory in Kazakhstan and students are entitled to attend a public school free of charge. Attendance is almost universal at these two levels, which contrasts with low attendance rates in pre-primary education. The size and location of schools are key distinctive features of the Kazakh school network. Urban schools tend to suffer from a shortage of student places and operate in multiple shifts. In contrast, low density of population and a policy that favours universal access have resulted in a large number of small-class schools (about 50% of all schools). Student learning outcomes, as measured by PISA, are considerably below the OECD average. The difference in the mean performance in mathematics suggests that Kazakh 15-year-olds are on average two years behind their peers in OECD countries. According to PISA data, the language of instruction in schools (Kazakh or Russian), school location (urban or rural), and the socio-economic background of students and schools make a difference in students' performance. The reform agenda for the education sector is ambitious and a number of important initiatives are underway such as the expansion of the pre-primary network, the introduction of a per capita funding scheme for schools and the establishment of a twelfth grade in school education.*

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Context

Geographic and demographic characteristics

Located in Central Asia, Kazakhstan is the ninth largest country in the world by land surface, equivalent to more than twice the combined size of France, Germany and Poland. The country is bordered by Russia in the North, the Caspian Sea in the West, China in the South-East, Kyrgyzstan and Uzbekistan in the South, and Turkmenistan in the South-West. The population of Kazakhstan amounted to 17 million people in 2013. A big surface and small population result in a low density of population, which was estimated at 6.2 persons per square km in 2013 (IAC, 2014).

Natural conditions considerably influence the provision and costs of education in some areas. Kazakhstan has extreme temperatures, which range from an average of over 30°C in the summer to an average of –20°C in the winter. More than half of the country, including the entire west and most of the south, is either semi-desert (12% of the surface) or desert (44%). Serious environmental concerns also affect the provision of education and well-being of children in former nuclear, industrial or mining sites, as well as with land degradation, desertification, and water scarcity problems.

The population pyramid of Kazakhstan presents many irregularities (see Annex 1.A1). With a quarter of the population school-aged, the Kazakh school system has to accommodate more children than the average OECD country, where less than one-fifth of the population is under 15 years old. Although fertility rates have now stabilised at 2.5 births per woman during her lifetime, past fluctuations, from drastic reductions in the 1990s to a peak of 2.7 in 2008, has led to challenges for school rolls.

Population trends are not homogenous across the country: the northern areas are experiencing a decline while in the south there is a baby boom. East-Kazakhstan, Kostanay and Karaganda, North and West Kazakhstan, Akmola and Pavlodar have experienced population decreases in the period 1999-2009, and North Kazakhstan has seen its number of inhabitants reduced by 18%. In contrast, the population has increased by more than 20% in the regions of Mangystau, South Kazakhstan and the cities of Astana and Almaty during this period. In 2013, more than half of the population (9.4 million) lived in urban areas and an increasing trend towards urbanisation was observed (IAC, 2014). The most urbanised regions were Karaganda (79% of urban population), Pavlodar (70%), Aktobe (62%) and East Kazakhstan (59%). In contrast, the rural population was concentrated in Almaty (77% of rural population), South Kazakhstan (61%), Zhambyl (60%), North Kazakhstan (58%) and Kyzylorda (57%).

Schools in Kazakhstan reflect the rich diversity existing in the country in terms of ethnicity, religion and language. The education system caters to students from 23 different ethnicities. Ethnic Kazakhs comprise 73% of students, ethnic Russians 14%, and ethnic Uzbeks 4%. Other minority groups reflect the movements during the Soviet period and include: Uighurs (1.5%), Ukrainians (1.3%) and Germans (1.0%) (IAC, 2014). While secularity

is enshrined in the constitution, Kazakhstan is predominantly Muslim (70%), with around one quarter of the population declaring itself Christian (26%) and 3.5% indicating "other" or no religious affiliation (OECD, 2014a).

Students may study in one of the two official languages (Kazakh and Russian) or in other minority languages. Kazakh is considered the language of the Republic and, according to the 2009 census, is understood by two thirds of the population. Russian is considered the language of inter-ethnic communication as it is understood by virtually everyone (94% of the population). English is understood by 15.4% of the population. The positive discrimination of the Kazakh language to strengthen national identity and to affirm it as the primary language of communication has translated into a growing number of schools using Kazakh as the language of instruction. In 2012, the language of instruction in most of the schools was Kazakh (3 819 schools), followed by Russian (1 394), Uzbek (60), Uighur (14), and Tajik (2) (IAC, 2014). About, 2 113 schools offered more than one language of instruction.

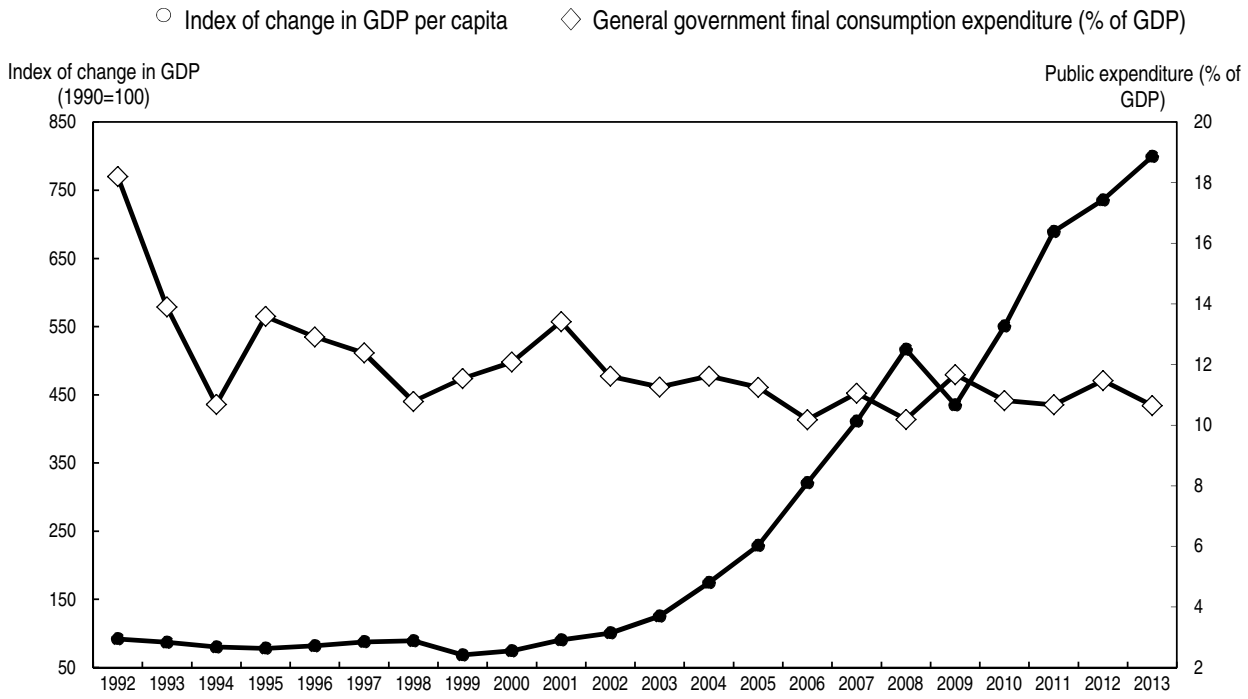
The net migration rate (the difference of emigrants and immigrants) is positive and accounted to 6 990 individuals for the period 2008-12. There are marked differences in the skill composition of immigrants and emigrants. The number of emigrants with higher education (5 829) almost doubles that of immigrants (3 096) (IAC, 2014), which suggests potential issues of "brain drain". Foreign citizens account for only 0.4% of the population. In an effort to fight child labour, Kazakhstan enabled children of migrant workers, including seasonal migrants, to attend educational institutions with the same rights as Kazakh children in 2012 (Antonowicz, 2013).

Economic growth and inequalities

Kazakhstan has experienced considerable economic growth in the last decade. Rapid growth in the early 2000s drastically slowed down with the global financial crisis of 2008, but rebounded by the end of 2009. In 2010, the country's annual GDP growth was 7% and inflation had remained stable. With a 2011 GDP per capita of USD 11 358, which doubled in just a decade, Kazakhstan is considered an upper-middle income economy. Nevertheless, the split from the Soviet Union in 1991 and the transition to a market economy imposed harsh times and hit the education sector particularly hard. Drastic adjustments included the closure of about 3 668 pre-primary schools and 590 schools and a severe reduction of teacher salaries (ADB, 2004). Figure 1.1 displays the evolution of GDP per capita and government consumption expenditure between 1992 and 2013.

Economic activity and investment in Kazakhstan is centred on extractive industries (e.g. oil, gas, mining), and economic growth has bolstered with increasing global prices and production. Extractive industries represented 65% of Kazakhstan's exports and attracted 70% of the inflow of foreign direct investment in 2009 (OECD, 2012). The International Monetary Fund (IMF) recently identified indicators suggesting that the country is affected by *Dutch disease* (the apparent relationship between the increase in the economic development of natural resources and a decline in the manufacturing sector or agriculture) (IMF, 2013). Despite efforts to diversify the economy around transport, pharmaceuticals, telecommunications, petrochemicals and food processing, these continue to be less productive and not very competitive sectors. The over-reliance on oil and other extractive industries means that public expenditures are very vulnerable to production and global price shocks. This was again visible with the crash of oil prices in 2014. Taxes on oil revenues were estimated to represent 37% of public revenues in 2006 (Daly, 2008).

Figure 1.1. **Evolution of GDP per capita and government consumption expenditure**



Note: General government final consumption expenditure (formerly general government consumption) includes all government current expenditure for purchases of goods and services (including compensation of employees). It also includes most expenditure on national defence and security, but excludes government military expenditures that are part of government capital formation.
Sources: World Bank Statistics (2014), World Bank national accounts data, World Bank data website, *http://data.worldbank.org/indicator/NY.GDP.PCAP.CD*; UNDATA (2014), *http://data.un.org/*.

Wide disparities remain in the personal and geographic distribution of income. The *Gini index*, a coefficient that measures the income inequality in a society and that ranges from 0 (perfect equality) to 1 (maximum inequality), has decreased steadily in the past decade, from 0.34 in 2001 to 0.28 in 2012 (IAC, 2014). The proportion of the population living below the poverty line fell to 3.8% in 2012 (IAC, 2014). The gap between rural and urban populations remains wide, with twice as many people living below the poverty line of USD 2.3 per day in rural areas than there are in urban areas (World Bank, 2012). Indicators on the health and well-being status of the Kazakh population suggest that significant challenges remain in terms of human development. Life expectancy remains low in comparison with countries with a similar level of income and despite improvements in the last decade, maternal mortality, infant mortality and under-five mortality rates are still high (OECD, 2014a).

The labour market is characterised by high female participation rates, a skilled workforce and low levels of unemployment. In 2011, the labour participation rate of the population aged 15 and above was 72% – a share that has remained fairly stable since 2000. Male participation in the labour force is at 77% (79% for the OECD on average) and female participation is at 67% (62% for the OECD on average) (OECD, 2014a). In 2010, about one quarter of the adult population aged 25 and above had completed tertiary education (IAC, 2014). The unemployment rate fell from 12.8% in 2000 to 5.3% in 2012 (IAC, 2014). In 2011, most of the employed labour force worked in services (55%), about one fifth in the industrial sector, and 27% in agriculture, although the latter only accounts for 5% of GDP (World Bank, 2012). The informal economy was estimated to account for 38% of GDP in 2007 (Schneider et al., 2010).

The country is actively engaged in the international community and virtually all major international organisations and donors are present in Kazakhstan. The World Bank, the Asian Development Bank and the International Monetary Fund are among the international governmental organisations that provided substantial development loans to Kazakhstan in the 1990s. In the early 2000s, Kazakhstan had repaid the loans and was able to borrow in international markets, becoming one of the few countries who managed to become donor-free in just a decade. The Asian Development Bank and UNICEF have been particularly engaged in providing support in the field of education (ADB, 2004 and UNICEF, 2010). The government is pursuing accession to the World Trade Organization (WTO) and is increasingly partnering with the OECD to put public policies up-to-par with developed countries.[1] In addition, Kazakhstan together with the Russian Federation and Belarus has formed the Eurasian Economic Union.[2]

The governance of the education system

A hierarchical distribution of responsibilities

Kazakhstan declared independence from the Soviet Union in 1991 and established a Presidential system with powers formally divided in legislative, executive and judiciary branches. The President, Nursultan Nazarbayev, has been in office since 1991. The Executive Office of the President exercises strong control over the Government, all branch ministers, and regional governors. Independent scrutiny of Kazakhstan's political system reveals the limitations of the democratic process and insufficient freedom of public discussions (ICG, 2013; Heinrich, 2010; Bhuiyan, 2012).

Kazakhstan has a highly centralised top-down system that leaves very little political, administrative and fiscal authority to lower levels of a clearly delineated hierarchy. Administratively, the country is divided into 14 Regions (or *oblasts* – облыстар, *oblıstar*) (see Table 1.1) and two cities of special status: the current capital Astana and the former capital

Table 1.1. **Regions of Kazakhstan**

Region	Capital	Area (thousand km^2)	Population (thousands, 2009)	Population density (people per km^2, 2009)
Akmola	Kokshetau	146.2	737.5	5.0
Aktobe	Aktobe	300.6	757.8	2.5
Almaty	Almaty	224.0	1 807.9	8.1
Atyrau	Atyrau	118.6	510.4	4.3
East Kazakhstan	Oskemen	283.2	1 396.6	4.9
Karaganda	Karaganda	428.0	1 341.7	3.1
Kostanai	Kostanai	196.0	885.6	4.5
Kyzylorda	Kyzylorda	226.0	678.8	3.0
Mangystau	Aktau	165.6	485.4	2.9
North Kazakhstan	Petropavl	98.0	596.5	6.1
Pavlodar	Pavlodar	124.8	742.5	5.9
South Kazakhstan	Shymkent	117.3	2 469.3	21.1
West Kazakhstan	Oral	151.3	598.9	4.0
Zhambyl	Taraz	144.3	1 022.1	7.1
City of Astana	-	0.7	613.0	875.7
City of Almaty	-	0.3	1 365.6	4 552.1
Kazakhstan	**Astana**	**2 724.9**	**16 009.6**	**5.9**

Source: The Agency on Statistics of the Republic of Kazakhstan (2011), *Results of the 2009 National Population Census of the Republic of Kazakhstan: Analytical Report*, Astana.

Almaty. *Oblast* governors are appointed by the President, serve as his representatives in *oblasts*, head the *oblasts* and are responsible for implementation of the President's policy decisions. The country is further divided into 175 districts/municipalities (or *rayons* – аудандар, *awdandar*), which encompass 87 cities, 34 villages, and 6 904 rural settlements. *Oblast* governors are also responsible for appointing and dismissing Heads of the *rayons*.

Several actors are involved in education at the national level. The Executive Office of the President plays an important role in the definition of education strategies and in the development of key initiatives. The President is involved in all the major education initiatives and, in his annual address, which typically occurs every January, he provides directions for the education system that the Ministry then further implements. In addition, the Executive Office of the President may directly develop and implement initiatives of special interest for the country, such as the network of Nazarbayev Intellectual Schools that cater to gifted students (see Box 3.2 in Chapter 3). The Executive Office of the President is also responsible for the overall review of monitoring reports on progress towards the objectives set in education strategies.

The Ministry of Education and Science (referred to as 'the Ministry' hereafter) is the central body responsible for the governance and inter-sector coordination in the fields of education, science, protection of children's rights and youth policy. The 2007 Law on Education attributes the following responsibilities to the Ministry: defining and executing educational policy; drafting regulations concerning funding for education; drafting educational standards and curricula; organising and implementing assessment systems; establishing requirements for teacher education; supporting the educational process in Kazakh language; and signing international agreements on education. The Ministry has created several subordinated organisations to support its work in areas of specific interest (see Chapter 2).

Strategic and operative plans set short-, mid- and long-term directions and goals, and a system of norms indicates how these should be achieved. Multiple mechanisms are in place at all levels to monitor progress towards the national objectives and ensure compliance with the system of norms. In general, the Ministry reports to the Executive Office of the President and is monitored by the Ministry of the Economy and Budget Planning (which, as of August 2014, became the Ministry of the National Economy) on its performance, and the Ministry of Finance on the execution of the budget.

Oblasts and *rayons* are responsible for the delivery of education services in schools. The exact expenditure responsibilities of *oblasts* and *rayons* were only clarified in the Budget Code in 2007. Until then, it was at the discretion of each *oblast* to transfer selected responsibilities on health, education or other social services to *rayons*. In theory, this could have led to diversity and to adaptation of local governance structures to diverse local conditions. In fact, however, the extensive system of planning and norms, coupled with little spending discretion, resulted in little variation across local services (Makhmutova, 2001). Moreover, *oblasts* and *rayons* cannot contradict central government policies and are required to follow national interests (Bhuiyan, 2010).

In comparison to OECD countries, schools have little autonomy in Kazakhstan. Their responsibilities include distributing students across classes, developing strategies to support low performers, establishing a leadership team, and managing the teaching body. An area in which school principals have a comparatively high level of autonomy is the management of teacher resources, namely teacher recruitment, the allocation of teaching

duties, and teacher dismissal. However, the number and type of teaching positions is strictly regulated by central norms, especially through curriculum requirements, typical staff structure and student numbers. The school principal decides how many teaching hours per week to allocate to each teacher (see Chapter 3 for greater detail). This means that teachers who are not needed in the school can be allocated just a few hours, instead of being openly dismissed. In fact direct dismissal of teachers is rare. Similarly, school principals can decide which teachers are given which responsibilities in school leadership teams, but the number and types of deputy principals and their specific tasks are set in legislation.

School Boards of Trustees and Parents' Committees play an important role in schools. Historically, all schools had Parents' Committees, composed of parents of current school students. These are informal (not legally registered) groups of parents, elected at parental meetings with school teachers. Their functions were and still are largely supportive, they organise school events, help in social and cultural activities, help organise school trips and similar activities. Typically, they have no access to professional and financial documentation of schools. In a major reform of the system, Boards of Trustees were established in some schools as of 2007. Their composition includes, besides parents, also representatives of the community and other local leaders. They were also assigned very significant functions in school management, including participation in the design of schools' development strategies, appointment of key personnel, and oversight of financial performance of schools. However, only in rare cases the Boards of Trustees are involved in these important duties, and typically their current activities consist only in providing assistance in the organisation of social and cultural events, similarly to Parents' Committees. Moreover, until now they have been established in less than a half of all schools. A survey of parents of ninth grade students showed that 40% of parents regularly attend school activities and participate in class activities, while the rest only rarely go to teacher-parent meetings. About 75% of parents regularly help their children with their homework (NCESE, 2012). In Kazakhstan, parents tend to be significantly more engaged in the education of their children than on average across OECD countries (OECD, 2013a).

Policy consultation tends to be limited to public authorities and operates in a hierarchical top-down cascade in Kazakhstan. The role of civil society and interest groups in education is weak. The Ministry of Education and Science has tried to increase transparency through creating and regularly updating an official website, and encouraging other educational institutions to create their own website.

The collapse of the Soviet Union and subsequent activities of foreign donors allowed the non-profit sector in Kazakhstan to appear and grow. However, out of the 200 officially registered non-governmental organisations (NGOs) not many are active and their actual influence in the education sector appears to be small (Ibrayeva and Nezhina, 2013). Moreover, the importance of international agencies in the development of the education system is gradually decreasing. Some education funding during the last decade came from external agencies in the form of loans, grants, sponsorships, and donations. International agencies supporting education projects comprise organisations with varied experience and priorities, ranging from technical assistance for the development of government strategies and policies for reform, to programmes of academic exchange. Many started operating during the early and mid-1990s, including some international governmental organisations (e.g. European Commission, ADB, World Bank, UNESCO, UNICEF), individual country governmental organisations, and other NGOs (e.g. Soros Foundation). Priority has generally

been on the instilling of democratic values in education, management of decentralisation and institutional development, the development and publication of new textbooks and instructional materials, and in-service training of teachers and administrators (ADB, 2004).

Legal and strategic foundations

The Constitution of the Republic of Kazakhstan (1995) and the National Law on Education (2007) lay down the main foundations of the education system. The Law determines the objectives and principles of education, the administrative structure, and the system of public and private schools. It also ratifies the administrative and financial decentralisation of education institutions. The legal framework on education also encompasses specific provisions of other legislative acts, edicts of the President, decrees of the Government, orders of Minister of Education and Science, and resolutions of boards of the Ministry of Education and Science. Policy developments in education are guided by a multitude of planning documents and strategies, notably the State Program for Education Development 2011-20.

Kazakhstan uses national strategic planning to broadly set out a vision for the country, but also to regulate every aspect of the education system at the central level. A number of strategies and planning documents ensure consistency and guide policymaking in the short-, medium- and long-term. All major strategies are considered as part of the legislative framework. The national architecture of strategic planning for the school system consists of:

- **Long-term:** Development Strategy Kazakhstan 2050 "One nation, one destiny", adopted in 2012, provides a vision for the country for the years to come and superseded the Strategy Kazakhstan 2030 adopted in 1997.
- **Medium-term:** several strategies co-exist for the medium term, notably the Program for Education Development in the Republic of Kazakhstan for 2011-20 (adopted in 2010) and the Strategic Plan of the Ministry of Education and Science for 2011-15 (from 2011) and for 2014-18 (from 2014). Other strategic documents include the National Action Plan for the development of school children's functional literacy for 2012-16 (from 2012), the State General Compulsory Education Standard (from 2012).
- **Short-term:** the annual address of the President to the nation provides an opportunity to launch new initiatives and new strategies, which are then usually developed into strategic sectorial documents and laws. The ministries, including the Ministry of Education and Science, also develop their own operational plans for each year.

Strategies contain specific indicators and targets to measure implementation progress, which is regularly monitored and reported to relevant authorities. The planning system works using a top-down approach. *Oblasts* and subsequently *rayons* also define their education strategies and planning documents to translate national strategic goals into specific regional and local implementation plans and to formulate the target values of the monitoring indicators in their sphere of operations. This approach to strategic planning is based on the assumption that far reaching strategic goals can be adequately broken down into a number of indicators, and that local and regional bureaucracies can monitor progress using those indicators as their main tool.

The structure and main features of the school system

Education in Kazakhstan is divided into pre-primary education, school education (including primary, lower secondary, and upper general or vocational secondary education), post-secondary and tertiary education (see the structure of the education system in Annex 1.A2). School education is the term used in this report to refer to primary (grades 1-4), lower secondary (grades 5-9) and upper secondary education (grades 10, 11 and 12).[3] These levels of education, as well as the two final years of pre-primary education, are compulsory and provided free of charge in public institutions.

Structure of the education system

Pre-primary education

A network of mostly public pre-primary nurseries and kindergartens provides pre-primary education and care to children from 0 to 6 years of age. Pre-primary enrolment falls well short of the high enrolment rates observed at the primary and secondary levels. In the early 1990s, about 70% of pre-primary schools were closed, particularly in rural areas, resulting in a high number of children who did not have access to pre-primary education. Between 2005 and 2010, Kazakhstan almost doubled the rate of pre-primary enrolment across the country (from 23% in 2005 to 42% in 2010), and the increase was six fold in rural areas (from 6.7% to 35%) (OECD, 2014a). Pre-primary education is not part of the scope for the School Resources Review of Kazakhstan but it is the subject of a separate OECD review (Litjens et al., forthcoming).

School education

Primary education starts at the age of six or seven and lasts for four years. The duration of lower secondary education is five years, followed either by two years in general upper secondary education or two to four years in technical and vocational education. In 2011, around two thirds of ninth graders continued to general upper secondary education, while one third enrolled in technical and vocational education (IAC, 2014). Students who successfully complete general upper secondary education can attend shorter (two to three years) technical and vocational training programmes or continue to higher education (OECD, 2014a).

Technical and vocational secondary education is provided in colleges (previously called professional lyceums), schools, and higher technical schools. Technical and vocational secondary education falls outside the scope of the School Resources Review of Kazakhstan, but it has been the subject of another OECD review (Álvarez-Galván, 2014). There is also a growing number of evening schools for young people who left school without completing their secondary education.

Post-secondary and tertiary education

In 2011, a total of 146 universities, academies, institutes, conservatoires and higher schools and higher colleges offered post-secondary and tertiary education. Graduates can obtain the academic Bachelor degree after a minimum of four years of study. Admission is based on the results of the Unified National Test (UNT) at the end of grade 11 (or grade 12), which is a combined upper secondary school leaving examination and university entrance test. Kazakhstan joined the Bologna Process in 2010. Post-secondary non-tertiary education is provided in academic (degree duration: two years) or technical and vocational specialisations (degree duration: at least one year) (OECD, 2014a).

Main features

Primary and secondary education is compulsory in Kazakhstan and students are entitled to attend a public school free-of-charge. Students can choose the school they want to attend and priority is given to applicants who live in the neighbourhood of the school. In the school year 2013-14, a total of 7 648 primary, lower and general upper secondary schools catered to 2 571 989 students in Kazakhstan. The school system is an amalgam of many different types and forms of schools, the vast majority of which (95.5%) are state-owned day schools overseen by the Ministry of Education and Science (see Table 1.2). The number of private schools has increased in the last decade, but only represents 1.4% of all schools in the country enrolling only 0.8% of the students. About half of the 107 private schools operating in 2013-14 were located in the cities of Almaty and Astana (IAC, 2014). Private schools tend to offer a more international curriculum and experience, are allowed to set their own fees, and do not receive any public funding.

The size and location of schools are the key distinctive features of the Kazakh school network. Urban schools tend to suffer from a shortage of student places and operate in multiple shifts. In the 2009-10 school year, about 66% of schools had classes in two or three shifts. In contrast, low density of population and a policy that favours universal access have resulted in a large number of small-class schools (*malokomplektnaya shkola* in Russian), which are characterised for having a very small number of students and low student-teacher ratios. Small-class schools are recognised as a special group of schools in Kazakh legislation; they are allowed, among others, to provide multi-grade teaching. Even the smallest communities in Kazakhstan are entitled to have a school, as long as they have at least five children of compulsory school age. About 50% of schools are considered small-class schools but they only cater to 11% of the student population (see Table 1.2). In some regions the vast majority of schools are small-class, notably in North-Kazakhstan (86%), Akmola (81%), Kostanay (76%) and West-Kazakhstan (74%). In 2010, the average enrolment in primary school was 12 students per school, in lower secondary 45 students, and in upper secondary 146 students per school. Small-class schools are confronted with particular challenges, such as: very small class-sizes, poor infrastructure and staff shortages, and often a lower quality of education. Recent policy efforts have focused on establishing resource centres to enhance the capacity of these schools, and supporting alternative boarding schools and transportation services (see Chapter 3).

The levels of education provided and the language of instruction vary across schools. Most schools are general day schools offering grades 1-11 or 12; 13% of day schools offer only primary grades 1-4; and another 15% offer only grades 5-9. Over half (52%) of general day schools offer instruction in Kazakh language, 19% offer instruction in Russian language and 29% are "mixed-language" schools; in addition two general day schools offer instruction in Tajik, 14 schools offer instruction in Uighur and 60 schools offer instruction in Uzbek (IAC, 2014).

There is a growing number of students in schools for the gifted, and of specialisation schools in which several subjects are taught at an advanced level (e.g. maths, natural sciences, social sciences, humanities, music, art). Gymnasiums and lyceums are the most common examples of schools with more in-depth curricula in several subjects. The most prestigious, however, are the Nazarbayev Intellectual Schools (NIS) that were created at the initiative of the President to develop new educational practices (see Box 3.2 in Chapter 3).

Table 1.2. **Basic education statistics in Kazakhstan and the OECD, 2012-13**

Kazakhstan (2013)				
	Number of schools	*%*	*Number of students*	*%*
All general secondary schools	**7 648**	**100.0**	**2 571 989**	**100.0**
of which:				
State-owned day schools	7 307	95.5	2 525 047	98.2
Non-state owned day schools	107	1.4	19 579	0.8
Evening schools	81	1.1	12 661	0.5
Nazarbayev Intellectual Schools (NIS)	15	0.2	9 700	0.4
Other schools[1]	138	1.8	5 002	0.2
State-owned day schools	**7 307**	**100.0**	**2 525 047**	**100.0**
of which:				
With Kazakh language of instruction[2]	3 796	52.0	1 607 509	61.9
With Russian language of instruction	1 349	18.5	894 658	34.4
With other languages of instruction	76	1.0	95 339	3.7
With more than one language of instruction	2 086	28.5	n/a	n/a
of which:				
Urban schools	1 605	22.0	1 403 377	55.6
Rural schools	5 702	78.0	1 121 670	44.4
of which:				
Small-class schools	3 639	49.8	284 267	11.3

Kazakhstan (2013) vs. OECD average (2012)		
	Kazakhstan (2013)	*OECD average (2012)*
Public spending as % of GDP[3]		
Total education spending	3.8	5.6
Primary and secondary education	2.1	3.6
Net enrolment rate (%)		
Primary and lower secondary education (ages 5-14)	99	98
Upper secondary education (ages 15-19)	86	83
Average class size[4]		
Primary education	23	21
Secondary education	18	24
Student-teacher ratio[5]		
Primary education	17	15
Secondary education	6	13
Learning outcomes		
PISA 2012 mathematics, average score	432	494
PISA 2012 mathematics, % scoring below Level 2	45	23

Notes:
1. Includes special correctional schools, Republican schools, schools at higher education institutions, and other schools.
2. Number of students based on 2012 data.
3. Based on 2011 data for the OECD.
4. Based on 2012 data for Kazakhstan.
5. Calculated using actual teacher headcount for Kazakhstan, full-time equivalent (FTE) teacher headcount for the OECD.

Sources: NCESE (2014), *Statistics of Education System of the Republic of Kazakhstan: National Collection*, National Center for Educational Statistics and Evaluation: Astana; and OECD (2014b), *Education at a Glance 2014: OECD Indicators*, *http://dx.doi.org/10.1787/eag-2014-en*.

Students with special needs and disabilities are educated in separate 'correctional' schools, separate classes within mainstream schools, or in their own homes. Recent policy measures aim at increasing the number of students with special needs and disabilities attending mainstream schools (see Chapter 3).

Access, performance and attainment

Access to both primary and secondary education in Kazakhstan is almost universal. In 2013, the net enrolment rate (school enrolment of children of the formal school age measured as share of population corresponding to the formal school age) was 99% for primary education and 86% for lower secondary (see Table 1.2). Kazakhstan has managed to achieve high levels of access to primary and secondary education for all, and few differences are observed in enrolment by geographical location, socio-economic background and gender. The difference in attendance ratios between boys and girls, rural and urban areas, and richest and poorest, account for less than one percentage point in primary education (UNICEF, 2012). These differences are also observed in secondary school, with the exception of children in the lowest income bracket. About 90% of those who have dropped out of school come from poor and disadvantaged families (Singh, 2012). Despite equal access to schooling, the schools attended vary considerably in terms of the quantity and quality of resources (see Chapter 3). Also, low attendance rates of pre-primary education, which are particularly low in rural areas, provide students with a different starting point in the education system. In Kazakhstan, the percentage of students who had attended pre-primary education for more than one year (24%) is one of the lowest among PISA-participating countries and economies (OECD, 2013b).

The level of educational attainment of the population is high: one quarter of the adult population aged 25 and above has completed tertiary education, 30% hold a post-secondary degree and 40% have upper secondary education (IAC, 2014). The educational attainment level of women is higher than that of men: 28% of women have attained tertiary education compared to 23% of men, and 33% of women have obtained a post-secondary degree compared to 29% of men (IAC, 2014). Anecdotal evidence suggests a rising trend in school dropout rates as the national curriculum is increasingly perceived as irrelevant to the modern job market, but official numbers are not available (UNICEF, 2012).

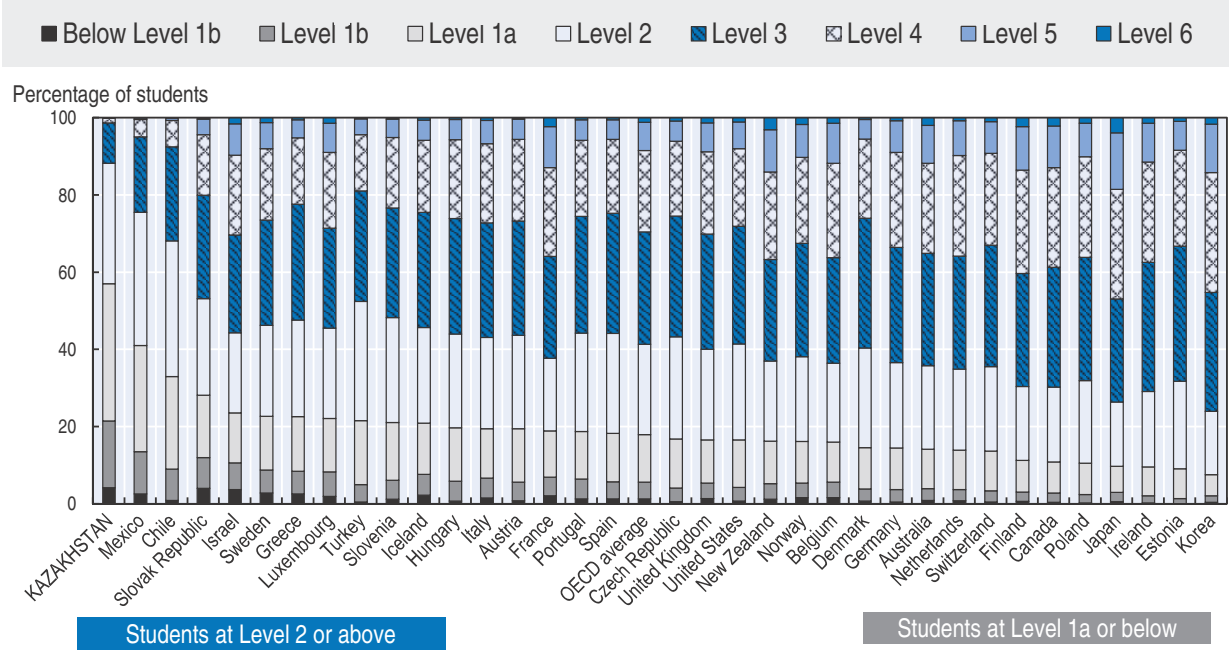
International assessments also provide important insights into student performance in Kazakhstan in recent years. Since 2007, Kazakhstan has participated in the Trends in International Mathematics and Science Study (TIMSS) conducted by the International Association for the Evaluation of Educational Achievement (IEA), and since 2009 in the OECD Programme for International Student Assessment (PISA). TIMSS provides data on the mathematics and science achievement of fourth and eighth grade students every four years. PISA is a triennial international comparative study of student learning outcomes in reading, mathematics and science of 15-year-olds.

In the TIMSS 2007 study, fourth grade students scored 549 scale points in mathematics and 533 scale points in science, ranking Kazakhstan in fifth place in mathematics and eleventh place in science among fourth graders from 36 countries (Mullis et al., 2008; Martin et al., 2008). System performance dropped significantly in the next cycle of TIMSS 2011 to around average performance. Fourth grade students in 2011 scored 501 scale points in mathematics and 495 scale points in science, placing them near the scale midpoint and on a par with New Zealand, Norway and Sweden; the country ranked 27th in the fourth grade mathematics assessment and 32nd in the fourth grade science assessment among 50 countries (Martin et al., 2012; Mullis et al., 2012). Moreover, the performance of eighth graders in 2011 was also lower than the performance of the same cohort of students tested as fourth graders 4 years before: 487 scale points in mathematics and 490 scale points in science. However, TIMSS 2011 showed that well over half of both fourth grade and

eighth grade students reached the "intermediate benchmark" level in both mathematics (62% and 57%) and science (58% and 58%), which was higher than the international average for these tests and equivalent to the performance of students in many OECD countries.

In PISA 2012, Kazakh students scored on average 432 points in mathematics (the main area of assessment), 393 in reading and 425 in science, while students in OECD countries scored on average 494, 496 and 501 points respectively (OECD, 2014c) (see Figure 1.2). The difference in the mean performance in mathematics suggests that Kazakh 15-year-olds are on average two years behind their peers in OECD countries. About 45% of Kazakh 15-year-old students are low performers in mathematics, meaning that, at best, they can extract relevant information from a single source and can use basic algorithms, formulae, procedures or conventions to solve problems involving whole numbers. This proportion is significantly above the OECD average (23%). Some 0.9% of students are top performers in mathematics, meaning that they can develop and work with models for complex situations, and work strategically using broad, well-developed thinking and reasoning skills. This proportion is smaller than on average across the OECD (13%). The dispersion of scores is small with the score difference in mathematics between the top and bottom 10% of students being one of the smallest among PISA-participating countries and economies.

Figure 1.2. **Levels of reading achievement in PISA 2012**



Source: OECD (2014c), *PISA 2012 Results: What Students Know and Can Do (Volume I, Revised edition, February 2014): Student Performance in Mathematics, Reading and Science*, http://dx.doi.org/10.1787/9789264208780-en.

In Kazakhstan, according to PISA data, the language of instruction in schools, school location, and the socio-economic background of students and schools make a difference in students' performance. However, no significant gender differences are observed. Students in Kazakh-language schools scored lower than those in Russian-language schools in PISA 2012, with the differences in reading and mathematics equivalent to about one year of schooling (World Bank, 2014). These variations could reflect differences in the socio-economic status of students attending different types of schools or differences in the

resources available to students in the schools. The World Bank analysis has shown that school resources contributed as much to the improvement in average PISA scores between 2009 and 2012 as the individual students' background characteristics. In mathematics, school resources matter more in improving performance of high achievers, whereas in reading they matter more for low- and middle-achieving students (World Bank, 2014).

The difference in performance between students whose school is located in a village (fewer than 3 000 people) or a town (3 000 to 100 000 people) was not significant, but those who attend a school in a city (over 100 000 people) performed significantly higher in PISA 2012 (OECD, 2013b). However, the mathematics performance of rural students improved by a full year of schooling since PISA 2009, compared to their urban peers, whose performance improved by less than one-half of a year. Overall, rural students still lag their urban peers in reading and mathematics, but the gap has narrowed considerably in the latter subject (World Bank, 2014). Students in the bottom quarter of the index of economic, social and cultural status also scored on average significantly lower than students in the top quarter, for a difference in mathematics equivalent to more than one year of schooling (OECD, 2013b). In Kazakhstan, 8% of the variation in student performance in mathematics is attributed to differences in students' socio-economic status (compared to 15% across OECD countries). While in OECD countries boys outperform girls in mathematics by an average of 11 score points, no significant gender differences were observed for Kazakhstan in PISA 2012 (OECD, 2013b). Gender differences are also not significant at the lower and top levels of performance in Kazakhstan, and differences are smaller than on average across the OECD.

National assessments also suggest marked differences in educational outcomes across the country. At the end of compulsory schooling, students can choose to take the Unified National Test (UNT), which certificates their schooling and is also a university entrance exam. In 2013, about 80% of students took the UNT. However, significant differences exist in the participation rates across *oblasts* as, for example, 55% of students in North Kazakhstan took the UNT compared to 82% of their peers in Astana city in 2013 (NCESE, 2013a, 2013b). Students in rural areas scored on average 8.74 points lower than those in urban areas. However, the variation in performance between 2012 and 2013 for urban (2.89 points) and rural (3.86 points) students suggests that the achievement gap might be closing (IAC, 2014).

In line with the strong focus on pursuing excellence, Kazakhstan has a longstanding tradition of participation in international Olympiads in natural sciences and mathematics. In 2010 Kazakhstan held the 51st international mathematical Olympiad at which Kazakh students reached 5th place among 98 participating countries (OECD, 2014a). In 2013, the Kazakh team won 228 gold medals, 285 silver medals and 335 bronze medals as well as 33 certificates – in total 881 awards (NCESE, 2012). Olympiads are also regularly organised at the national, regional and local levels, and incentives are provided to encourage the participation of students.

There is little research about the returns on educational investments in Kazakhstan. Arabsheibani and Mussurov (2007), using a 2001 household survey, found evidence to suggest a positive and significant effect of secondary education on earnings. These findings are in line with results from other transitional economies (Münich et al., 2005) and middle-income countries (Psacharopoulos and Patrinos, 2004).

Recent relevant policy developments

The reform agenda for the education sector is very ambitious: Kazakhstan should become an educated country with a smart economy and a highly qualified labour force by 2020. Moreover, education is considered as the platform that future economic, political and socio-cultural prosperity of the country will rely on (MESRK, 2010). In the past 20 years, vast economic, social and demographic transformations have already translated into major structural changes in the education system. Today, Kazakhstan continues to embark on profound reforms to improve the quality of the education system and is increasingly looking at international standards and best practices.

The current strategy to transform the education sector is outlined in the State Program for Education Development in the Republic of Kazakhstan (SPED) for 2011-20. The SPED further develops previously adopted strategies, such as the State Program for Education Development for 2005-10, the State Program for Technical and Vocational Education Development for 2008-12, the Children of Kazakhstan Program for 2007-11, and the Balapan Pre-primary Education Program for 2010-14.

The SPED includes a thorough diagnosis of the education system in terms of strengths, weaknesses, opportunities and challenges and outlines measures to address them. Some of the key challenges identified in schooling are: (i) underspending in education; (ii) low status of the teaching profession, poor quality of teacher education, lack of high quality teaching staff and specialists in children's rights protection, and weak educational leadership; (iii) poor infrastructure and equipment of schools; (iv) low quality of provision in small-class schools; (v) incipient inclusive education; (vi) underdeveloped use of public-private partnerships in education; (vii) incipient use of information technologies; and (viii) education statistics that do not meet international standards and are not publicly available. Other relevant challenges identified in other education levels relevant for schooling include the little access to pre-primary education, the mismatch between education supply and employers' demand for qualified vocational and higher education graduates, the lack of a national qualifications system, and the disconnect between the content of school education and the content of higher education.

The main goal of the SPED is increasing the competitiveness of education and the development of human capital through ensuring access to quality education for sustainable economic growth. This overall goal has been operationalised in 10 directions and 23 targets. Moreover, 58 indicators have been defined to measure progress towards the accomplishment of the objectives (see Annex 1.A3 for a complete list of the indicators). Each direction defines the current and specific levels to be attained in 2015 and 2020 and indicates the main authority responsible for monitoring progress. Some of the key policy measures set in the SPED in order to tackle the challenges outlined above are as follows:

- *Early childhood education and care (ECEC)*: enlarging the network of pre-primary schools; updating the curricula; training staff and updating the training curricula; achieving full enrolment (3-6 years); providing free meals; and smoothing the transition to primary education.
- *Primary, lower and upper secondary education*: development of new mechanisms of education financing, including a new per capita funding scheme; improving the quality of teachers and school leaders; training highly qualified staff for the education sector; providing more support and incentives; developing public-private partnerships and introducing some elements of corporate governance systems in schools; improving student

assessment methods and establishing national education statistics that meet international standards; transitioning to a 12-year education model and updating the curricula; addressing the challenges of small-class schools; and developing the concept of inclusive education and the support provided to low-performing students in schools.

- *Vocational education and training (VET)*: updating the structure and curricula of technical and vocational education to meet the demands of the country's industrial innovation; improving staff training; and increasing the reputation of VET education.
- *Higher education*: equipping undergraduate and postgraduate students with skills to meet the demands of the country's industrial innovation; integration into the European Higher Education Area; fostering synergies between education, science and industry; creating conditions for the commercialisation of intellectual property products and technologies.
- *Lifelong learning and civic education*: creation of conditions for life-long learning for all; implementation of a package of measures on patriotic education; encouragement of active citizenship and social responsibility; and fostering the potential of youth.

Notes

1. In the field of education, Kazakhstan has engaged in recent years in several OECD Reviews other than the present School Resources Review: Early Childhood Education and Care (Litjens et al., forthcoming), Vocational Education and Training (Álvarez-Galván, 2014), a general Review of the School System (OECD, 2014a), Students with Special Needs and Disabilities (OECD, 2010), and Higher Education (OECD, 2007).
2. As of 2015, Armenia and the Kyrgyz Republic became members of the Eurasian Economic Union.
3. It should be noted that the scope for the analysis in this report is limited to school resource use in general school education (primary, lower secondary and upper general secondary education).

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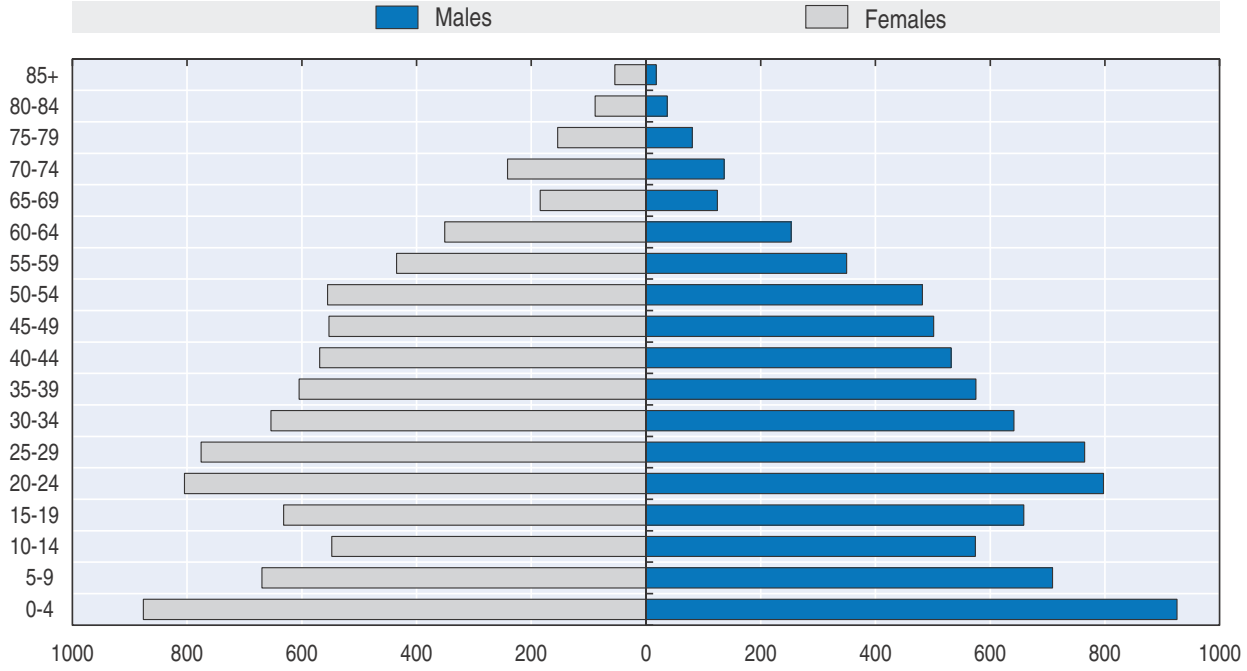
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ANNEX 1.A1

Structure of the population by gender and age, 2013

Figure 1.A1.1. **Structure of the population by gender and age, 2013**

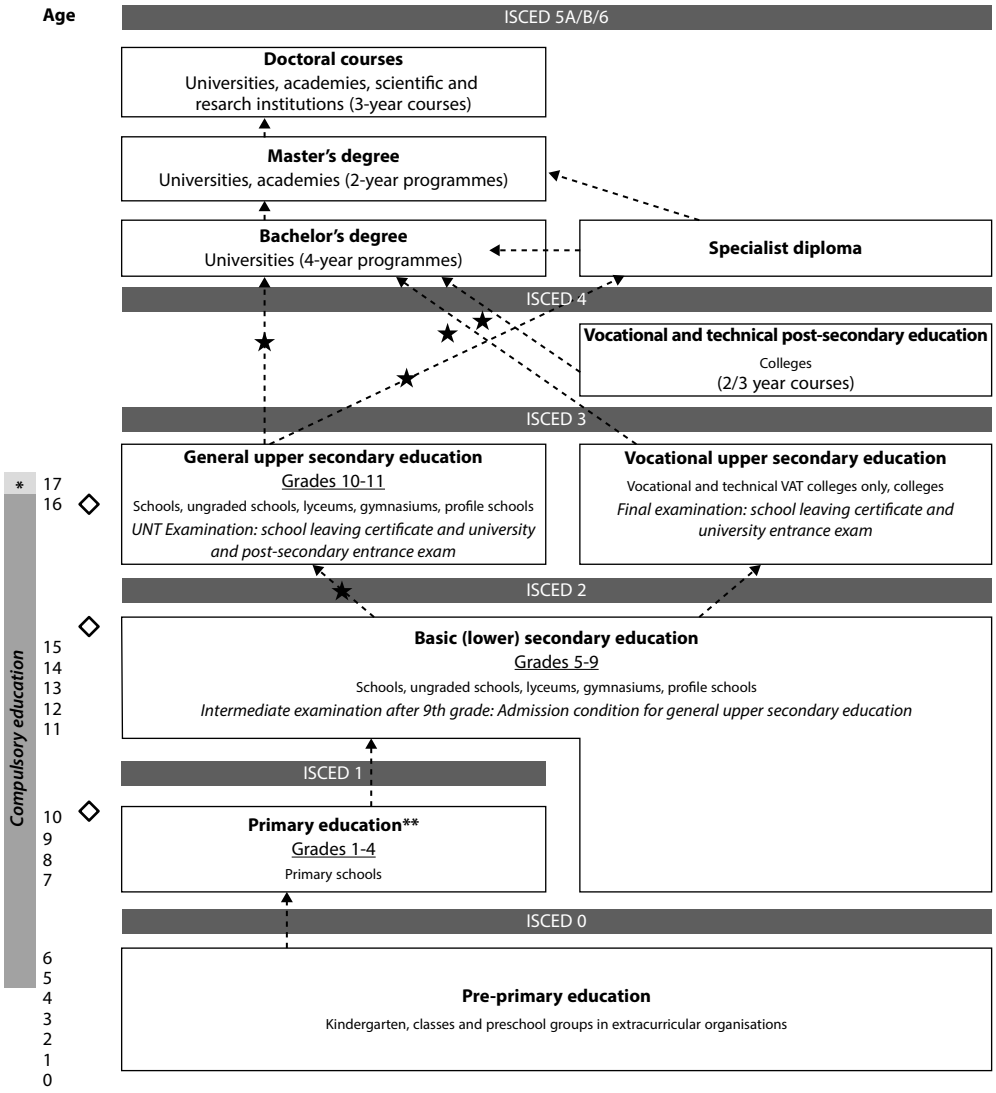


Source: Information-Analytic Center (IAC) (2014), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Kazakhstan*, *www.oecd.org/edu/school/schoolresourcesreview.htm*.

ANNEX 1.A2

The education system of the Republic of Kazakhstan

Figure 1.A2.1. **The education system of the Republic of Kazakhstan**



* Current transition to 12-year model

** The Ministry of Education of Kazakhstan does not differentiate between primary and lower secondary education. Only a few "primary education only" schools offer grades 1 to 4. Primary education can start at the age of 6 or 7.

★ Specific entrance conditions

◇ Diagnostic test or entrance examination

Source: UNESCO (2011), World Data on Education, Kazakhstan, *www.ibe.unesco.org/en/services/online-materials/world-data-on-education/seventh-edition-2010-11.html*.

ANNEX 1.A3

Indicators of Kazakhstan's State Programme for Education Development 2011-20

Table 1.A3.1. **Indicators of the State Programme for Education Development 2011-20**

Indicator	2010	2015	2020	Authority monitoring progress
Share of teachers who passed professional development courses according to new professional development courses (out of the total number of teaching employees)	0%	30%	60%	Ministry of Education and Science; Local executive bodies
Share of teachers in profession-oriented schools with a Masters degree	0%	not less than 10%	not less than 20%	Ministry of Education and Science;
Share of young specialists newly arrived to educational organisations for working in the current year (out of the total number of teaching employees)	2.6%	4.5%	6%	Local executive bodies; Ministry of Education and Science
Share of teachers lecturing in science and mathematics in English	0.6%	10%	15%	Ministry of Education and Science
Share of specialists of the qualification upgrading system holding academic degrees	3.4%	5%	15%	Local executive bodies; Ministry of Education and Science
Share of engineering-pedagogical workers in technical and vocational schools, who undertook qualification upgrading and training courses (per annum)	20%	20%	20%	Local executive bodies; Ministry of Education and Science, unions of employers, branch ministries
Share of faculty of universities who passed qualification upgrading and refresher courses in Kazakhstan (per annum)	6%	20%	20%	Ministry of Education and Science
Implementation of corporate governance principles in civilian universities	44%	65%	90%	Ministry of Education and Science
Share of teachers who passed qualification upgrading in implementation of information-communication technologies in education (of their total number)	0%	90%	90%	Ministry of Education and Science; Local executive bodies
Number of students per one computer	18	10	1	Ministry of Education and Science; Local executive bodies
Share of pre-school mini-centres out of the total number of pre-school organisations	59.7%	60%	52.7%	Local executive bodies; Ministry of Education and Science
Share of children aged 5-6 covered with pre-school training	83%	100%	100%	Local executive bodies; Ministry of Education and Science
Share of private kindergartens (of the total number of kindergartens)	10%	not less than 27%	not less than 30%	Local executive bodies; Ministry of Education and Science
Share of schools focusing on science and mathematics out of the total number of profession-oriented schools	0%	not less than 15%	not less than 35%	Local executive bodies; Ministry of Education and Science
Share of schools provided with chemistry, biology, physics classrooms, multimedia language labs with maintenance service (out of their total number)	31.7%	40%	80%	Local executive bodies; Ministry of Education and Science
Share of schools that are in poor condition (out of their total number)	2.6%	2%	1%	Local executive bodies; Ministry of Education and Science
Shortage of school places	74.3 thousand	45 thousand	30 thousand	Local executive bodies; Ministry of Education and Science
Share of schools using the three-shift system	0.9%	0.2%	0	Local executive bodies; Ministry of Education and Science

Table 1.A3.1. **Indicators of the State Programme for Education Development 2011-20** *(cont.)*

Indicator	2010	2015	2020	Authority monitoring progress
Share of school students provided with school bus transportation from home to school and back (of the total number of students needing transportation)	63%	80%	100%	Local executive bodies; Ministry of Education and Science
Number of "supporting schools" –resource centres for small-class schools	0	160	160	Local executive bodies; Ministry of Education and Science
Share of secondary school students attending sports clubs in educational institutions (of the total number of students)	20%	25%	30%	Local executive bodies; Ministry of Education and Science
Share of school students attending children and youth sports centres (of the total number of students)	8%	12%	14.5%	Ministry of Tourism and Sport
Share of school-age children covered with artistic, musical and technical creativity	21.5%	23%	38%	Local executive bodies; Ministry of Education and Science
Share of university students attending sports club (of the total number of students)	*	20%	40%	Ministry of Education and Science
Share of children covered with inclusive education of the total number of children with developmental disabilities	9%	25%	50%	Local executive bodies; Ministry of Education and Science, Ministry of Labour and Social Protection
Provision of students from low-income families with free fortified hot meals	70%	100%	100%	Local executive bodies; Ministry of Education and Science
Share of majors in technical and vocational schools provided with professional standards (out of the total number of majors)	0%	30%	90%	Ministry of Labour and Social Protection, Ministry of Industry and New Technologies, branch ministries, Ministry of Education and Science, unions of employers
Share of standard curricula and programmes of professional and vocational education profession developed with the participation of employers , based on professional standards	0%	50%	90%	Ministry of Education and Science; local executive bodies; unions of employers
Share of integrated educational curricula developed with the participation of employers and international experts	20%	40%	70%	Ministry of Education and Science; local executive bodies, unions of employers
Share of university students enrolled in industrial placement of the total number of students studying under the government grant scheme in technical and vocational education organisations	80%	85%	90%	Local executive bodies; Ministry of Education and Science; branch ministries; unions of employers; Atameken Union
Share of students of technical and vocational education institutions whose study is funded by the employers (of the total number of students)	0.6%	1%	2%	Local executive bodies; employers; Ministry of Education and Science
Providing young people of typical age with technical and vocational education	17.6%	20%	23%	Local executive bodies; Ministry of Education and Science
Number of school places opened in the system of technical and vocational education	0	2 660 school places	16 940 school places	Local executive bodies; Ministry of Education and Science
Number of newly opened places in the dormitories of technical and vocational education institutions	0	1 300 places	1 500 places	Local executive bodies
Share of technical and vocational education institutions provided with up-to-date teaching equipment (out of their total number)	36%	75%	90%	Local executive bodies; Ministry of Education and Science
Share of students studying under graduate programmes on a government grant scheme out of the total number of undergraduate programme students studying on under the government grants	8%	20%	40%	Ministry of Education and Science
Including one-year master's degree programme against the amount of government grants for bachelor's degree programme	1.6%	14%	25%	Ministry of Education and Science
Number of students studying on a government grant scheme under the PhD programmes with annual increase of government grants, beginning from 2012	200	not less than 1000 people	not less than 2000 people	Ministry of Education and Science
Share of universities which implemented the credit transfer model according to the European Credit Transfer System (ECTS) in the Republic of Kazakhstan	19%	100%	100%	Ministry of Education and Science
Share of the Bolashak International Scholarship recipients studying under the master's degree, PhD and bachelor's degree programmes since 2015 – from one term up to one academic year, and those passing research internships	69%	100%	100%	Ministry of Education and Science

Table 1.A3.1. **Indicators of the State Programme for Education Development 2011-20** *(cont.)*

Indicator	2010	2015	2020	Authority monitoring progress
Share of universities having access to the Republican Interuniversity Electronic Library	26%	55%	100%	Ministry of Education and Science
Extension of academic freedom of universities within the standard curricula for higher undergraduate and postgraduate education within majors; increasing the number of elective components	65%	70%	80%	Ministry of Education and Science; employers
Share of graduate students and PhD candidates in Nazarbayev University having publications in high impact factor scientific journals	0%	10%	30%	Ministry of Education and Science; Nazarbayev University Independent education organisation
Share of foreign students in Kazakhstan's higher education institutions including those studying on a fee paid basis	1.5%	2.5%	3%	Ministry of Education and Science
Share of universities that created innovative structures, research laboratories, technological parks and centres (of the total number of technical universities)	14%	20%	50%	Ministry of Education and Science
Share of universities that established structural divisions of scientific as well as design and construction organisations (of their total number)	*	10%	25%	Ministry of Education and Science
Share of university graduates who have completed master's degree and PhD programmes and who have been employed by universities and scientific organisations within the first year after graduation	*	10%	30%	Ministry of Education and Science
Share of funding for educational activity of civilian universities under the PPP scheme	*	10%	50%	Ministry of Education and Science
Share of funding for research and innovative activity of civilian universities under the PPP scheme	*	10%	50%	Ministry of Education and Science
Number of modular curriculums for short-term refresher courses and qualification upgrading programmes for the technical and maintenance sector employees run jointly with employers	0	20 units	25 units	Ministry of Education and Science; employers; Ministry of Labor and Social Protection
Share of youth running for representative bodies at all levels (of total number of deputies)	*	3.9%	4.1%	Ministry of Education and Science; Local executive bodies
Share of young people participating in the activity of youth organisations	22%	28%	35%	Ministry of Education and Science; Local executive bodies; NGOs;
Share of republican youth organisations involved in implementation of socially important projects under the public social contract	12%	20%	24%	Ministry of Education and Science; Local executive bodies; NGOs

* Statistics not available

Source: MESRK (2010), The State Program for Education Development in the Republic of Kazakhstan 2011-20: RK Presidential decree as of December 7, 2010, Number 1118.

Chapter 2

Governance of school resource use in Kazakhstan

The Kazakh education system is highly centralised. The governance of school resource use involves extensive central planning, a very detailed system of norms and a strong hierarchy in which different levels of administrative governance are subordinated to higher levels, both in their decision making structure and in the budgeting process. The main players are the President and his Executive Office, the Ministry of Education and Science, the Ministry of the National Economy (earlier called Ministry of Economy and Budget Planning), the Ministry of Finance, oblasts, rayons *and schools themselves. Education is considered a top priority and ambitious reforms are underway (e.g. establishment of twelfth grade, new school funding model). This is guided through the vision set in strategic documents such as the Development Strategy Kazakhstan 2050 "One nation, one destiny" and the State Program for Education Development 2011-20. There is an apparent desire and potential to increase resources devoted to education and awareness that spending per student remains markedly lower than the OECD average and that of other neighbouring countries. Long-term central planning allows continuity of education policy while the comprehensive system of norms provides safeguards for schools against discretion by educational authorities. However, insufficient local and school autonomy hinders effectiveness of resource use as the ability to respond to specific local needs, taking into account local conditions and context, is more limited. Also, intergovernmental transfers account little for local needs and involve little equalisation which leads to considerable differences in spending per student across regions, localities and schools.*

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

This chapter is about the governance of resource use within school systems. It analyses how the effectiveness of resource use is influenced by key features of school systems such as distribution of decision-making, structure of schooling, level of parental choice and size of private sector. It also deals with the level of resources available for school education and revenue sources. Furthermore, it discusses the planning of resource use (e.g. definition of priorities and targets, distribution of responsibilities for resource use) and the implementation of policies to improve effectiveness of resource use (e.g. communication and consultation with relevant stakeholders about resource use).

Context and features

Distribution of responsibilities for school resource use

The Kazakh education system is highly centralised. The distribution of responsibilities for school resource use matches the overall governance of school education described in Chapter 1. The governance structure of the Kazakh education system follows closely that of the former Soviet model, in which different levels of administrative governance are subordinated to higher levels, both in their decision making structure and in the budgeting process. The distribution of responsibilities for resource use in schools is briefly described below by actor and in Table 2.1 by area:

- *The President and his Executive Office* provide clear and detailed directions for the development of the education system, hold the Ministry of Education and Science accountable for its results and monitor directly some initiatives of special interest.
- *The Ministry of Education and Science* is the competent central authority on education matters. The Ministry is responsible for the implementation of the laws on education, as well as strategic planning, management and funding of the education system, including the preparation of draft education budgets. The Ministry of Education and Science regulates a whole range of key issues: curriculum development, educational plan and educational programmes, student assessment systems, and allocating and managing some financial resources (namely targeted transfers and republican budgets for specific programmes). Most decisions at regional, local and school levels are made within relevant regulations.

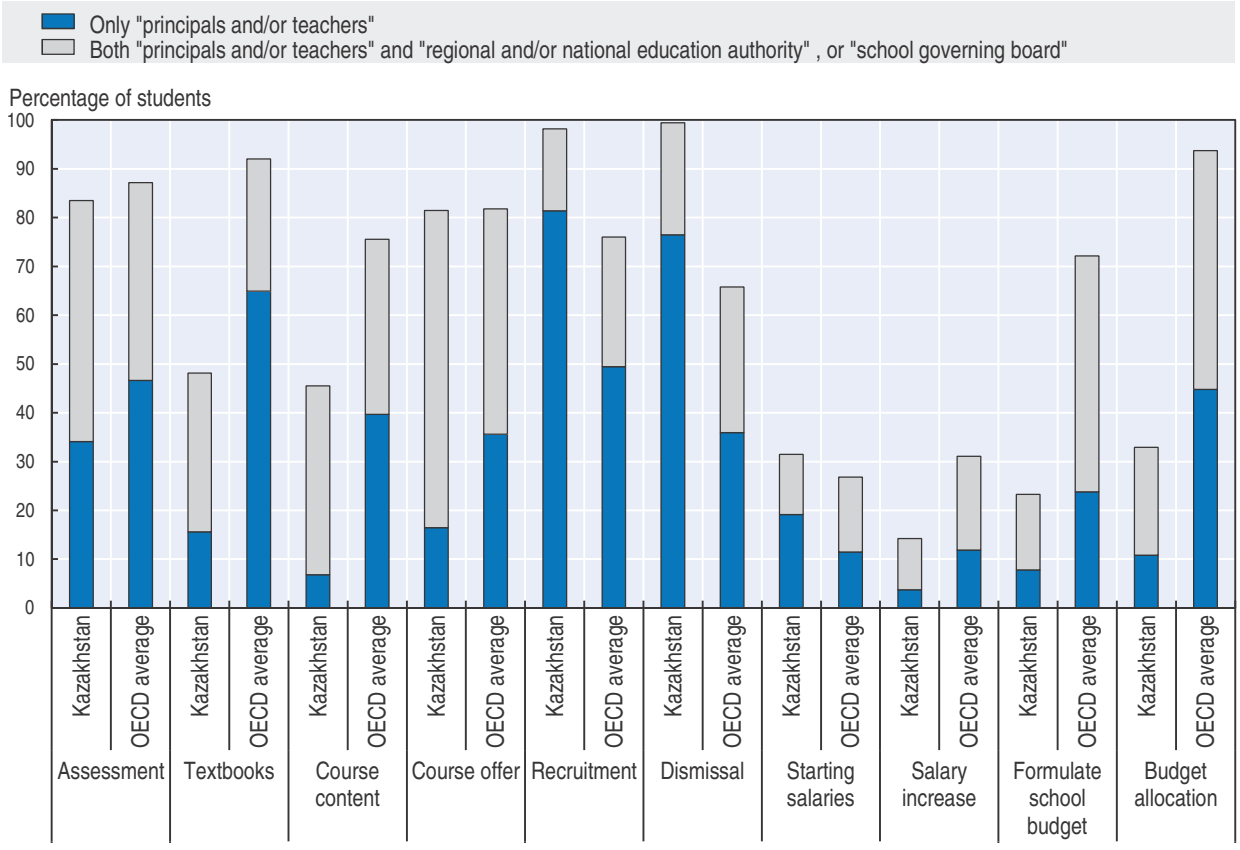
  The Ministry has created several agencies and institutions, which are formally subordinated to the Ministry, to provide greater flexibility in the management of human and financial resources in the form of state enterprises (52 at the time of the Review visit), joint stock companies (8) and limited liability partnership (1). Most of these institutions have been created in the last 10 years and each is specialised in a specific area, such as quality assurance, statistics, or managing international projects. For example, the National Centre for Educational Statistics and Evaluation (NCESE) was created to undertake the collection and analysis of some educational statistics and evaluations.[1] Another relevant agency is the Financial Center, which is responsible for the formulation of a new school funding model. The Information-Analytic Center is responsible for international projects of the Ministry, such as the reviews of the

education system carried out by the OECD. The National Centre for Professional Development (Orleu) is responsible for the design and provision of professional development opportunities for teachers and school leaders. The Centre for Excellence at the Nazarbayev Intellectual Schools (NIS) is purported to design and foster pedagogical and institutional innovation in the NIS schools as well as to scale them up to other schools. Finally, the Centre for Development of Small-class Schools, which is part of the National Academy of Education, was created to monitor the performance of small-class schools and foster improvements.

- *The Ministry of the National Economy* (called, at the time of the Review visit, *Ministry of Economy and Budget Planning*) is responsible for developing the fiscal policy; creating an integral and effective system of national planning; developing the proposed annual budget, budget classification and the procedure for preparation and submission of budget requests; monitoring the implementation of investment projects; developing proposals to improve regional and local public administration; and, establishing reporting requirements on operations of central, regional and local authorities. Also, the Ministry of the National Economy plays an important role in the coordination of central, regional and local authorities.
- *The Ministry of Finance* is responsible for the administration and inter-sector coordination in the area of budget implementation, budgetary accounting and budget reporting on implementation of the national budget and, within its jurisdiction, local budgets. The Treasury Committee of the Ministry of Finance monitors the execution of the public budget and is established at the central, regional and local levels. The education departments of *oblasts* and *rayons* are subject to audits by financial control inspectorates of the Ministry of Finance. The Financial Control Committee is responsible for internal financial control and public procurement, audit activities, accounting, and financial reporting.
- *The Accounts Committee* is the supreme audit institution, which is the body with the highest authority in the control of the execution of the national budget. The Accounts Committee is directly subordinated and accountable to the President. At the regional and local levels, audit commissions were established in 2011 to improve the external public financial control of their budgets.
- *Oblasts* are responsible for education in vocational and professional schools as well as in special and specialised schools. *Oblasts* provide in-service teacher training and methodological, pedagogical, psychological and medical consulting services to schools. *Oblasts* organise the Olympiads and other student contests at the regional level. *Oblasts* are also responsible for distributing textbooks, maintaining school infrastructure, providing free and subsidised school meals for specific categories of students, and supporting orphan students.
- *Rayons* are mainly responsible for allocating and managing physical resources, determining class sizes and providing methodological support to schools. According to the Budget Code, local authorities are assigned primary responsibility for financing schools, evening education, and boarding schools. Local governments also have responsibilities in purchasing and delivering textbooks and instructional materials, organising school Olympiads and other student contests at the local level, providing free meals to students and logistical support to schools. School principals participate on a monthly basis in a meeting organised by the *rayon*'s department of education which is purported to facilitate the implementation of norms and solve any existing problems.

- *Schools* have little autonomy in the management of school resources in Kazakhstan compared to other OECD countries, except for teacher resources (see Figure 2.1). Schools are mainly responsible for organising student learning, addressing low student performance and managing their teaching body. According to PISA 2012, a large proportion of 15-year-olds attend a school whose principal reports selecting teachers for hire (81%) and firing teachers (76%) (OECD, 2013a). However, a small proportion of 15-year-olds attend schools whose school principal reports establishing student assessment policies (34%), choosing which textbooks are used (16%), determining course content (7%), deciding which courses are offered (16%), establishing teachers' starting salaries (19%) and increases (4%), formulating the school budget (8%), or deciding on budget allocations within the school (11%). School principals are also unable to design their own organisational structure, both in terms of the number of deputies and in their functions. Regarding the "firing" of teachers it must be noted that, in a great number of instances, it might essentially involve assigning fewer teaching duties to the concerned teachers.

Figure 2.1. **School autonomy in Kazakhstan and OECD, 2012**



Note: This figure shows the in schools whose principal reported in PISA 2012 that the following groups have a considerable responsibility for the areas of autonomy displayed above: (i) only "principals and/or teachers" (indicated in dark blue); and (ii) both "principals and/or teachers" and "regional and/or national education authority", or "school governing board" (indicated in light blue).
Source: OECD (2013a), *PISA 2012 Results: What Makes Schools Successful (Volume IV): Resources, Policies and Practices*, *http://dx.doi.org/10.1787/9789264201156-en*.

- *Boards of Trustees*, as a possible form of a collegiate body contributing to school management, were legally established in 2007 in the context of a policy seeking to decentralise decision-making within the education system and grant the school community with an opportunity to participate in school management. Membership of a Board of Trustees includes representatives of teaching staff, parents, graduates from the school, local businesses and civil society organisations. As of 2012-13, Boards of Trustees had been created in 3 259 schools (44.1% of schools). There is, however, great disparity across *oblasts*. While over 400 schools had created Boards of Trustees in East Kazakhstan and South Kazakhstan, fewer than 10 schools had a Board of Trustees in each Atyrau, Astana City and Almaty City. By 2020, 60% of schools are expected to have Boards of Trustees. The main functions of Boards of Trustees are still confined to the organisation of social and cultural events but Boards are expected to progressively take on further responsibilities in determining schools' developmental strategies, appointing key personnel, and overseeing the school's finances. The new school funding model (see Chapter 3) provides them with opportunities to allocate teacher bonuses.
- *Parents' Committee*, which is an informal group with no legal recognition, typically functions as an advisory group in a range of organisational school decisions and also assists in the organisation of school events. Prior to the introduction of Boards of Trustees, schools would freely find their own ways to foster collaboration with their surrounding communities. Most typically, such collaboration has taken the form of a *Parents' Committee*, which is elected by a general parents' meeting at the school.

The coordination between different education levels is ensured by extensive central planning, a very detailed system of norms and a strong hierarchy (see Chapter 3 for a detailed explanation of norms within the education system). The Development Strategy Kazakhstan 2050 "One nation, one destiny", which was adopted in 2012, provides a grand vision for the country in the long-run. In the education sector, it is complemented by the State Programme for Education Development in the Republic of Kazakhstan for 2011-20 (SPED), which was adopted in 2010. The SPED has a five-year implementation plan which, in turn, is operationalised into annual plans and other thematic strategies. In the short-term, the annual address of the President to the nation provides an opportunity to present new initiatives and redefine strategies, which then are usually developed into strategic sectorial documents and laws. Similarly, *oblasts* and *rayons* also define their general and sectorial plans at multiple time horizons on the basis of the national and *oblasts*' ones respectively.

The SPED sets out an ambitious strategic reform programme to boost the quality of the education system (see Chapter 1). Three key initiatives with significant impact on the planning and use of school resources have been launched: the extension of compulsory schooling from 11 to 12 years (with the establishment of the twelfth grade); the introduction of resource centres to support small-class schools; and a new school funding model.[2]

Table 2.1. **Distribution of responsibilities for school resource use by area**

Area	Distribution of responsibilities
Overall governance of the system	
Strategic development	The President and his Executive Office provide directions for the development of the education system which are further implemented into strategic and operational plans by the Ministry.
Curriculum	The Ministry establishes the State Compulsory Standard of Secondary Education, which determines the list of compulsory subjects, programmes and study plans. Each school develops its own educational plan, distributing hours across subjects and defining extracurricular activities.
Student Assessment	The Ministry is responsible for the development of the student assessment system, including the Unified National Test (UNT) and the External Assessment of Student Achievement (EASA). This responsibility has been delegated to the Committee for Control in the Field of Education and Science and the National Testing Centre. Schools define assessment criteria for teacher-based assessment.
Allocation of resources to schools	The Ministry establishes the rules and methodology for school finance. The Government provides *oblasts* and *rayons* with the funding to be distributed to schools. The Government decides on salaries of school staff, which can be complemented by funds coming from local education authorities.
Targeted groups	The Ministry and other central government bodies have the responsibility for determining which groups of students can receive a specific treatment (e.g. linguistic, gifted, with a disability, low income). The provision of support can be the responsibility of central, regional or local authorities.
School operations	
School network	The Committee for Control in the Field of Education and Science is responsible for issuance of licenses for school operation as well as closures. Local authorities can also close schools when the number of students is below the national requirement for operation or schools do not comply with security and health requirements. If no other schools operate in a locality, local authorities have to arrange free-of-charge transportation for students to the nearest school.
School calendar and instruction time	In observation of the required student breaks regulated by the Ministry of Health, the Ministry of Education and Science determines the calendar, list of subjects and number of hours allocated to them, and distribution of study load for students over a week. Schools form classes, adjust loads of subject teachers, and prepare the timetable.
Class size	The maximum class size and the circumstances under which it can vary are also centrally defined. *Oblasts* and *rayons* can modify class sizes within certain parameters.
Admission to schools and grouping of students	The Ministry regulates criteria for admission into schools as well as the grouping of students. The school principal decides on the admission of students.
Support to low performing students	The type, frequency and intensity of strategies to support students with learning difficulties are left at the sole discretion of schools.
Specific resources	
School leadership	The framework for school leadership is centrally defined. Local authorities are responsible for hiring and dismissing school principals in compliance with national norms. School principals appoint deputies for academic, methodological, educational and other work (depending on type and kind of school). The school principal is responsible for the elaboration of the school operational plan (e.g. defining school operations with indication of timeframes and responsibilities).
Human resources	The standard staffing of public educational organisations and the List of Teaching Positions and Equated Employees are centrally defined. The school principal selects teachers and support staff; approves the management structure, staffing tables and job descriptions of employees; creates conditions for their professional development; manages the teachers' council; conducts attestation of staff in accordance with the established procedure; rewards and imposes penalties to staff; and decides on the teaching load of teachers (in special cases this may lead to dismissal of teachers).
Physical resources	The Ministry regulates school infrastructure, equipment and instructional materials that should be available in schools. Local authorities are responsible for their delivery and schools are expected to use them for educational purposes. Schools are also responsible for reporting on their budget, staff and assets on a regular basis.

Source: Adapted from IAC (2014), OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Kazakhstan, *www.oecd.org/edu/school/schoolresourcesreview.htm*.

Finance of the school system

Public revenues

The Kazakh public finance system is very centralised, and overall public revenues are largely determined at the central level. A great deal of the subnational administrations' recurrent expenditure is financed through a system of assigned taxes and budget subventions. The country's 16 regions (14 *oblasts* and the 2 cities of Republican subordination, Astana and Almaty) are fully assigned personal income and related contributions collected within their territories. *Rayons* and cities of *oblast* subordination are fully assigned the property tax and certain excise taxes. Local budget financing of school education accounted for about 74% of all education expenditures in 2013, or 1.8% of GDP. Meanwhile, the Republican budget's share has remained relatively constant between 25-29% since 2006, having doubled from 12% in 2002 (IAC, 2014). Although the largest disbursements are made by local authorities, the areas in which they can exercise discretion in ensuring appropriate school resource levels are limited. Local authorities cannot determine rates or bases for taxation, except for the land tax.[3] Taxes are collected directly by the Ministry of Finance and its territorial divisions, which do not report to any local government authority. Local authorities can only borrow from regional or national authorities, which limits their capacity to finance capital expenditures (Makhmutova, 2006).

Intergovernmental transfers play an important role in the budgets of *oblasts* and *rayons*. In 2011, tax revenues amounted to about 36% of local revenues while vertical transfers accounted to 61% (Makhmutova, 2012). Lack of own resources and a system of far-reaching norms governing nearly every aspect of school resource provision means that local governments have little discretion over their spending. The framework of intergovernmental transfers has been reformed several times since the split of the Soviet Union. Since 2005, the framework consists of (Makhmutova, 2006):

- *General transfers, targeted recurrent transfers, and targeted development transfers*. Unlike the targeted transfers, which can only be used for the specified purpose, general purpose transfers are not earmarked for a particular sector and thus become part of local governments' general revenues from which they may finance education or any other function within their purview. Targeted development transfers are used to finance specific programmes. For example, half of the KZT 98.7 billion (approximately USD 640 million) in targeted Republican transfers allocated in 2011 was directed toward the construction of education facilities in selected areas. The rest was spent on recurrent education programmes, which included the provision of pre-primary education, as well as skills development and retraining activities under the national Employment 2020 programme, among others.
- *Budget subventions and budget withdrawals* are purported to equalise variation in regional revenues (per capita) and ensure that all levels of governance have the necessary resources to perform their responsibilities. Subventions or withdrawals are labelled as general transfers and established in absolute terms for a three-year period. In 2011, 13 out of 16 regions (all except Almaty city, Mangystau and Atyrau) received budget subventions as their expected expenditures exceeded their potential revenues (Ministry of Economy and Budget Planning, 2011). The equalisation system is not based on clear criteria or a minimum standard and, as a result, the allocation per student or patient might be disproportional across the country (Makhmutova, 2006) and a considerable scope for negotiations and mutual adjustments exists.

The formulation of the national, regional and local budgets

The Budget law provides a clear description of the process and sets out the calendar for the formulation of the national, regional and local budgets (see Table 2.2). The potential revenues and expected expenditures are estimated to determine the overall budget envelope. In mid-May, *rayons* have to submit their budget proposal – which aggregates the budgets of all their schools – to *oblasts*, which in turn submit consolidated budget proposals to the Ministry. Projections are likely to have a significant margin of error as the number of students, classes, or full-time equivalent teachers needed are defined later in the year.

Table 2.2. **Timeline for the national, regional and local budget formulation in Kazakhstan**

Steps of the budget process	Central level	*Oblast*, Astana, Almaty level	*Rayon* level
Approval of national development plans and of macroeconomic forecasts for next budget year	April 15		
Submission of budget plans by budget programme administrators	May 15		
Initial budget submitted for review by the budget commissions	August 1	September 1	October 1
Corrected budget submitted for approval by executive body	August 15	October 1	October 15
Finalised budget submitted for approval by the assembly	September 1	October 15	November 1
Approval of the provisional budget for first quarter if the complete budget is not approved by the assembly	December 25		
Adoption of operating plans of state organs	January 10		
Final deadline for approval of the budget by the assembly	March 1		

Source: Adapted from Ministry of Economy and Budget Planning (2011), *Budget Guide: Budget of the Country – Budget for Everybody*, Astana.

The process for budget formulation takes place almost simultaneously to provide greater scope for negotiation. A given *oblast* might disagree with a budget proposal from a *rayon* and, at the same time, use the budget proposed to negotiate greater funds from the central government. Also, discussions take place at multiple forums (budget commissions, executive bodies and assemblies). At the same time, the approval of budgets is sequential from higher to local levels. The budget of *rayons* is only approved once that of the respective *oblast* has been approved which in turn follows the approval of the budget for the central government.

Other sources of funding

The review team did not receive congruent information on other sources of funding, including funds raised from fee-based services, sponsorships, and donations. The revenues raised through fee-based services are deposited in a Cash Control Account (CCA) of the Treasury and can be discretionally allocated by schools in consultation with the Board of Trustees or the Parents' Committee. Donations from parents, businesses and other benefactors are deposited in the CCA Sponsorship account of the Treasury and are spent at the sole discretion of schools (IAC, 2014). Revenues and expenditures related to fee-based services and donations are not recorded in the school budget. In contrast, in-kind donations are to be accounted in the school balance sheet. The review team was not given any estimation of amounts hold in CCA accounts.

Public schools tend to provide few fee-based services (IAC, 2014).[4] Most school principals and accountants reported that after-school non-pedagogical activities are provided to students free of charge and that school facilities are not generally rented out for a fee to community organisations or other outside parties. Several stakeholders

reported that the status of schools as "state institutions" (*Gosudarstvennyye uchrezhdeniya*, GU) forbids them from collecting fees and placing them in a special account to be used at the school's discretion. Others spoke of an upcoming plan to grant schools the status of "state communal enterprises" (*Gosudarstvennyye kommunal'nyye predpriyatiya*, GKP), which have the right to open their own bank accounts and raise revenues that can be spent at the discretion of a newly established Board of Trustees.

In-kind donations seem to be widespread and typically include gifts of goods and services, such as learning materials, multimedia or ICT equipment, and small-scale rehabilitation or repairs of school facilities (IAC, 2014). In addition, there is evidence that families are increasingly contributing to pre-primary and school education: schools collected an average of about USD 300 from each family in 2009, an amount that might be lower in primary grades and higher in upper secondary grades (Singh, 2012). Similarly, a survey of 60 schools in four *oblasts* revealed that a significant proportion of parents give voluntary contributions to schools: 86% in urban schools, 69% in rural schools and 33% in small-class schools (Sange, 2008). The survey also found that lower fundraising in small-class schools was more associated to the inability of parents to contribute rather than lower needs (Sange, 2008).

Expenditure on education

The total volume of resources devoted to education has been relatively stable in recent years. After a brief decline following the 2009 financial crisis, public expenditure on education has hovered around 4% of GDP. By 2013, public education spending had recovered to approach pre-crisis levels, though the modest figure of 3.8% of GDP masks the rapid GDP growth that the country has experienced since the turn of the century. The share of overall public expenditures devoted to all levels of education has recently surpassed 20% (see Table 2.3). Overall private spending on education, at 1.1% of GDP, is mostly devoted to higher education as primary and secondary schooling only account for one-fifth of all private education spending.

Table 2.3. **Public spending on education in Kazakhstan, the OECD, and selected countries**

	% of GDP		% of total public expenditure		Per student as % of GDP per capita	
	Total education	Primary and secondary[1]	Total education	Primary and secondary[1]	Total education	Primary and secondary[1, 2]
Kazakhstan (2013)	3.8	2.1	20.5	10.4	16	11
Kazakhstan (2011)	3.8	2.1	18.4	10.7	14	11
OECD average (2011)	5.6	3.6	12.9	8.4	27	25
Selected OECD countries (2011)						
Mexico	5.2	3.5	20.5	13.6	19	16
Poland	4.9	3.3	11.4	7.5	31	28
Turkey	4.1	2.4	10.9	6.3	18	14
Selected non-OECD countries (2011)						
Brazil	6.1	4.5	19.2	14.3	26	24
Russian Federation	3.9	2.0	10.9	5.5	24	20

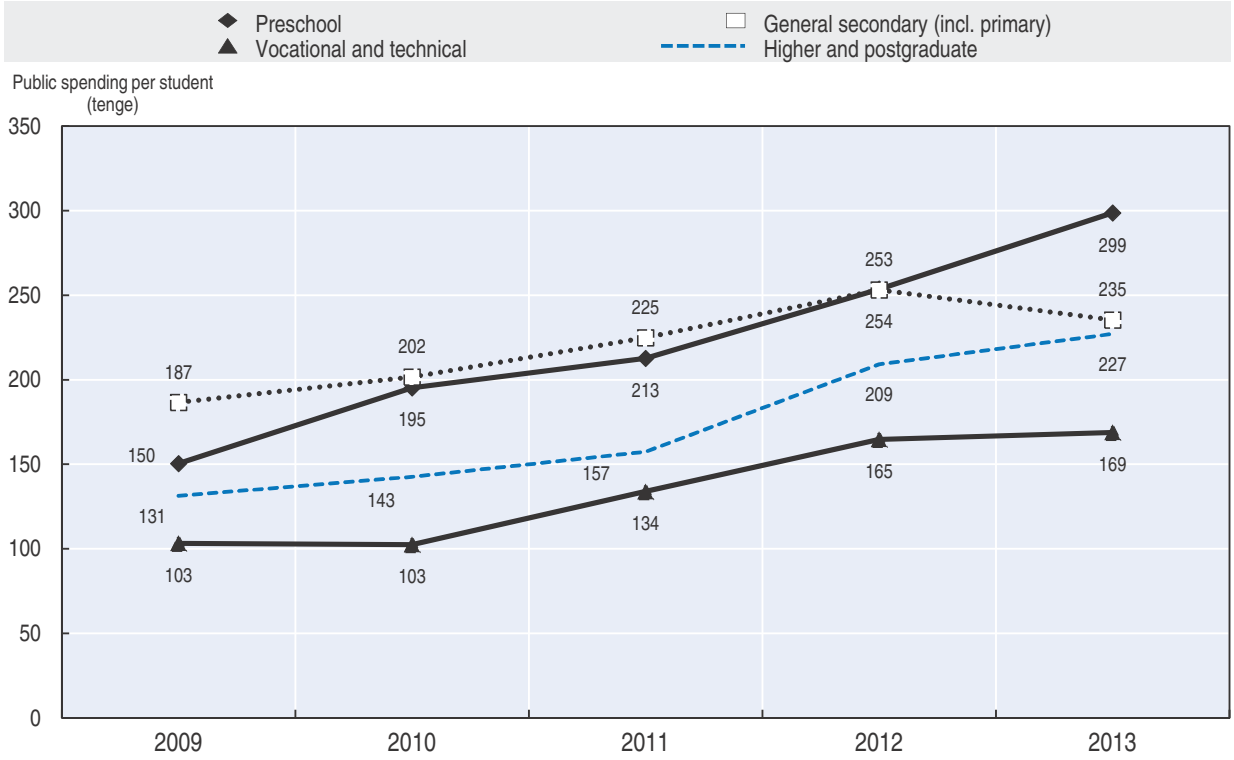
1. Includes technical and vocational education. Data on selected countries include post-secondary non-tertiary education (with negligible amounts) while data on Kazakhstan do not.
2. For selected countries, data are calculated as an average of primary and secondary education and refer to both private and public expenditure.

Sources: Authors' calculations based on data provided to the review team by the Ministry of Education and Science and ASRK (2014), *Volume of services provided by educational organizations of the Republic of Kazakhstan,* Astana, and OECD (2014a) *Education at a Glance 2014: OECD Indicators*, *http://dx.doi.org/10.1787/eag-2014-en* (selected countries).

The proportion of public expenditure devoted to school education (10.4%) is above the OECD average. It accounted for half (51%) of all government expenditures in education in 2013, down from 58% in 2011. The relative decline comes as a result of growing public expenditure in pre-primary education, whose relative share in the education budget has tripled since 2009. In absolute terms, however, spending on school education has remained around 2% of GDP in recent years, which is significantly below the OECD average (3.6%) (see Table 2.3).

Spending per student in school education has grown in real terms but remained flat as a share of GDP per capita (the latter a result of increasing living standards in Kazakhstan). Spending per student as a proportion of GDP per capita stood at 11% in 2013, a percentage considerably lower than the OECD average (25%) in 2011. In 2013, per-student spending for schools was 27% lower than for pre-primary education, similar to that of higher education, and 28% greater to that of vocational and technical education. Inflation-adjusted spending per school-level student grew by 26% between 2009 and 2013; meanwhile that of pre-primary, vocational, and tertiary education saw increases of 98%, 64%, and 73%, respectively (see Figure 2.2).

Figure 2.2. **Annual public expenditure per student in Kazakhstan, by level of education, 2009-13**

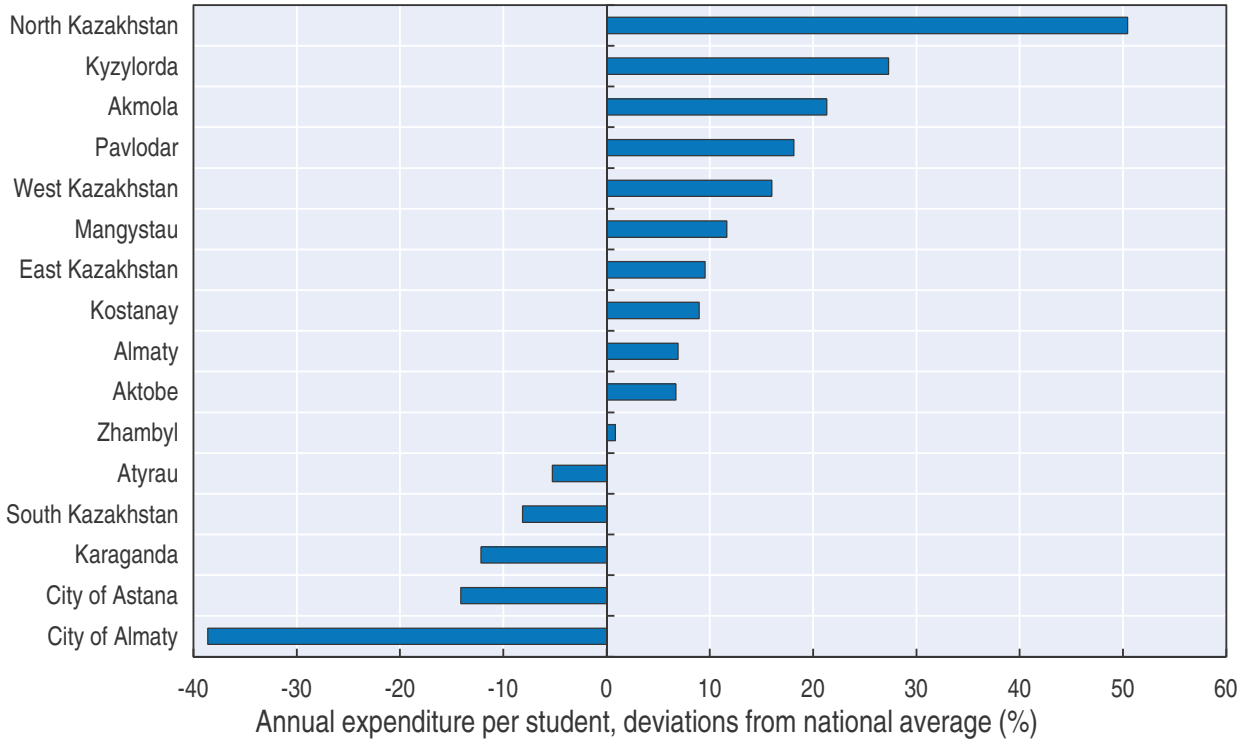


Source: Authors' calculations based on data provided by Ministry of Education and Science and Agency of Statistics of Kazakhstan (ASRK) to the review team.

Some regions spent significantly more of their resources on education than others. South Kazakhstan, for example, allocated 41% of its budget to education, while the city of Astana only spent 10% (OECD, 2014b). The costs of education provision (driven largely by the organisation of the school network)[5] and the availability of alternative funding sources (such as Republican budget transfers) determine the priority given to education in the local

budgets. As a result, unit costs in schools are seen to vary significantly from KZT 170 000 in South Kazakhstan and the city of Astana to KZT 373 000 in North Kazakhstan (IAC, 2014).[6] Figure 2.3 shows the variance in per student expenditure across regions, indicating considerable spending disparities.

Figure 2.3. **Variance in per student expenditure across regions in Kazakhstan (%), local budgets, 2011**



Source: Reproduced from OECD (2014b), *Reviews of National Policies for Education: Secondary Education in Kazakhstan*, *http://dx.doi.org/10.1787/9789264205208-en*.

Strengths

Education is considered a top priority and ambitious reforms are underway

Grand vision plans place education as one of the top priorities of Kazakhstan. A series of cascading strategic documents present a stable, predictable framework for the direction of the sector. The national development strategy "Kazakhstan 2050" lays out general education sector objectives, which are then translated into a series of quantifiable indicators to be monitored and achieved by 2020 in the State Program for Education Development 2011-20. The Strategic Plan of the Ministry of Education and Science 2014-18 subsequently lays out annual targets and actions, which are then linked to budgeting decisions. The threefold increase in funding for pre-primary education since 2009, for example, is a direct result of strategic planning that has prioritised the development of that subsector of education.

There is an apparent desire and potential to increase resources devoted to education and awareness that spending per student remains markedly lower than the OECD average and that of other neighbouring countries. The implementation of a wide range of reform initiatives established in the strategic documents governing the sector, such as the

transition to a 12-year school system or a wider use of information technologies, requires a significant amount of additional resources. A number of high-level stakeholders in Kazakhstan consulted during the course of this Review appeared favourable to increases in the medium to long-run in the education budget in order to achieve the strategic goals set for the sector. In a country that spends only about 4% of GDP on its education system while experiencing rapid resource-driven growth and with a great margin to improve education services, the expansion of public resources to schools seems not only feasible but possibly an efficient option. However, as explained earlier, public expenditure remains very vulnerable to global oil price shocks. Following the visit by the review team, oil prices decreased significantly in the course of 2014, limiting the ability of the Government to increase public investment in education.

The Kazakh government has recently launched an ambitious strategic reform programme to boost the quality of the education system. The reforms tackle key challenges in the Kazakh education system and can potentially improve the quality of the system. The plans to establish a compulsory twelfth grade in school education, postponed as of late 2014 as a result of new fiscal constraints, should provide Kazakh students with increased opportunities to reinforce their knowledge, abilities and skills before taking up further educational or labour market opportunities. The introduction of resource centres to support small-class schools provides a good example of emerging cooperation between schools, broadening the horizons and breaking the isolation of students from small-class schools and providing more contact between different groups of students (see Chapter 3). Also, the intended move towards a new funding model based on per student allocations will be a first step to increase efficiency and transparency in the allocation of resources (see Chapter 3).

Educational planning and norms provide clear expectations

The extensive central planning and a detailed system of norms are two key features of the Kazakh education governance system inherited from Soviet times. Educational plans and strategies set clear policy directions and norms transform them into operational actions to achieve them. All major strategies and norms have the personal imprint of the President and are considered part of the legislative framework.

Long-term central planning allows continuity of education policy

Kazakhstan is a country with an ingrained culture of central planning as heritage from Soviet times. Strategies and plans span in a top-down cascade to all time horizons and governance levels. The existence of plans at multiple time horizons (short, medium and long-run) ensures continuity in education policy and provides certainty to all actors. It enables education reforms to unfold in a constructive manner towards a well-established goal.

A comprehensive system of norms provides safeguards for individual schools

The great level of detail of norms for operation is a mechanism to ensure equality of treatment across the country and reduce potential risks (e.g. subjective decisions, errors, misuses, or even corruption). This means that there is little discretion at the local level in educational operations. The system of norms is adjusted or even extended as new educational policies are developed.

Schools must be funded at the level determined by the norms. Norms provide certainty and a legal protection to ensure that schools are given reasons at centrally determined levels, from the number of staff to the space per student (see Chapter 3 for further detail). If a school is not given reasons at the level determined by norms, the school principal has the right to ask local authorities to provide the missing resources. In parallel, the school licensing and attestation processes performed by the Committee of Control in the Field of Education and Science is purported to enforce the norms in schools. The Committee of Control seeks to identify violations to the norms and requires local authorities to rectify the infringements.

Mechanisms are in place to monitor progress towards education goals

Strong monitoring and enforcement mechanisms are in place to ensure that the existing educational plans are reached and that schools comply with the norms. The review team observed that agents in the school system are greatly aware and chiefly focused on making progress towards education goals and on complying with the operational norms. A thorough enforcement system has been established to put pressure on the achievement of the objectives set: vertically, each level of government is monitored directly by higher levels and monitors its immediate subordinated level; and horizontally, some departments monitor the achievements of others (see Chapter 5 for further detail). Regular reporting is complemented by inspections carried out by the central level directly through the Committee of Control in the Field of Education and Science.

Efforts have been undertaken to improve the administrative capacity

The Kazakh government is well aware that facing educational challenges requires improving the capacity of the education administration. Kazakhstan has a clear, hierarchical and rigid governance structure in which each level enjoys limited operational autonomy but is seen as a part of the unified administrative apparatus. It allows the central government to maintain good control of the system in the implementation of education policies and strategies. In times of crisis, while education provision was disrupted in neighbouring countries, this administrative apparatus has proven effective in making sure schools remained opened and teachers received their salaries.

Regarding the building of administrative capacity, the most relevant development within the Ministry of Education and Science in recent years was the creation of the Committee of Control in the Field of Education and Science, which included the creation of regional offices (in the *oblasts* and in Almaty and Astana). The Committee has become instrumental in identifying mismanagement in the system and promoting compliance with operational norms.

In addition, the creation of several agencies subordinated to the Ministry in recent years has opened promising avenues towards a more specialised and flexible central administration of the education sector. Examples include the Information-Analytic Center and the Financial Center. Most of them have a legal form that allows the Ministry to ease recruitment procedures and grant greater operating and financial flexibility. These new agencies operate in areas of special interest for the Ministry and in close coordination with the Minister. For example, the Financial Center was entrusted with monitoring the implementation of the per student funding formula pilot scheme (see Chapter 3).

Challenges

Public investment in education is low

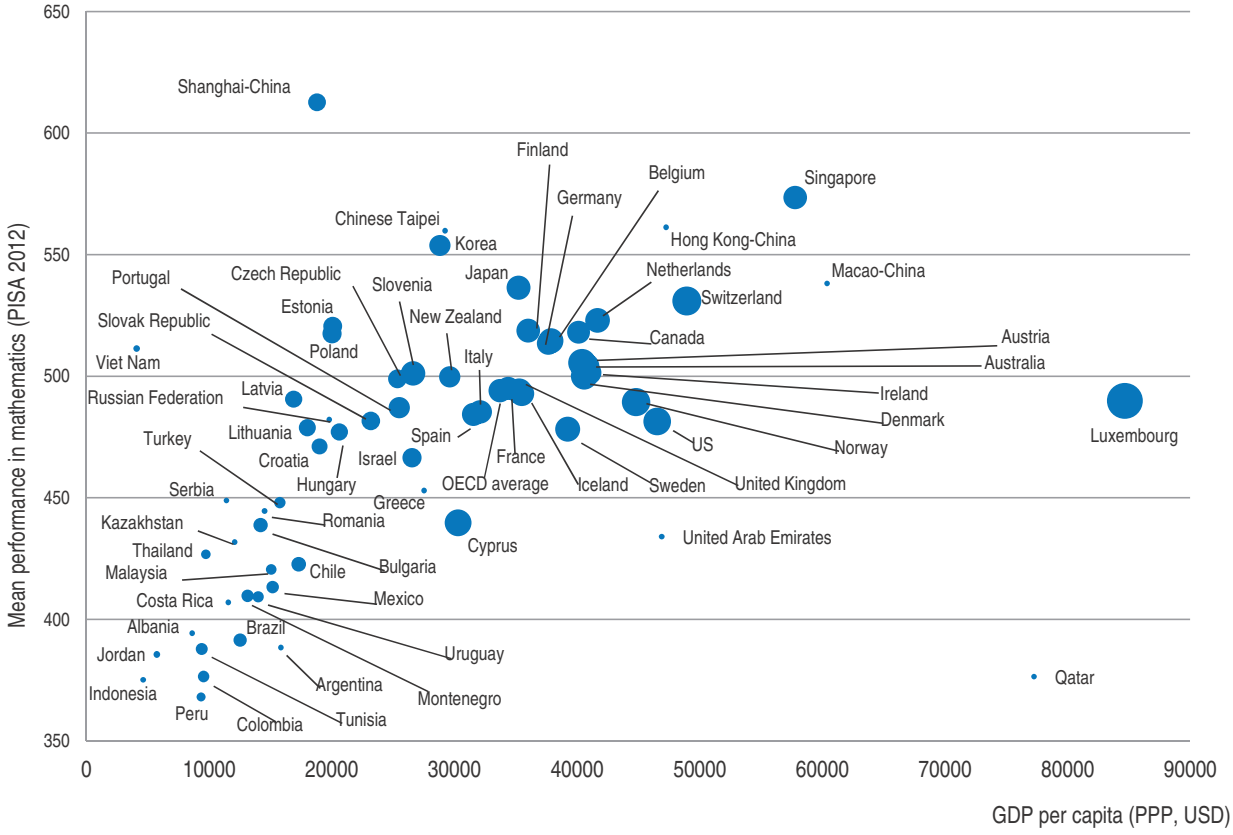
The overall level of public resources devoted to education is low compared to the OECD average as well as to that of other countries with similar levels of economic development. At 3.8% of GDP, Kazakhstan's education budget is substantially lower than the OECD average of 5.6%. The amount devoted to school education (including vocational education), 2.1% of GDP, is considerably below the OECD average of 3.6%, although the latter also encompasses post-secondary non-tertiary expenditures. At 11% of GDP per capita, Kazakhstan's 2013 public spending per student was significantly below the OECD 2011 average (see Table 2.3).

Among the 65 economies participating in the 2012 round of PISA, Kazakhstan finds itself in the bottom 20 both in terms of average mathematics performance and cumulative spending per student. Although the relationship between the learning achievement of 15-year olds and the amount spent on their schooling is not purely causal, research has shown that a minimum level of financing is required to ensure that students have access to materials and resources necessary for learning (World Bank, 2013). Moreover, countries that fall below the high-income threshold of roughly USD 20 000 in GDP per capita in purchasing power parity (PPP) terms are more likely to see a correlation between national wealth and PISA performance (OECD, 2012) (see Figure 2.4). Kazakhstan finds itself within this range, suggesting that further economic growth and increases in spending on education may both contribute to learning gains.

There is considerable scope to increase public expenditure on education in Kazakhstan. Countries with similar or lower levels of GDP invest proportionally more in the education sector. The lack of adequate resources in schools can hamper the quality of learning environments. While larger education budgets are no guarantee of better education quality, a minimum level of spending is necessary for ensuring good quality education provision. A school system that lacks quality teachers, adequate infrastructure and enough textbooks will almost certainly fail to promote quality education. Underinvestment in the school system can also result in educational inequalities, as scarce resources tend to concentrate in certain disadvantaged areas or schools. For example, the expansion of education funding in recent years in Kazakhstan has focused on some "points of growth", among which is the network of Nazarbayev Intellectual Schools (NIS) that target gifted students. The NIS currently enrol 0.4% of students at a unit cost of more than three times the national average. While NIS are meant to serve as a model for future education reform in Kazakhstan, the possibilities for scaling up their innovations seem limited within the current fiscal environment. Similarly, PISA 2012 shows significant differences in student achievement across Kazakhstan's schools, with some differences driven by variations in resource levels among schools (World Bank, 2014) (see Chapter 3 for further detail on current inequities in the distribution of resources across schools).

The official reluctance to expand public expenditure on education is linked to concerns about both the sector's efficiency and its absorptive capacity. A number of stakeholders consulted for this Review acknowledged the need to increase financing for education, but expressed scepticism about the sector's ability to use extra funds effectively. One concern is the lack of good quality performance measures that can inform the budgeting process. The main hurdles to an effective use of extra resources remain the lack of sufficient capacity at all levels of public administration and the ability to link strategic

Figure 2.4. **The relationship between GDP per capita, cumulative expenditure per student on school education and mean PISA performance in mathematics of 15-year-olds, 2012**



Note: The volume of the country's circle reflects cumulative expenditure per student between 6 and 15 years of age.
Note by Turkey: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".
Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.
Source: OECD (2014c), *PISA 2012 Results: What Students Know and Can Do (Volume I, Revised edition, February 2014): Student Performance in Mathematics, Reading and Science*, *http://dx.doi.org/10.1787/9789264208780-en*.

goals to measurable performance indicators, which translate into budgeting decisions (Dulatbekov and Assylbayeva, 2013). Despite a long list of monitoring indicators embedded in the sector's strategic documents, schools and local authorities are typically not held accountable for their achievement but, instead, for compliance with the norms (see Chapter 5).

Insufficient local and school autonomy limits the potential for improvement

Schools and local governments have little autonomy in Kazakhstan compared to OECD countries (see Figure 2.1). Little local and school autonomy hinders effectiveness in the use of resources as local authorities and schools are unable to match resources to their specific needs, and in consideration of their conditions and context. For example, one local education authority visited during this Review reported having trouble retaining qualified teachers but being unable to raise teachers' salaries because these are set at the central level. Instead of offering salary raises, the local authority had to find a way around by

providing teachers with salary bonuses. Again, the grounds for providing these bonuses and procedures for allocating them are defined in national norms, so it is not possible to use this trick without distorting the compensation system. Moreover, the existence of extensive norms reduces the responsibility for the effective use of resources of education officials at different governance levels. Teachers, school leaders and education local officials are focused on complying with the system of norms rather than on exploring ways to foster school improvement.

Local and regional governments have very little spending discretion for local development. Little variation has been found in the content and coverage of local services (Makhmutova, 2001), and indeed subnational governments are required to support national policies and interests in their own policies (Bhuiyan 2010). The budget cycle illustrates the little autonomy of subnational authorities, which prepare their budgets only after the higher-up authority has formed its budget. The decentralisation of the governance of primary and secondary schooling seeks to increase responsiveness to local needs, improve the quality of schools, spur innovation in education, and improve financial and human resource management in education (Oates, 1972; OECD, 2013c). Also, from a local development perspective, a high quality education system may help attract economic activity and residents interested in more and better opportunities for their children. However, lack of capacity at the local level may lead to greater inequalities and ineffectiveness. In other words, the central government might not know what to do but the local government may not know how to do it (Bird, 1995).

Intergovernmental transfers account little for local needs and involve little equalisation

Intergovernmental transfers rely mostly on regulated negotiations with limited account of local needs

Kazakhstan has undertaken significant reforms in the last 15 years to improve the intergovernmental fiscal relations, such as clarifying the budgeting processes and responsibilities for spending, but considerable challenges continue to hamper a more efficient and equitable governance of school resource use. One of the main concerns remains the importance of budget negotiations on the calculation of intergovernmental transfers and on defining education budgets at the subnational level. Intergovernmental transfers are calculated using a complex set of formulas that take into account the projected revenues and expenditures of local budgets, which are computed according to a long list of indicators and coefficients across all sectors (Government of the Republic of Kazakhstan, 2010). However, no portion of these general purpose transfers is earmarked for education and the corresponding budget negotiations end up leading to suboptimal allocations as objective indicators on potential revenues and expenditure needs are given little importance. The formulation of education budgets at the local level mainly consists of a negotiation in which lower levels underestimate revenues and overestimate expenditures in their budget requests. However, regulatory norms play an important role in the negotiations by establishing the amount that local governments are entitled for education which, as argued before, may not correspond to local education needs.

Other concerns have also been raised on the intergovernmental transfers and budgeting process. Bhuiyan (2010) argues that subnational governments have limited autonomy in resource use as intergovernmental transfers are not always predictable and could shift from one year to the next. Makhmutova (2006) identifies six additional pitfalls

of the current intergovernmental fiscal relations: (i) inadequate planning and forecasting of budgets at all levels; (ii) lack of stable income sources for local budgets; (iii) poor incentives for budget implementation at the local level; (iv) weak equalisation mechanisms; (v) weak management of public assets at the local level; and (vi) inadequate monitoring of implementation and control of local budgets.

Insufficient equalisation leads to large differences in spending per student across the country

There are some indications that intergovernmental transfers have an insufficient equalisation effect of education spending per student across subnational governments and thus schools. As documented earlier, expenditure per student varies greatly across *oblasts* – from 39% below the national average in Almaty to 50% above the national average in North Kazakhstan (see Figure 2.3). Marked differences in per student spending are also observed across *rayons*. The Ministry of Education and Science commissioned a report to UNICEF on the financing of 175 schools across Kazakhstan. The final report revealed important differences in spending per student between *rayons* of the same *oblasts* and between schools of the same type and size within the same *rayon* (UNICEF, 2012).

Some subnational governments spend significantly more of their resources on education than others and, while expenditure per student should not be equal across the country, the existing differences are not always associated to the costs of provision. A previous OECD report attempted to correlate spending per student and the costs of provision. The authors found that North Kazakhstan and Akmola, for example, are *oblasts* with a similar share of rural and small-class schools and with comparable average class sizes, student-teacher ratios and student transportation coverage, but their per student expenditure differs by almost 2.5 times (OECD, 2014b). The regions of Almaty and Zhambyl have very similar school networks and, although the proportion of students using transportation services is smaller in Almaty (48%) than in Zhambyl (80%), per student expenditure is more than 7 times lower in the Almaty region. The report also highlighted marked differences between the two biggest cities, Almaty and Astana, despite having similar average school and class size. The authors also found that expenditures per student do not seem to be correlated with the cost of living and report that while the cost of living in North Kazakhstan is the third lowest in the country, its average per student expenditure is the highest of all *oblasts* (OECD, 2014b).

The overreliance on intergovernmental transfers means that these are particularly relevant for education expenditure as the latter represented about 30% of local budget spending in 2011 (twice that of the next-largest sector). The resources available at the regional and local level determine the amount of resources to be distributed to schools as well as the quality of the support that *rayons* and *oblasts* provide to schools. As noted in OECD (2014b), the methodological school support teams, for example, are likely to be resourced with more trained and equipped staff in large and rich cities. In addition, small-class schools in areas with low capacity for resource generation often lack basic equipment and instructional materials. During the Review visit, school principals of small-class schools often reported that only salaries and basic facilities maintenance (such as heating and electricity) are funded and that there is no budget for purchasing library books, internet access and pedagogical equipment. Moreover, insufficient funding is allocated to maintenance of new school equipment and smart boards, raising the risk that this new equipment may soon fail to function properly.

Limited consultation and articulation hamper the potential of strategic planning

Little consultation might hinder the quality and legitimacy of planning processes. The strategic planning of resource use in Kazakhstan is essentially driven by the centre, in a top-down approach, and is controlled through a bureaucratic process of verification of whether specific norms have been followed. The planning does not include phases of discussions, and leaves little room to adjust overall strategic goals to specific local conditions. The lack of consultation with stakeholders means that education strategies might not fully reflect the rich diversity present in the country.

The engagement of a broad set of stakeholders is paramount for education reform in most OECD countries. Frequent and open communication and opportunities for participation can facilitate meaningful and ongoing engagement at the different levels. Stakeholders typically include teachers, representatives from teacher unions, school and local leadership, and other community representatives, such as business leaders and parents.

While substantial work has been done in developing a range of strategies for education in the country, a vision for education which encompasses the views and perspectives of a variety of stakeholder groups is missing. A well-thought-out and inclusive strategic vision is necessary to design long term legal and institutional changes, to plan effectively the human and financial resources needed in different territorial and administrative areas of the system, and to adopt a clear implementation path.

Also, many of the new policies, as formulated in strategic documents, are not thoroughly analysed in terms of their short-term and long-term benefits and cost implications or in terms of the future need for resources. The Action Plan of the Ministry contains some of the key actions and financial implications but major reforms seem not to be subject to in-depth cost-benefit or financial scrutiny. Similarly, school budgets are rarely altered when new investments lead to increase of recurrent costs (by increasing space per student, for example) or to their decrease (by increasing class sizes, for example).

Policy recommendations

Increase overall public spending on education, while addressing key efficiency concerns

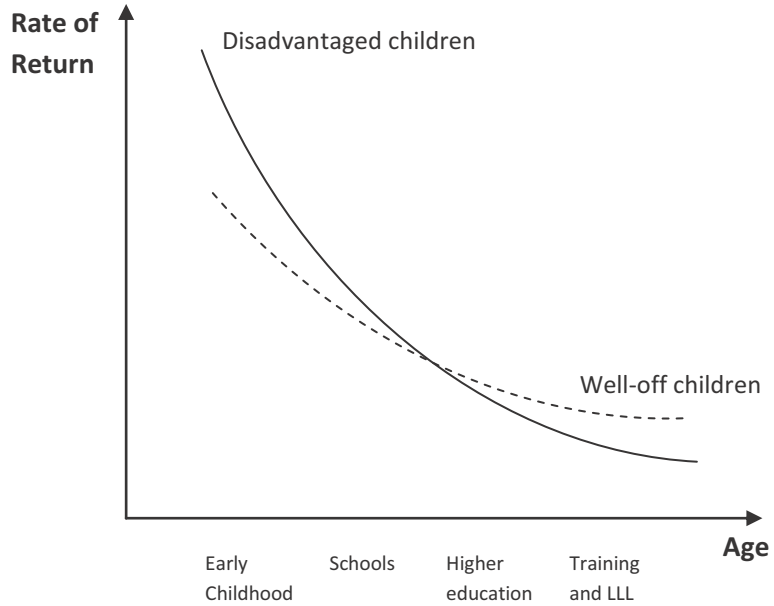
Compared to other countries with similar income, Kazakhstan underinvests in education. The level of resources currently invested in education does not match the ambitions set out in the sector's strategic documents. As a result, a gradual expansion of public spending on education toward OECD standards (5-6% of GDP) as a long-term objective should be considered to support the sector's strategic plans. While certain periods of fiscal stress on the national budget, as with the fall of national revenues resulting from lower oil prices in 2014 and 2015, will not facilitate the achievement of this objective, the Government should be determined in its ambition of gradually increasing public investment in education. This also highlights the importance of exploring ways to protect education expenditure from oil shocks as these tend to hit the education sector hard. An underinvestment in one generation of students can have long-lasting effects on the country's economic prospects.

The gradual expansion of public spending on education needs to be accompanied by a reflection about the specific areas that should receive priority for further investment, particularly in situations of fiscal constraints. This is a complex decision which requires

comprehensive analysis in the system and wide consultation among stakeholder groups. Part of the analysis should assess which areas provide greater opportunities for efficiency improvements before further investment is granted. This analysis would allow the Government to develop a strategy for how to use additional funds, if they become available in the years to come. The present report provides some suggestions for this debate but does not seek to point to definite directions for further spending.

One area in which Kazakhstan clearly needs to invest more is in early educational years, in particular early childhood education. This should be part of further investment in strategies to support disadvantaged students. While spending more on elite "points of growth" (such as Nazarbayev Intellectual Schools) may stimulate educational innovation, this approach alone does not benefit the majority of students. Evidence from the United States (Cunha et al., 2006) and Europe (Woessmann, 2008) shows that investing as early as possible in high quality education for all, and particularly in supporting students from disadvantaged backgrounds, yields larger returns because early cognitive development makes it easier to acquire skills and knowledge later in life (see Figure 2.5). The substantial long-lasting effects of early education on economic and social outcomes are particularly high for children from disadvantaged backgrounds, whose home environments may not provide them with the foundational skills necessary to prosper at later educational stages. Providing equal opportunities to gain necessary skills for all individuals is particularly important in an economy in transformation and with a small workforce, such as Kazakhstan, in order to sustain high growth levels. More education is likely to increase employability, productivity and provide greater flexibility to cope with technological transitions.

Figure 2.5. **Efficiency and equity of investing early in education**



Sources: Cunha, F. et al. (2006), "Interpreting the Evidence on Life Cycle Skill Formation", in Hanushek, E. and F. Welch (Eds.), *Handbook of the Economics of Education*, Chapter 12, Amsterdam, pp. 697-812; Woessmann, L. (2008), "Efficiency and equity of European education and training policies", *International Tax Public Finance*, Vol. 15, No. 1, pp. 199-230.

Another promising area where additional investment may be very beneficial is increasing support to small-class schools through resource centres (see Chapter 3). Building on the experience gained up to now, it is possible to extend the system in two directions. The first is to invest in a number of new resource centres to cover all small-class schools in the country. The second, no less important, is to increase the scope of support provided by these centres to small-class schools. An additional area for further investment is certainly associated with policies to address the overcrowded urban schools. This involves the construction of new school infrastructure in urban areas and the maintenance of those schools which are in emergency condition. Also, as detailed later in this report (see Chapter 4), policies to provide systemic support for the improvement of low performing or disadvantaged schools should be a priority area for further resources.

In some countries, an option for further education investment has been increasing teacher salaries across the board. While it is certainly important for Kazakhstan to have teachers satisfied with their level of remuneration and not interested in seeking additional sources of income from outside the school system, it is also important to take into account that there appears to be no overall shortage of teachers. Hence potential salary increases might be targeted at potential groups of teachers (e.g. beginning teachers) rather than provided across the entire teaching body (see Chapter 3). A more pressing priority for spending in the teaching workforce relates to the resources needed in the move towards a workload system (e.g. 40 hours of work a week distributed across a range of tasks beyond teaching) from employment under a teaching load (*stavka* system), which does not recognise the whole set of professional activities of teachers and is detrimental to their engagement in schools (see Chapter 3). This reform requires considerable resources but could benefit from the overall reduction of teacher numbers possibly with better individual teachers (see Chapter 3).

Increasing public investment in education needs to go alongside improving the efficiency of public funds' use. Among measures that improve the latter are the strengthening of performance monitoring and the reinforcement of accountability to ensure the education system's equity and quality objectives are achieved. Reliable monitoring of use of resources in the education system is a necessary condition for planned expansion of education spending (see Chapter 5). It will also be useful for the Ministry to commission independent monitoring reports from outside the education system itself, for example from universities, from established NGOs or from international experts. It is not enough to rely on monitoring provided by the same people who are implementing the reforms (see Chapter 5). Some areas can be made more efficient, such as the organisation of the school network (including some consolidation in non-urban areas) (see Chapter 3), the reduction of the emphasis on top-performing students (see Chapter 3) and the management of human resources (with the need for more autonomy at the local level and the concerns the *stavka* system raises) (see Chapter 3).

Another important aspect involves the pacing of this change. The budget envelope should be increased only slowly, in parallel with the increase of the capacity of the system to absorb new programmes and new approaches. This slow process will give the Ministry time to adjust the process in light of the lessons provided by the monitoring system.

Gradually increase local and school autonomy

School autonomy has been the subject of heated debates in the international education and research community in the last fifty years. The relationship between

autonomy, performance and equity is a complex one. Since the 1980s, school reforms in several OECD countries have increasingly given schools greater autonomy, in an effort to increase performance. Woessmann (2003) finds that school autonomy in setting standards and the size of the school budget are negatively related to student performance, while school autonomy in personnel management and process decisions are positively related to performance. This may suggest that school systems should ensure external control of resource levels and performance standards, but give schools autonomy in process areas where school-level knowledge is more relevant, such as managing their personnel. In PISA 2012, students tend to perform better in countries where schools have greater autonomy over what is taught and how students are assessed (OECD, 2013a). However, school autonomy has been negatively associated with student achievement in developing and low-performing countries (Hanushek et al., 2013).

The consequences for Kazakhstan from this accumulated research need to be carefully analysed, using local experts and a better understanding of how schools operate in the country, but two lessons seem clear. The first lesson is that when thinking about local autonomy Kazakhstan reformers need to carefully analyse which spheres of autonomy should be entrusted to schools and to their principals, which spheres should be entrusted to *rayons*, and which spheres should remain with central level authorities. The second lesson is that granting of autonomy must always be associated with relevant and focused monitoring, especially monitoring of outcomes.

Kazakhstan could explore ways to gradually provide more autonomy to schools and lower levels of government in order to enable them to foster improvements in education. Certain decisions are best left to local authorities and school principals, who best know their schools' needs, to ensure a more optimal allocation of resources. In Kazakhstan, more autonomy can only come with relaxing the current system of norms. This can only be done very carefully, as the norms are the backbone of the current education system and any change is likely to generate uncertainty and might put schools under stress. Initially, the change may mean that instead of direct mandates the norms may be treated as minimum standards or suggested – but not enforceable – guidelines. A public consultation could be held to determine which norms or procedures generate hardest constraints for schools and should be relaxed first. Schools, for example, could be rather quickly allowed to decide on the number of deputy principals needed. Similarly, local governments could have greater flexibility in increasing teacher salaries, within some nationally mandated limits. As school leaders and *rayon* officials learn to exercise their new responsibilities and as monitoring systems gather more experience, the Ministry can proceed with further relaxation of the norms, stronger deregulation and increased autonomy. In other words, increasing autonomy must be associated by the process of mutual learning of school principals and of monitoring experts.

More school and local autonomy is also likely to exacerbate the existing differences between schools and between local governments in different parts of the country, including the urban-rural divide. Therefore some mechanisms to disseminate best practices, to identify risks and support those local managers whose performance is not improving should be introduced. In this regard, it will be necessary to strengthen the improvement function of school evaluation (see Chapter 4). A first step might consist of giving schools and/or *rayons* some specific freely disposable funds in the school budget to be allocated and used by the own decision of the school according to transparent procedures. Budget areas where such disposable funds can be introduced first include, for

example, teacher in-service improvement programmes and increased education support to vulnerable groups of students. Similarly, education resource centres can be gradually given increased autonomy in the services they render to small-class schools, allowing them to increase the scope of additional education provided to students of small-class schools.

It may also be necessary to create specific school improvement grants to intervene in cases when misused autonomy leads to weaker academic outcomes or undermines budget discipline. Without this type of new intervention tools the Ministry may find itself powerless in the face of the potentially negative effects of increased autonomy. At the same time, specific procedures and transparency of actions are needed to ensure that these tools are not used without good reasons.

Reinforce the role of evidence in the development of education policy

Kazakhstan needs to develop a culture of using evidence and performance audit as the basis for future reform initiatives, both in the design – to identify what policies would be more cost-effective – and in the implementation – to make change happen in schools. Previous initiatives could be further analysed in terms of the successes and limitations encountered in their implementation. The current major policy initiatives would also benefit from a thorough analysis. The new per-capita funding pilot model (see Chapter 3), for example, could be thoroughly reviewed in order to shed light on the impact of the new financial approaches on the functioning of schools. Before its national roll-out, it is key to fully understand its effects on school practices. The review could also cover the work of school accountants and the operations of the newly established Boards of Trustees. The lessons from the pilot should be used for the discussion of whether the new per-capita funding system is mature enough for immediate implementation across the country, or whether it should be further piloted, refined or amended. Similarly, the operation of the resource centres could be reviewed in terms of its benefits to students of small-class schools served, implementation difficulties, and aspects to be improved.

In OECD countries there is a growing understanding of the importance of informing education policy with evidence from research, programme evaluation and performance audits. This involves a strategic approach to research, analysis and evaluation, and information management activities in view of supporting the development of evidence-based policies. Disseminating the evidence basis underlying the policy diagnosis, research findings on alternative policy options and their likely impact, as well as information on the costs and benefits of reforms is also instrumental in gaining the support of key stakeholder groups. Indeed, individuals and groups are more likely to accept changes that are not necessarily in their own best interests if they understand the reasons for these changes, recognise the underlying evidence supporting the reforms, and can see the role they should play within the broad national strategy. This should be part of the effort of further engaging stakeholder groups in policy consultation.

Redesign the system of intergovernmental transfers

Kazakhstan should explore how to further reform the system of intergovernmental transfers in order to strengthen its governance system. While the design of the intergovernmental relationships goes beyond the education sector (and hence, the scope of this Review), getting the right system is particularly important for education as it accounts

for the lion's share of the local budgets. Steps could be taken towards greater clarity on responsibilities, a formula-based allocation and greater fiscal equalisation. Intergovernmental transfers should be commensurate to the distribution of responsibilities to foster fiscal co-responsibility and their effects should be evaluated in order to further refine the system. Box 2.1 provides some selected approaches to intergovernmental fiscal transfers in upper middle income countries.

Box 2.1. **Selected approaches to intergovernmental fiscal transfers**

In **Argentina**, the transfer of responsibility for secondary schools from federal to provincial level was accompanied by a system of federal tax transfers. Nationally, decentralisation appears to have improved local participation, strengthened monitoring and improved learning standards. However, test scores point to a widening gap between wealthier provinces with strong government capacity and poorer provinces with low administrative and institutional capacity; the latter performed worse under decentralisation. National efficiency has improved, but at the expense of equity.

When **Brazil** devolved authority from a highly centralised system to states and municipalities in the mid-1990s, it created FUNDEF to reduce the large national inequalities in per-student spending. State and municipal governments were required to transfer a proportion of their tax revenue to FUNDEF, which redistributed it to state and municipal governments that could not meet specified minimum levels of per-student expenditure. FUNDEF has not prevented wealthier regions from increasing their overall spending more rapidly than poorer regions, but it has played a highly redistributive role and increased both the absolute level of spending and the predictability of transfers. There is strong evidence that FUNDEF has been instrumental in reducing class size, improving the supply and quality of teachers, and expanding enrolment. At municipal level, data show that the 20% of municipalities receiving the most funds from FUNDEF were able to double per-pupil expenditure between 1996 and 2002 in real terms.

China's experience with fiscal decentralisation provides a cautionary tale for education equity. During the 1990s the central government gave more responsibility to local governments, schools and communities. The share of GDP allocated to education declined from 2.9% in 1991 to 2.2% in 1997. The ratio of highest-spending to lowest-spending province in per-student expenditure in primary education almost doubled from 5 to 9. Many schools and local authorities resorted to formal and informal household charges. Concerns over inequality prompted the Chinese Government to remove some tax powers from local government, continue to finance teacher salaries and maintain responsibility for parts of the capital budget. While the central government formally prohibits the charging of fees, still many local governments informally encourage it and large gaps in the quality of provision remain.

In **South Africa**, the financing formula for fiscal decentralisation incorporates a strong redistributive component aimed at overcoming inequalities inherited from the apartheid era. Around 95% of provincial government expenditure comes from central government. The largest component is known as an equitable share transfer, weighted to reflect levels of poverty and the costs of achieving minimum national norms in areas such as health and education. In education, financing is based on student numbers, with some additional weight given to poor and rural provinces. Provincial authorities are also required to rank schools by a poverty index, which is used to allocate funding for non-personnel inputs.

Box 2.1. **Selected approaches to intergovernmental fiscal transfers** *(cont.)*

In **Vietnam**, transfers are determined by a formula based on population, but with weighting for poverty, remoteness, health and education norms, and the presence of disadvantaged populations. A 2003 law recalculated the education norm on the basis of all children, rather than in-school children. Since the shares of school-age children enrolled are lower in poorer provinces, this has increased equity. Similarly, the education norm for a child living in mountainous areas (which have the worst education indicators) is 1.7 times that of an urban child. The commitment to equity is reflected in spending: richer regions have some twenty-five times the income of the poorest regions such as the North West, but budget spending per capita is roughly equivalent, reflecting large transfers from rich to poor regions.

In **Poland**, education decentralisation was part of the overall decentralisation process of the country initiated in 1990. The main transfer from the central to local budgets is called "general subvention" and is composed of a few separately calculated components. Two main ones are education component and equalisation component. The education component is calculated on the basis of student numbers (with numerous coefficients reflecting different costs of providing education to different groups of students), and thus reflects different cots of service provision (see also Annex 3.A2). The equalisation component is based on a formula and equalises poorer jurisdictions up to 90% of average per capita own revenues of similar local governments. It thus reflects revenue equalisation.

Sources: UNESCO (2008), *EFA Global Monitoring Report 2009: Overcoming inequality: why governance matters*, Chapter 3, Unesco, Paris, pp. 145-170; Swianiewicz, P. (2006), "Local government organisation and finance: Poland", in Shah A. (ed.), *Local governance in developing countries*, The World Bank, Washington, DC, pp. 303-346.

Intergovernmental transfers should be determined on the basis of a formula in order to reduce the influence of political distortions on the allocations. The most promising way to limit rent seeking and political bias is a simple, transparent, and easy-to-understand equalisation formula with few indicators covering a country's main fiscal disparities (OECD, 2012). In the case of education, transfers should be primarily based on a formula that captures the number of students, and takes account of the specific needs of students and schools (see Chapter 3). In addition, a number of OECD countries have developed various measures to limit the influence of special interests (see OECD, 2012, for further information). Denmark and Australia, for example, have introduced independent agencies and bodies to limit political bargaining and approach resource distribution from a technical rather than political perspective. Research has shown that independent agencies are less prone to political influence than ministries (Khemani, 2007). Similarly, many countries not only take into account the opinion of local governments, but also involve civil servants, politicians, and experts. Also, a two-stage budget procedure by setting the overall budget for equalisation and then negotiating the distribution formula has been successful in reducing rent-seeking pressures in some countries such as Norway.

Greater fiscal equalisation is key to ensure *rayons* and *oblasts* can provide similar services at similar tax levels. The equalisation transfer needs to be formula-based and take into account fiscal capacity (i.e. ability to raise revenue) as well as the costs of service delivery (e.g. price indices, geographical disparities, poverty). Most OECD countries have mechanisms to equalise either or both revenue-raising capacity and expenditure needs (OECD, 2012). The significance of fiscal equalisation is reflected not only in its extensive use in both federal and unitary countries but also in that its objectives and procedures are

often laid down in the constitution and form a central pillar of national fiscal policy. Across the OECD, fiscal equalisation transfers average around 2.5% of GDP, 5% of general government spending, and 50% of intergovernmental grants. In some countries – such as Australia, Germany and Sweden – revenue-raising disparities are virtually eliminated.

A clearer distribution of responsibilities over budget procedures between levels of government could be beneficial. This means that the law on local public finances must clearly delineate the revenues and expenditures of *rayons* and *oblasts*. The clarification of responsibilities will also shed light in the new role of *rayons* under the new funding scheme and pave the way towards their new functions. It will also be beneficial to introduce specific reporting categories in the budget classification to ensure that various targeted funds for different functions of the education system are adequately and fully reported. This will allow the Ministry to properly monitor the allocation of resources to individual schools and address arising inequities.

Notes

1. Subsequently to the visit by the Review Team, in December 2014, the National Centre for Educational Statistics and Evaluation (NCESE) was closed and its services were integrated in the Information-Analytic Center (IAC).
2. Subsequently to the Review visit, as a result of the fiscal constraints provoked by the 2014 drop in oil prices and the results of the evaluation of the respective pilot programmes, some of these reform plans have been postponed or curtailed. Thus the introduction of the new per capita funding scheme has been postponed to 2018 and restricted to grades 10 and 11; and the plans to establish a compulsory twelfth grade have been suspended, with resources being instead channelled to reinforce attendance rates of the final year of pre-primary education. These policy changes are not analysed in this report.
3. The land tax can be increased or decreased within the centrally regulated rates, but typically represents a very small percentage of local budgets.
4. Schools are allowed to provide "supplementary education" services on a contractual basis. Most schools visited by the Review Team provide these services, but were either unaware of the allowance or unclear regarding the kind of services they can provide for a fee. Charging fees for services that fall within the scope of state educational standards is forbidden, but schools are allowed to provide some services on a commercial basis: (i) additional education programmes (e.g. creativity, sports, culture and arts); (ii) additional more in-depth classes on curricular subjects; (iii) other activities (e.g. sports competitions, seminars, meetings, conferences, summer camps); (iv) lending musical instruments, school meals and Internet access; (v) energy surplus; and (vi) vocational training (IAC, 2014).
5. Table 5.9 in OECD (2014b) shows that the share of rural schools in a region explained 72% of the variation in the share of local budgets allocated to education (OECD, 2014b).
6. Unit cost figures include only local budget spending per student.

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Chapter 3

School resource distribution in Kazakhstan

The distribution of resources to schools is currently decided on a discretionary and incremental basis by rayons *in consideration of national norms. This is in parallel with plans to introduce a new per-capita funding model, following a pilot phase, an important step towards a more efficient and equitable school funding scheme. However, the new school funding model has not been thoroughly analysed, requires further development and the original timeline for its implementation was too tight. A distinctive feature of the school network is its large geographical coverage as a result of a strong policy to ensure universal access to compulsory schooling. It is populated with a large number of small-class schools, which might not be the most cost-effective option to deliver education services in rural and remote areas. In addition, students in small-class schools tend to suffer from poorer learning environments. Regarding the teaching workforce, current student-teacher ratios indicate that there might be some oversupply of teachers in the system. The conception of teacher employment, whereby basic compensation is associated purely to the teacher's teaching load (*stavka *system), is a source of concern as it does not appropriately recognise the many tasks a teacher accomplishes beyond teaching and reduces his or her engagement in school activities. Another aspect reducing the professionalism of teachers is the absence of teaching standards. Also, the distribution of resources is limited in the extent to which it takes account of the specific needs of students or schools. The concept of inclusive education narrowly focuses on disabilities and more extreme socio-economic conditions and results in a relatively small number of students entitled to receive extra support. For example, there is no systematic policy to support students who are falling behind. This is in contrast with the overemphasis placed on top-performing students. Also, schools in Kazakhstan appear to be making slow progress in accommodating children with disabilities. Finally, in recent years, Kazakhstan's government undertook significant efforts to upgrade school infrastructure. This is in response to a previous chronic underinvestment in maintenance of schools, which left many buildings in need of modernisation.*

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

This chapter is concerned with how resources can be effectively distributed across the school system. This includes the distribution of resources between the different levels of the administration (e.g. central, regional and local), across resource types (e.g. human resources, physical resources) and between individual schools (e.g. through funding formulae and special targeted programmes). In addition, it also discusses the distribution of school facilities (e.g. organisation of the school network), the organisation of teacher resources (e.g. number of teachers; teacher preparation), the organisation of school leadership resources (e.g. number and profile of school leaders) and resources targeted at specific student groups (e.g. special needs; programmes for disadvantaged students).

Context and features

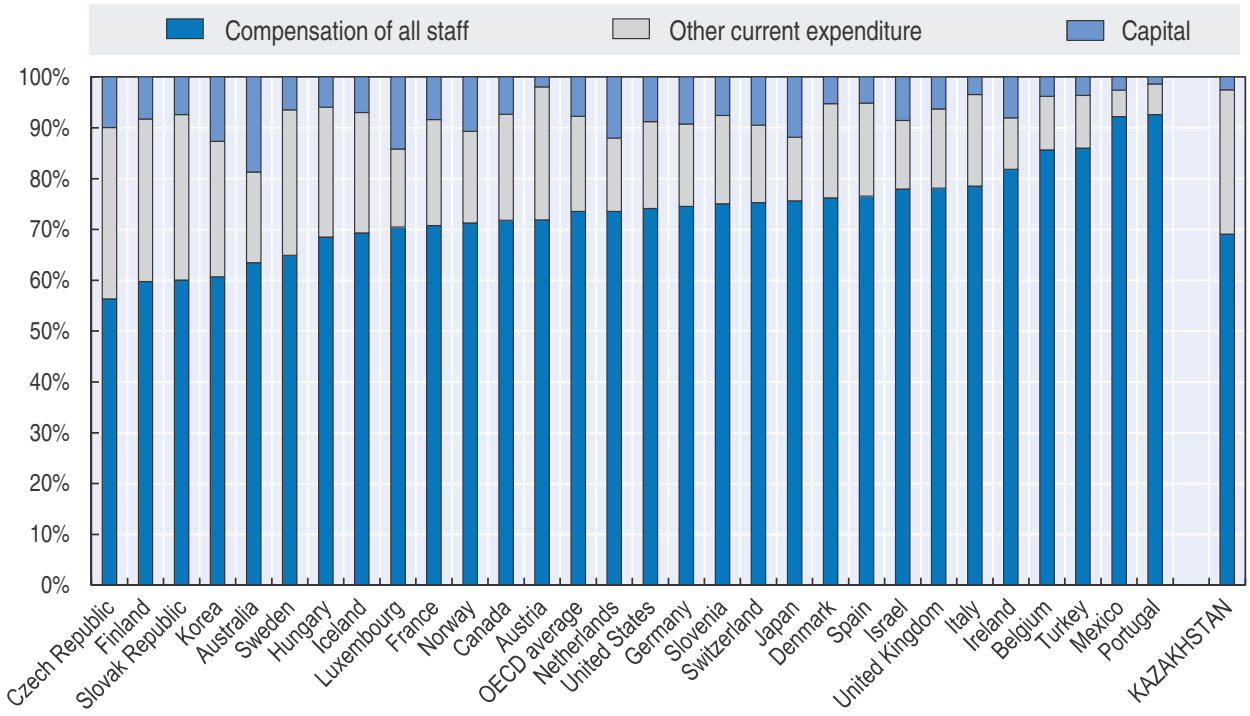
The distribution of resources across types

The overall public and private expenditure on education infrastructure is low in Kazakhstan compared to other OECD countries. In 2011, Kazakhstan's capital expenditure, which refers to the spending on assets that last longer than one year (e.g. construction, renovation or major repair of buildings and new or replacement equipment), represented 2.5% of its primary and 3.6% of its secondary education expenditure, compared to 7.7% and 7.1%, respectively, across OECD countries (see Figure 3.1) (OECD, 2014a).

The largest share of current school operation expenditure is devoted to staff compensation given the labour-intensive nature of instruction. About 69% of the total budget for primary and lower secondary education in Kazakhstan goes to staff compensation, which compares to an average of 74% for primary and 73% for secondary education in OECD countries (see Figure 3.1). While no data are available in Kazakhstan on the percentage of the budget devoted to teachers' salaries alone, it accounts for 58% of total expenditures for primary and secondary education in OECD countries. About 28% of expenditures on primary education and 25% of expenditures on lower secondary education in Kazakhstan are allocated to other current expenditure, which compares to 19% in primary and 20% in secondary education on average in OECD countries. Other current expenditure refers to, for example, teaching materials and supplies, maintenance of school buildings, and other sub-contracted services such as student meals and rental of school facilities. These services are obtained from outside providers, unlike the services provided by the education authorities or by the educational institutions using their own personnel.

The national distribution across resource types differs from the corresponding distribution in school budgets. According to a study by UNICEF, on average, 85% of a school budget is spent on wages, 8% on non-instruction related expenses (e.g. school meals, medicines, other goods and services, communication, transport, rent, business travel, judicial decisions), 5% on communal expenses, and 1% on students at risk (UNICEF, 2012). Payroll expenses account for 79% of urban school budgets and 93% of rural ones (UNICEF, 2012). Small-class schools and primary schools in rural areas are particularly affected in

Figure 3.1. **Capital and current education expenditure in Kazakhstan and OECD countries, 2011**



Note: Data for Kazakhstan cover primary and lower secondary education while data for OECD countries cover primary and both levels of secondary education.

Sources: UNESCO Institute for Statistics database, *www.uis.unesco.org/DataCentre/Pages/BrowseEducation.aspx* and OECD (2014a), *Education at a Glance 2014: OECD Indicators*, *http://dx.doi.org/10.1787/eag-2014-en*.

this sense. On average, 99.6% of their budget is dedicated to salaries (Sange-SFK, 2012). However, the report notes that departures from these average values are very common and can be considerable.

Organisation of the school network

The school network of Kazakhstan presents two contrasting realities: the capacity built is insufficient in urban areas and excessive in rural ones. Urban schools tend to be overcrowded; some operate in three shifts; and quite a number experience a shortage of student places. In 2013, at least 320 schools throughout Kazakhstan experienced a shortage of student places, requiring a total of 130 000 additional places (5% of the country's total enrolment).[1] The cities of Astana and Almaty had the largest share of overcrowded schools, with at least half of their schools reporting place shortages; though other regions mainly in the country's south (such as South Kazakhstan and Mangystau) also faced space constraints (IAC, 2014).

A distinctive feature of the school network is its large geographical coverage, which expands to the entire country, as a result of a strong policy to ensure universal access to compulsory schooling. Every settlement has the right to provide education services if the minimum number of required students is met: at least 5 students for primary education (grades 1-4); 41 for basic education (grades 1-9); and 81 for all compulsory education (grades 1-11/12). Of the 7 307 public schools operating during the 2013-14 school year, 5 702 (78%) were located in rural areas. These rural schools provide education services to 44% of Kazakhstan's students and were, on average, a quarter the size of urban schools in terms

of their enrolment (197 versus 874 students enrolled). With the exception of the cities of Almaty and Astana, every region of Kazakhstan had at least 60% of its schools located in rural areas; North Kazakhstan region led the way with 90% (see Table 3.1).

Small-class schools (*malokomplektnie shkoli*) is a term used in this Review to designate schools which are typically located in remote and rural areas[2] and are much smaller than other schools both in terms of the average size (78 students compared to 611) and class size (8.4 students compared to 21). Small-class schools comprised half (3 639) of all schools in Kazakhstan in the school year 2013-14 but enrolled only 11% of all students (284 267) (IAC, 2014). Less than half (44%) of small-class schools provide all compulsory grades, implying that most of them only provide primary (grades 1-4) or basic education (grades 1-9). In the school year 2013-14, the number of students from more than one grade taught together in multi-grade classes represented a small proportion of small-class schools' students (22%) and classes (27%) and nationwide accounted for 6% of classes and 2% of students (IAC, 2014).

Table 3.1. **Characteristics of the school network by region, 2010**

	Share of rural schools (%)	Share of small-class schools (%)	Average class size	Student-teacher ratio	Share of buildings in emergency condition or requiring overhaul (%)	Share of students receiving free hot meals (%)	Share of students covered by transportation services (%)
North Kazakhstan	90.7	86.2	11.2	6.7	27.2	34.0	92.2
Almaty	87.8	44.6	18.8	9.0	31.8	11.0	48.2
West Kazakhstan	86.5	71.8	14.9	7.6	26.2	86.0	68.1
Kostanay	86.3	13.6	15.1	6.1	4.9	41.0	40.5
Akmola	85.3	80.0	12.4	7.7	22.7	30.0	98.3
Zhambyl	82.4	45.3	18.9	8.6	37.1	46.0	79.4
Aktobe	81.7	66.7	16.3	8.4	16.3	63.0	78.6
South Kazakhstan	81.3	26.3	21.4	9.8	38.8	7.0	42.1
Kyzylorda	81.0	75.9	21.2	9.9	47.8	25.0	56.2
Pavlodar	79.3	73.4	13.9	7.7	22.1	38.0	99.6
East Kazakhstan	78.5	66.2	16.0	8.3	19.3	40.0	86.8
Atyrau	70.9	26.1	18.3	9.4	48.5	12.0	87.8
Karaganda	62.8	57.9	17.2	9.3	15.2	61.0	100.0
Mangystau	56.7	14.7	21.9	12.6	22.5	39.0	94.9
City of Almaty	0.0	0.0	24.4	13.3	38.7	59.0	0.0
City of Astana	0.0	2.3	24.4	15.2	21.2	69.0	0.0

Source: OECD (2014b), *Reviews of National Policies for Education: Secondary Education in Kazakhstan*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264205208-en*.

The distribution of small-class schools across the country is very uneven. It ranges from none in the biggest cities (Astana and Almaty) or less than 20% of schools (and 3% of students) in a few regions (Mangystau, Kyzylorda and South Kazakhstan) to more than 80% of all schools and 40% of all students in the regions of Akmola and North-Kazakhstan (IAC, 2014). Calculations based on statistics for the academic year 2012-13 (NCESE, 2014) suggest large differences in the average regional size of small-class schools which might imply that norms are applied differently across the country. In Atyrau, for example, the average class size of small-class and other schools is about the same and the average size of small-class schools (134 students) almost doubles the national average. By contrast, small-class schools in Kyzylorda only have 34 students on average, which more than halves the national average, and classes are on average four times smaller than in other schools. This suggests that Kyzylorda applies stricter criteria to classify a school as a small-class one.

A significant initiative to improve the access to quality education for students of small-class schools is the creation of resource centres to provide support to groups of small-class schools. Each resource centre, typically located in a regular well-resourced school, works together with a small number of small-class schools to provide opportunities for their students to benefit from better resourced quality learning environments (see Box 3.1).

Box 3.1. **Resource centres to support small-class schools**

Resource centres (called *опорная школа* in Russian) were first trialed in Karaganda *oblast* in a pilot project devised jointly by the Education Department of the city and that of the *oblast*. Due to interest generated by this initiative, the project was taken up by the Ministry of Education and Science and a national pilot was initiated in 2012. In 2014, there were 59 resource centres operating in Kazakhstan, and the plan was then to increase their network to 160 by the end of 2015. Resource centres have been mainly organised in large, well equipped schools, but in some cases special investment in school buildings and equipment was necessary to adapt the school to the role of resource centre.

The main aim of an individual resource centre is to support the improvement of education quality in a group of small-class schools located in the vicinity of the centre. Each centre is assigned between 3 and 4 satellite schools with which to work. For example, the current 59 resource centres provide educational services to 192 small-class schools.

The support provided to small-class schools consists in special teaching sessions organised in the centre for small-class school students from grades 8 and 9. These students, accompanied by one or two teachers from the small school, come for three sessions in a school year, each session lasting two weeks (10 school days). The first session is organised in September and includes a test of student knowledge. The last one takes place in April and also includes a test. The tests are used in two ways: they allow the assessment of student needs and the subsequent preparation of a plan of educational activities tailored to specific students; and they also allow the assessment of student progress during the school year. Between the sessions the resource centre provides remote support to small-class school students. If the small school is located close to the resource centre, students will be transported from home every morning and transported back home in the evenings, otherwise accommodation will be provided. Students are also provided with textbooks, other educational resources and meals free of charge. All these expenses as well as the salaries of teachers assigned to these classes are part of the budget of the resource centre.

The teaching sessions in the resource centre consist of classes conducted by teachers from the centre, at which a teacher from the school is also present, though in practice rarely active. Students have access not only to well-educated teachers, but also to laboratories and a library. An important part of the process is social interaction of students coming from remote, small schools with students of the resource centre. According to regulations, the teaching plan of the resource centre must take into account the plans and conditions in associated small-class schools and be approved by the consultative council of the centre. This institutional arrangement fosters cooperation between schools and allows for proper accounting of the needs of all students.

Sources: Interviews with schools and IAC (2014), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Kazakhstan*, *www.oecd.org/edu/school/schoolresourcesreview.htm*.

The current and future school funding models

The current school funding model

The distribution of resources to schools is currently decided on a discretionary basis by *rayons* in consideration of national norms and, in practice, is greatly associated to historical expenditures. School principals are responsible for the preparation of the annual school budget, with the assistance of school deputies and the school accountant. The first step of the budget formulation consists in drawing the list of personnel of the school, which is based on the number of consolidated classes. The number of classes determines the type and number of school deputies, the number of teaching hours and related tasks to be allocated, and the number and type of support staff of the school (see Annex 4.A1). The overall number of teaching hours is used to determine the number of teachers needed as well as their teaching workload, once up to nine teaching hours have been allocated to each school leader. The second step consists in calculating the exact salary of each staff member with strict observance of the current legislation (e.g. category, qualification, experience) and their workload. The final step consists in the calculation of the remaining operating costs (e.g. heating, electricity) to reflect changes in input prices and other structural conditions (e.g. maintenance, facilities, equipment). Schools might also request additional resources for a variety of purposes (e.g. repair damages in school equipment, purchase missing textbooks) to local authorities in an ad hoc basis throughout the year.

Schools submit their budget proposal to the *rayon*. The number of staff and their compensation is negotiated and approved before the start of the school year (September), while the overall school budget follows the fiscal year (January to December) and is approved later in the year once the budget of the *rayon* has been determined (see Chapter 2). The education department of *rayons* checks the adherence of the proposed staffing to national norms whilst the financial department reviews the overall financial implications. Once the budget of the *rayon* is established, local educational and financial authorities have some discretion to distribute the remaining budget, which is the difference between the sum of the minimum budget of schools (i.e. staff costs and other essential operating costs) and the budgeted school expenditures of the *rayon*. Some of the remaining budget might be allocated to schools before the approval of their budget or throughout the year to cover unexpected expenses or ad hoc requests.

The review team was informed in the local authorities and schools it visited that, in practice, school budgets are largely based on historical expenditures adjusted by inflation, and that schools have little bargaining power. School budget proposals tend to be adjusted downwards and schools have to negotiate individually for increases to cover unexpected expenses or extraordinary requests.

The future school funding model

The envisaged future school funding model combines a per student funding formula with incremental costs. Although the work on the new funding model was initiated in 2005, the allocation formula was only legislated in 2013, the pilot began in 2014 and roll-out was originally planned for 2015.[3] Officials interviewed during the Review visit indicated that the new model is, in part, purported to reduce staff costs and provide some funds for school development, in addition to providing a more transparent distribution of the funds. The new funding model has been piloted in 50 schools in 4 *oblasts* (Almaty, Aktobe, East-Kazakhstan and South-Kazakhstan) since September 2013 and in 13 other

schools of Akmola *oblast* since January 2014 (IAC, 2014). The pilot is managed and monitored by the Financial Center, a subordinated institution of the Ministry. The allocation formula has been stipulated in legislation, information and guidance have been provided to local authorities and booklets have been prepared and distributed to school leaders to inform them about the changes. Once introduced, the new model will be applied to all schools (i.e. primary, lower and upper secondary) with the exception of small-class schools and specialised schools (e.g. correctional, advanced curricula, NIS). The new funding scheme has two main components:

- *Educational process* includes expenses covered by the central government: salary costs and related contributions, instructional materials (e.g. textbooks, instructional packages), and performance bonuses for staff. It is financed through a per student formula and the money is transferred to schools via the respective *oblast* and *rayon*. Annex 3.A1 provides further detail about the formula that will be used to allocate funds related to the educational process.
- *Educational environment* includes the remaining expenditures: utilities, communication services, maintenance costs, minor repairs, student meals and other support, transportation, financial services and other required expenses. It is financed by local authorities on the basis of actual needs of schools, conditions and opportunities, and with observance of national norms. School heating costs, for instance, might vary significantly from school to school depending on the type of fuel used, weather, and conditions of the school building and facilities.

To support the implementation of the new funding model, other relevant changes have been introduced in schools such as the creation of Boards of Trustees and the modification of the legal status of schools from a *funded* enterprise to a *communal* one. The newly established Boards of Trustees are typically chaired by school principals and have four other members: a representative of the *rayon* or city, a representative of parents, and social partners, sponsors or local business leaders. The main purposes of the Boards are to contribute to the development of schools, oversee their finances, and distribute financial rewards to the best teachers on the basis of central guidelines (see Chapter 2). The new legal status of schools will enable them to change their accounting system and offer additional fee-based services.

The teaching workforce

Profile of the teaching workforce

In the 2012-13 school year, 292 064 teachers worked in school education, 63% of whom were based in rural areas. Between 2008-09 and 2012-13, the size of the teaching workforce grew 9.1% (see Table 3.2). A major feature is that the teaching profession is highly feminised: the proportion of females in 2012-13 reached 88% and 76% in urban and rural schools, respectively. This is considerably above the 2012 OECD average: 82%, 67% and 59% in primary, lower secondary and general upper secondary education, respectively (OECD, 2014a).

Qualifications of Kazakh teachers have improved in recent years but, in 2012-13, about 12% of teachers did not have a higher education degree, a circumstance more often found in rural schools (about 14%) than in urban schools (about 9%) (see Table 3.2). In primary education, for the same school year, about 25% of teachers did not have a higher education degree (NCESE, 2013a). This proportion varies considerably across regions and is above 30%

in Aktobe, West Kazakhstan, Karaganda, Mangystau, Pavlodar and North Kazakhstan (NCESE, 2013a). As a comparison, the average proportion of teachers with no higher education qualification in education systems participating in the 2013 cycle of the OECD's Teaching and Learning International Survey (TALIS) was 2.3% (OECD, 2014c).

Over a third of teachers (34.4%) had over 20 years of experience in 2012-13, an increase from the 30.7% of 2008-09 (see Table 3.2). This might reflect some ageing of the teaching profession. However, the teaching workforce remains younger than the average in the OECD area. In 2011, the proportion of teachers aged between 20 and 30 and aged 51 and over was 23.9% and 21.0%, respectively (OECD, 2014c). In comparison, for the same year in the OECD area, the proportion of teachers below 30 was 13.0%, 11.3% and 9.1% for primary, lower secondary and upper secondary education, respectively, while the proportion of teachers aged 50 and above, was 30.6%, 33.9% and 37.4% for the same education levels (OECD, 2013d).

Table 3.2. **Teachers in Kazakhstan: number, level of education and years of experience, 2008-09 and 2012-13**

	2012-13			2008-09		
	Total	Urban	Rural	Total	Urban	Rural
Number of teachers	292 064	108 202 (37.0%)	183 862 (63.0%)	267 736	96 882 (36.2%)	170 854 (63.8%)
Level of education						
Higher education (%)	87.9	90.7	86.2	85.2	90.0	82.5
Incomplete higher education (%)	0.6	0.3	0.8	1.4	0.9	1.7
Secondary vocational education (%)	11.3	8.9	12.7	12.9	8.9	15.2
General secondary education (%)	0.2	0.1	0.2	0.5	0.1	0.7
Years of experience						
Under 3 years (%)	12.8	12.4	13.1	13.2	11.5	14.2
3 to 8 years (%)	19.3	17.8	20.2	18.6	16.4	19.8
9 to 16 years (%)	20.9	20.7	21.1	22.8	24.6	21.8
17 to 20 years (%)	12.6	13.3	12.1	14.6	14.9	14.5
Over 20 years (%)	34.4	35.9	33.5	30.7	32.7	29.6

Source: IAC (2014), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Kazakhstan*, *www.oecd.org/edu/school/schoolresourcesreview.htm*.

Initial preparation

Initial preparation of teachers involves the completion of a teacher education degree. Primary education teachers should have completed a teacher education programme either as part of vocational upper secondary (4-year programme after completion of grade 9) or post-secondary education (3-year programme after completion of grade 11) or in a higher education institution (4-year Bachelor's programme). In contrast, aspiring lower or upper secondary teachers are required to complete a 4-year teacher education programme (Bachelor's degree or higher) at the higher education level.

In 2013, 144 447 individuals were attending initial teacher education programmes at higher education level, 61% in public institutions and 23% in a government-sponsored place (IAC, 2014). Admission to these programmes is based on the Unified National Test (UNT) used for entry into higher education. However, as of 2015, a new "Creative Examination" will be required to enter teacher education programmes at the higher

education level. The objective is to assess the aptitude of the candidates for the teaching profession, including their readiness and motivation. Initial teacher education is also offered at 86 of the 139 institutions of higher education in the country. Government-sponsored places are offered in 39 of the 86 institutions offering initial teacher education while attendance in the remaining institutions is fully based on the payment of fees. Teacher education is also offered at the Master's level, with an attendance of 4 458 students in 2012-13 (IAC, 2014).

Many teaching specialisations exist within teacher education for primary and secondary education. Seven specialisations are offered for primary teaching focussed on: general primary; computer sciences; foreign languages; Kazakh language; Russian language; "self-knowing"; and mathematics. These are concurrent programmes whereby subject-matter knowledge and pedagogical skills are acquired simultaneously. Initial teacher education programmes for lower and upper secondary are organised in 23 regulated teaching specialisations (e.g. Kazakh or Russian language and literature; Physics; History; Pedagogy and Methodology of primary education; Kazakh language and literature in schools with language of instruction other than Kazakh; two Foreign Languages). In 2013-14, the specialisations benefiting from the greatest number of government-sponsored places were physical education, vocational training, Kazakh language and literature, mathematics and computer sciences (IAC, 2014). Programmes offered can be concurrent or consecutive, which means that pedagogical skills can be acquired simultaneously or after subject-matter knowledge. The typical programme at the higher education level involves some practical training at schools (corresponding to at least 16% of the programme credits; OECD, 2014b), state examinations in the specialisation taken and a thesis.

Recruitment into teaching

The main requirement to apply for a job as a teacher is to hold a teaching degree for the relevant level of education and subject specialisation. Teachers are hired into schools through an open recruitment procedure led by the school principal. Schools have autonomy in teacher appointment and allocation of teaching duties. However, schools need to follow regulations regarding teacher positions, job descriptions, required standard qualifications and procedures for job placement. Information about job vacancies is supposed to be submitted monthly by principals to employment centres of *rayons* and cities. This information may also be published in newspapers, the concerned school's website and in official websites of *rayons* and cities. Teachers apply directly to schools and the hiring procedure typically involves interviews at the school with a panel composed of the school management and selected teachers from the school.

Kazakhstan has introduced some incentives for teachers to work in rural schools. These include a 25% supplement to the basic salary, compensation to cover utility bills (e.g. heating), additional social support (e.g. settlement allowance, housing allowance) and cattle food. However, the provision of these incentives is at the discretion of local education authorities. In addition, a scholarship programme to attend initial teacher education targeted at candidates from rural areas requires recipients to teach at least 3 years in rural areas following graduation. Along the same lines, the programme "To the Village After Graduation" is targeted at higher education graduates (including teacher education graduates) who work in a village for at least 5 years. These initiatives are part of broader policies to foster regional development in the country. However, it should be noted that according to regulations, teachers in classes with less than 15 students (as is the case

in many rural schools) are entitled to only 50% of some common salary supplements for additional tasks (e.g. for correcting homework, for managing a class; see below) (OECD, 2014b).

Workload and use of teachers' time

In Kazakhstan, teachers are employed under a weekly teaching load system (*Stavka* system) whereby their basic compensation is purely associated with their teaching load. Activities considered as included in this compensation are lesson preparation, communication with parents and participation in conferences and seminars. Other activities are compensated separately. These include marking student notebooks and written work, management of pedagogical/methodological associations, classroom management, mentoring other teachers, laboratory supervision for subject disciplines, in-depth teaching of a subject, working with special needs students and taking on additional hours as a substitute teacher for absent teachers. Teachers are not expected to stay on the school premises beyond their teaching time. This is in clear contrast to employment under a workload system, more typical of OECD countries, whereby teachers work a specified number of hours per week (e.g. 40 hours), a proportion of which are supposed to involve teaching. The remainder of the time is used for preparation of lessons, substitute teaching for absent teachers, assisting students with learning difficulties, meeting with parents and doing administrative work. It is also typically expected that the teacher stays at the school beyond teaching hours (see UNICEF, 2011, for a more detailed explanation of the *Stavka* system). Teachers in general school education in Kazakhstan benefit from 56 days of paid annual leave.

The *Stavka* system is extremely flexible. A *Stavka* unit is defined as 18 hours of teaching a week and teachers are typically employed from 0.25 of a *Stavka* to 1.5 *Stavkas*, or in special circumstances (e.g. teacher shortage), for 2 *Stavkas*. No minimum teaching load is stipulated while regulations specify a maximum load of 1.5 *Stavkas*. One implication of the system is that one teaching load (a *Stavka* unit) involves a small base salary, which provides the incentive for teachers to take on additional teaching hours and/or take on additional jobs in or outside of school.

Career structure

Teachers in Kazakhstan are considered civil servants. There is a clearly established career structure for teachers associated with a teacher certification process known as teacher attestation (see Chapter 4). Within teaching, four main steps exist: young specialist (or No Category), 2nd Category, 1st Category and Highest Category. While the average proportion of teachers in the first (31%) and second (30%) category was similar across *oblasts* in 2011, the cities of Almaty and Astana had a much larger proportion (29%) of teachers in the highest category than on average across the country (15%) (OECD, 2014b). Moreover, four *oblasts* (Aktobe, Kostanai, Kyzylorda and Mangystau) had a slightly higher proportion of teachers with no category (30% compared to 25% country-wide) (see Table 3.A3.1 in Annex 3.A3). There are also marked differences in the distribution of teachers by category between urban and rural areas (see Table 3.A3.1 in Annex 3.A3). Three further steps involve management responsibilities: Chief of Methodological Office, Deputy Principal and School Principal. New teachers are placed for three years in an initial step as *Young Specialist/No Category* and move up a category through the successful completion of a

teacher attestation process (see Chapter 4). However, a new teacher can apply for admission into the 2nd Category following one year of employment, provided he or she has a good track record.

Upon entry into the school, teachers sign a one-year contract. Following that, typically, the next contract is open-ended with the possibility of termination by either the teacher or the school (at the discretion of the school principal). There is no probationary period for beginning teachers (i.e. teachers employed for the first time in the school system). At the discretion of school management, a probationary period can only be established for newly-hired teachers with previous teaching experience. Mentoring of beginning teachers is not regulated at the national level but is typically organised at the school's discretion. Mentoring programmes might involve the development of a collaborative development plan with the mentor, classroom observation by the mentor followed by feedback, reports on the mentee's progress and the promotion of self-reflection and self-evaluation skills of the mentee. However, there is no information available on the extent to which this approach is implemented across schools in Kazakhstan (OECD, 2014b). Self-reported data collected in the principal's questionnaire of PISA 2012 suggests that mentoring programmes are widespread in Kazakhstan: about 97% of students are in schools whose principal reported that their schools have a teacher mentoring scheme, compared to 72% on average in OECD countries (OECD, 2013a).

Compensation

Teachers are paid according to the salary scale defined for civil servants. Teachers' compensation includes their basic salary, career development-related compensation, compensation for additional tasks, and special allowances.

The basic salary of a teacher results from a base salary which is multiplied by a given coefficient which depends on the teacher's civil service category (associated with teacher qualifications) and years of experience. School teachers with a higher education qualification are placed in category G-9 of the civil service while teachers with a VET qualification at secondary or post-secondary level are placed in category G-11. Table 3.3 shows the 2011-12 base salary together with the coefficients used to compute the basic salary for a number of relevant civil service categories.

Table 3.3. **Structure of salaries of civil servants, 2011-12**

Salary category (G-1 to G-14)	Function	Base salary – Tenge (KZT)	Coefficients			
			Years of experience			
			0-1	7-9	17-20	> 20
G-1	Top of civil service	17 697	4.29	4.76	5.10	5.15
G-4	School principals		3.41	3.77	4.04	4.08
G-5	Deputy School Principals		3.17	3.51	3.76	3.80
G-7	Teachers in higher education and post-secondary VET institutions		2.80	3.11	3.33	3.35
G-9	School teachers with a higher education qualification		2.40	2.63	2.83	2.88
G-11	School teachers with a VET qualification at secondary or post-secondary level		2.02	2.21	2.38	2.42

Source: IAC (2014), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Kazakhstan*, *www.oecd.org/edu/school/schoolresourcesreview.htm*.

In addition, teachers receive career development-related extra compensation. This relates to extra qualifications, reaching the three top categories of the career structure and completion of selected professional development activities (namely new generation professional development developed by the NIS network). The extra compensation is depicted in Table 3.4.

Table 3.4. **Extra teacher compensation for extra qualifications, career advancement and selected professional development**

Basis for extra compensation		Extra compensation
Academic degree	Candidate of Science	1 additional national minimum wage
	PhD	2 additional national minimum wages
Career category	G9 – Highest	100% of base salary (before coefficient is applied)
	G9 – First	50% of base salary
	G9 – Second	30% of base salary
	G11 – Highest	90% of base salary
	G11 – First	45% of base salary
	G11 – Second	30% of base salary
Professional Development developed by NIS network	NIS training attestation: level 3 (basic)	30% of basic salary (after coefficient is applied)
	NIS training attestation: level 2 (main)	70% of basic salary
	NIS training attestation: level 1 (higher)	100% of basic salary

Source: IAC (2014), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Kazakhstan*, *www.oecd.org/edu/school/schoolresourcesreview.htm*.

As explained earlier, teachers also receive compensation for additional tasks such as marking student homework, classroom management and advanced subject teaching. Teachers also receive special allowances as with compensation for working in challenging circumstances (e.g. rural areas, high radiation risk areas).

Finally, teachers may also receive ad hoc bonuses for "successful teaching". Teacher bonuses are provided at the discretion of local education authorities (*rayon*, city or *oblast* level) and are typically associated with student results at the UNT or at national and international Olympiads. These bonuses are often provided in the context of "Best Teacher" competitions at the *rayon*, city and *oblast* levels.

The leadership of schools

In the school year 2012-13, there were 6 641 school principals and 17 998 school deputies in Kazakhstan. The number and type of school deputies is regulated and depends on the size of the school. About 45% of schools had a principal and two or three deputies.[4] Around three out of four school principals (4 875, 73%) led a school located in a rural area (IAC, 2014). The proportion of female school principals (54%) was considerably smaller than that of female teachers (88%) in 2012, which suggests that women had six times less chances than men to become school principals.

The application to school leadership positions is restricted to teachers. To become school leaders, candidates should have at least five years of pedagogical experience for deputy and principal positions, alongside having completed an initial teacher education degree. This means that previous leadership experience or training is not required to opt for a deputy position. In 2012-13, about 90% of school principals had the highest, first or second teaching categories, which means that they were among the most experienced teachers (see the above section on teachers for further details) (IAC, 2014). Virtually all

principals had completed at least a higher education degree and 2% of them had post-graduate qualifications (IAC, 2014).

Local authorities are responsible for the recruitment and dismissal of school principals. The appointment has been undertaken in association with competitive procedures since 2007. Vacancies are publicly announced and an ad hoc local commission is created to evaluate the applications received and interview the candidates shortlisted. The commission is composed of at least five members representing the local education authority, teacher associations (labour, methodological, school) and parents. The commission designates a candidate but final appointment is subject to the approval of the head of the *rayon*'s education department. By contrast, school deputies are appointed directly by the principal among the most experienced teachers.

Most school principals are very experienced teachers before being appointed to the principalship and tend to stay on this position until the end of their careers. In 2012, more than half of principals (57%) had held leadership positions for over 10 years, 26% of them had between three and ten years, and the remaining 17% had less than 3 years of experience. The number of experienced principals is much larger than in countries participating in the TALIS 2013 survey, where only 34% of principals had more than 10 years of experience, 47% had between three and ten years, and 29% less than three years (OECD, 2014c). The extensive experience of Kazakh school principals in their positions coupled with minimum requirements to access principalship suggests that their average age is quite high. An important proportion are about to retire (6%) or have already exceeded retirement age (4%) (IAC, 2014). An ageing body of school principals is of particular concern in some *oblasts*, including Almaty, Akmola, East-Kazakhstan, Zhambyl, North-Kazakhstan, and South-Kazakhstan. The turnover rate is small, only 183 school principals (3%) had to be replaced in 2012 (IAC, 2014).

School leaders have the status of civil servants. There is no separate career structure for school leaders but a unique career stage with a single salary scale. School principals are initially appointed for one year and, unless the contract is terminated, it then becomes open-ended. Salaries are defined by the general scales for public employees (see Table 3.3). Similar to the calculation of teacher salaries, the basic salary of school leaders is the result of multiplying the base salary by a coefficient based on years of service. To increase their salaries, it is common practice to continue to teach or perform other additionally remunerated school activities up to 9 hours per week (e.g. classroom management, coordination of extra-curricular activities, teaching children with special educational needs). School leaders can also opt for allowances and housing support to work in rural areas as teachers and professionals of other public sectors. There is no system of incentives to attract high performing school leaders to challenging schools, to compensate them for their performance or to encourage their personal development. In spite of this, a scheme is in place to publicly recognise the achievements of school principals. By the school year 2012-13, 21% of school principals had received medals or merit badges from the Ministry (IAC, 2014).

Targeted policies and support to specific groups of students

Low income and at-risk children

School principals are entrusted with the responsibility of providing vulnerable students with a caring environment. Schools receive additional funding from the *rayon* labelled as Fund for Universal Compulsory Education, which must be equivalent to at least 1% of the overall budget and is purported to supporting needy or at-risk students from low

income families. It can be used to provide in-kind support (e.g. clothes, footwear, textbooks, training aids, stationery, school meals, school trips or summer camps, participation in cultural and sports events) or financial assistance. Students or their parents have to apply for these resources to the school principal.

School meals are provided free-of-charge to students who are considered disadvantaged. The following categories of disadvantage have been defined: children from families eligible to receive national targeted social assistance; children from families that have average income below the minimum subsistence level; orphans and children without parental care; and children from families that need urgent assistance due to emergency situations. Schools can also determine additional categories of disadvantage. Targeted programmes are generally more efficient than programmes that spread resources across an entire population, without regard to needs, and are used in Kazakhstan. However, targeting specific children within schools can stigmatise the recipients and, for example, the provision of free meals to only students from low-income families is one of the most visible ways of publicly identifying disadvantaged children (Bundy et al., 2009). While free meals are provided to disadvantaged students throughout Kazakhstan, five regions and the city of Almaty have decided to provide them to all their students.

Kazakhstan treats orphans as a group of children with special needs, who should be provided with special conditions as compensation for their disadvantaged background (OECD, 2014b). In 2012, the number of orphan students in schools amounted to 18 017, 9 659 in urban areas and 8 358 in rural ones. Local governments provide monthly payments to foster guardians for maintenance of an orphan(s) or children without parental care. Orphans are entitled to the abovementioned assistance programmes. There are also special education schools and boarding schools for orphans and children without parental support. Boarding schools are financed by public and charitable money and provide students with accommodation, clothes, equipment, meals, textbooks, and health services (IAC, 2014).

Out-of-school children

An area in which Kazakhstan has placed considerable efforts in recent years is in preventing school dropouts and reducing the number of out-of-school children with the flagship programmes "Road to School" and "Care." According to national statistics, 540 children were identified as being out-of-school in 2013, and only 76 of them have repeatedly been absent for 10 days or more without a valid reason. "Road to School" mobilises multi-sectoral teams in August of each school year to raise awareness about the importance of enrolling in school and provides material assistance to students from socially disadvantaged groups; in 2013, it benefited over 300 000 children with assistance amounting to almost KZT 2 billion (IAC, 2014). About half-way through the school year, in January, "Care" engages teachers to carry out a census of households in the micro-*rayon* of their school to identify students who are out of school or have been absent for more than 10 days without a valid reason and to provide assistance to families to get the children back in school; in 2013 "Care" provided material assistance to over 158 000 disadvantaged students (i.e. uniforms, pens, pencils, notebooks, school bags). The Republican budget and international charities support targeted programmes to increase educational opportunities for disadvantaged students. A recent UNICEF report on out-of-school children in Kazakhstan indicates that there is no quantitative and analytical information on children who are missing or at-risk of missing education and outlines the limitations of the existing strategies to identify and support those students (for further information see Antonowicz, 2013).

Gifted students

There is a rapidly growing set of educational services catering to gifted students. In 2012, 3 966 schools offered advanced instruction to 815 177 students (IAC, 2014), which represent an increase of 1 958 schools and 5% of students since 2011, although identifying the total number of schools and students is not an easy task as terminology is not standardised. The Nazarbayev Intellectual Schools (NIS), which is a network of schools for gifted students created and closely monitored by the President and his Office, are among the most prestigious ones (see Box 3.2). Other public schools catering to gifted students include gymnasiums, lyceums, as well as other specialised schools. These schools typically benefit from more autonomy in terms of enrolment procedures, selection of staff, specific managerial arrangements, financing mechanisms and, more broadly, a specific policy treatment. Students who attend these schools follow more advanced curricula and have more opportunities for in-depth study of one or more specialisation subjects (i.e. mathematics, physics, biology, humanities).

Box 3.2. **Nazarbayev Intellectual Schools**

Nazarbayev Intellectual Schools (NIS), which are autonomous schools reporting to a Board of Trustees chaired by the President, provide an interesting comparison with schools reporting to the Ministry of Education and Science. NIS were established in 2008 to serve as laboratories for improved teaching and learning in STEM fields (Science, Technology, Engineering and Mathematics) and as "feeder schools" for Nazarbayev University. As of 2013, 9 700 students attended 14 operative schools in Astana (2), Aktobe, Atyrau, Karaganda, Kokshetau, Kyzylorda, Pavlodar, Semey, Shymkent (2), Taraz, Ust-Kamenogorsk and Uralsk. The NIS cater to about 1 108 students from rural areas in a boarding arrangement.

Admission to NIS is based on competitive examinations. As of 2013, the selection process includes tests in mathematics, languages (Kazakh, Russian and English) and the ability to study mathematics and science (quantitative reasoning and spatial thinking). The selectivity of NIS is quite high, particularly for students applying for places in classes with Kazakh language of instruction. In 2013, about 7 689 individuals applied for one of the 884 places available in Kazakh language of instruction for grade 7 and 2 864 individuals did so for one of the 884 places in Russian language of instruction, which means that the acceptance rate for those studying in Kazakh (12%) is much smaller than that of Russian (31%) (NIS Annual report, 2013). Fewer than 50% of all applicants met the requirements for a merit scholarship.

The instructional resources for NIS are comparable to those in OECD countries, with new facilities and sizeable libraries (e.g. 181 books per enrolled student in the Astana NIS) and widespread availability of such technologies as mini-TV studios (8 NIS), "interactive floors" (6 NIS), high-speed internet access in newly opened schools, interactive white boards, and equipped science laboratories. The curriculum for NIS was developed in collaboration with international partners. Teachers in NIS are competitively recruited and approximately 15% hold masters degrees or a PhD in the sciences; 17% are foreign teachers. Starting salaries for full-time teachers are KZT 120 000 (USD 656) for local teachers and USD 4 000 to USD 5 000 for international teachers. The student to teacher ratio averages 6.4 across all NIS.

Source: NIS (2013), Annual report AEO "Nazarbayev Intellectual Schools", *http://nis.edu.kz/en/about/reports/?id=2817*.

Students with a disability

Kazakhstan provides education for children with special needs and disabilities in separate "correctional schools", in separate or mainstream classes within mainstream schools, and in their own homes. In 2012, there were 106 correctional schools catering to 15 261 students, 388 mainstream schools had a total of 1 219 special classes attended by 8 825 students, and an unknown proportion of the 7 923 children studying at home with an individual programme or 156 educated by their family had a disability (IAC, 2014). About 90% of students in special classes were considered to have a delay in development rather than a disability (IAC, 2014).

In recent years, Kazakhstan has taken some steps towards the inclusion in mainstream schools of students with special needs and disabilities. Students with a disability have the right to attend mainstream schools if their parents choose so and the proportion of schools with facilities to accommodate them has risen from 10% in 2010 to 23% in 2013. By 2020, the government plans to have 70% of schools with inclusive facilities, 20% of schools with barrier-free access and 50% of students with a disability in mainstream schools (MESRK, 2010). Initiatives include support and facilities for various groups (e.g. those needing speech and language therapy) and updating of special education programmes, textbooks and learning packages for hearing-impaired children (IAC, 2014).

Physical resources

School infrastructure

Many school facilities date back to Soviet times. There is no coherent medium or long-term funding strategy for school physical infrastructure and overall capital expenditures represented only 2.5% of the overall budget for school education in 2011 (see Figure 3.1). In recent years, efforts have been undertaken to construct and rehabilitate schools in needy areas. The "100 schools, 100 hospitals" programme, announced by the President of Kazakhstan in 2007, has constructed 106 new schools providing more than 86 000 additional student places throughout the country. The purpose of the programme, financed largely through Republican budget targeted development transfers (TDTs), was threefold: (i) to reduce reliance on three-shift education; (ii) to reduce the number of schools in emergency condition; and (iii) to decrease the deficit of student places in schools (IAC, 2014). As a result, the number of students enrolled in schools with three shifts was cut in half between 2007 and 2011.

Chronic underinvestment in maintenance and upgrading of schools has left many buildings in need of modernisation. In the school year 2012-13, the number of schools that required a complete overhaul stood at 1 461 (20%) and 189 (2.6%) were deemed to be in an emergency condition (see Table 3.1) (IAC, 2014). In particular, rural schools are six times more likely to be housed in buildings that require emergency repairs. Three-quarters of schools in emergency condition were concentrated in only four regions: South Kazakhstan, East Kazakhstan, Kyzylorda, and Zhambyl. Half of all schools in the country only had outdoor toilets, almost all of them in rural areas. In fact, rural schools were twice as likely *not* to be equipped with indoor toilets (63%) as to have them (37%).

Technology, laboratories and instructional materials

Kazakhstan has placed a lot of emphasis on equipping schools with information and communication technology (ICT) and connecting schools to the internet. Under the "e-learning" programme announced in 2010, several waves of schools have been equipped

with computer hardware and software, multimedia equipment, interactive smartboards, and associated teacher training. As of 2013, 99% of all schools had access to the internet and 75% had broadband access (though only 52% in rural areas). A total of 246 000 computers are installed in schools (one for every 13 students), but one-fifth are outdated and require replacement. While the e-learning programme is being rolled out nationwide, it has so far only been implemented in 16% of all schools and vocational institutions. Because of its staggered implementation, regional discrepancies in coverage exist, even among neighbouring regions – for example, while the capital Astana had 58% coverage in 2013, the surrounding Akmola region was last in the nation at only 6% (NCESE, 2014).

Schools have also been getting progressively better equipped with science laboratories. By 2012-13, 50% schools were equipped with modern physics laboratories, 40% had biology laboratories, and 30% had chemistry laboratories (IAC, 2014). About two-thirds of the newly equipped schools are located in rural areas. The State Program for Education Development (SPED) for 2011-10 sets a target of 80% of schools being equipped with modern laboratories by 2020.

Textbooks are provided to all students free of charge and their coverage is nearly universal. According to the Law on Education (Article 6), local authorities at the *rayon* and city level are tasked with the purchase and supply of textbooks on the mandatory list of titles to all students enrolled in their public education organisations. The State Program for Education Development 2011-20 sets the target of full nationwide coverage of free-of-charge textbooks by 2015. As of 2013, 98% of students in Kazakhstan had been provided with textbooks. While some regions have achieved universal provision, others lag behind (North Kazakhstan region is last in the nation with only 90%). However, the review team came across instances where parents appear to pay out of pocket for some textbooks, according to reports of some of the schools visited, in regions where supposedly the coverage of free textbooks is about 100%. In 2008, rules for the preparation, review and publication of textbooks, teaching materials and manuals were introduced, and over one thousand textbooks were deemed non-compliant with the new standards (Singh, 2012).

Strengths

Steps have been taken to introduce a school funding formula

The envisaged new funding model is a first step towards a more efficient and equitable school funding scheme. The formula that has been proposed is the result of a long development process, which has included a piloting phase and consultations with national experts (Sange-SFK, 2012) and international ones (see, for example, UNICEF, 2012). Its final form (as piloted) is the result of the own analytical effort by the Ministry of Education and Science and its subordinated institutions, and so reflects the needs and sensitivities of Kazakh education leaders. Also, the new funding model exhibits some positive aspects. The division of education expenditures into two separate parts, to be borne by central and local authorities respectively, has also been successfully introduced in other countries to allow adaptation to local conditions and cost levels (see Annexes 3.A1 and 3.A2). Also, the formula allocates the funds to individual schools and takes full consideration of the existing regulations. The exclusion of small-class schools from the application of the formula, at least at the beginning of the pilot process, seems reasonable as funding small rural schools through a unique national allocation formula is not an easy task.

The distribution of resources to schools through a formula is more likely to lead to a more efficient and equitable allocation than other methods, including the discretionary and incremental current funding model of Kazakh schools (see Box 3.3). A per student funding scheme implies that resources are calculated for every student and that a specific formula is drawn, often in the form of a mathematical equation. A well designed funding formula can, under certain conditions, be the most efficient, equitable, stable and transparent method of funding schools (Levačić, 2008). Formula funding combines both horizontal equity – schools of the same type (for example, primary schools) are funded at the same level – and vertical equity – schools of different types (for example, general academic and vocational schools) are financed according to their differing needs. It can also provide incentives for a better use of resources.

The distribution of resources on a discretionary or incremental basis, the current method used in Kazakhstan, is rarely efficient or equitable. Schools have no incentives to reduce their expenditures or increase their efficiency. Actually, schools have incentives to run into deficits with the hope that others would absorb them and inflate their expenditures with the purview of obtaining larger allocations in further years. This practice is known as *deficit budgeting* in many post-Soviet countries. Negotiation processes reflect the priorities and relative strengths of local actors and those who can prove most convincingly that they have greatest needs. The response to perverted incentives has been to extensively regulate the allocations (e.g. employment, utilities) in order to protect schools from unilateral budget cuts and at the same time lower the expected allocation. However, in most cases, the actual application of the norms depends on the attitudes of decision-makers and thus might be applied differently. Moreover, discretionary and incremental funding models tend to be associated with low levels of budget transparency.

Formula funding offers more scope and more tools for achieving equity and efficiency, but these are by no means guaranteed. Indeed, inadequate formulas or wrongly assessed coefficients may exacerbate inefficiencies (for example, by helping to preserve small-class schools which may be consolidated), as well as inequities (for example, by providing more funds to schools or regions which historically had higher allocations). The level of equity and efficiency achieved depends, among others, on the extent to which formula funding meets the following conditions:

- Coefficients should adequately reflect different per student costs of providing education. This is not an easy task when class size varies greatly due to the existence of rural or remote schools. Difficulties also emerge in the consideration of students' and schools' needs in the formula (e.g. curriculum requirements, school equipment, students' learning pace). A balance needs to be struck between a simple formula, which might fail to capture everything, and a sophisticated formula, which might be difficult to understand and adjustment might result in unexpected and unwelcomed results.
- Budgetary discipline entails not compensating overspending of *rayons* and schools unless justified by exceptional circumstances (i.e. emergency conditions, unexpected enrolment growth). This means that they need to plan their budget in a realistic way and be careful to ensure sufficient funding is allocated to key budget categories (salaries, heating, teaching aids). At the same time, they have to limit these required expenditures and allocate funds for school development. This is very difficult, in part because it goes against the traditional mentality of always "saving" schools which ran into problems, and in part because hard budget constraints can be imposed only if there is consensus that formula-based allocation is adequate and sufficient.

Local discretion in the allocation of resources is key to enable matching in line with their needs and priorities, not hampered by excessive regulations and instructions. Without such flexibility, when national norms dictate large parts of school budgets, budget discipline may become a tool for inefficiency, because no national rules can adequately reflect all specific particularities of individual schools. However, formula funding may be difficult to implement and may not cover all schools' costs (infrastructure, staff, etc.) and requires transparency and sufficiently detailed and reliable data (Levačić, 2008). While the conditions above are not always entirely met, in general, formula funding yields more effective and equitable results than other methods.

Box 3.3. **Approaches to school funding**

There are three main methods to determine the annual allocation of resources that schools receive:

- *Administrative discretion*, which is based on an individual assessment of each school. Although it can serve schools' needs more accurately, it requires extensive knowledge of each school and measures to prevent misuse of resources. While it might involve the use of indicators, it differs from formula funding because the final allocation might not necessarily correspond to the calculations.
- *Incremental costs* is another type of school funding scheme, which takes into consideration the historical expenditure to calculate the allocation for the following year with minor modifications to take into account specific changes (e.g. student numbers, school facilities, input prices). Administrative discretion and incremental costs are often combined, and usually these are used in centralised systems.
- *Formula funding* relies on a mathematical formula which contains a number of variables, each of which has a coefficient attached to it to determine school budgets (Levačić, 2008). Formulas typically contain four main groups of variables: (i) basic: student number and grade level-based, (ii) needs-based, (iii) curriculum or educational programme-based, (iv) school characteristics-based. It is common to combine a per student formula funding for some expenditures and other approaches for others (e.g. incremental costs, administrative decisions); for example, capital costs are rarely included in a per student formula.

Source: OECD (2012), *Equity and Quality in Education: Supporting Disadvantaged Students and Schools*, *http://dx.doi.org/10.1787/9789264130852-en*.

A vast school network and targeted measures ensure student access to education

The almost universal access to compulsory education from primary through upper secondary education is one of the most remarkable strengths of Kazakhstan's education system. The strong official commitment towards universal schooling is reflected in the extensive school network covering most of the country's far-flung rural settlements through the right to create small-class schools and the use of boarding schools and transportation for children from villages without educational institutions. Of the roughly 2.5 million school-aged children in Kazakhstan, only 34 817 (1.4%) live in communities without a school; of these, 26 738 receive transportation to school and most of the remaining children live in boarding schools or with relatives near the schools they attend.

Kazakhstan has in place targeted programmes to ensure that all children are in school. One of the main objectives of the ambitious construction programme "100 schools, 100 hospitals" was to decrease the deficit of school places and it appropriately targeted

regions experiencing a demographic boom (see below). There are also programmes targeted at individuals who have dropped out of school or are at risk of doing so, such as the programmes "Road to School" and "Care". Also, schools receive additional funding equivalent to 1% of their budget to be spent, among others, to financially support students who are at risk of dropping out.

There are important efforts to improve infrastructure, equipment and learning materials

Infrastructure

In recent years, Kazakhstan's government undertook significant efforts to upgrade school infrastructure and meet demand in regions with growing student populations. Most schools were built during the Soviet construction boom of the 1960s to 1980s, and by the turn of the 21st century many showed the signs of their age. The "100 schools, 100 hospitals" programme, which was in place between 2007 and 2011, resulted in the construction of 106 schools by the central government. Many more were built or rehabilitated using local budget resources. The use of targeted development transfers from the national budget for the construction of education facilities has been particularly effective. According to a 2012 World Bank report, the thorough process and clear selection criteria led to a well-targeted distribution to the neediest regions (South Kazakhstan and the city of Astana) (World Bank, 2012). By far the largest share of the programme's resources (27%) went to building schools in South Kazakhstan region, which accounts for one-fifth of the total school enrolment in Kazakhstan. Other regions with growing student populations or high proportions of three-shift schools (Astana, Mangystau, Kyzylorda) also received significant allocations, while regions with school infrastructure surpluses (North Kazakhstan, Karaganda) received the least. The State Programme for Education Development (SPED) 2011-20 also includes school construction as one of its key objectives, in particular by reducing the number of schools in emergency condition or operating in three shifts.

Equipment

Considerable efforts have also been made to equip most schools with laboratory and ICT equipment, textbooks, and learning materials. The e-learning programme, in particular, is an ambitious attempt to bring broadband coverage and modern information technology to schools and promote the use of ICTs in the learning process. Though still in its early stages of implementation, the programme aims to cover 90% of schools by 2020 (up from 16% in 2013) (IAC, 2014). The large-scale introduction of PCs, laptops, tablets, and interactive smartboards for use in the classroom puts Kazakhstan at the forefront of technology use in schools among countries in the region. The SPED stipulates that by 2020 at least 80% of schools should have modern laboratory equipment and 100% textbook provision. By recognising the value of interactive hands-on learning in the science fields, Kazakhstan is following international best practice to ensure adequate equipping of physics, chemistry, and biology laboratories and their alignment with national curricula.

Learning materials

Most students are provided with free textbooks at all grade levels. Textbooks are available in Kazakh-language, Russian-language and other minority languages, and norms stipulate that they are to be provided free to all students. New textbooks come with CDs and methodological guidelines for teachers. There are also reading books available for

student reading. By expanding free distribution of required textbooks to all students, the country's policymakers are aiming to make sure that all students have access to the necessary learning materials regardless of their physical location or family status. The process for designing, preparing and approving new textbooks is aimed at ensuring a high pedagogical quality. The review team was shown new primary school textbooks that appeared to be identical for Kazakh and Russian language groups.

Recruitment procedures and the existence of a career structure benefit human resource management

Teachers and school principals are hired locally through competitive procedures

As indicated earlier, in Kazakhstan, the area of greatest autonomy for schools is teacher selection and dismissal. According to PISA 2012 data, 81% of 15-year-olds attended schools whose principals reported that only principals and/or teachers have a considerable responsibility for selecting teachers for hire, against an OECD average of 49% (OECD, 2013a, Figure IV.4.2). The equivalent figure for responsibility for dismissing teachers is 76%, against an OECD average of 36% (OECD, 2013a, Figure IV.4.2). This is a strength in a system where schools are individually judged on their ability to improve student learning. A direct interaction with the applicants takes place, typically through interviews, and allows the use of a more complete set of criteria to match individual applicants' characteristics to schools' specific needs. Also, the process of open local recruitment of both teachers and school principals offers advantages to applicants since they can more directly choose the school and identify with the school's educational project. As a result, the process is more likely to build a sense of commitment of school leaders and teachers to the schools where they are recruited. Local recruitment is particularly important for schools to build the prevailing collaborative spirit observed in Kazakhstan (see Chapter 4). Woessmann (2003) used data from the Third International Mathematics and Science Study (TIMSS) to examine the relationship between different aspects of centralised and school-level decision-making and student performance. He concluded that students in schools with autonomy in deciding on the hiring of teachers performed statistically significantly better in mathematics and science, as did students in schools that could determine teacher salaries themselves.

Recruitment practices for teachers and school leaders are required to involve advertised positions. All candidates meeting the eligibility criteria can apply and a public competition is held with the objective of ensuring transparency to the process. The selection includes a diverse recruitment panel in order to elicit different views on the candidates as well as increase the objectiveness and transparency of the selection. In the case of school principals, the inclusion of key stakeholders in the panel is likely to benefit the legitimacy of the newly selected principal in the school. Interviews are performed to shortlisted candidates in order to provide them with more opportunities to show their knowledge, skills and capabilities whilst making sure that the selected candidate matches the school's specific needs.

However, it is important to note that school autonomy in teacher recruitment involves some complexity as there is the potential for an inequitable distribution of teachers (as schools with more resources and located in advantaged areas have greater potential to attract high quality teachers) and opportunities for favouritism in teacher selection by schools. The latter requires transparency in recruitment processes through making information about existing teaching openings publicly available. The review team formed

the impression that job openings for teachers are not always widely disseminated within the education system and, sometimes, not properly disseminated within *rayons* and *oblasts*. At the same time, it is important to develop school leaders' skills in personnel management and use school attestation to monitor schools' approaches to teacher recruitment. Another major limitation is the lack of selection criteria to recruit school leaders, which is particularly important to guarantee an unbiased decision when recruitment is done at the local level (OECD, 2008b). Finally, the veto power of the head of education of the local authority might hinder the recruitment of the best candidates in some cases.

A positive development is the existence of some incentives to work in rural areas where schools might have more difficulties in attracting high quality teachers and school leaders (special allowances and in-kind support). These assist rural schools in making their employment conditions more attractive and can reduce the potential inequitable distribution of teachers which may result of a more decentralised approach to teacher recruitment. However, the practice of reducing certain salary supplements for additional tasks (e.g. correcting homework; managing a class) on the basis of class size, which tends to affect more teachers in rural areas (where class size is typically smaller), is debatable in terms of the negative incentives it gives to work in rural areas.

A clear career structure recognises and rewards teacher performance

In Kazakhstan, teachers benefit from a clearly established career structure with four steps associated with a teacher certification process (teacher attestation, see Chapter 4). The existence of a career structure for the most part accomplishes two important functions: the recognition of experience and advanced teaching skills with a formal position and additional compensation; and the potential to better match teachers' skills to the roles and responsibilities needed in schools, as more experienced and accomplished teachers may be given special tasks within schools (e.g. mentoring of beginning teachers). These convey the important message that the guiding principle for career advancement is merit and have the benefit of rewarding teachers who choose to remain in the classroom.

Teachers, as they access higher categories of the career structure, are expected to have deeper levels of knowledge, demonstrate more sophisticated and effective teaching, take on responsibility for curricular and assessment aspects of the school, assist colleagues and so on. Given the potential greater variety of roles in schools as the teacher goes up the career ladder, the career structure fosters greater career diversification. Such opportunities for diversification already exist in Kazakh schools as with management responsibilities for teachers at schools, participation in methodological associations and mentoring of beginning teachers. These are likely to have a positive motivational effect. However, the different categories in the teacher career structure are not clearly associated with given roles and responsibilities in schools.

Attention is placed on equality whilst catering to diversity

Educational norms set standards to ensure equal treatment across students within schools. Every aspect of schooling is regulated in a clear and detailed manner, from elements related to the educational process (e.g. teachers, instructional time, curriculum, instructional materials) to more trivial ones such as the temperature of the building. Most resources are distributed on the basis of detailed norms that generally make no mention of student characteristics other than the grade level. In this way, norms seek to foster equal

opportunities as most schools are supposed to receive comparable resources. During its field visits, the review team observed strong efforts from schools to apply the norms to the best of their ability.

In addition to the great attention to equality and standardisation, the school system recognises that some groups of students require a specific treatment. For example, the Kazakh school system provides specific conditions for the following groups:

- *Ethno-linguistic minorities*. Attention is paid to ensure that the school system caters to students from an ethnical or linguistic minority group. The population of Kazakhstan is historically multi-ethnic and the government promotes toleration and harmony.
- *Gifted students*. Mechanisms to identify and provide gifted students with advanced learning opportunities are well developed in Kazakhstan. Gifted students are identified through psychological school entrance tests and on the basis of academic performance and results in the Olympiads. Many also apply to, and might receive scholarships, to attend specialised schools. The most academically gifted are admitted to the Nazarbayev Intellectual Schools with full scholarships and boarding opportunities as required. These programmes recognise children's differential talents and abilities and provide them with opportunities to develop their skills at a more accelerated pace.
- *Students with disabilities*. Increasing attention has been placed in accommodating children with disabilities in mainstream schools. Recent efforts and stated ambitions towards educating children with disabilities in mainstream schools are encouraging.
- *Low income and at-risk students*. Norms and targeted financial support are used to ensure that students with socio-economic difficulties attend school. Strategies used to ensure support to needy students are establishing a requirement for schools to closely supervise student attendance and regularly monitor out-of-school children as well as the existence of school psychologists and social pedagogues in schools. Another strategy is the use of targeted financial support, which has been articulated through the definition of several categories of disadvantage. Students who are considered disadvantaged are entitled to certain benefits such as free meals. Also, schools are supposed to receive an allocation amounting to at least 1% of their budget from local governments to be distributed to students in economic difficulty.

Challenges

There are inequities in the distribution of resources

Resource distribution could better account for the specific needs of students and schools

The distribution of resources is limited in the extent to which it takes account of the specific needs of students or schools. The strict application of norms to ensure equality across students is detrimental to efficiency and equity. By severely constraining the frontier of possibilities for schools and local governments to match the mix of resources to the specific needs of schools and of local education systems, allocations are inevitably suboptimal. Schools and *rayons* have little flexibility to invest more in human resources (by increasing staffing levels or by raising teacher salaries) if these are more acutely needed, or alternatively to invest in physical resources (school buildings, school equipment such as smart boards), if the present ones are insufficient or outdated.

Limited attention to the specific needs of students and schools also results in inequities. There are very few programmes and resources targeted at students from a disadvantaged background or with learning difficulties. This means that disadvantaged or

low performing students are in an unequal footing. If the design of finance schemes does not take into account the sometimes marked differences in the costs of students' instruction, schools may provide lower quality education or seek alternative ways of raising money that can hinder equity. The review team observed differences in resource availability between schools serving different types of students. Rapid urbanisation and strict adherence to norms disadvantages some students attending urban schools, which tend to operate multiple shift schedules with overcrowded classrooms. Similarly, the rapid expansion of the student population means that some students in crowded schools lack free textbooks. PISA data indicate that approximately 12% of 15-year old students did not have textbooks for key subjects in 2012 (OECD, 2013a).

The current concept of disadvantage used is too narrow

The concept of inclusive education may be overly narrow in Kazakhstan as it focuses too narrowly on disabilities and more extreme socio-economic conditions and results in a relatively small number of students entitled to receive support. The review team was told that out of approximately 4.5 million children aged 15 or below, only 220 000 to 260 000 (approximately 5%) come from "vulnerable groups". In one school enrolling over 1 600 students, only 100 students (6%) qualified for free meals under current norms. Existing norms have little ability to encompass more students in the "disadvantaged" category or to allocate more resources to more disadvantaged students. Schools with higher shares of either disadvantaged students or students with learning difficulties receive no additional resources. Yet international research is clear in finding that properly designed and financed compensatory education programmes can reduce the gap in achievement between advantaged and disadvantaged schools and students (McEwan, 2008). This is highly relevant to Kazakhstan given the evidence that shows that socio-economic background of students and schools make a difference in students' performance (see Chapter 1).

Although steps have been taken in Kazakhstan to broaden the concept of inclusiveness, the review team formed the impression that the discussions are still far from the concept of equity prevalent in OECD countries. OECD countries recognise that schools with higher proportions of disadvantaged students are at greater odds of suffering from a myriad of social and economic problems that can inhibit student learning. In addition, a higher share of disadvantaged students can have adverse effects on the school climate and increase the complexity of their learning needs (Lupton, 2004).

Little support is provided to low performing students

There is no systematic policy or guidelines to support students who are falling behind with their learning. This often goes alongside little recognition of education policy of the fact that learning difficulties might be the result of difficult socio-economic circumstances. Support to individual students with learning difficulties is provided at the initiative of schools but no additional resources are allocated to schools that have a larger share of low performing students. Lack of systemic support is likely to leave schools trapped between more demanding learning environments and inadequate resources.

The inclusion of students with disabilities remains limited

Schools in Kazakhstan do not appear to be making enough progress in accommodating children with disabilities. While the effectiveness in meeting the needs of students with a disability is not the focus of this Review, it was analysed in depth in a previous OECD

Review of students with special needs and disabilities in Kazakhstan, the Kyrgyz Republic and Tajikistan (OECD, 2008a). The Review noted that the main challenges in Kazakhstan are catering to students with disabilities and special needs in mainstream schools rather than in separate correctional schools and the existence of large numbers of children with a disability and special needs who were not in any school, special or mainstream, and receiving little or no useful education in their own homes. In separate schools, students might have fewer opportunities to access the full curriculum, interact with other children and develop the abilities and potential that they share with other children. The Review recommended adopting the wider concept of "special needs education", the prevailing one in the majority of OECD and many other countries, which aims to educate most students in mainstream schools and only those with serious disabilities in specialised schools. A recent meta-analysis found that including special needs students within regular classrooms had neutral to positive effects on the achievement of their classmates (Ruijs and Peetsma, 2009).

Despite the measures undertaken in recent years, the road ahead towards full inclusion of students with special needs and disabilities seems to be long in Kazakhstan. When children with a disability do study in mainstream schools, they tend to be segregated into special classes; approximately 400 schools have such special classes, attended largely by approximately 8 000 students with "developmental delays." Moreover, many special needs students are still institutionalised into special boarding schools or are studying at home rather than in their local school. For example, out of approximately 39 000 children with a disability identified in 2012-13, approximately half were orphans with a disability in boarding schools, one-third were other children with a disability being educated in boarding schools and approximately one-fifth were studying at home, which may mean they were for all practical purposes out of school (IAC, 2014). Low pre-primary enrolment rates might result in many children's special needs going undiagnosed or unnoticed until primary school. There is a severe lack of services to address disabilities before or during schools; there are very few education professionals trained to work with children with disabilities, technology is not available to schools to support children with special needs, and medical services are not always available for children with severe developmental problems. Although new construction and rehabilitation norms require the physical modification of schools to accommodate children with a physical disability, these norms are inconsistently applied. The review team found no evidence of either ramps or elevators in the more modern schools it visited, and in older schools we encountered hazards such as uneven floors and stairs lacking hand railings. Furthermore, few steps have been taken to reduce the number of special needs children educated in their own homes, or improving the quality of the education they receive.

There is an overemphasis on top-performing students

Kazakhstan's education system places great importance on preparing students for participation in academic Olympiads and gives high priority to "gifted children", while the performance of average or lagging students does not receive the same attention. About 17% of the Republican budget for education in 2013-14 was targeted to the training and education of gifted children, organisation of Olympiads, and contributions to Nazarbayev Intellectual Schools (NIS). Students' success in the Olympiads is a source of pride and satisfaction for schools; students who have won awards tend to be featured in the corridors of schools and teachers are rewarded with bonuses and better career prospects.

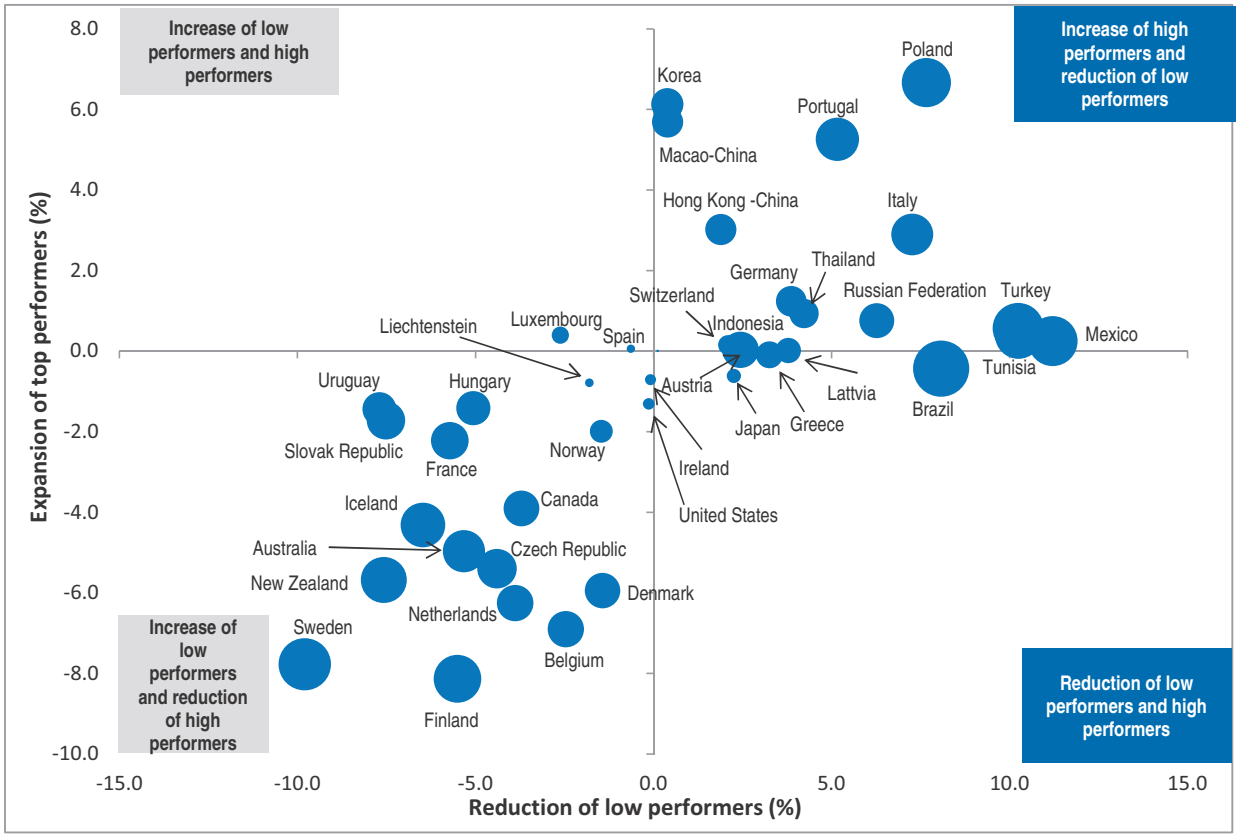
The small set of NIS schools is funded at levels considerably higher than mainstream schools. If all schools in Kazakhstan could be resourced at the same level as the NIS, the current budget for general education would increase by more than 300%. While this inequity has little overall effect on the allocation of resources across the system, it limits the validity of NIS schools as innovation labs because the conditions in these schools are so much better than in the rest of the network. In particular, the current number of NIS schools is not sufficient to ensure large scale impact across the national education system, and the clear vision of the future of NIS schools, including how many there should be, is not yet adopted.

While NIS schools or similar schools catering to gifted students do not directly discriminate students on the basis of their family income, economically disadvantaged students may have little access to extracurricular classes that prepare for admission to these schools. The annual costs associated with extra classes in subjects that are prerequisites for admission to NIS or universities are relatively high. For example, in Astana, each class offered by one extended education organisation costs 5 000 Kazakh Tenge (KZT) per month, or about KZT 50 000 per year. Children applying to grades 2-6 of NIS are tested in mathematics, Kazakh language, Russian language and English language; only classes in Kazakh language are offered free of charge by this organisation. In addition, children applying to grades 7-11 of NIS must take tests in a science related to their direction; classes in physics are also charged KZT 5 000 per month. The total cost associated with these extra classes, therefore, could be as much as KZT 200 000 (approximately USD 1 100) per year – close to 10% of GDP per capita (IAC, 2014); these costs are incurred by a high share of students who wish to apply to university programmes (NCESE, 2012).

The Kazakh approach to top performers is of particular concern in view of the size of the country and is not yielding the expected results. With a small population, the opportunity costs are very large. Underdeveloped human capital hampers productivity growth and limits the effective and full use of resources (Heckman, 2011). International assessments do not show an extraordinary number of top-performing students while they show that a large number are falling behind their peers in other countries. For example, while Kazakhstan produced 881 school-aged winners of international science competitions in 2010 (OECD, 2014b), only 0.2% of its 15-year-olds scored at the top two levels of PISA science assessments in 2012 (compared to the OECD average of 8.4%). At the same time, 42% of Kazakhstan's students scored below the basic science proficiency level in PISA 2012 (versus an OECD average of 18%) (OECD, 2014d).

Evidence from PISA suggests that improving high and low performance can go hand in hand, but it is reductions in low performance which drive overall improvements in the education system. A total of 39 countries and economies from OECD and non-OECD countries participated in both PISA 2003 and 2012 rounds in which the main field of assessment was mathematics. The ten countries that achieved the greatest increase in the mean average performance, adjusted by differences in sample size and socio-economic composition of students, were in ranking order: Brazil (35 score-points), Tunisia (29), Mexico (28), Poland (27), Turkey (25), Portugal (21), Italy (20), Indonesia (15), the Russian Federation (14) and Korea (12) (OECD, 2014d) (see Figure 3.2). Eight out of the ten countries and economies with the highest average improvement are also among the ten countries with the highest reductions in the number of low performer students. Only half of those countries with the highest average improvement were among the ten countries with the highest increase in

Figure 3.2. **Change in the average score and proportion of top and low performers in PISA from 2003 to 2012**



Notes: Bubbles are sized according to the change on the average score. The horizontal axis refers to the reduction of low performers (i.e. a positive change means a reduction of the proportion of low performers) and the vertical axis refers to the increase of high performers (i.e. a positive change means an increase of the proportion of high performers).
Source: Data from OECD (2014d), *PISA 2012 Results: What Students Know and Can Do (Volume I, Revised edition, February 2014): Student Performance in Mathematics, Reading and Science*, http://dx.doi.org/10.1787/9789264208780-en.

the number of high performers but they are all among the top 20. By lifting the performance of their lowest-achieving students, these countries and economies have narrowed the gap between high- and low-achieving students and, in some cases, increased equity as well, as many low-achieving students are also from disadvantaged backgrounds.

The new school funding model requires further development

Governance

The new funding scheme involves a partial recentralisation of school finances as the bulk of educational expenditures (namely funds for educational process) will be determined at the central level and transferred from the Ministry to schools, via the respective *oblast* and *rayon*, on the basis of the formula. Local governments will have fewer opportunities to adjust the allocations to local needs. At the same time, no mechanism has been created to address the differences between the theoretical calculation of needs through the formula and the actual needs of schools. In the context of Kazakhstan, where the quality of data can be of concern (see Chapter 5), the use of a data-driven approach such as a formula with limited ability to adjust to the great diversity of conditions in which schools operate might pose important challenges. In other countries, such as Lithuania, the grant is transferred to the

local government which then has the right to reallocate a limited amount (up to 5%) of the grant funds between individual schools (see Annex 3.A2). This provides some measure of flexibility without increasing the amount of required data for the formula.

The formula will not apply to schools for gifted students – including the NIS schools – and small-class schools. The finance mechanisms for these types of more costly schools have not been reviewed yet. Thus, there is a risk that gifted and small-class schools will continue to be financed with the current model. While there are just a few NIS schools in the country, small-class schools comprise about half of all general secondary education institutions, so perpetuation of their current financing is very problematic, as it is likely to exacerbate the inefficiencies and inequities of the system. Also, the existence of multiple finance mechanisms increases the management costs and might hinder public accountability. If the allocation formula for the educational process part of school budget is rolled-out nationally without inclusion of small-class schools, it will become very difficult to unify school financing in the future.

Design

Unlike a typical allocation formula for schools, the equation proposed in Kazakhstan does not clearly identify groups of students for whom separate per student amounts should be allocated. It uses both student characteristics (for example, grade level) and teacher characteristics (for example, add-ons to salary due to school location), see Annex 3.A1. Thus, it cannot be considered a genuine per student formula. Instead, it defines a complex set of coefficients governing teacher resource needs through the number of classes (determined by the number of students and by assumed class sizes) and through a large number of indices related to different compulsory allowances.

The formula is overly complex. The large number of indices and cases means that the formula will be almost specific for every school, which might make its application more difficult and costly, and raise transparency issues. Applying the fundamental counting principle, we can deduct that the formula contains more than 200 standards.[5] Of course, these are just different per student amounts as allocated by the formula, the formula itself does not separately list these standards. The existence of a large number of standards means that the formula is more costly as well as less stable and predictable. The maintenance of a price index for each of the standards is very costly. Moreover, the introduction of new rules and classifications might require a major restructuring of the formula. In addition, the overall allocation to schools is more difficult to predict as any adjustment might generate unwelcomed deviations from the original allocation. An overly complex formula also hinders transparency and the ability of all stakeholders to understand how resources are distributed.

Despite the large number of standards, the formula might not capture with enough accuracy class size, which greatly varies in Kazakhstan and strongly influences the costs of provision. Only two normative class sizes have been defined: 20 for rural schools and 24 for urban ones. In contrast, the Lithuanian allocation formula, for example, uses twice as many normative class sizes (10, 15, 20, 25) despite being a smaller and more homogenous country. Moreover, the normative class size for rural schools (20 students per class) is very large and thus is likely to allocate insufficient resources to some of them.

Another variable of concern is the reduction in the allocation to be applied when maximum class sizes are exceeded. The reduction is difficult to apply and has a small deterrent effect. To apply the reduction, the Ministry will require accurate reliable information about the number of students in every class and in every school in the country. The collection

and verification of such data is likely to represent a sizeable challenge. The actual reduction seems too small (at most 6% reduction for students above 40 in a given class) to produce a deterrent effect. Indeed, more stringent approaches could be considered to discourage excessive class sizes, such as not allocating funding for any student exceeding the threshold. A more simple and effective approach would be to remove this element of the formula and use school inspection and attestation altogether to ensure that classes are not too large.

Implementation

As originally planned, the timeline for the implementation of the new funding model is certainly too tight. The piloting time is also very short to observe and assess the effects of the new financial mechanism and new managerial procedures. Moreover, the sample of schools selected for the pilot might be too small to extrapolate the findings to the national level. In addition, as originally planned, the pilot would end just before the full roll-out expected for 2015.[6] There might not be enough time to conduct a thorough review of the results and further refine the formula. The new funding model also requires changes in the intergovernmental transfers and thus will impact national, regional and local budgets, which will be negotiated before the end of the pilot.

The impact of the new funding scheme, as piloted, has not been thoroughly analysed, although the Financial Center conducted some analysis at the end of the 2013-14 academic year. No nation-wide simulations of the effects of the new allocation mechanisms were conducted or are even planned. Such simulations could provide insights into the potential impact of its implementation in school, local, regional and national budgets as well as help prepare for the actual calculations of allocation, including ensuring that all required data are available, accurate and reliable. Such simulations, in particular, would reveal which schools and *rayons* who would win under the new financial model (would receive allocation higher than historical costs), and those who would lose. This is in turn necessary to assess the need for a transition period with hold-harmless clauses, and to prepare all stakeholders for the forthcoming changes. The review team heard during the meetings that little importance has been attached to the simulations of winners and losers at the school level with the new funding methods as nominal expenditures on education are on the rise. While all schools might receive at least the same nominal amounts, some schools might be worse-off in real or relative terms. In contrast, the introduction of a buffer mechanism (i.e. hold-harmless clause) for a limited period to help schools and local authorities adjust is common in other countries.

Furthermore, despite the efforts to provide clear information about the new funding methods, the review team formed the impression that local authorities and school principals might be uncertain about the implications for their schools. This means that those who hold considerable responsibilities for actually implementing the reform might have an insufficient understanding of the principles and practical issues which they will face in the very near future. Thus, the risks of the national roll-out of the formula in this situation are considerable.

Small-class schools raise quality, equity and efficiency concerns

Inefficiencies

An extensive school network populated with a large number of small-class schools might not be the most cost-effective option to deliver education services in rural and remote areas. The preponderance of small schools is driven by the Soviet-era belief that every village deserves its own school, despite the presence of many small schools within a

short distance of each other, without sufficient regard to the quality, equity and efficiency of the education services provided. Small-class schools operate in villages with as few as five school-aged children, which would imply a student-to-teacher ratio of 5 to 1, and represent high unit costs. Indeed, the strict application of staffing norms squeezes school budgets as low student-to-teacher ratios are at the expense of either the quality of teachers, maintenance, equipment and instructional materials.

Inequities

Students in small-class schools tend to suffer from poorer learning environments. Some evidence suggests that the teaching quality in small-class schools is lower than in other schools and thus calls into question the benefits that could accrue from lower student-to-teacher ratios. First, the proportion of teachers at the highest category is between 2 and 3 times lower in rural than in urban areas (see Annex 3.A3). Similarly, the proportion of teachers with "No Category" is systematically higher in rural areas. Assuming that a higher category in the career structure is associated with teachers with greater competencies, students in urban areas are, on average, provided with higher quality teachers than students in rural areas. This contrast is also visible, even if to a much lesser extent, in the proportion of teachers with no higher education qualification (91% in urban areas and 86% in rural areas, see Table 3.2). There is also some anecdotal evidence that highly effective teachers are less likely to work in disadvantaged schools and more likely to work in schools for gifted students (OECD, 2014b). Second, schools located in rural areas are more likely to experience teacher shortages in specialised subjects. Third, initial teacher education programmes might not prepare teachers for the specific challenges that they will face in small-class schools, such as multi-grade teaching, whilst international research shows that effective multi-grade teaching requires capable teachers with a specific preparation to teach in these environments and additional resources, such as different types of instructional materials (Mariano and Kirby, 2009; Veenman, 1995; Burns and Mason, 2002).

The availability and quality of instructional materials and equipment in small-class schools can also be questioned. The review team noted during the visit that teachers in small-class schools reported having to purchase "everything" – all instructional materials other than the students' textbooks. In addition, staff at one school mentioned that full sets of textbooks were provided every five years, with no annual replacements for unintentional losses or damage; the result was that some students in some grades and classes did not receive free textbooks. However, according to the official regulations, 20% of textbooks are to be replaced every two years to take into account wear and tear. Similarly, rural small-class schools also reported that their lack of internet access contributed to the absence of such newer technologies as "interactive white boards" in these schools; nearly all (93%) of urban schools but fewer than half (43%) of rural schools have "interactive classrooms" (IAC, 2014).

Lower performance

National and international student assessments suggest that the learning environment in small-class or rural schools hinders educational performance. The Unified National Test (UNT), Kazakhstan's school-leaving and higher education entrance examination, shows significant differences in participation rates across regions – from 55% in North Kazakhstan to 82% in Astana city – which might reflect the fewer opportunities for specialised learning in grades 10-12 in some geographical areas. Also, the average urban-rural difference in the results was 8.74 points in 2013 in favour of urban areas

(NCESE, 2013b). Significant differences are also observed between cities and other towns or villages below 100 000 inhabitants in the performance of 15-year-olds in PISA 2012, with the reading score gap equivalent to about half a year of school, which is slightly smaller than the OECD average (OECD, 2013b).

And little support exists

The lack of clear strategic vision to improve education service delivery in rural and remote areas hinders the overall performance of the education system. Despite accounting for half of all public schools, small-class schools are increasingly excluded from major policy initiatives, such as the e-learning programme or the new funding scheme. Also, the review team was not informed about any further plans on school network consolidation and schemes to foster between-school collaboration, such as the recent initiative to create resource centres, which is still very limited. The lack of a strategic vision for small-class schools threatens the long-term sustainability and equity of education provision in Kazakhstan's rural areas.

The creation of resource centres, which aim at improving access to quality education for students of small-class schools, has not been carefully planned and scheduled to maximise its impact. The current network is not the result of a school mapping effort to review where education resource centres are feasible, where school consolidation is a better option, and where existing small-class schools need to be maintained. Such an effort is necessary to adequately plan the level of human and financial resources needed by the network of resource centres. In addition, small-class schools have not been consulted as for the type of support that could be more valuable for them. Also, resource centres currently only support about 10% of small-class schools. The timeline and costing of full coverage is unknown. The potential impact of this initiative is also limited by its design. The key initial educational stages have been excluded as the initiative only targets students in grades 8 and 9; including all grades would require a continuous effort by resource centres. Similarly, there seems to be greater scope for mutual collaboration between teachers and school leaders of small-class schools and resource centres.

Significant inefficiencies hamper the management of human resources

Lack of clear standards for teachers and school leaders hinder their potential

In Kazakhstan, there is no national framework of teaching and school leadership standards, a clear and concise statement or profile of what teachers and school leaders are expected to know and be able to do. Approaches to educating, developing and rewarding effective teachers and school leaders are weakened in the absence of profession-wide standards and a shared understanding of what counts as accomplished teaching and school leadership. Teaching and school leadership standards are useful mechanisms for clarifying expectations of what systems of initial education and professional development should aim to achieve, serving as a framework for the selection of candidates in the recruitment processes, offering the credible reference for making judgements about their competence (as in their attestation), guiding professional development, and providing the basis for career advancement. Lack of clear standards also suggests that the criteria used in recruitment, professional development and appraisal are likely to differ across schools.

The current reference in Kazakhstan for the teaching profession and, in particular, for teacher attestation (see Chapter 4), is the "Standard Qualification Characteristics of Teaching Positions and Equated Employees" which includes a description of official duties,

additional knowledge required, and qualification requirements. "Official duties" are a basic description of the main responsibilities of teachers (e.g. preparing lesson plans; communicating with parents), "additional knowledge required" relates to aspects such as knowledge of laws and regulations within the education sector, while "qualification requirements" describe a few basic competencies teachers should have at the different categories of the career structure (e.g. use forms and methods of active learning; assess students). These do not reflect the broad range of competencies that teachers require to be effective practitioners in modern schools. Such descriptions need to encompass the whole range of domains covered by a teacher's work such as planning and preparation; activities within the classroom; instruction; and professional responsibilities and provide a detailed description of competencies teachers should have, within such domains, to be accomplished in their teaching (e.g. communicating clearly and accurately; managing student behaviour and organising physical space; reflecting on teaching) (OECD, 2005).

The Standard Qualification Characteristics of Teaching Positions and Equated Employees specifies a long list of responsibilities for each member of school leadership teams and details the norms that they have to comply with. The review team observed that school leaders are well-aware of these regulations and their meaning. However, it is difficult for them to relate norms to day-to-day work and use them to raise their performance. While the lack of clear standards might not be of concern in a system where school leaders are mainly tasked to manage resources in compliance with norms, standards become an important tool to set clear expectations and hold school leaders accountable in the move towards greater school autonomy (as recommended in Chapter 2).

Initial teacher education raises a range of concerns

Initial teacher education raises a range of concerns. First, there is some anecdotal evidence indicating that initial teacher education is not attracting the best candidates from school education. This reflects the loss in the attractiveness of teaching as a result of low salaries, difficult working conditions and the low status of the profession. A consequence of this is the high degree of feminisation of the profession, considerably above the OECD average. Indeed, teachers' relative wages are likely to affect not only the number of people who are willing to teach, but also their characteristics. The growing feminisation of teaching has been attributed, in part, to the relative decline of teacher salaries over the long term (OECD, 2005).

Second, the quality of initial teacher education programmes is not warranted. In Kazakhstan, it is possible to teach in primary school with a teacher education degree obtained from vocational and technical education at secondary or post-secondary non-tertiary level. About 12% of teachers do not have a higher education qualification for teaching. In addition, there is an impressive supply of initial teacher education programmes, on offer at 62% of the institutions of higher education in the country of which less than half receive public funding. These aspects raise concerns about the quality of teachers' initial preparation.

Third, there are indications that the teacher education system is producing an excessive number of graduates. In the 2012-13 academic year, pedagogical colleges at pre-tertiary level produced 9 223 graduates of primary teacher education programmes while institutions of tertiary education produced 33 371 graduates who can teach in general school education. This number of graduates is significant as it corresponds to 11.4% of the entire teaching workforce. Of course, only a fraction of graduates go into

teaching as some engage in further study (particularly graduates from pedagogical colleges) and others select other jobs within and outside education. In light of the current size of the teaching workforce (and current student-teacher ratio levels), there seems to be room for the initial teacher education system to be more selective at the entry point. If teacher education programmes admitted fewer students, and if those admitted were more suited for teaching and more interested in a teaching career, the available resources could be used more effectively.

Fourth, a number of organisational aspects to the organisation of teacher education programmes are problematic. Degrees in teaching are highly specialised, sometimes providing qualifications for just one area such as physics or "Kazakh language and literature in schools with language of instruction other than Kazakh". This grants less flexibility in the teacher labour market as the supply of teacher qualifications is then less responsive to the demand for teachers (e.g. a teacher degree in both physics and chemistry would provide greater flexibility to cover job positions in either of these areas). In addition, the review team formed the impression that practical training in teacher education programmes could be strengthened through both the amount of time devoted to it and the quality of the interactions with schools. Furthermore, entry requirements lack specific assessments to identify teaching potential and assess motivation for the profession as the basis for entry remains the UNT. However, the Ministry of Education and Science is currently designing a specific test for access to teacher education programmes ("Creative Examination"). Finally, institutions of higher education have little autonomy in designing their teacher education programmes as these are regulated at the central level (e.g. specialisations, curriculum, structure of programmes). This is problematic as institutions of higher education are in a better position to understand the needs of schools and respond more swiftly to them. A greater institutional autonomy could also benefit from the existence of teaching standards as the framework for developing the curriculum for teacher education programmes.

The number of teachers and school leaders might be excessive

Analysis of class size and student-teacher ratios as well as of the structure of leadership teams in Kazakhstan provide indications that, compared to the situation in OECD countries, the overall number of teachers and school leaders can be considered high (see Table 3.1). On the whole, Kazakhstan might be facing an oversupply of teachers even if an explanation for this is the significant proportion of small-class schools in the country. At the same time, some care is needed in the interpretation of student-teacher ratios, since in Kazakhstan a teacher's workload is calculated in *stavkas* rather than as "full-time equivalents" and many of these teachers work only part time (see below). The contrast of class size and student-teacher ratios across regions reveals a stark difference in teacher needs between the south and the north of the country and between urban areas and rural areas. While class size and student-teacher ratios are highest in the south of the country and in the two main cities (class size above 20 in Almaty city, Astana city, South Kazakhstan, Kyzylorda and Mangystau), they are lowest in the North of the country (class size is below 14 in Akmola, Kostanai, Pavlodar and North Kazakhstan) (see Table 3.1). It may also denote a relatively low rate of teacher mobility across the country. In spite of the overall oversupply of teachers, there are instances of shortages. These tend to happen more often in some rural areas and in subjects such as mathematics (IAC, 2014).

Also, to comply with staffing norms, schools must employ a considerable number of school deputies. Principals are not able to determine the number of staff that will support them in their functions. Instead, a detailed set of norms establishes the number and functions of deputies in each school depending on its size. Thus, principals have a limited ability to form a leadership team based on his or her leadership style, profile of potential teachers available to take up leadership positions or the specific needs of the school at a concrete point in time. The size of the leadership team might be excessive in view of the high opportunity costs. In particular, the proportion of school leaders to teachers and to students in small-class schools is very high. For example, the review team visited a school of about 150 students with 20 teachers and 7 school leaders. The size of the typical leadership team in Kazakhstan is considerably larger than in OECD countries. In addition, there is some duplication and excessive fragmentation in the distribution of tasks. In schools with two languages of instruction, for example, each language has its corresponding pedagogical deputy even when the same person could handle both language tracks. The 9-hour limit for school deputies to undertake other activities such as teaching or additionally paid tasks also hinders the ability of the school principal to distribute leadership tasks in the most efficient way (see Chapter 4). Whilst teaching might enable them to know better the realities of their own school classrooms and strengthen their position and authority before other teachers, it consumes time that they could spend on school management and leadership.

Inefficient staffing levels are detrimental to the quality of teaching

The large number of staff squeezes school budgets, creates rigidities and crowds out investments in other areas. As school principals have to follow national curriculum norms in allocating teaching duties and cannot alter their salaries determined by national regulations, staff costs become a rigidly fixed expenditure. About 93% of school expenditures in rural schools are devoted to staff compensation. This means that budgets are very tight and that principals have very limited room of manoeuvre to manage resources in a more efficient way or invest in school development activities. Some principals of small-class schools reported to the review team that only salaries and basic facilities maintenance (such as heating and electricity) are funded and that there is no budget for purchasing library books, internet access and pedagogical equipment. Thus, inefficient employment levels are of particular concern because opportunity costs are high as the marginal impact of investments in other inputs is very high.

Given that resources are limited, the large number of staff discourages improvements in their compensation and professional development. Kazakhstan has publicly recognised that low salaries hamper the attractiveness of the profession and some steps have been taken to increase salaries in recent years. The salary gap remains wide and suggests that larger increases are needed to make a difference (see below). However, the large number of teachers limits any sizeable increase. Moreover, investments in the professionalisation of the entire teaching workforce can be questionable under the current staffing levels as the costs of professional development are directly proportional to the number of teachers.

Effective school systems require the right combination of high quality and well-trained personnel, adequate educational resources and facilities, and motivated students ready to learn – and resources must be distributed in a way that allows this. Resources are limited and how well countries succeed in directing them to where they can have the most impact matters. A recurrent trade-off that has a great impact on expenditures due to the

labour-intensive nature of education is the definition of class sizes: small class sizes require a large number of teachers whilst greater class sizes can free up resources to improve teaching quality. Research has found that higher teaching quality has a greater impact on student achievement than smaller class sizes (Rivkin, Hanushek and Kain, 2005).

Teacher employment under the Stavka system raises concerns

The conception of teacher employment in Kazakhstan, whereby basic compensation is associated purely to the teacher's teaching load (*stavka* system), is a source of concern. A recent regional study on recruitment, development and salaries of teachers in the Central and Eastern Europe and the Commonwealth of Independent States (CEECIS) region carried out by UNICEF discusses the *stavka* system in the region (UNICEF, 2011). It notes that, in combination with a low base salary (as is the case in Kazakhstan, see below), "the *stavka* system has in effect turned the teaching profession into a part-time job that encourages teachers to teach excessively, take on an additional job, or look for additional sources of income in or outside the school." This leads some teachers in Kazakhstan to have very heavy teaching loads and others to engage in activities such as private tutoring of students after regular class hours.

A heavy teaching load or a job in addition to teaching leaves little room for teachers to engage in other activities at the school such as collaboration with colleagues, reflection on own practices, mentoring of less experienced teachers, communication with parents and professional development. This is compounded by the fact that teachers are not expected to stay on the school premises beyond their teaching time, which also limits their engagement with students. As explained in UNICEF (2011), "many initiatives that attempt to strengthen student-centred teaching methods do not sufficiently consider the limitations of the *stavka* system in terms of additional pedagogical work." This might lead "to active resistance to implementing student-centred teaching methods that require extensive lesson preparation or formative student evaluation." It is also unclear why, in the teaching profession, tasks such as marking student work, classroom management, in-depth teaching of a subject are to be paid separately, as is currently the case in Kazakhstan. Another key question is the limited time teachers have for the preparation of their classes. As noted in another OECD report (OECD, 2014b) neither the *stavka* system nor the list of tasks paid extra reward time spent on the preparation of lessons. Those with a heavy teaching load or with an extra job find it challenging to prepare their classes thoroughly.

Finally, as concluded in OECD (2014b) the *stavka* system may disadvantage teachers in urban areas where an oversupply of teachers is more common. Less experienced teachers may also find it more difficult to be given the option of taking on higher teaching loads (since these are preferably given to more experienced teachers), and might end up teaching less than one standard teaching load (one *stavka*) which in turn lowers their income and limits the attractiveness of their job (OECD, 2014b).

Low teacher and school leader salaries lead to an inefficient use of their time

Given the complexity of the teacher salary structure in Kazakhstan, it is not simple to analyse teacher salary levels. However, there are good indications that salary levels are low both for teachers and school leaders. A thorough analysis of teacher salary levels in Kazakhstan is developed in OECD (2014b). It clearly shows that basic salaries (base salary with an account of teachers' qualification levels and years of experience) are very low. For example, in Kazakhstan in 2011, the basic salary of a teacher with one teaching load (one

stavka) with a higher education qualification and 15 years of experience in primary and secondary education was 75% and 70% lower than the salary of a worker with comparable academic credentials, respectively. Teacher remuneration only goes above the salary of the average worker with higher education qualifications when he or she works 1.5 *stavkas* (27 hours of teaching), has reached the 1st category of the career structure and obtains average compensation for a number of extra tasks (class management, marking students' work, responsibility for specialised classrooms, evening classes, management of the boarding section of the school, chairing the methodological association or other commissions, and in-depth subject teaching). These constitute probably an unreasonable number of tasks for a single teacher, placing their salary above that of the average worker with higher education qualifications only in 11% (for primary teachers) and 34% (for secondary teachers) (see Table 5.10, OECD, 2014b). As pointed out in OECD (2014b), this simulation demonstrates the magnitude of potential disadvantage in income for teachers whose tenure and/or working environment does not permit taking on additional work. According to data from the World Bank, the minimum starting salary for a teacher in 2013 was 35 747 Kazakh Tenge (KZT), compared to an average salary in the education sector of KZT 68 971. These salaries were considerably lower than those of other skilled professions: the average salary was KZT 210 000 and 81 340 in the banking sector and in the healthcare sector, respectively (World Bank, 2013).

As explained earlier, the low level of teacher salaries (per *stavka*) induces many teachers to teach very high number of lessons per week, up to and sometimes exceeding the regulatory limit of 27 lessons per week. This is of particular concern in cities, where salaries might be insufficient for living expenses. Some schools or local governments have looked into ways around. Thus increasing basic teacher salaries would allow decreasing average weekly teacher load and employ more younger teachers, contributing in this way to improving teaching quality. It is certainly possible to achieve this at least in large, rich cities as Astana and Almaty, but presumably also in an increasing number of regions. However, this is not allowed, except for some limited bonuses which may be occasionally paid to teachers.

It is also clear that the basic salary of teachers is low compared to the generosity and diversity of compensation for additional tasks, extra qualifications, career advancement and "higher-level" professional development. Moreover, the practice of rewarding teachers with financial bonuses, in some regions and in the context of the per-capita funding scheme, seems to be mainly based on narrow criteria such as student achievement in the UNT or at Olympiads – meaning that, in practice they are mostly available to teachers of gifted or advantaged students (OECD, 2014b).

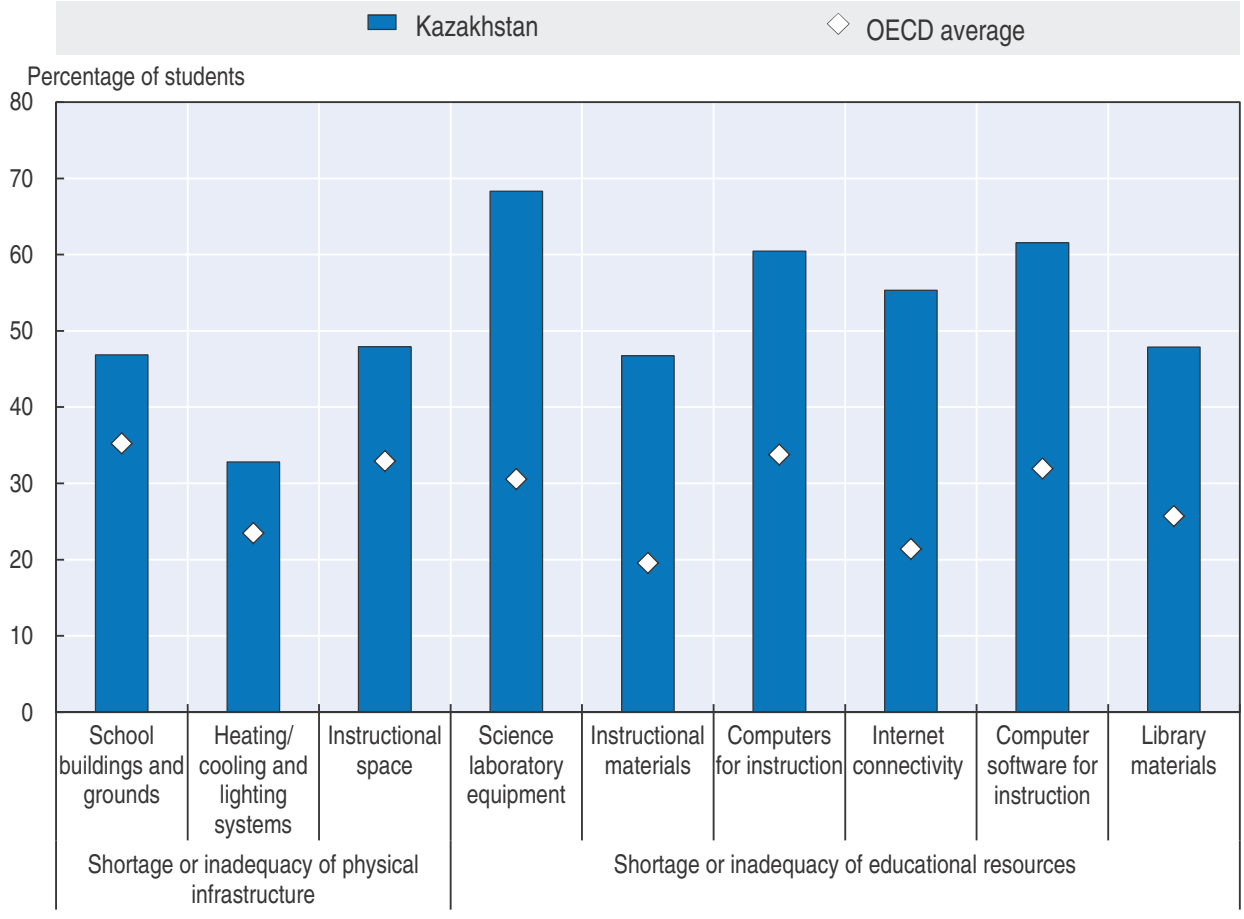
School leaders not only have low salaries compared to other professionals in similar leadership positions but also their salaries might not be higher than those of teachers. The leadership salary premium is not clear-cut: school leaders might be well-compensated or under rewarded for their tasks and accurate data are not available to calculate their average salary. Starting basic salaries are differentiated: new principals earn roughly 8% more than new deputies, who in turn earn 32% more than new teachers. In practice, however, disentangling salary differences is much more complex. The starting salaries of school principals cannot be readily compared with those of new teachers as the former are required to have accumulated at least 5 years of experience to apply for the position. Moreover, all the school deputies interviewed during the Review visit spent 9 hours per week teaching or undertaking other activities for which they also receive the associated

complements, such as the category held. As their compensation is only linked to their years of service, school leaders might have no incentive for performance or to take-up professional development as their effort, progression or achievement does not influence their pay.

There are concerns about the state of school infrastructure

Chronic underinvestment in maintenance and upgrading of schools has left many buildings in need of modernisation in Kazakhstan. Old buildings that fail to heat properly in the winter, or are too expensive to heat, threaten students' health and ability to learn in one of the world's coldest climates. Three-shift schools remain to be used in some parts of the country and two-shift schools are the norm. Schools without indoor toilets are alarmingly common in rural areas of Kazakhstan. Many schools lack basic equipment or instructional materials, despite the efforts undertaken in recent years. In PISA 2012, school principals were asked whether the quality of their schools' physical resources hinders instruction a lot or to some extent (see Figure 3.3) (OECD, 2013a). About one third to half of 15-year-olds are in schools whose principals reported that shortages or inadequacy of school buildings and grounds; heating/cooling and lighting systems; or instructional space

Figure 3.3. **School principals' perceptions of adequacy of physical infrastructure and educational resources**



Source: OECD (2013a), *PISA 2012 Results: What Makes Schools Successful (Volume IV): Resources, Policies and Practices*, *http://dx.doi.org/10.1787/9789264201156-en*.

hinder their school's capacity to provide instruction. In addition, half or more of 15-year-olds are in schools whose principal reported that a shortage or inadequacy of educational resources (e.g. science laboratory equipment, computers, Internet connectivity, computer software for instruction) hinders instruction.

International research findings suggest that physical resources matter below minimum standards. Evidence consistently suggests that the absence of essential facilities is detrimental to learning, although research shows a weak association between school-based inputs, including infrastructure, and education outcomes (Murillo and Roman, 2011; OECD, 2013a).[7] In other words, adequate physical infrastructure and up-to-date textbooks do not guarantee good learning outcomes, but the absence of such resources is likely to have a negative effect. Poorly designed and maintained schools (i.e. those with inadequate acoustics, temperature, light and air quality), often found where educational achievement is low, can have a detrimental effect on teacher and student engagement and adversely affect student outcomes and can pose risks to student and staff health and safety (Higgins et al., 2005). Moreover, the condition of schools can indicate to the community the value of schooling as schools shape the appearance and atmosphere of the surrounding environment.

Policy recommendations

Devote greater resources to low performing and disadvantaged students and schools

Embrace the concept of equity in education

The ongoing discussion in Kazakhstan to define educational inclusion provides an opportunity to embrace the broader concept of equity in education, which can be a more powerful means to level up student performance. An emerging viewpoint across OECD countries is that education systems must enable all students to succeed in their education. Increasingly, it is no longer seen as adequate to provide equal access to the same "one size fits all" educational opportunity. More and more, the focus is shifting towards providing education that promotes equity by recognising and meeting different educational needs. School failure is no longer solely attributed to shortcomings of individual students (e.g. talent, motivation, socio-economic background) but to an inadequate provision of support by schools, and by extension, school systems.

While there is not a single definition of equity across OECD countries, the OECD has defined equity as the extent to which the education system manages to achieve high levels of fairness and inclusion (OECD, 2012). Equity as *inclusion* means ensuring that all students reach at least a basic minimum level of skills. Equitable education systems are fair and inclusive and support their students to reach their learning potential without either formally or informally pre-setting barriers or lowering expectations. Equity as *fairness* implies that personal or socio-economic circumstances, such as gender, ethnic origin or family background are not obstacles to educational success. These two dimensions of equity, fairness and inclusion, often overlap. The highest performing education systems across OECD countries are those that combine high levels of quality and equity (OECD, 2012).

Broader criteria should be established to identify disadvantaged or low performing students and schools in Kazakhstan. As each national, and even local, context is unique, the criteria used are very diverse. Some of the elements typically considered to determine schools that need additional support are (OECD, 2012): (i) student outcomes (marks,

qualification levels, gain and growth, improvement); (ii) physical and human capital (finances, facilities, staff, leadership); (iii) student intake characteristics (socio-economic, migrant, specific groups, language barriers, special needs); (iv) schools' context (e.g. violence); and (v) geography and topography. The use of targeted measures is a data-intensive process that often requires improving data collection in order to capture well differences in disadvantage and ensure the correct identification of beneficiaries.

Review the current distribution of resources through a lens of equity

Achieving high levels of equity in educational inputs and outcomes is a result of a continuous effort. In Kazakhstan, an independent review of current inequities and shortcomings of distribution of resources could shed some light on which reforms could have a greater impact on equity. The results of the review should be made public and lead to discussions on ways to adjust the weights of the new funding model as well as address the current overemphasis on top performers. Educational authorities at different levels should actively monitor equity issues and refine their policies accordingly. This means, for instance, that the educational and innovative activities of NIS schools should be accounted separately and publicly disclosed.

Design mechanisms to provide greater support to low performing and disadvantaged students and schools

Differences in instructional costs need to be taken into consideration in the distribution of resources in order to enable schools to respond to different learning needs and support disadvantaged or low performing students. Resources can be channelled to schools and students in different ways, although most countries have in place a combination of the following mechanisms:

- *The distribution of resources to schools is based on a per student funding formula with a needs-based group of variables* (see below). The additional resources enable schools to better support students with, for example, additional teaching time, specialised learning materials and in some cases smaller classes. In the Netherlands, for instance, the "weight" of each student is determined by the parents' educational level and empirical research conducted by Ladd and Fiske (2009) has shown that schools with a high proportion of weighted students effectively have on average about 58% more teachers per student and also more support staff. In the United Kingdom, starting from April 2011, schools receive an additional GBP 430 a year for every student they enrol that is entitled to a free school meal (a measure of disadvantage), with schools spending this money at their discretion.
- *Specific support programmes can target individual schools or deprived geographical areas* with a holistic approach or a focus on key levers of educational performance. Some countries have specific programmes to promote the acquisition of basic reading skills, for example, or improve teaching in low performing and disadvantaged schools (see Box 4.2). France, for instance, has a long tradition of special education areas in the use of area-based support structures. However, an excessive reliance on supplementary programmes may generate overlap, difficulties in coordinating allocations, excessive bureaucracy, inefficiencies and lack of long term sustainability for schools (OECD, 2012).
- *Provide direct support to students*, such as incentives to stay in education. Incentives may be especially relevant for students in financial need, who might be forced or tempted to leave education when the opportunity cost is high. Some countries, such as Mexico and

England, have had relative success in giving students financial incentives to stay in the education system. However, the complexity of the design of these programmes, their high cost and their mixed results indicate a need also to consider other more cost-effective alternatives (Slavin, 2010).

Postpone the roll-out of the new school funding model and refine the formula

The new school funding model would benefit from further analysis and restructuring before national roll-out is attempted. Indeed, premature roll-out risks locking the country within an unworkable, very complex formula, which would be very difficult to correct. This entails national roll-out being delayed. As of early 2015, the decision was taken and the roll-out postponed to 2018.

The design of the formula should address the challenges mentioned earlier. The formula needs to be clearly focused on students and their needs, and not on teachers and their salary requirements (see Annex 3.A1). In particular, the formula needs to take into account specific needs of specific groups of students. Annex 3.A2 provides an example of the main elements of the per student funding formula in Poland and Lithuania. Of course, it is the responsibility of Kazakhstan experts to identify which groups of students should be identified in the formula and what should be the associated weights. Some basic issues may however be formulated already:

- The formula needs to be both simplified and made more flexible. As discussed in Annex 3.A1, there is too much detail regarding the formation of teacher salaries and not enough flexibility to adjust school funding to very diverse conditions in a huge and highly varied country like Kazakhstan.
- The formula should introduce specific factors for vulnerable groups of students, such as minority students, poor and migrant students and special needs students. Even if initially the values of associated coefficients will be small, over time this may become an important policy tool for the Ministry to address educational problems of different social groups.
- The formula should not try to imitate faithfully specific salary needs of every school, because this is an impossible task and inevitably leads to a very complex and cumbersome formula. Instead, the funding model should allow for some local discretion. One possible approach is to follow the Lithuanian model and allow *rayons* to introduce limited redistribution of funds allocated to schools by the formula (see Annex 3.A2).

Delay in the national roll-out of the new funding model should be used for proper preparation to ensure that the implementation is safe and will not disrupt education provision in any city or *rayon* across Kazakhstan. Some steps of this necessary preparation may be identified as follows:

- The pilot conducted in 2014 did not yield sufficient information about the adequacy and usefulness of new funding model and of new budgeting procedures (including the role of Boards of Trustees). A more thorough piloting effort with an independent monitoring system would be very useful. The report from the monitoring should be made public, and resulting lessons included in the fine-tuning of the proposed approach.
- The inclusion of small-class schools in the formula will prevent splitting the general school system of Kazakhstan into two separate parts, each with a different financing model. While it is certainly easier to implement a new funding model only for larger schools, resulting fragmentation will be very difficult to address in later phases of the reform process.

- No formula can be considered safe for implementation without national simulations. The work necessary to perform the simulations is very similar to the work necessary to actually calculate the allocation in terms of gathering data, putting them together in usable form and performing all the necessary calculations. Crucially, both allow to link individual allocation to schools or *rayons* with the total envelope for education in the national budget. However, simulations have the added value of allowing decision-makers to analyse different proposed allocation scenarios, review changes introduced by altering specific coefficients, and see the impact of potential new factors in the formula.
- Allocation coefficients should be chosen on the basis of empirical analysis, so that the allocation does not differ too radically from the present, historically established allocation of resources. At the same time, however, reformers should not try to imitate blindly the current allocation, because doing this will perpetuate present elements of inequity and inefficiency. The desired changes in overall allocation pattern needs to be formulated on the basis of thorough review and subjected to public debate.
- Attention needs to be paid not only to the formula allocating funds for educational process, but also to the requirement that *rayons* provide all students with an adequate educational environment (see Annex 3.A1). Although the role of *rayons* in the financing of schools will be diminished, they will still be responsible for ensuring that schools are clean, heated, well-supplied and equipped. Therefore redesign of the grant system for education is a necessary part of the preparation process.
- Finally, most reforms of education finance include a transition period, during which specific "hold-harmless", buffer mechanisms prevent radical change of funding levels from one year to the next one. This period is necessary to allow local institutions to adjust their spending patterns to the new allocation system. Moreover, such adjustments can be made only if schools and *rayons* are given some measure of autonomy in their budgeting process.

Adequate preparation for the rollout of a new funding scheme is a necessary condition for its success. This means that an in-depth study of the pilot should be carried out to shed light on the refinement of the formula before full roll-out. It is key to better understand the effects of the new funding model in schools. Similarly, the impact on local governments should also be analysed as the major part of financial resources for education will be transferred to schools bypassing local budgets. Adjustments may also be required in other areas; for example, equity considerations should be strengthened through more adequate fiscal equalisation mechanisms (see Chapter 2), to ensure that all *rayons* are equally able to provide the part of education services for which they will be directly responsible (educational environment, see Annex 3.A1).

Improve the organisation of the school network

Improve the planning for a more efficient and equitable school network

Greater planning capacity is cornerstone to create a more efficient and equitable school network. A wide-ranging review of school network organisation should be undertaken with a threefold perspective: the demand (i.e. potential enrolment, preferences of students); the supply (i.e. capacity constraints, quality); and the current and future trends and needs of the economy and society. There are already indications that a long-term rebalancing is necessary between the available school infrastructure and the prospective demand. In particular, areas with growing student populations should benefit

from sustaining the efforts to increase the available school facilities, while areas with declining populations should be subject to a well-planned downsizing of their school networks. There are several benefits to such realignment of school infrastructure in line with demographic needs. First, the unit costs of education provision in underpopulated areas can be significantly reduced if schools are consolidated, as students are grouped in larger classes and maintenance costs of small facilities decline. Second, areas with shortages of student places can reduce their reliance on two- and three-shift schooling if sufficient numbers of additional facilities are made available, thus potentially improving the learning outcomes of some students.

Develop a vision for the provision of education in rural areas

A strategic vision is required at the national level on how best to deliver education in rural areas. The current reliance on small-class schools scattered across Kazakhstan's vast rural areas is unsustainable and leads to serious concerns about its quality, equity and efficiency. The strategy should have four main pillars: (i) reorganisation of the school network; (ii) flexibility for more efficient resource management; (iii) ensuring equity and fairness of resource provision; and (iv) proper monitoring of education quality in rural schools. In the reorganisation of the school network, Kazakhstan should consider a number of different options (Box 3.4 provides country examples of approaches to rural education):

- *Closing or consolidating small-class schools*. A feasibility study can be carried out to assess which rural schools can be closed or reorganised without impairing access to education.[8] About two-thirds of 15-year-old students (66%) are in schools whose principal reported in PISA 2012 that there is at least one other school competing for students in the same geographical area (OECD, 2013a). While many of them are likely to be located in urban areas and experiencing shortages of student places, such a large proportion indicates that there is some scope for school network consolidation. The assessment should also consider the (financial, human and political) costs, feasibility and acceptability of different alternatives such as transporting students, housing them at boarding schools, or providing education through ICTs.
- *Clustering schools or fostering collaboration between nearby schools*. The current initiative to use resource centres in order to support small-class schools needs to be independently reviewed and assessed. In view of the results, the resource centres network could be extended across the country and its role redefined so that it is able to provide significant on-going support to associated small-class schools. The financing of education resource centres should be split into two separate funding flows, one for basic teaching of enrolled students, other for the support functions. In addition to resource centres, Kazakhstan could consider school clustering or more ambitious collaboration schemes. Clustering of schools is a practice followed in a number of countries, in which a group of rural schools located close to each other retain their individual identity and legal status (thus each will still have its own principal and its own reporting requirements), but they agree to share specific resources to lower the cost and improve services rendered to students. Shared resources may include teachers (who would conduct lessons and other activities in more than one school), sport facilities (open to students from all schools participating in the cluster), computer labs and similar.

- *Conversion of several nearby small-class schools into satellites of one educational institution with a single leadership team*. This means that legal status of smaller schools will be changed, and only one school principal of the hub school will manage the operations of all satellite establishments. Similarly, there will be one budget encompassing the central school and the satellite schools. This institutional structure will allow not only transportation of satellite school students to the central school, but also travel of central school teachers to satellite establishments to conduct classes there, for example on specific school days. Moreover a decision will need to be taken about the location of new education resources, such as teacher working time or equipment: whether they will be more efficiently used in the central school or in the satellites. Similarly, it will be necessary to decide for each satellite school which grades will be taught there, for example only early education or full secondary education. Since this will be the autonomous decision of the school principal, significant flexibility in the use of resources may be achieved under this arrangement.
- *A greater use of ICT* could be considered to improve the quality of instruction and broaden access in some remote areas. Good quality education can be provided to rural students through the use of distance education, as done in such similarly large countries with remote populations as Canada and Australia (Barbour, 2011, Davis, 2010). Students in small-class schools can participate in web-based lessons, and the role of the teacher will be mainly to facilitate the process and to support students. This approach has been tried in Brazil, where schools can access online educational resources through "Educopedia", a digital platform of lesson plans and activities aligned with the school curriculum. This platform was first developed by the municipality of Rio de Janeiro and has since expanded to serve 680 000 students with 50% of the teachers reporting to use the tool more than once per week. Overall, proper and beneficial introduction of distance and technology-aided learning requires serious preparation, including provision of appropriate content on the web, retraining of teachers in rural schools, and sufficient network connectivity.

Greater consideration and flexibility is needed to allow rural schools to manage their resources more efficiently. As discussed in Chapter 2, the current system of centrally-set norms is too rigid to allow local decision makers to employ the mix of inputs deemed most appropriate for their schools to deliver quality education. Whether a school should employ a security guard or school deputy-principal, or reallocate those resources to an additional ICT teacher, for example, is a decision best left to the school principal (perhaps in consultation with the Parents' Committee or the Board of Trustees).

The equity and fairness of resource provision to rural schools ought to be explicitly considered. When funds are allocated to enhance school infrastructure, assign teachers, or provide ICT equipment, the needs of under-resourced schools (mainly in rural areas) should be given due consideration. This can be done through special "affirmative" programmes to support rural hub schools, encourage resource-sharing between schools, or targeting resources and educational materials to schools with the highest concentration of students from needy families. Also, consider policies to improve the distribution of resources. For example, revise the norms for textbook distribution and replacement to accommodate changes in school enrolments due to internal migration from rural to urban areas and establish guidelines for ensuring pedagogical quality of Kazakh-language, Russian-language and other minority language textbooks.

More thorough quality monitoring and support mechanisms need to be put in place. Only by accurately measuring the quality of education in small rural schools can the policymakers get an idea of whether these institutions provide good value for money. In-depth assessments of student learning (using modern international assessment practices), supplemented with detailed monitoring of school financing and resource use, will allow education sector decision makers to properly analyse where systemic changes are required. After all, putting schools in every village that provide a sub-standard quality of education is not an effective use of scarce resources.

Sustain the efforts to improve school infrastructure

The scope for improvement of school infrastructure remains large, despite the considerable efforts undertaken in recent years. To address these infrastructure challenges, Kazakhstan will need to rely on both Republican-level and local financing, and to strategically expand the total volume of resources devoted to education. Given the steadily increasing birth-rate since 2002, much of it concentrated in a handful of regions, national action will continue to be required to ensure that resources are properly targeted to areas most in need. Regions like South Kazakhstan, and schools in rural areas elsewhere in the country's south, will continue to need Republican budget transfers to meet infrastructure demands. The precise balance of cost-sharing will need to be struck between central and local authorities, but the Government in Astana will likely need to play a greater rule in equalising financial resources for education across the country's regions.

Budget for maintenance of school buildings

A more sustained effort is also needed to ensure that maintenance of school facilities and equipment is fully funded. Ad hoc programmes that finance school construction using central budget funds have the potential to leave local authorities responsible for unsustainable recurring costs for years to come. Ensuring that the responsible authorities have the means to maintain newly built schools and procured equipment, as well as address the physical conditions of older facilities, should be made an integral part of the annual budgeting process.

Box 3.4. **Approaches to rural education**

Kazakhstan is not unique in facing the challenge of providing quality education in large, rural areas, where villages are widely spaced and transportation options very limited due to distances and inadequate roads network. In this respect, Kazakhstan can learn from approaches taken by Canada, Australia, Sweden, Portugal and Poland, five OECD member countries which share the feature of low population density or extensive rural areas. As the literature suggests, one policy option to address low population density is school closure and consolidation (Ares Abalde, 2014). Through school consolidation, one or more schools are closed, and students from these institutions are transferred to other institutions which then increase the total number of students they enrol. Countries, regions and municipalities have promoted consolidation through various combinations of incentives, disincentives, and direct policy interventions (Howley et al., 2011). However, the effects of closure and consolidation vary by school size and region. Creating large schools in rural areas with low population density can greatly increase the costs of transporting students, but such additional costs may not be incurred in urban areas (Fox, 1981).

Box 3.4. **Approaches to rural education** *(cont.)*

In **Canada**, although more than 900 small rural community schools have been closed since 1966, a bus system complemented the closure policy. This system transported growing numbers of students for longer distances to larger schools, farther away from their communities. Small-class schools which remain operational today are often in remote areas where schools have very low enrolment – often much fewer than 100 students – and where a bus system is ineffective. The consolidation approach to rural education is limited by how far and how long policymakers can expect students to tolerate riding a school bus (Mulcahy, 2009)

Another approach suggested by the literature is collaboration with larger schools, which avoids the closure and consolidation of small-class schools. This collaboration focuses on sharing facilities of larger schools which tend to be better equipped than their smaller peers. Small-class schools often face difficulties in providing physical spaces, and costly learning tools beyond textbooks. Larger schools serve as a hub, and small-class schools serve as "feeder" or "satellite" schools, as evident in the approach used in **Queensland, Australia**. Students from small-class schools are transported to the larger schools on a set timetable. Sharing facilities allows students of small-class schools to benefit from a wider curriculum where an applied element is required in areas such as dance, physical education, ICT, and visual arts. This approach allows small-class schools to avoid closure (Ó Slatara and Morgan, 2004).

In contrast to the aforementioned approaches, a third approach has been adopted in **Sweden**, and focuses on a clustering arrangement. This arrangement arises when an agreed number of independent schools cooperate to the maximum degree, without loss of identity or independence (Ó Slatara and Morgan, 2004). Rural schools are clustered under a "Rektorsomrade" or "Principal's area" (Ó Slatara and Morgan, 2004). The purpose of clustering is to mitigate the problems faced by small-class schools, namely professional and social isolation. Principals interact to reduce administrative burdens stemming from resource management and procurement. The clustering approach also facilitates communication of best practices, without schools losing their individual identities.

In **Poland**, a specific programme "Mała szkoła" ("Small school") was developed to enable continued operation of small rural schools. Under the programme, rural schools may be run by associations of parents, with a number of national obligatory norms listed to reduce costs. The list of these lifted norms and what should replace them is clearly stipulated in education laws. Among these lifted norms are the requirements to employ cleaners or separate kitchen staff. Instead, the programme allows for these functions to be performed by parents on a voluntary basis, which significantly reduces the per student costs. Such voluntary engagement of parents also strengthens links between the school and the community, and brings additional benefit in cases of conflicts or of poorly performing students. Moreover, education laws define financial responsibilities of local governments to the schools operating under this programme in such a way, that the funds transferred by the local government to the school are generally sufficient to cover its (reduced) costs, while being at the same time much lower than the costs of maintaining the school prior to its entry into the small school programme. This ensures that local governments are interested in participating in this programme. In practice, if the village community considers their school to be an important asset for their future, they can organise themselves and in this way take over the management of the school. Moreover, they will often benefit from the direct support of their local government, for example the lawyers employed by the local government may support the parents in establishing their association, help adopt its statutes in conformity to the laws and finally help register it.

Box 3.4. **Approaches to rural education** *(cont.)*

In **Portugal**, about 2 500 schools closed between 2005 and 2008 compared with 1000 in the previous 10 years. Rural areas were dominated by small schools with poor facilities, while urban areas had overcrowded schools with double shift education. Research showed inefficiencies, lower academic performance in smaller schools, higher teacher turnover and variable quality in rural areas. The government determined that small schools with grade repetition rates higher than the national average were to be closed during 2005/06 and clusters of schools should be created. The reorganisation and redeployment programme had several instrumental features: (i) there was a clear central vision about what type of schools should replace the closing schools, which were larger school centres with a minimum of 150 students at more than one level and full-day school with extra-curricular activities; (ii) it was recognised that parents needed to be convinced that the outcomes for them and their children would be better and incentives, including free transportation, were provided; (iii) municipalities needed incentives to invest in new provision; and (iv) the consultation and decision-making processes needed to be applied carefully as previous attempts to close schools had failed. In general, the reorganisation process brought about innovations and improved efficiency of the schools, reduced isolation of teachers, improved socialisation of underprivileged or isolated pupils, and fostered a collaborative approach between the Ministry of Education (centrally and regionally), municipalities, schools and other stakeholders (Ares Abalde, 2014).

Sources: Fox, W. F. (1981), "Reviewing Economies of Size in Education", *Journal of Education Finance*, Vol. 6, No. 3, University of Illinois Press, Champaign pp. 273-296; Mulcahy, D. M. (2009), "Developing Government Policies for Successful Rural Education in Canada", in Lyons, T., J. Choi and G. McPhan (eds.), *Innovation for Equity in Rural Education. Symposium Proceedings*, University of New England, 11-14 February, Armidale; Ares Abalde, M. (2014), "School Size Policies: A Literature Review", *http://dx.doi.org/10.1787/5jxt472ddkjl-en*; Ó Slatara, T. and M. Morgan (2004), *"The Future of Small Schools and Teaching Principalship in Ireland", Interim Report February 2004*, *www.ippn.ie/index.php?option=com_mtree&task=att_download&link_id=2588&cf_id=24*.

Improve the management of human resources to raise the quality of teachers and school leaders

Develop and widely disseminate standards for teachers and school leaders

Kazakhstan needs to have a basic reference of what good teaching and good school leadership mean. As articulated previously by the OECD (OECD, 2013c), this means establishing a clear set of coherent teaching and school leadership standards that signal to teachers and school leaders and to society as a whole the core knowledge, skills and values associated with effective teaching at different stages of a teaching career and associated with effective school leadership. Clear, well-structured and widely supported professional standards for teachers can be a powerful mechanism for aligning the various elements involved in developing teachers' competencies (OECD, 2005). The same applies to school leadership standards in relation to school leadership.

Teaching and school leadership standards should contain quality criteria or indicators for professional teaching and school leadership practice and should be applied in developing teacher education curricula, evaluating individual performance, establishing career structures and guiding professional development (OECD, 2005). Teachers' and school leaders' practices and the competencies that they need to be effective should reflect the student learning objectives that the school system is aiming to achieve. Teaching and school leadership standards need to be informed by research and express the sophistication and complexity of what effective teachers and school leaders are expected

to know and be able to do. They should also express different levels of performance and responsibilities expected at different stages of the teaching and school leadership career. For school leadership, an implication would be to reinforce instructional leadership *vis-à-vis* administrative leadership.

In the development of standards, Kazakhstan should consider involving not only governmental authorities at all levels but also professional associations of principals and teachers, groups of educational administrators, researchers, and representatives from teacher education institutions in order to reflect different perspectives and ensure a common understanding and legitimate the process. The development of standards is often a participative process; it can begin as a proposal from the Ministry of Education that later goes through successive rounds of consultation and validation as in Chile or Québec (Canada); or are initiated by professional and academic associations, who then lead the process of consultation and validation with a wider group of actors, which then leads to subsequent adoption by the educational authorities as in the United States and British Columbia (Canada) (CEPPE, 2013). In Australia, standards were also piloted to test their authenticity, utility and added value before its national launch (Dinham et al., 2013). The consultation processes can also include a review of current staffing norms ("Standard Qualification Characteristics of Teaching Positions and Equated Employees") and the current roles of teachers and school leaders in the Kazakh system. There is also a need to ensure appropriate feedback mechanisms: following implementation, standards can have periodical revisions to ensure that these remain aligned with other elements of the system, and that they are useful in the promotion of teacher and school leader professionalism.

Kazakhstan should also envisage measures to help teachers and school leaders embed these standards in their regular practice. This "making sense" of standards by teachers and school leaders is essential to transform their practice. Extensive socialisation of standards for teachers can be done at several stages of teachers' careers (NBRC, 2010): (i) initial teacher education so that new teachers already have a clear understanding of what is expected from them; (ii) induction and mentoring programmes to ease the transition between initial education and school-level practice; and (iii) in-service teachers must receive training on the use of standards and their implications for classroom practice.

Raise the bar to enter the teaching profession and school leadership

Overall, Kazakhstan is not facing shortages and, in some regions, has an oversupply of teachers. This is an opportunity to be more selective about those who are employed and those who enter the profession and initial teacher education. Entry into preparation programmes can be much more selective to ensure only high-quality graduates fill the available teaching posts. Barber and Mourshed (2007) found that the top-performing education systems recruit their teachers from the top third of each secondary graduates' cohort (top 5% in Korea, 10% in Finland and 30% in Singapore and Japan). Criteria to enter initial teacher education can be strengthened to include interviews and tests to assess the aptitude and motivation of candidates. The number of places in initial teacher education could also be limited by limiting the number of accredited programmes (by raising quality standards for accreditation) and making access to these more demanding. This would reduce the number of graduates of initial teacher education to levels closer to the needs of the school system and is likely to improve their quality. Initiatives at the starting point of the teacher's career can also go alongside stronger requirements to enter the profession. A poor selection decision can result in up to 40 years of poor teaching and so it is essential to

design selection procedures that assess the set of skills and attributes that effective teachers should possess.

Recruitment procedures for school leaders should also place greater emphasis on leadership skills rather than on knowledge of current norms. While the selection of principals has traditionally been linked to their length of service as a teacher, most OECD countries have recognised the inadequacy of seniority as a major selection criterion. In many countries, there is a new emphasis on breaking hierarchical models of leadership to allow faster emergence of younger dynamic personnel into leadership positions. To increase the objectiveness of the selection of school principals, Kazakhstan could consider establishing clear criteria to guide the selection of school leaders in alignment with school leadership standards. In Victoria (Australia), members of the selection panel are given detailed guidelines outlining the most important criteria for selection and explaining steps to prepare for and conduct the interviews (OECD, 2008b).

Rethink approaches to initial teacher education

Initial teacher education has an important role to play in ensuring that a teaching career is open to a wide range of well-qualified people, and that emerging needs in the school system are responded to effectively. A priority should be to improve the quality of initial teacher education. This requires strong accreditation procedures ensuring that teacher education institutions are evaluated on an ongoing basis and that the teacher education sector as a whole is subject to periodic review and debate. It is important to target public resources into the development of high-quality teacher education programmes, including greater funding to specialisations in greater need in the school system. In order to encourage innovation and a diversity of approaches in teacher education, accreditation criteria should focus on the outcomes of programmes rather than on their inputs, curriculum and processes (OECD, 2005). As argued earlier, in Kazakhstan there is probably room to reduce the number of accredited teacher education programmes. Also, a higher education qualification should become the minimum requirement for entering the teaching profession at all educational levels, implying that initial teacher education programmes at the secondary or post-secondary non-tertiary levels should be discontinued. This will improve the overall quality of initial teacher education and its status.

As explained earlier, there is also room for initial teacher education to become more selective. The current system of unrestricted entry to initial teacher education for students who passed the UNT leads teacher education resources to be spread too thin. Potentially useful initiatives include: providing more information and counselling to prospective teacher trainees so that better informed enrolment decisions are made; procedures that try to assess whether the individuals wanting to become teachers have the necessary motivation, skills, knowledge and personal qualities (specific assessments); incentive schemes to recruit candidates with high-level competencies (such as higher education grants); and flexible programme structures that provide students with school experience early in the course, and opportunities to move into other courses if their motivation towards teaching changes.

Another priority should be to grant the accredited teacher education institutions with greater autonomy to shape their programmes, including the introduction of entrance selection mechanisms, the design of part of the curriculum and the creation of multi-specialisations programmes. This allows a greater responsiveness to the needs of

the school system. For instance, an increase in the common components of teacher preparation programmes for different levels of education and specialisations would increase opportunities for working in different educational levels and specialisations as teacher demand and career interests change. Teacher education programmes, in particular, should be less specialised and allow the graduate to teach in a wider range of specialisms. The reduction in the number of teacher specialisations is likely to increase the efficiency of the school system by enabling graduates to teach in a wider range of specialisms and schools to better accommodate their needs. This means that Kazakhstan should abandon the Soviet concept of "one subject, one teacher" and embrace an initial teacher education structure of common components and few specialisations. Finally, the role of field experiences in schools could be reinforced. These should happen earlier in teacher education, and be framed to provide a broad experience of what it means to be a professional teacher, including actual class teaching, counselling and guidance, curriculum and school development planning, research and evaluation and collaboration with parents and external partners (OECD, 2005).

Enhance the functioning of the teacher labour market

Regional imbalances in teacher supply and demand relate, partly, to the limited mobility of teachers across regions of the country. The lack of mobility means that teacher shortages in some regions of the country are paralleled by oversupply in others. As a result, providing incentives for greater mobility and removing barriers are important policy responses. One option is the provision of incentives to attract teachers to specific *rayons* or *oblasts*. While the current provisions for teacher employment provide for extra incentives for working in rural areas, the system of norms is not flexible enough to grant *rayons* and specific schools the ability to devise specific incentives to alleviate potential recruitment problems. This calls for greater flexibility in the system of norms, as argued in other sections of this report.

Incentives need to be large enough to make a difference and be combined with appropriate support and development to effectively improve teacher quality and student achievement in disadvantaged schools. Most OECD countries offer incentives, such as additional yearly or one-off bonuses, as a reward for teaching in a disadvantaged and/or remote area (OECD, 2012). In Japan, officials in the prefectural offices allocate good teachers to schools with weak teaching bodies to make sure that all students have equally capable teachers. Low socio-economic status students in Korea are more likely than high socio-economic status students to be taught by high quality mathematics teachers. Multiple incentives are offered to candidates who work in high need schools, including additional compensation, smaller class size, less instructional time, additional credit towards future promotion to administrative positions, and the ability to choose the next school where to work in (OECD, 2012).

Another option is to improve the information flows in the teacher labour market. The development of transparent and prompt systems to close the information gaps between teachers and schools is essential for an effective functioning of the teacher labour market, especially in a country such as Kazakhstan where schools are more directly involved in teacher recruitment and selection. Possible strategies are requiring all teaching vacancies to be posted, creating websites where the information is centralised or establishing a network of agencies to co-ordinate and foster recruitment activities (OECD, 2005). This would also have the advantage of improve the transparency of teacher recruitment at the

school level. Another way of expanding the potential supply pool of teachers, to address potential shortages such as in mathematics, is through an increased mobility of teachers across educational levels, something that can be achieved by ensuring that different teacher education programmes are less specialised (as suggested above), and by providing more opportunities for retraining and upgrading teachers' skills.

The successful decentralisation of personnel management, and school decision-making more generally, requires that central and regional authorities play a strong role in monitoring the adequate and equitable distribution of teacher resources throughout the country. To reduce the costs of the mismatch and take advantage of the current overall oversupply, Kazakhstan could undertake a comprehensive study of the supply of and demand for teachers and other education professionals. This study should estimate the demand for teachers and other education professionals per role and specialisation. In the United Kingdom a teacher workforce planning exercise is carried out annually covering geographical areas, education sectors and curriculum specialisations to ensure an appropriate supply of high-quality teachers (Department of Education and Skills, 2012).

Reconceptualise teacher employment and discontinue the stavka system

Making the work of teachers more effective in Kazakhstan schools necessitates a whole new concept of teacher employment. As explained in OECD (2005), teachers are now expected to have much broader roles. Some examples of areas of broadened teacher responsibility are: initiating and managing learning processes; responding effectively to the learning needs of individual learners; integrating formative and summative assessment; teaching in multicultural classrooms; introducing new cross-curricular emphases; integrating students with special needs; working and planning in teams; evaluation and systematic improvement planning; ICT use in teaching and administration; projects between schools; management and shared leadership; providing professional advice to parents; and building community partnerships for learning (OECD, 2005). These broaden responsibilities are simply not compatible with a conception of teacher employment associated mostly with teaching as a paid activity (the *stavka* system). Clearly, Kazakhstan needs to move to employment under a workload system, more typical of OECD countries, whereby teachers work a specified number of hours per week (e.g. 40 hours), a proportion of which are devoted to teaching. Such conception of teacher employment recognises that teachers need time for engaging in a range of other tasks, including the adequate preparation of lessons. This may contribute to improve teacher professionalism, making the profession more attractive and reducing the number of teachers with unreasonably high teaching loads. This reform will necessitate considerable resources but should be a priority for the application of extra resources devoted to education and could benefit from the overall reduction of teacher numbers.

This new concept of teacher employment also grants an opportunity for schools to diversify the roles and tasks of their teachers in such a way their needs are better met. For instance, if it proves difficult to reduce the number of teachers, one possible alternative is to use the extra teacher capacity to implement strategies to individually support students who are falling behind, as recommended earlier. Research in the United States suggests this is an effective strategy. The *Success for all Program*, in the United States, has been identified by The Brookings Institute as one of five social programmes that work, with daily 90-minute reading classes boosting reading scores in high-poverty schools by an average 27% of a standard deviation, or 25-30% of a grade level after three years of the programme

(Haskins and Margolis, 2014; Borman et al., 2007; Fryer, 2014). A similar intensive tutoring programme was introduced in poor-performing schools in Houston, and it boosted primary school students' mathematics scores by 30% of a standard deviation. Children in the early primary grades in Kazakhstan spend 25% fewer hours in school, as compared with the OECD average. Increasing the number of instructional hours by including intensive tutoring for poor performing students in the early grades could both improve children's performance and utilise teachers who might otherwise be under-employed, improving their professionalism.

Regarding the career structure, the introduction of a formal probationary process can provide an opportunity for both new teachers and their employers to assess whether teaching is the right career for them. The satisfactory completion of a probationary period of one to two years teaching should be mandatory before full certification or a permanent teaching post is awarded. This should go alongside systematic mentoring programmes in Kazakh schools. This would give beginning teachers the opportunity to work in a stable and well-supported school environment. The successful completion of probation should be acknowledged as a major step in the teaching career and tied to teacher attestation (see Chapter 4).

Improve teacher compensation

Further financial investment in the school system, as suggested earlier, needs to give great priority to improving the attractiveness of teaching and to ensuring teachers have adequate incentives to be effective in their daily practice. An initial step is reconceptualising teacher employment on the basis of a fixed weekly workload, as suggested above. This major reform, which will recognise the broader professionalism of teachers, is likely to require a substantial investment. The subsequent step is to assess the room to improve overall levels of teacher compensation and rethink its structure.

It is clear that current basic salaries of Kazakh teachers are low in contrast to the greater generosity of extra payments for additional tasks, extra qualifications, career advancement and "higher-level" professional development. The workload system for teacher employment will allow at least some of the resources spent on "additional tasks" to become part of teachers' basic salaries. But this might not be enough to make salaries of beginning teachers attractive. It might be worth targeting salary increases in the teaching profession to their basic component so salaries become more competitive in the early stages of the career. This is in recognition that extra payments for career advancement and "higher-level" professional development are quite significant. Better basic salaries for teachers will help improve the status of the profession, attract better candidates for teaching, and make teaching more appealing to males. The strategy would be better paid but possibly fewer teachers overall.

Compensating teachers on the basis of a full workload also improves the fairness of teacher compensation. This is because the *stavka* system has the potential to disadvantage teachers whose working environment does not permit additional teaching hours and, therefore, better income (OECD, 2014b). In addition, it is important that financial bonuses for teachers (as those provided through the per-capita funding scheme) are linked to a more comprehensive set of criteria and go beyond student achievement data such as results in the UNT and in Olympiads.

Similarly, the compensation for school leaders needs to be improved in order to ensure that it is attractive enough for high-quality candidates and that it provides a clear-cut salary premium *vis-à-vis* teachers. School leaders could benefit from their own career structure and an incentive scheme to reward their performance. The removal of the 9-hour cap for teaching and other activities for school leaders could also facilitate a more efficient allocation of time. It could enable the principal to create teams more adjusted to the school's needs with fewer school deputies but with full-time responsibilities in large schools and fewer leadership responsibilities in small ones.

Notes

1. This figure excludes South Kazakhstan, for which data was not readily available.
2. Not all small-class schools are located in rural areas and not all rural schools are small-class ones. A school is considered rural if located in such an area. A school with at least 180 students located in a rural area is considered a rural school but not a small-class one. A school with less than 180 students located in an urban area is considered a small-class school but not a rural one.
3. Subsequently to the visit by the Review Team, the roll-out of the per student funding formula was postponed to 2018 and limited to grades 10 and 11, as a result of pitfalls identified through the evaluation of the pilot. The analysis in this report concerns the plans for the introduction of the per student funding formula as of April 2014, when the Review Team visited Kazakhstan.
4. The Review Team had access to the dataset of the number of deputies per school in the school year 2012-13. The dataset includes 7 416 schools, although data are missing for 846 schools (about 5%). The total number of deputies was 17 998, which means that on average each school had one principal and 2.74 deputies. However, differences in the number of deputies per school were stark: 0 (952 schools), 1 (594 schools), 2 (2 086 schools), 3 (879 schools), 4 (761 schools), 5 (641 schools), 6 (380 schools), 7 (175 schools), 8 (77 schools) and 9 (25 schools). The Review Team was told that the accuracy of the dataset was roughly 80%. The number of deputies might be overestimated in small schools where the principalship is also formally recognised as a deputy position, or underestimated in schools where deputies hold categories not formally recognised as such (see Chapter 4). It should be noted that, according to existing regulations, schools with fewer than 6 classes cannot have deputies (for further information see Table 4.A1.1).
5. The number of permutations can be estimated as follows: 18 coefficients of full-time equivalent (FTE) teachers per student times 3 environmental conditions (regular, environmental disaster zones, radiation risk zones), times 2 specialisation programmes (regular, with in-depth teaching of specific subjects), times 2 school types (regular, residential), resulting in over 200 different allocation standards.
6. As explained earlier, subsequently to the visit by the Review Team, it was decided to postpone the full roll-out to 2018.
7. Murillo and Roman's study of 15 Latin American countries found that, with the exception of Cuba, basic infrastructure and services (water, electricity, sewage), didactic facilities (sport facilities, laboratories, libraries) and the number of books in libraries and computers in the school affects student performance. This finding holds even after controlling for the family's socio-economic and cultural characteristics, the socio-economic characteristics of the area and the country's level of development (Murillo and Roman, 2011).
8. A similar feasibility study carried out in the Republic of Moldova in 2010 concluded that as many as 29% of the country's rural schools could be closed in response to declining enrolment without impairing access.

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ANNEX 3.A1

The new school funding model

The new school funding model divides school budgets into two parts: the educational process, financed through a grant from the central government, and the educational environment, financed from own revenues of *rayons* and *oblasts*. Another relevant difference is that the allocation is based on the number of students in the educational process component whilst on the actual needs of the schools in the educational environment one. Table 3.A1.1 provides further detail on the types of expenditures covered by each component. Capital expenditures are not included in the new school funding model and are financed through the national and local budgets in accordance with other strategies and policies.

Table 3.A1.1. **Components of the new school funding model**

	Educational process	Educational environment/setting
Level of government responsible	Central government	Local governments
Basis for the calculation	Number of students	Actual needs
Type of expenditures	Staff compensation Employer's contributions Expenses on health improvement benefits Teaching expenses (additional textbooks, instructional packages, teaching materials and visual aids) An incentive component	Utilities and communication services Building and equipment maintenance services and minor repairs Transportation services and student meals and other support Provision of residential care at schools Fund for Universal Compulsory Secondary Education Other services (financial services, tax and other obligatory payments to the budget)

Source: Republic of Kazakhstan (2013), *Order of Minister of Education and Science of the Republic of Kazakhstan dated October 30, 2013, Number 440: Methodology for Per Capita Standard Funding of Secondary Education*, Republic of Kazakhstan, Astana.

Factors considered in the educational process component

The formula of the educational process component takes into account some basic characteristics of schools to determine the number of full-time equivalent teachers per student. The formula takes into consideration (see Table 3.A1.2):

- Levels of education provided: pre-primary, primary, lower secondary, upper secondary, to take account of distinct instructional loads.
- Normative class size: 24 students in urban schools and 20 in rural schools.
- Type of schooling: in schools or home-schooling to reflect differences in instructional time.

Dividing the average weekly number of classes by the weekly teaching load and by the normative class size gives the coefficient reflecting the number of full time equivalent teachers (FTE, or *Stavka* in Russian) per student for each group of students. The coefficients for pre-primary schools are significantly lower than coefficients for schools, which is mainly due to much higher teaching load of pre-primary school teachers. Moreover coefficients in rural schools are higher than in urban schools, reflecting smaller normative class sizes.

Table 3.A1.2. **Factors considered in the calculation of full time equivalent teachers**

Education level	Weekly teaching load	Average weekly number of classes		FTE teacher per student	
		Schools	Home teaching	Rural school	Urban school
Pre-primary	24	22		0.0458	0.0382
Primary	18	34	8	0.0944	0.0787
Lower secondary	18	44	10	0.1222	0.1019
Primary and secondary	18	46	12	0.1278	0.1065

Source: Republic of Kazakhstan (2013), Order of Minister of Education and Science of the Republic of Kazakhstan dated October 30, 2013, Number 440: *Methodology for Per Capita Standard Funding of Secondary Education*, Republic of Kazakhstan, Astana.

The formula also takes into account other legislation that influences school expenditures to be covered by the educational process component. The additional factors to be accounted for make the formula considerably more complex and also blur the per-student character of the formula as many factors are related to the characteristics of the teacher workforce.

- Special treatment of staff working in areas of environmental degradation (50% salary increase and 12 calendar days of additional annual leave in disaster zones, 100% salary increase and 14 calendar days of additional annual leave in zones with risk of radiation).
- School location (25% salary increase in rural schools).
- Boarding schools (10% salary increase).
- Additional allowances for teacher qualifications (6% of all teachers).

The formula also takes into account an increase of allocation for additional payments and allowances, for the standard teaching programme and for teaching programmes with in-depth study of particular subjects. All these values are reflected in appropriate coefficients, to be taken into account to assess required salary allocation. Finally, after multiplying the number of FTE teachers per student (listed in Table 3.A1.2) by the base salary, one obtains the basic teacher salary standard per student. Then, additional factors are taken into consideration in order to calculate the per student standard of funding per year:

- Multiplication by 12, because the base salary is defined per month, and per student amount is defined per year;
- Multiplication by 1.1, to reflect taxes, social contribution and pension contribution;
- Increase the amount by 55% to reflect the salary costs of management, administrative, support and technical staff;
- Include other teaching expenses (fixed sum established yearly by the Government, equal to KZT 1 731 per month in 2013).

The allocation for every school is thus determined by multiplying the number of students enrolled in the school, and belonging to each of the identified groups of students, by the relevant per student standard of funding per year.

There is an additional allocation rule, which is designed to prevent overcrowding of schools. The maximum class size in Kazakh secondary schools is set to 25 since 2011. In exceptional cases, when the demand exceeds the available places, some classes are larger, though the formula foresees a reduction of per capita standard of funding per year for students above the maximum class size (by 4%, 5% and 6% for each student above 25, 30 and 40 students in a class respectively).

The formula to distribute resources for the educational process also contains an additional component, which is purported to pay bonuses to school staff based on their performance as well as to cover other needs of schools related to the educational process. Full detail of the indicators taken into consideration to determine the size of this component per school and its distribution within schools is available in a handbook titled "Methodological guidance on the implementation of the per capita normative financing" edited by the Financial Centre. Different indicators apply to the teachers, school leaders, administrative staff, and support personnel.

ANNEX 3.A2

The per student funding formula in Lithuania and Poland

The per student funding formulas used in Lithuania and Poland provide clear contrasting examples of two ways of allocating resources to schools (Levačić, 2011; Herczyński, 2011). The formulas are described below (for a succinct comparative review of both approaches in costing education functions see Herczyński, 2009). Table 3.A2.1 provides a summary of the key elements of the formulas in Lithuania and Poland.

The school funding formula in Lithuania

The Lithuanian allocation formula, known in the country as *student basket*, applies to all 60 municipalities. It governs the allocation of a specific grant only for education process, which includes teacher, administrative and professional staff salaries (but not salaries of technical staff), textbooks, teaching materials and aids, teacher in-service training, pedagogical and psychological services, student professional guidance and cognitive development. The other part of education expenditures, called education environment, is financed from general revenues of local governments and is not included in the student basket. Education environment includes salaries of technical and administrative staff, utilities expenditures, school maintenance, and small school purchases. It is important to note that both parts of the school budget include some salaries and some non-salary expenditures.

The grants are assessed on a per school basis and then summed up over all the schools in a given municipality. The grant is transferred to the municipality as a whole, and the municipality is also informed about how much funds were assessed for each school. However, the municipality has the right to reallocate up to 5% of the grant between schools. This is a very strong mechanism. For instance, a 2% reallocation from a large urban school to a small rural school may provide almost a doubling of its budget.

The basic per student amount (called *student basket*) for a student of an urban school attending grades 5 to 8 is defined on the basis of curriculum standards assuming that the class size is 25 students. As teacher salaries increase, or curriculum changes, the formula allows for automated recalculation of the basic per student amount. This amount includes: (i) Teacher salaries (based on curriculum and normative class sizes), comprising 85% of the student basket; (ii) School management (based on school size), comprising 9% of the student basket; and (iii) Textbooks, teacher qualifications, teaching materials and other, comprising the remaining 6% of the student basket.

Further, the formula contains well over a hundred coefficients, applied to different groups of students to obtain their per student amounts. These coefficients reflect different cost differentials for different groups of students. Among them there are: (i) Coefficients for grade levels (initial, basic, secondary), reflecting different teaching load; (ii) Coefficients for different normative class sizes (10 students for very small schools, 15 for small schools, 20 for medium schools and 25 for urban schools), reflecting different unit costs; and (iii) Coefficients for different student characteristics, including special education, students learning at home and adult students, as well as for pre-primary students and for students involved in informal education. As a result, the formula seems exceedingly complicated.

The school funding formula in Poland

The Polish allocation formula, known in the country as *algorithm*, applies to an education grant from the central budget to almost 3 000 local governments, which include about 2 500 *gminas* (first tier), responsible for primary and lower secondary schools, 380 *powiats* (second tier), responsible for secondary education (both general academic and vocational) and for non-school education establishments (centres of vocational excellence, centres for special needs students, pedagogical and psychological services, in-service teacher training and similar), and to 16 self-governing *voivodships* (third tier), responsible for specific schools of regional or national importance, and for a range of regional education institutions (regional teacher training facilities, teacher colleges, pedagogical libraries). The same formula serves all three tiers of local government and all education functions performed by them. The formula allocates an education grant to each local government proportionally to the number of *weighted students*. The total amount of funds available for the grant is divided by the total number of weighted students in the country. This is summed up over all local governments and the resulting amount, called *the allocation standard*, is the appropriate per student amount. The education grant received by the municipality results from multiplying the number of weighted students in the municipality by the allocation standard.

Table 3.A2.1. **Comparison of key elements of the funding formulas in Lithuania and Poland**

Issue	Lithuania	Poland
Relation with the total pool of funds for education grant	Total pool is the result of application of the formula	Total pool serves as input for calculation of basic per student amount
Impact of increase of teacher salaries	Automated increase of basic per student amount and of total pool	Requires negotiations
Impact of increase of curriculum	Automated increase of basic per student amount and of total pool	Requires negotiations
Impact of increases of fuel prices	No impact	Requires negotiations
Impact of decrease of student numbers	If all other parameters are unchanged, total pool of funds decreases	Automated increase of basic per student amount
Impact of school consolidation on the amount received by the municipality	Potential decrease (if school size increases)	No impact
Impact of increase of coefficients for special needs students on allocation	Increase of the total pool and of the relevant allocations to municipalities	Shift of funds away from mainstream schools to schools serving special needs students

Sources: Levačić, R. (2011), "Per capita Financing of General Education in Poland: A Case Study", in Alonso J. D. and A. Sanchez (eds), *Reforming Education Finance in Transition Countries: Six Case Studies in Per capita Financing Systems*, World Bank, Washington, DC; and Herczyński, J. (2011), Student Basket Reform in Lithuania: Fine-Tuning Central and Local Financing of Education, in Alonso J.D. and A. Sanchez (eds.), *Reforming Education Finance in Transition Countries: Six Case Studies in Per capita Financing Systems*, World Bank, Washington, DC.

The number of weighted students is obtained through a formula that allocates additional coefficients (weights) to specific groups of students taking into account the extra costs associated with their needs. The formula contains weights for up to 41 specifications including, among others: (i) weight for students of rural schools, equal 0.38 (meaning that each student of a rural school is treated by the formula as 138% of an urban school student), reflecting higher teaching costs in small rural schools; (ii) a series of weights for special needs students, from 0.8 to 9.5 (depending on the type and severity of the special need), reflecting small class sizes and additional teachers employed; (iii) weight for lower secondary schools, equal 0.04, weight for upper secondary school, equal 0.08, and weight for vocational schools, equal 0.15, reflecting different curricula; and (iv) a series of weights for art and music schools, from 0.92 to 3.42, depending on arts programme and reflecting different curricula.

ANNEX 3.A3

The distribution of teachers across categories

Table 3.A3.1. **Distribution of teachers across categories in urban and rural areas, by location, 2010**

Region	Urban				Rural			
	Highest Category	First Category	Second Category	No Category	Highest Category	First Category	Second Category	No Category
Akmola	24.1	32.0	26.6	17.3	8.8	28.8	33.6	28.9
Aktobe	18.5	28.1	33.0	20.4	8.0	25.6	31.6	34.8
Almaty	21.0	33.1	24.1	21.8	12.9	32.7	28.1	26.3
Atyrau	16.7	43.4	22.0	17.9	9.5	36.4	29.4	24.6
East Kazakhstan	24.2	30.3	27.2	18.3	9.6	34.2	30.1	26.1
Zhambyl	25.6	25.9	23.9	24.5	15.8	26.0	31.1	27.1
West Kazakhstan	15.7	36.3	29.7	18.3	7.4	35.6	31.3	25.7
Karaganda	21.6	30.8	28.1	19.5	11.9	36.1	27.5	24.6
Kostanai	23.6	29.5	25.6	21.2	9.5	26.6	30.5	33.3
Kyzylorda	5.9	35.6	31.1	27.5	2.0	33.1	34.0	30.9
Mangystau	12.6	28.8	30.0	28.6	6.6	31.5	29.8	32.1
Pavlodar	32.4	30.4	22.6	14.6	11.2	31.2	28.8	28.8
North Kazakhstan	29.1	31.5	22.4	17.0	10.5	32.0	29.7	27.9
South Kazakhstan	21.2	26.6	29.9	22.4	11.3	31.1	34.9	22.6
Astana City	28.9	26.0	25.9	19.3	-	-	-	-
Almaty City	28.8	25.1	26.6	19.5	-	-	-	-
Country average	**22.6**	**29.6**	**27.2**	**20.6**	**10.4**	**31.4**	**31.3**	**26.9**

Source: OECD (2014b), *Reviews of National Policies for Education: Secondary Education in Kazakhstan*, *http://dx.doi.org/10.1787/9789264205208-en*.

Chapter 4

School resource utilisation in Kazakhstan

In Kazakhstan, school leadership responsibilities are formally distributed and include instructional leadership. This is dictated by the established norms, which recognise that strategic and pedagogical leadership cannot be exercised over time by one person alone. In practice, however, the level of interaction and shared vision among members of school leadership teams observed by the review team suggest that a hierarchic model prevails over a flatter distributed leadership structure. Also, there is no systematic approach to school leadership development and few opportunities exist to take up training. A positive aspect is that students rarely repeat a year in Kazakhstan. There are some support strategies to address the learning gaps during the school year, for example through remedial after-school activities. However, the review team found little evidence of the provision of early support to avoid students falling behind, with personalised and intensive intervention. Furthermore, in Kazakhstan, classes are orderly, without loss of time for student behaviour or teacher absenteeism. The official instructional time is provided with few disruptions and complemented with widespread after-school activities. However, there are some concerns about the management of instructional time: multi-shift teaching, which is prevalent in Kazakhstan, might reduce the official instructional time; the school calendar is not adjusted to local conditions and needs; and instructional time for students in primary grades may be inadequate for students who come from disadvantaged backgrounds. Moreover, there are concerns that the current framework for teacher professional development is not responding adequately to teachers' needs: there is little flexibility in the current provision; it is unclear whether adequate learning opportunities for teachers are available; and incentives to engage in professional development seem to be increasingly related to salary increases and career advancement. Finally, Kazakhstan shows a clear commitment to external accountability based around school evaluation with a regular cycle of external school evaluations (school attestation) and a formal certification process for teachers (teacher attestation). However, the review team formed the impression that there is an over-emphasis on the accountability function of both teacher evaluation and school evaluation, with less attention paid to genuine professional discussions about effective teaching.

This chapter analyses how resources can be effectively utilised, through specific policies and practices, to different priorities and programmes once they have reached different levels of the school system. Among other things, it considers how resources are matched to students' needs (e.g. grouping of students within schools; student support systems; programmes to prevent early school leaving); how teacher resources and teaching time are allocated to students so that they optimally respond to improvement priorities (e.g. class size, teacher-student ratios, use of teachers' time); how student learning time is organised (e.g. instruction time, length of school day); how school leadership is organised and distributed; how resources in schools are organised to create environments conducive to effective teaching and learning (e.g. outreach to parents and communities); and how school facilities and materials are used to support such environments (e.g. use of school facilities for afternoon tutoring or summer schools, use of ICT to complement face-to-face instruction).

Context and features

The workforce of schools

The workforce of schools in Kazakhstan is characterised by its large size and high degree of specialisation. The "Standard Staffing of Public Educational Organizations and List of Teaching Positions and Equal-Status Employees" (Decree no. 77, 2008) establishes the number of school leaders and support staff required in each school on the basis of its type, education level, and number of consolidated classes. Annex 4.A1 provides the detailed list and associated workloads of non-teaching staff in schools by number of consolidated classes.

Leadership team

Responsibilities for school leadership are distributed between the school principal, who holds the maximum authority of schools, and a number of deputies. The distribution of leadership is well-recognised in the legislation and well-established in schools. According to the Decree no. 77, each school might have a principal and three types of deputies with the following responsibilities:

- *School principal*: leads the overall school in compliance with norms; approves the school plan, staffing and number of classes; appoints other school leaders and recruits teachers; fosters pedagogical improvement and professional development and distributes rewards to the staff; ensures learning materials, equipment and physical infrastructure are safe and up-to-date; ensures that disadvantaged students are supported and no children are out-of-school in the neighbourhood; and, reports to administrative authorities.
- *Deputy principal for academic affairs*: coordinates and supervises pedagogical improvement, including consolidating and disseminating best teaching practices; plans school educational operations, such as composing the timetable of classes, and ensures compliance with

existing norms; participates in the recruitment of teachers and fosters their professional development; organises school evaluation, teacher appraisal and student assessments; and, ensures that equipment, materials and technology are safe and up-to-date.

- *Deputy principal for educational work*: organises and ensures the quality of extracurricular activities, and home-schooling for children with special needs; participates in the recruitment of, and supervises and supports the professional development of senior counsellors, after-school teachers, and home-school teachers; and, liaises with representatives of the community, law enforcement bodies, parents and Parents' committee.
- *Deputy principal for economic activities*: administers, procures and controls expenditure on material and financial resources (e.g. repairs, computers); supervises work on landscaping, gardening and cleaning; ensures compliance with rules for fire safety, occupational safety and health; and, monitors operation of the main building technology and energy equipment.

The number and responsibilities of leadership positions vary according to the size of schools. In primary schools, the main school leader is only formally recognised as a principal when the school has at least 8 classes and 240 students. The smallest schools (fewer than six classes) cannot employ a deputy. Schools with six to ten classes are required to employ deputies responsible for academic affairs and educational work half time, while responsibilities related to economic activities are not associated to a deputy position. Schools with more than 20 classes should have 1.5 deputies for academic affairs and educational work, and those with more than 30 classes are required to employ two deputies for each position. In schools that offer two languages of instruction, one deputy for academic affairs and one deputy for educational work are assigned to each language track. In addition, it is increasingly common among specialised schools such as gymnasiums and innovative schools to hire administrative managers (Mukhtarova and Medeni, 2013). Further information about school leaders is provided in Chapter 3.

Teachers who are most successful in their work and have extensive experience can be offered to lead the school's methodological association, or, as a one-time initiative, to take over some authority and responsibility for holding of workshops, conferences and other school events. Kazakhstan is one of the countries participating in PISA with the highest number of students attending school and in which principals report that teachers are involved at least once a month in decisions concerning the school (72%), a culture of continuous school improvement is being built (79%) and management practices reviewed (57%) (compared to 72%, 70% and 29% respectively in OECD countries) (OECD, 2013a).

Teaching workforce

Teachers represent the overwhelming majority of staff in schools. A profile of the teaching workforce is provided in Chapter 3. Small class size and student-teacher ratios result in a large number of teachers per school. In schools that offer two languages of instruction, it is common to divide teaching staff by the language track in which they teach. Within schools, teachers are grouped into methodological associations that meet regularly to discuss the organisation of instruction and teaching practices.

Teachers do get the opportunity to play roles within schools which diversify their careers. Examples include mentor for beginning teachers, head of the school's methodological association, project co-ordinator for a specific school initiative and

chairman of the school's teacher trade union committee. Some of these functions can be temporary and performed at the request of the school leader. School management has the autonomy to distribute specific, temporary functions to teachers within the school.

Learning support staff

In Kazakhstan, schools hiring staff whose main function is to assist the work of teachers is not usual practice. In other countries, such "Learning Support Staff" typically assist teachers in their instruction, provide support for students and contribute to the overall learning-related activities of schools. The most common learning support staff in Kazakhstan is laboratory assistants for subjects such as physics, chemistry, biology and computer science. Their work consists in maintaining laboratories, preparing experiments, and assisting teachers in conducting laboratory classes.

Other school staff

Schools have to employ a large number of support staff as determined by Decree no.77. A total of 13 other professional categories are stipulated to support the day-to-day operation of schools (e.g. accountant, psychologist, nurse, librarian, clerk, secretary, repair man, guard, doorman) (See Annex 4.A1). The number of positions per category depends on the type, level of education and number of consolidated classes of the school.

School and student arrangements

The extensive system of norms is designed to ensure equality in schooling conditions across the country. Norms for teachers, student-teacher ratios and "sanitary" conditions of schools mean that, within schools, most students are supposed to encounter comparable conditions. In the vast majority of schools, students study the same curriculum that specifies the grade-specific skills to be learned. Textbooks are provided to students in all schools; teacher guides and software are provided with the new textbooks.

School choice and student admission policies

Students have priority when enrolling in a school within their neighbouring zone, defined by the *rayon*, but have the right to attend any school in the country. If a school receives more applications than the permitted class and school size, the number of places available can be increased, with the agreement of *rayon* authorities, until the minimum area of 2.25 m^2 per student is reached. This possibly implies opening new classes when applicants are residents of the zone. Schools with a specific educational orientation are allowed to hold entry tests. A survey found that the two most important criteria used by parents when choosing a school for their children were the distance from home and the quality of the teachers (NCESE, 2013).

Class size and student-teacher ratio

Average class sizes in Kazakhstan are relatively small: 17.7 students in primary classes, 18.1 students in lower secondary classes, and 15.6 students in general upper secondary classes (the 2012 OECD averages were 21 and 24 for primary and general lower secondary education; OECD, 2014a). This hides considerable variations across *oblasts* and cities: from 9.9 students in primary education in North Kazakhstan to 25.6 students in primary education in Almaty City. The average class size in small-class schools (8.4 students) more than halves that of other schools (20.8 students) (see Table 4.1).

Similarly, student-teacher ratios are low when compared to those in the OECD area. The country average is 8.5, ranging from 5.5 in North Kazakhstan to 14.9 in Astana City (see Table 4.1). The 2012 OECD average was 15, 14 and 14 for primary, lower secondary and upper secondary education, respectively (OECD, 2014a).

Current regulations establish that, in general, school education, class size should not exceed 25 students. However, regional and local authorities have some discretion in adjusting class sizes. Also, class sizes can be smaller (20 students) in advanced grades and increased up to a per-student unit area of 2.25 m^2 if construction work is underway. Regulations also determine the maximum class size for special education classes. For example, class size cannot exceed 8 students for classes of visually-impaired students and for classes of hearing-impaired students.

Table 4.1. **Class size and student-teacher ratio, by region, grade and school size, 2011**

Oblast or City	Class size by grade			Class size by size of school		Average class size	Student-teacher ratio
	Grades 1-4	Grades 5-9	Grades 10-11 (12)	Small-class schools	Non small-class schools	Total	Total
Akmola	11.7	12.8	10.3	8.2	17.7	12	7.4
Aktobe	15.8	16.7	15.2	8.5	22.1	16.1	7
Almaty	19.2	19.4	14.3	8.5	20.5	18.6	8.7
Atyrau	19.1	18.5	15.2	17.5	18.4	18.3	9.1
East Kazakhstan	15.4	15.9	14.5	9.9	17.5	15.5	8
Zhambyl	19.1	19.2	16.4	12.5	20.5	18.8	8.3
West Kazakhstan	14	15.5	13.4	7.2	18.5	14.6	7.4
Karaganda	16.9	17.6	14.4	7.1	20.3	16.9	8.9
Kostanai	12.8	14.7	11.7	8.0	19.7	13.5	7.6
Kyzylorda	21.3	21.5	18.3	6.0	21.8	20.9	6.9
Mangystau	21.8	22.3	18.4	9.8	21.8	21.7	11.7
Pavlodar	13.8	13.7	11.8	6.9	21.5	13.5	7.7
North Kazakhstan	9.9	11.4	10.6	6.9	16.6	10.6	5.5
South Kazakhstan	20.8	21.7	20.8	10.6	21.7	21.2	9.2
Astana City	25.3	24.5	24.7	-	25.1	24.7	14.9
Almaty City	25.6	23.9	21.5	-	24.4	24.4	12.4
Country average	**17.7**	**18.1**	**15.6**	**8.4**	**20.8**	**17.6**	**8.5**

Source: IAC (2014), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Kazakhstan*, *www.oecd.org/edu/school/schoolresourcesreview.htm*.

Grouping of students

Schools are expected to compose classes within age-specific grade-level sections that are balanced across gender, social background and ability. Ability grouping is forbidden in grades 1-4 while students in grades 5-9 can be grouped on the basis of their electives and ability. Primary school students typically remain with the same teacher from 1st through fourth grade, in a practice called "looping" or "multi-year teaching" that is common in other countries. The separation of students into different educational programmes occurs only after grade 9, when students can choose to continue to tenth grade in the same regular school, in a more academic school (e.g. lyceum, gymnasium) or a vocational school, and are therefore separated into different educational programmes.

Student progression and support

There is no systematic national policy to support students who are falling behind and, while support strategies are typically organised at the school level, these tend to be little documented. The review team visited schools where teachers and psychologists provide students with some individual attention in the form of remedial after-school classes at schools. Some students told the review team that when they had difficulty with any subject, their first strategy was to discuss the problem with their teacher. In addition, they also reported attending free after-school classes taught at the school.

Grade repetition is rarely used in Kazakhstan. Official statistics indicate that only 0.04% of students repeated a year in 2012 (IAC, 2014). According to self-reported data in PISA 2012, about 2% of 15-year-olds had repeated at least a year throughout their schooling, a proportion much smaller than the average across OECD countries (12%) (OECD, 2013a). First grade students do not repeat a year in general, unless recommended by the psychological, medical or pedagogical services and upon the agreement of the parents. Students in grades two to four with unsatisfactory marks in fewer than two subjects are allowed to retake exams in those subjects and, if they successfully pass them, they progress to the next grade. Students in grades five to eleven with one or two subjects failed retake the exams and receive additional homework on these subjects during the summer. If students fail the exams, they might repeat the year or can be transferred to remedial classes if recommended by the psychological, medical or pedagogical services and upon the agreement of the parents. The pedagogical council of the school and the school principal might make students with unsatisfactory marks in three or more subjects repeat a year.

School climate

Schools in Kazakhstan appear to have a positive climate, with a relatively high emphasis on academic success (see Table 4.2). Over two-thirds of students participating in the 2011 Trends in International Mathematics and Science Study (TIMSS) studied in schools that had a high emphasis on academic success, as reported by principals and teachers. Similarly, about two thirds of students studied in schools where teachers reported the school was safe and orderly, and nearly all fourth grade students studied in schools where the principal reported hardly any problems with school discipline or safety. In comparison with other countries participating in TIMSS 2011, Kazakhstan reported the

Table 4.2. **Perceptions of principals, teachers and students of school climate, 2011**

	Grade 4			Grade 8		
	Kazakhstan	International Average	Highest OECD	Kazakhstan	International Average	Highest OECD
"Very high" or "high" emphasis on academic success as reported by principals	70	66	93	65	60	82
"Very high" or "high" emphasis on academic success as reported by teachers	80	67	96	73	53	75
Safe and orderly school as reported by teachers	67	53	85	65	45	64
"Hardly any problems" with school discipline and safety as reported by principals	91	61	85	44	16	23
Students "almost never" bullied at school as reported by students	64	48	68	73	59	79

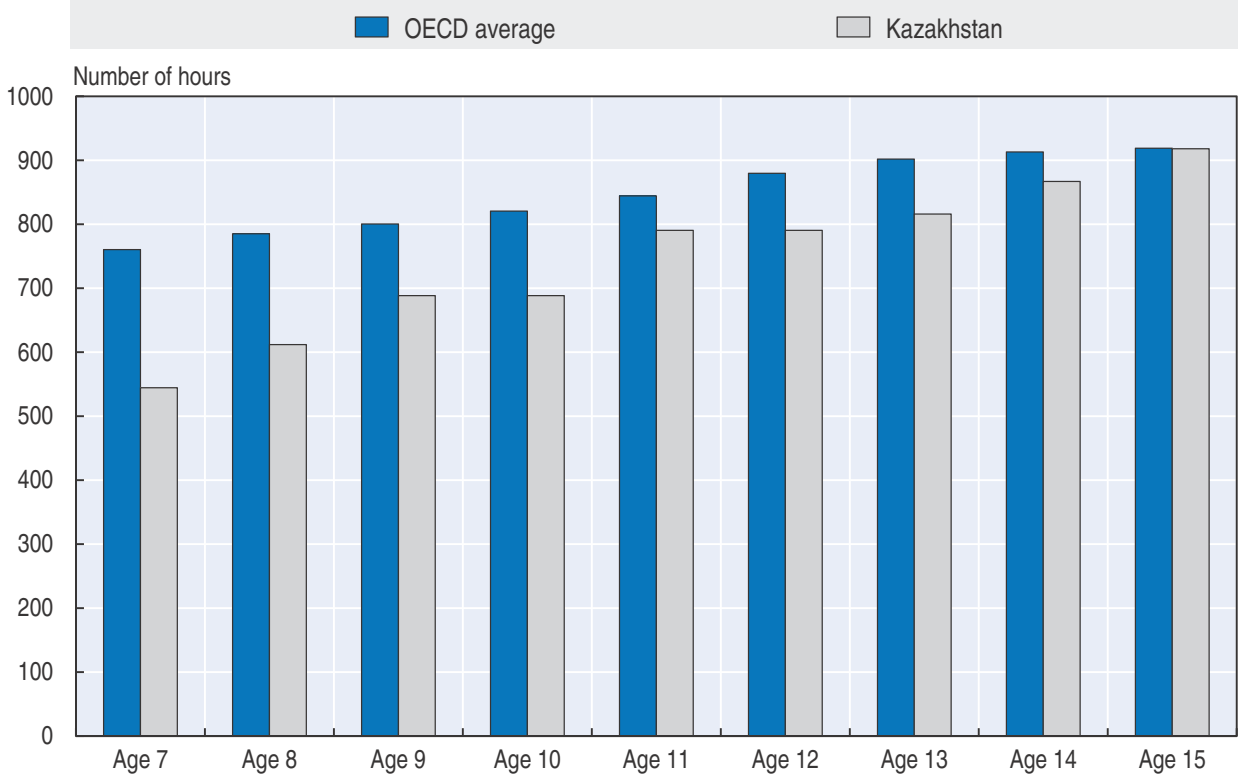
Source: Mullis, I. et al. (2012), *TIMSS 2011 International Results in Mathematics*, IEA TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College, Boston.

least amount of problems with school discipline and safety at both fourth and eighth grades. Finally, about two-thirds of fourth grade students and three-quarters of eighth grade students reported that they almost never experienced bullying at school.

Instructional time and extracurricular activities

Time is one of the most important resources used in student learning. More instructional time does not necessarily translate into more learning but little instructional time limits learning opportunities. The length of the official school year in Kazakhstan is comparable to that of many OECD countries. The school year is decided centrally and is the same for all schools: 33 weeks for grade 1 and 34 weeks for other grades. Schools are in session six days a week, and students attend classes for 24 to 39 lessons per week, depending on their grade level. The total amount of instructional time in school, however, is shorter in Kazakhstan than in most OECD countries, because the lessons are shorter (45 minutes in duration, 35 for the first half of grade 1), with breaks between lessons. By the end of grade 9, students in Kazakhstan complete 12% fewer hours of schooling than the OECD average. Much of this time difference occurs in primary grades 1-2, where the instructional year is 25% shorter, in terms of the number of hours, than the OECD average for these grades. Secondary school instructional hours, which are also lower than the OECD average, are only about 5% lower for students aged 14 and are the same for students aged 15 (Figure 4.1). In addition, norms for students in Kazakhstan require two hours of individual and group counselling per week.

Figure 4.1. **Compulsory instructional hours in Kazakhstan and OECD average, by age group, 2011**



Sources: IAC (2014), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Kazakhstan*, *www.oecd.org/edu/school/schoolresourcesreview.htm*; and UNESCO Institute for Statistics database, *www.uis.unesco.org/DataCentre/Pages/BrowseEducation.aspx*.

Instructional time is mainly devoted to the academic subjects of mathematics, science, language of instruction and foreign languages as the Kazakh curriculum is relatively narrow. In "tri-lingual" schools, students may study their own language of instruction (Russian, for example), Kazakh language and a foreign language (English, for example). At the primary level, reading is emphasised, whereas in grades 5-11 mathematics and the sciences are emphasised. Annex 4.A2 shows the number of lessons a student would be expected to have over the course of grades 1-11 in one trilingual school, by subject. A student who had completed grade 11 in this school would have studied the language of instruction (including reading in this language) for a total of 2 135 lessons – over half in the primary grades – mathematics for a total of 1 900 lessons, and the sciences for a total of 1 631 lessons.

Official instructional time is complemented by after-school "hobby groups" (or extra-curricular activities), which also provide students with the opportunity for a broader range of curricular experiences. In the 2012-13 school year, 53 272 such hobby groups, which operate on schools' premises, offered activities to nearly 881 437 enrolees; since some students may participate in more than one "hobby group" the number of enrolees may be greater than the number of individual students. These after-school "hobby groups" or "clubs" engage students in such activities as fine arts, choreography, vocal and choral groups, and performance groups. PISA 2012 data indicate that over 80% of 15-year-old students attend schools that offer such extracurricular activities as sports (99%), mathematics competitions (97%), service opportunities (97%), arts (89%), or school yearbook (82%) (OECD, 2013a). In addition, more than 30 000 children participate in sports clubs throughout the country and a growing number of "extended education" institutions (680 in 2013-14) provide further extracurricular activities in areas such as ecology, technology, tourism, music and fine arts, recreational camps, and sports.

Paid tutoring services by individual teachers are forbidden in school premises. However, teachers can provide such services outside their school as an additional paid activity. Teachers can also work in after-school activities provided by education organisations other than schools. However, individual tutoring can also be organised within the context of school activities, for which teachers receive an additional compensation.

School facilities

Many schools use facilities throughout the day. Two-thirds of the country's schools provide instruction in two shifts, and a small number of schools (1%) operate in three shifts. Elimination of three-shift schools was one of the central pillars of the "100 Schools, 100 Hospitals Program", yet 110 such schools were in existence in 2013 – up from 71 in 2011. The great majority (80%) of these are located in two *oblasts* – Almaty and South Kazakhstan – the regions with the fastest rates of student population growth (NCESE, 2014). A symptom of infrastructure shortages carried over from Soviet times, multi-shift teaching results in a full use of the existing facilities throughout the day. After-school use of facilities is also quite common for a wide range of extra-curricular and related activities. School auditoria are used by art and drama circles, gyms and sport fields by athletic teams associated with the school, and classrooms are often used for the delivery of evening classes to adults (if permitted by the local executive authorities) (IAC, 2014).

School facilities are also heavily utilised year round. Summer camps and summer school activities are typically organised during the break in the academic year. These activities serve a range of social purposes – from providing children with creative and intellectual stimulation during school holidays to engaging them in vocational and social work to serving the needs of children from vulnerable families. These activities, typically provided free of charge, reinforce the school's role as the centre of community life in Kazakhstan's towns and villages.

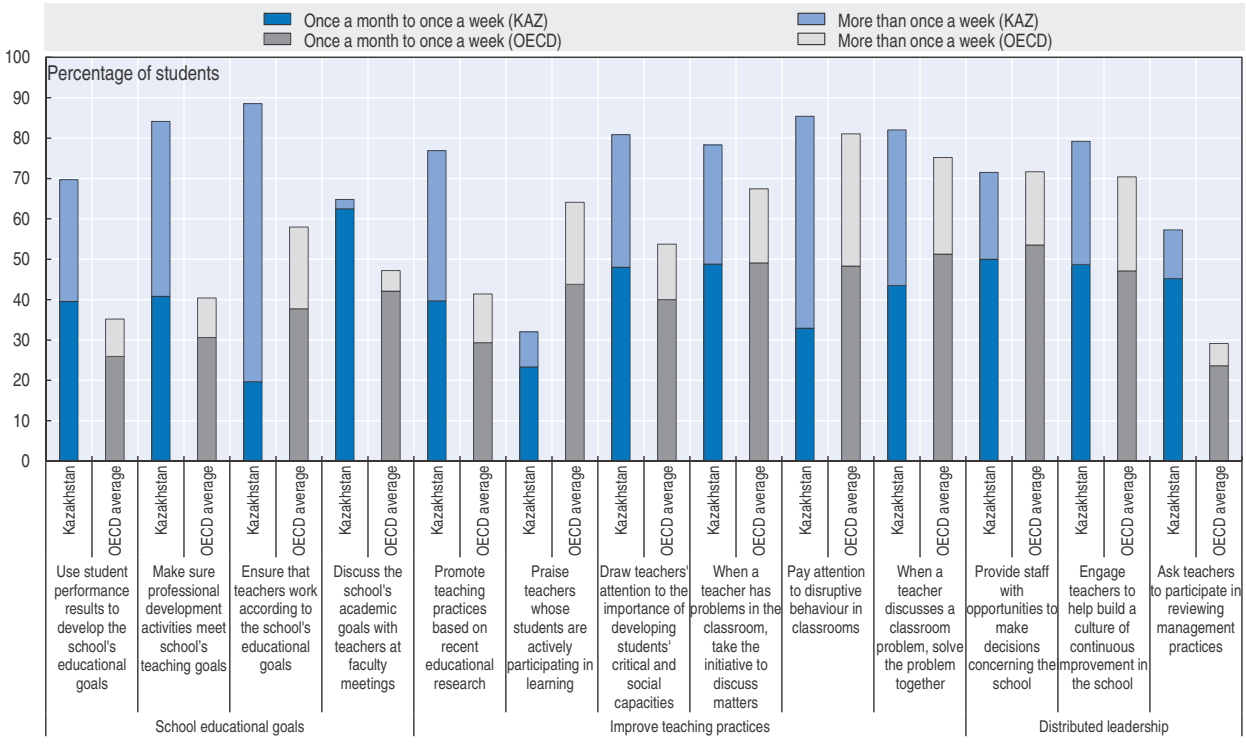
Professional development opportunities for teachers and school leaders

Working environment in schools

Teachers have many opportunities for professional development in their schools. In Kazakhstan, each school has at least one methodological association in which teachers meet regularly to discuss about instructional methods. A high share of students participating in the TIMSS 2011 study in Kazakhstan had teachers who reported that they frequently interacted with other teachers to: discuss how to teach a particular topic, collaborate in planning and preparing instructional materials, share what they had learned about their teaching experiences, visit another classroom to learn more about teaching and work together to try out new ideas (Mullis et al., 2012). This share was substantially higher than the international average for teacher collaboration. The review team visited schools that confirmed these survey findings. Teachers reported that they provided peer feedback to other teachers on their teaching and that school pedagogical councils (groups of teachers teaching the same subjects) discussed difficulties of individual students and tried to resolve problems as a group.

School leaders exercise a greater degree of instructional leadership than on average in OECD countries, according to self-reported data in PISA 2012 (see Figure 4.2). A large number of students in Kazakhstan attend schools whose principal reports that, at least once a month, he or she: makes sure that professional development activities for teachers are in accordance with the teaching goals of the school (84%); ensures that teachers work according to the school's educational goals (89%); discusses the school's academic goals with teachers at faculty meetings (65%); promotes teaching practices based on recent educational research (77%); praises teachers whose students are actively participating in learning (32%); draws teachers' attention to the importance of developing students' critical and social capacities (81%); takes the initiative to discuss matters when a teacher has problems in his/her classroom (78%); pays attention to disruptive behaviour in classrooms (85%); and works together with teachers to solve a classroom problem (82%) (OECD, 2013a). Moreover, all students are in schools whose principal reports that there is teacher peer review (i.e. lesson plans, assessment instruments, and lessons) and that the principal or senior staff observe lessons to monitor teaching practices, compared to 60 and 69% respectively in OECD countries. Also, a large number of students attend schools whose principal reports that at least once a month he or she uses student performance results to develop the school's educational goals (70%).

Figure 4.2. **Frequency of engagement in instructional leadership in Kazakhstan and OECD average, 2012**



Note: This figure shows the percentage of 15-year-old students in schools whose principal reported in PISA 2012 that he or she engaged from once a month to once a week (dark blue) or more than once a week (light blue) in the actions related to instructional leadership displayed above during the previous academic year.
Source: OECD (2013a), *PISA 2012 Results: What Makes Schools Successful (Volume IV): Resources, Policies and Practices*, *http://dx.doi.org/10.1787/9789264201156-en*.

Teacher professional development

Teachers are required to undertake professional development outside their schools at least once every five years, with activities that should not take longer than four months. Required professional development is publically financed and school principals take responsibility to manage professional development requirements within their schools. Teachers generally do not fund professional development. The appraisal of a teacher is not directly related to his or her professional development. While, a teacher may be advised to take a given professional development activity as a result of a teacher appraisal, he or she is not required to do so. Two types of professional development activities co-exist:

- *Traditional forms of professional development* activities such as courses, workshops and seminars, which are provided more locally through professional development institutions and grant a certificate for the teacher but do not lead to a salary increase. They usually last a minimum of 72 hours. When courses exceed 36 hours, the training typically involves project work and a final examination. These courses are offered by the regional branches of the National Center of Professional Development "Orleu".
- *"Higher-level" training programmes* which lead to a salary increase. These programmes reflect an ambitious reform of professional development in Kazakhstan and are led by the Center of Teaching Excellence at Nazarbayev Intellectual Schools in partnership with international partners (mainly the Faculty of Education at the University of Cambridge).

Objectives of the reform include the re-organisation of professional development provision in the country, the introduction of innovative practices in the school system on the basis of the experience accumulated at NIS schools and drawing on international best pedagogical practices. These programmes are proposed in three levels: (i) Basic: training focussed on the learning process in the classroom; (ii) Intermediate: training focussed on the learning process at the school; and (iii) Advanced: training focussed on improving school-wide teaching practice. These training programmes are provided by the Center of Teaching Excellence at Nazarbayev Intellectual Schools and the National Center of Professional Development "Orleu", although the latter can only provide basic and intermediate courses.

The selection of teachers who attend the advanced-level training is made by *oblasts*' Departments of Education, following a nomination by the school principal. Criteria for selection relate to number of years of teaching experience and evidence of successful teaching, ability to introduce innovative teaching, aptitude to disseminate own teaching experience, capacity to guide less experienced teachers, and knowledge of ICT technologies (see Table 4.A3.1 in Annex 4.A3). Each programme consists of three consecutive periods of one month duration: a theoretical introduction, on-the-job learning with online support, and a final off-the-workplace self-reflection, peer appraisal and an assessment of the changes in the teacher's pedagogical practice. Upon completion of the programme, teachers should prepare a portfolio, conduct presentations and pass an examination. In 2012, about 7% of teachers did not successfully complete the programme. The successful completion of a "higher-level" training programme leads to a higher salary: an extra 30%, 70% and 100% of the basic salary for a basic, intermediate and advanced programme respectively (see Table 3.4 in Chapter 3).

In 2013, 50 600 teachers attended shorter-term traditional forms of professional development provided by the regional branches of the National Center of Professional Development (NCPD) "Orleu". For the same year, the number of teachers attending "higher-level" training programmes provided by NCPD "Orleu" was 8 691 and 1 198 for the basic and intermediate levels, respectively, while the number of teachers attending the same type of programmes at the Center of Teaching Excellence at NIS was 1 147, 997 and 3 093 for the basic, intermediate and advanced levels, respectively. Teachers can also undertake professional development outside the framework of official requirements, as with the acquisition of new formal qualifications. This is sometimes achieved with the support of the respective school.

Leadership development

School leaders tend to develop their leadership skills through their individual on-the-job practical experience. Teacher education programmes do not have a school management component and completion of a leadership development programme is neither required to be eligible for a leadership position nor necessary after being appointed to the position or before taking up duties. Participation in in-service professional development is not mandatory and, in contrast with teachers, it does not lead to salary increases. Also, there are no mentoring schemes or professional learning communities for school leaders.

The National Center for Professional Development "Orleu" and its regional offices are responsible for the design and delivery of most in-service leadership development courses. The content of the courses mainly focusses on: (i) theory and methodology of management in education; (ii) status of education in Kazakhstan; (iii) methods of management in education; (iv) theory and methodology of school management; and (v) modern social and cultural aspects of school management (IAC, 2014). Some efforts have been undertaken in recent years to introduce a practical component with internships in leading schools, using more interactive and information technology, and expanding access by providing distance learning courses (IAC, 2014). In 2013, 568 school principals (9% of the total) and 2 126 school deputy-principals (12% of the total) participated in the "Orleu" professional development courses (IAC, 2014), which suggests that school leaders participate in training courses on average every 10 years of service. According to data from the Ministry, only 56% of school principals had attended advanced training courses for management staff in 2012 (IAC, 2014).

The Center of Teaching Excellence of Nazarbayev Intellectual Schools together with Nazarbayev University also offers professional development opportunities for school leaders. It has developed with the support of the University of Cambridge (United Kingdom) an innovative 9-month training programme that combines theoretical and hands-on experience. The programme lasts a total of 640 hours, which are distributed as follows: (i) introductory face-to-face training (160 hours); (ii) practical experience in a school with support of a coach (80 hours); (iii) face-to-face training to deepen and complement the knowledge gained, reflection and evaluation of school leaders (160 hours); and (iv) an internship in a school with the direct support of a coach (240 hours). The main purposes of the programme are to: (i) develop an understanding of the role and mission of the modern school leader; (ii) form key competencies in the field of leadership and governance, strategic planning, management and forecasting; (iii) equip school leaders with the skills, techniques, forms and approaches to improve their own activities and the activities of teachers and students; and (iv) develop leadership skills to foster collaboration with parents and the community. In 2013, only 250 school principals or deputies participated in this programme. In 2013, the Center also organised a five-month programme (June to October) for about 70 school leaders of the 35 schools where some innovations of the NIS are being piloted. The programme consisted of an introduction, a leadership development course abroad, some distance learning, some observation at a NIS, and a final project (NIS, 2013).

Evaluation and assessment

Student Assessment

Student performance is assessed by a wide range of instruments, ranging from external national examinations to ongoing daily formative assessment in the classroom. At the national level, sample-based external assessments of student achievement (EASA) are conducted in grade 9 since 2012, the results from which are used as key performance measures towards national goals. These are low stakes for schools, teachers and students. Summative assessment is based on teacher-based assessments (including for final examinations in certain subjects at the end of certain grades) and, for the final year of schooling, on national examinations (Unified National Test, UNT). The latter take place at the end of school education (eleventh grade) and are targeted at students who want to enter higher education (they mostly function as an entry examination for higher

education). Students can graduate from secondary education with no need to take the UNT. The results of UNT are largely used to compare performance across students, schools and regions and to assess whether student learning objectives are met at the national level. The National Testing Centre designs and administers both the EASA and the UNT while both assessments are regulated by the Committee for Control in the Field of Education and Science.

The 2012 EASA assessment was taken by 37 799 students in 653 schools, chosen by taking a 10% sample of the schools in each region. Four subjects were assessed (language of instruction, history, mathematics and chemistry). The Ministry of Education and Science published the 2012 results in the report *Analysing Results of the External Assessment of Student Achievement of ninth grade Students* (OECD, 2014b).

In 2012, 117 333 students took the UNT, which constituted 75% of the total number of school graduates. The UNT is taken in five subjects. Four are compulsory: mathematics, history, language of instruction (Kazakh or Russian), and Russian (in schools with Kazakh language of instruction) or Kazakh (in schools with Russian language of instruction). The fifth subject can be chosen from the following: physics, chemistry, biology, geography, world history, English language, German language, French language, Kazakh literature and Russian literature. The most popular optional subjects in 2012 were biology (chosen by around 33% of candidates), physics (31%) and geography (around 15%) (OECD, 2014b). The Ministry of Education and Science and NCESE (whose services, as of 2015, were integrated in IAC) publish annual reports showing student results by region and subject and over time. The reports include school performance ratings, naming the 100 schools with the highest average UNT scores (which tend to be schools for gifted children) and the 100 schools with the lowest average UNT scores (OECD, 2014b). *Oblast* and city education departments also typically publish on their websites UNT results of their *rayons* and schools, by subject. As a result, UNT results are published in school rankings at *rayon*, *oblast* and national levels.

Teacher attestation

Teachers are required to go through a teacher attestation process at least once every five years, either to access the category above or to be able to keep the current category (see Chapter 3 for a description of categories in the career structure). Teachers also have the choice to voluntarily request an attestation for a category upgrade before 5 years elapse since their previous attestation. In this case, they must pass an examination developed by the National Testing Centre, consisting of 60 multiple choice questions (20 questions on laws and regulations, 20 questions on the basics of psychology and pedagogy and 20 questions on subject-matter knowledge). The attestation process requires the teacher to submit a portfolio containing information about participation in professional development and other pedagogical activities (e.g. development of teaching methods and curricula), as well as information about the educational achievement of his or her students (e.g. winners of Olympiads and other competitions) (OECD, 2014b).

Teachers have their attestation applications reviewed by commissions formed at the school level for 2nd Category, at the *rayon* level for 1st Category and at the *oblast* level for the Highest Category (and sometimes 1st Category). At the school level, commissions are formed by high level school staff, including teachers from the highest categories. For small schools, commissions might include teachers from neighbouring schools. At all levels, commissions generally include "the most skilled education employees", representatives of teacher unions, and members of methodological and pedagogical associations.

The criteria for teacher attestation are the "Standard qualification characteristics of teachers". These apply to all teachers and are divided into three main areas: official duties, additional knowledge required, and qualification requirements. Table 4.A3.2 in Annex 4.A3 shows the "qualification requirements" to be admitted to the different teacher categories. "Official duties" relate to the main responsibilities of teachers (e.g. promoting the development of social and individual abilities in students, preparation of lesson plans, communication with parents) while "additional knowledge required" includes in-depth knowledge of the country's constitution and its laws and regulations and how these are applied in the education sector. Using criteria which are specific to the category concerned, the attestation commissions look at evidence of pedagogical experience and practice (class preparation and methodological materials), participation in further training and professional activities (conferences, pedagogical competitions, workshops), participation in experimental work and in the development of study programmes and curricula, leadership of peer groups (including teacher unions, creative teams), participation in the administration of educational institutions, as well as at information from independent evaluations of teaching quality by parents and students and at educational achievement (e.g. performance of pupils in Olympiads and in other competitions) (OECD, 2014b). The attestation process also includes an interview with the teacher and lesson observation.

Following the examination of submitted materials and the teacher interview, the attestation commission makes one of the following conclusions: (i) the teacher conforms to the category for which she or he is applying, i.e. a promotion is awarded if the teacher is applying for a category upgrade or the category is maintained for a teacher seeking to keep his or her current category; (ii) The teacher is subject to re-attestation, i.e. the teacher is given a second opportunity; or, (iii) The teacher does not conform to the category for which she or he is applying, i.e. a promotion is not awarded if the teacher is applying for a category upgrade or the category is withdrawn for a teacher seeking to keep his or her current category. Hence, theoretically, if their teacher attestation is not successful, teachers can be downgraded to a lower category, although it is unclear how often this occurs (OECD, 2014b). The teacher can also appeal the decision of the commission.

Attestation of school principal and deputies

In contrast with appraisal processes for teachers, the attestation of school leaders is still in its initial stages in Kazakhstan. The law provides for an attestation of school principals once every three years but does not stipulate any requirement for the attestation of other leaders. No official appraisal criteria have been established yet and, in practice, principals' attestation occurs during external school evaluation processes by taking into consideration students' achievement (e.g. average UNT results, results in Olympiads) and annual reports on teachers' professional development (World Bank, 2013). The results of the attestation have no impact on principals' compensation or career progression. Other school leaders are not attested for their leadership duties but might be subject to regular teacher attestation.

School Evaluation

In Kazakhstan each school has to be licensed before it can start operating and is then required to undergo an attestation (or inspection) process at least every five years. Both these processes are the responsibility of the Committee for Control in the Field of Education and Science, created in 2011, which is part of the Ministry of Education and

Science. Through these processes, the Committee oversees the quality of education in individual schools, assesses compliance with regulations and takes measures to improve the quality of educational services. The Committee has territorial branches in *oblasts* and both the cities of Almaty and Astana, which organise both the licensing and school attestation processes. The initial licensing process for a school to start operating focusses on minimum material and staff requirements such as whether the school has the required staff and adequate buildings and equipment. It involves the formation of a commission which visits the school.

The references for school attestation are the education standards as well as regulations about teaching staff, schools' infrastructure, and schools' operation (e.g. maximum class size). The school attestation report is not made public. However, the public is allowed to consult the printed copy of the report that the school receives. Also, it should be noted that there is no requirement for schools to undertake school self-evaluation as such but only as an input for school attestation. However, many schools engage in internal discussions about ways to improve their practices, involving their teaching community. The school attestation process involves, for each school in the system, a sequence of activities comprising:

- A self-evaluation report by the school: addresses the general characteristics; staff structure; number of students; instruction, pedagogical work and teaching loads; training and guidance; research laboratories; ICT and library resources; student performance; research work; and professional practice.
- A visit by an attestation commission includes the observation of teaching and learning in the classroom, the review of school administrative documents (e.g. school plans, class schedule, lesson plans), testing of students, and interviews with school agents (students, teachers, parents). Aspects which are reviewed include teaching staff (e.g. qualification requirements, hiring procedures, teaching load), pedagogical approaches, quality of teaching and learning, adequacy of student population to school capacity, infrastructure (e.g. laboratories, ICT, library) and student performance. For example, in terms of teacher qualifications and experience, primary schools should have at least 20% of teachers at the two highest career categories (30% for secondary schools). In order to assess student performance, the school attestation process includes the application of standardised tests to students in the school. These tests are designed by the National Testing Centre specifically for school attestations and are targeted at students in grades 4, 9 and 11 in a wide range of subjects. Other grades might be tested with quizzes specifically designed by subject specialists who are part of the attestation commission.

  The attestation commission is typically formed by 15-16 individuals and visits schools for about a week. The chair is a staff of the Committee for Control, 4 individuals are from other regions, and the rest represent local experts (mostly teachers). The great number of members of the commission is to a great extent related to the concern of covering the different subject specialisms offered at the school. Members of commissions are paid for their services. Candidates for attestation commissions are selected from regional and urban databases which typically include teachers with extensive experience and who are involved in methodological associations. The number of members in a commission might slightly vary according to the number of teachers in the school and the variety of disciplines they teach.

- The preparation of a school attestation report together with the attestation decision (*attested* or *not-attested*). The attestation commission makes a recommendation regarding the attestation decision and the Committee for Control then validates (or not) such recommendation. A favourable attestation decision is taken if the school fully complies with education regulations and standards, including in terms of student performance (at least 70% of the tested students pass the standardised test applied by the attestation commission). A negative attestation decision leads to the suspension of the school's license. The attestation report contains a list of the violations found and sometimes identifies the liable individuals within the school. While the focus of the report is an account of the violations to the regulations, it generally also contains a range of recommendations for the improvement of school pedagogical practices. It is expected that the report is discussed among the teachers and school leaders. Often the recommendations in the report are used by the school as an opportunity to request further resources from local education authorities.
- A follow-up phase for those schools *not-attested* (whose license is suspended). Schools which are not attested are supposed to develop an action plan. A commission is formed to review whether the weaknesses and violations detected on the occasion of the original attestation process were eliminated within a specified time (typically six months). If that is the case, the school's license is re-activated. Otherwise, the school's license is revoked and the school can no longer operate. Support for improvement is expected to be provided by local education authorities (*rayons* and city departments).

In 2013, only about 54% of the 1 427 schools which underwent the attestation process received a positive decision in their original attestation process (according to data provided by the Committee for Control in the Field of Education and Science) (see Table 4.3). This figure contains great variance across the country, ranging from only 12.2% in Atyrau to 83% in Almaty city.

Table 4.3. **School attestations, 2013**

Region	Number of school attestations undertaken	Attestation decision		
		Attested	Not attested	Proportion attested (%)
Akmola	143	100	43	69.9
Aktobe	65	30	35	46.2
Almaty	138	24	114	17.4
Atyrau	41	5	36	12.2
East Kazakhstan	129	87	42	67.4
Zhambyl	86	51	35	59.3
West Kazakhstan	75	23	52	30.7
Karaganda	91	51	40	56.0
Kostanay	109	38	71	34.9
Kyzylorda	80	48	32	60.0
Mangystau	22	12	10	54.5
Pavlodar	82	60	22	73.2
North Kazakhstan	98	55	43	56.1
South Kazakhstan	191	125	66	65.4
Almaty City	47	39	8	83.0
Astana City	30	21	9	70.0
Total	**1 427**	**769**	**658**	**53.9**

Source: Data provided by the Committee for Control in the Field of Education and Science to the review team.

System Evaluation

A range of tools are used to monitor performance of the education system in relation to the State Program for Education Development 2011-20. Information on student learning outcomes is collected from sample-based external assessments of student achievement (EASA), conducted in grade 9 in four subjects (language of instruction, history, mathematics and chemistry), and from the Unified National Test (UNT) taken by students who want to enter higher education (in a variety of subjects). The monitoring system also includes a range of statistics on education based on data collected from schools on a standardised format. Also, international benchmarks of student performance provided by international student surveys such as PISA and TIMSS have been influential in driving policy development at the system level. In addition, NCESE (whose services, as of 2015, were integrated in IAC) also conducts surveys to assess societal views of education which include the collection of views and perspectives from principals, teachers, parents, students and potential employers. By contrast, there is no framework to evaluate the work of *rayons*' and *oblasts*' Departments of Education even if the monitoring of their work can be followed on the basis of student learning outcomes.

Both the Ministry of Education and Science and NCESE (as of 2015, the Information-Analytic Center) publish reports with system-level analysis. Examples are the *National Report on the State and Development of Education*, *The Results of the Monitoring Study of fifth and ninth grade Student Performance Evaluation*, *Analysing Results of the External Assessment of Student Achievement of ninth grade Students* and *Analysis of Unified National Test Results 2012*.

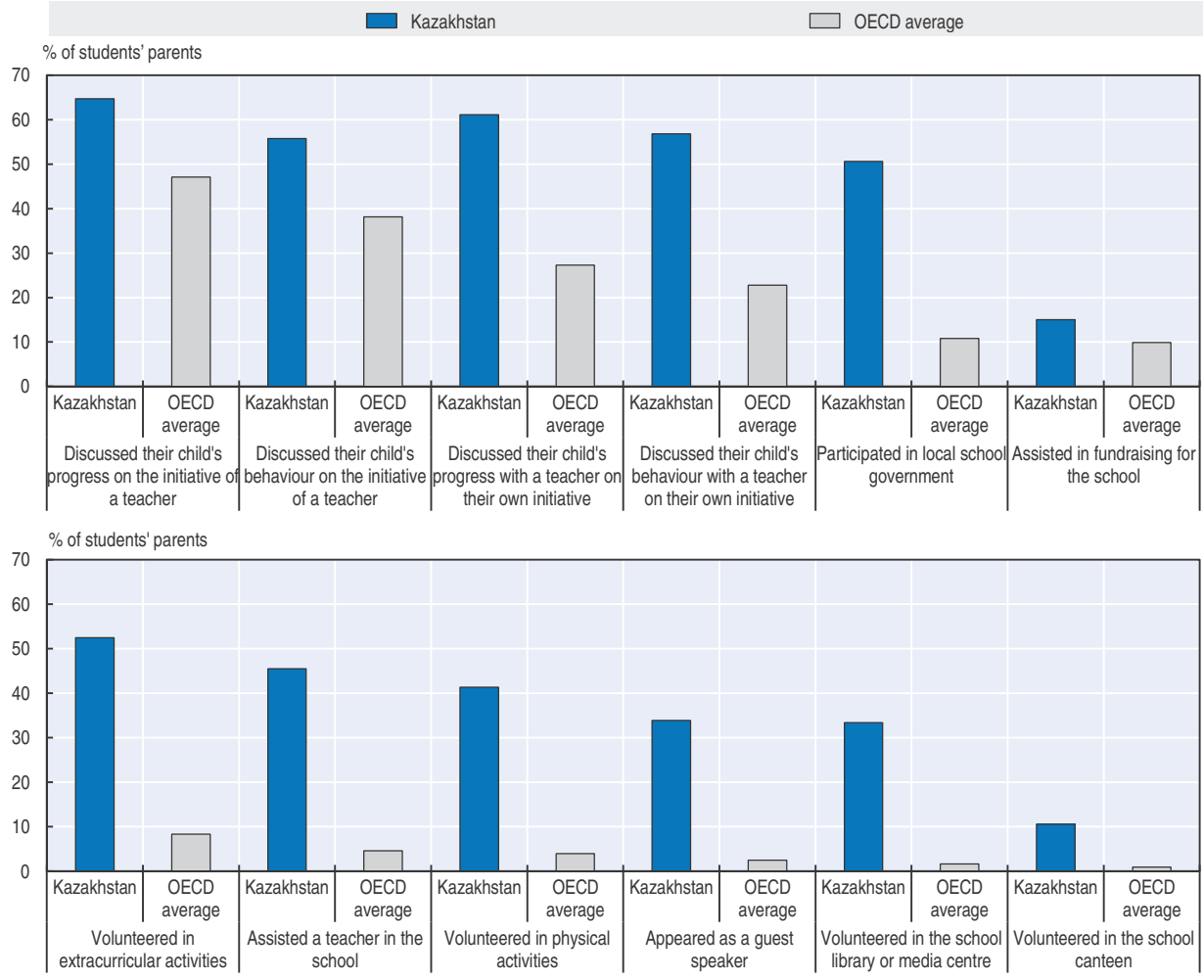
Collaboration with other schools and community engagement

Little collaboration exists between schools. There are no formal schemes for school leaders to engage in supporting their peers in other schools (e.g. exchanging best practices, mentoring new leaders, supporting those in low performing or isolated schools) and the concept of system leader who can not only lead his or her school but also contribute to system-wide improvement is rather incipient. There are few mechanisms to share resources between schools in order to make a more efficient use of their physical infrastructure, equipment and instructional materials, or their human resources.

Opportunities for formal community engagement in school governance are emerging as Boards of Trustees are being established and are consolidated in schools. Boards of Trustees, as a possible form of a collegiate body contributing to school management, with the participation of stakeholders from outside the school (e.g. parents, local businesses), were established in 2007 in the context of a policy seeking to decentralise decision-making within the education system and grant the school community with an opportunity to participate in school management (see also Chapter 2).

Prior to the introduction of Boards of Trustees, schools would freely find their own ways to foster collaboration with their surrounding communities. Most typically, such collaboration took the form of a Parents' Committee, elected by a general parents' meeting at the school (see Chapter 2). PISA 2012 asked school principals to indicate the proportion of students' parents who participated in various school-related activities. As shown in Figure 4.3, a greater proportion of parents in Kazakhstan seem to participate in a wide range of activities in schools relative to the OECD average.

Figure 4.3. **Perceptions of parental involvement in Kazakhstan and OECD average, 2012**



Note: This figure shows the school principals' report on the percentage of students' parents who participated in the school-related activities displayed above during the previous academic year.
Source: OECD (2013a), *PISA 2012 Results: What Makes Schools Successful (Volume IV): Resources, Policies and Practices*, *http://dx.doi.org/10.1787/9789264201156-en*.

Strengths

A collaborative spirit prevails in schools

Teachers have opportunities to collaborate

Teachers seem to have opportunities to collaborate in schools in Kazakhstan. The frequency and intensity of school-based professional development opportunities in Kazakhstan seems to be significant. School-based teacher professional development enables the improvement of teaching practices in view of meeting the school's needs. Teachers are aware of the learning goals pursued by their colleagues and potential areas for collaboration (through joint work in methodological associations), and such joint efforts can contribute to establishing professional learning communities in schools. Teachers must develop competencies to work as a group, adding to the social asset of schools. To do so, individual courses are not enough, even when meeting institutional needs, and school-based approaches can be more effective. The experience of Finland, Singapore,

Japan and Canada shows that school-based strategies can create a positive culture in which teachers push and also pull each other into energising improvements where all the staff and therefore all students are bound to learn (Hargreaves and Fullan, 2012). Indeed, high-performing countries tend to focus on the continuous improvement of the entire teaching staff in schools rather than on the development of individual teachers. In some countries, notably China (Shanghai) and Finland, critical reflection on practices, using educational research knowledge and methodologies, takes place in higher education as well as in school classrooms, thereby creating a 'virtuous circle' of reflective practice (OECD, 2011).

School leadership responsibilities are distributed and include instructional leadership

The legal requirement to distribute leadership responsibilities among several staff lays down a foundation that could favour the development of distributed leadership in Kazakhstan. By establishing several individual formal leadership roles, norms recognise that strategic and pedagogical leadership cannot be exercised over time by one person alone. This is in line with an increasing body of research that suggests that school leadership teams are the basis for increasing leadership capacity and fostering more sustainable school improvements as opposed to the traditional leadership style based on a single leader (Pont et al., 2008; Harris, 2012). The existence of several formal positions can also pave the way towards leadership succession, which might become an issue of particular relevance in the next years in view of the age structure of Kazakh school principals.

In practice, however, the extent to which leadership is actually distributed in schools, and thus its potential to positively influence organisational outcomes and individual performance, can be questioned. Formal and informal norms restrict the ability of school principals to utilise all the available talent within schools as, for example, principals cannot decide on the number and functions of the leadership team. The extent of actual delegation of responsibilities from principals to other leaders varies between schools and depends on personal management style of each specific principal (IAC, 2014). The level of interaction and shared vision among members of school leadership teams observed by the review team suggest that a hierarchic model prevails over a flattener distributed leadership structure.

Another positive feature in Kazakhstan is the great attention placed on instructional leadership. Many of the tasks that are expected from principals in Kazakhstan are aligned with instructional leadership tasks that are associated with improvements in student performance. As shown by data from PISA 2012, according to the perceptions of Kazakh school principals, instructional leadership seems to be more widespread and frequent in Kazakh schools than on average across the OECD (see Figure 4.2). Research on school leadership practices that are successful in raising student outcomes suggests that school leaders should place greater focus on improving the core business of teaching and learning (Robinson et al., 2008; Day et al., 2009). In many high performing systems, school principals spend around 80% of their time in improving instruction and taking action to better motivate and develop the professional capacities of teachers, and their functions and incentives are focussed on instructional leadership rather than school administration (McKinsey, 2010).

Students progress smoothly through grade 9

Students are not tracked into different programmes until grade 10

The separation of students into different educational programmes does not occur until grade 10, which means that all students are exposed to the same curriculum through grade 9. While the optimal time to track students is difficult to estimate, extensive research indicates that selecting students into different tracks at an early age is detrimental to equity and does not increase the overall performance (Slavin, 1990; Hanushek and Woessmann, 2005; Van de Werfhorst and Mijs, 2010). Although students in higher-achieving "tracks" have larger learning gains, their gains are offset by the smaller learning gains of students in lower-achieving "tracks" (Schofield, 2010).

Many OECD countries have introduced comprehensive education measures, and raised the age of first tracking or postponed it to a later stage of the educational process – most commonly to the end of lower secondary education. One of the most recent reforms was undertaken in Poland, where early tracking was postponed one year, until the age of 15. The reform raised students' performance substantially, particularly for those students that would have been assigned into vocational tracks, without hindering the performance of top achievers (Wisniewski, 2007).

Policy expectations are that schools will compose classes within grade level sections that are balanced across gender, social background and ability. The same classroom composition and teacher is typically maintained during the first four grades of primary education. Multi-year teaching ("looping") provides a number of benefits for primary school students. The international literature suggests that looping provides consistency in the curriculum delivery, reduces the amount of time that teachers and students spend becoming oriented to each other, builds strong relationships among students, teachers and parents, and may improve student learning (Barger, 2013). It appears to be particularly valuable for disadvantaged students.

Grade repetition is rarely used and students have some opportunities to catch up

Students rarely repeat a year in Kazakhstan, a strategy conceived to support student learning but that has been proven largely ineffective and very costly. There are some support strategies to address the learning gaps during the school year, for example through remedial after-school activities, and opportunities to retake exams and do additional homework to catch up before the start of the following year. However, the review team found little evidence of the provision of early support to avoid that students fall behind, with personalised and intensive intervention, which very often have direct costs for schools.

The little use of grade repetition in Kazakhstan is supported by the vast body of literature that reports that the academic benefits of grade retention are slight and short-lived while the financial costs of grade repetition are large for both individuals and society (see OECD 2012a, for a brief summary). Some learning gains might accrue in the retained year as students are working on the same curriculum again but these tend to fade away in later years. Grade repetition has a long-term social and academic negative impact as it increases the likelihood of earning no qualification or only a lower secondary one. Moreover, it widens inequities because the proportion of students from disadvantaged backgrounds are more likely to fall behind and thus to repeat a year than other students. Also, students usually perceive repetition not as an enabling opportunity but as a personal

punishment and social stigma, and may be further discouraged from education. Its direct costs for school systems are very high, as these include providing an additional year of education and delaying entry to the labour market by a year. In Belgium, the Netherlands, Portugal and Spain the direct costs of grade repetition account for more than 8% of the annual expenditure on primary and secondary education (OECD, 2014a).

School facilities, equipment and learning materials are extensively used

School facilities are utilised extensively throughout the course of the day and the year in most schools. Multi-shift teaching, after-school activities, and summer camps mean that school buildings rarely stand idle. The Soviet tradition of equipping schools with large auditoria, workshops, gyms and sport fields (and occasionally swimming pools) raises the school's importance as institutions that can serve students in a variety of ways.

Information and communication technologies (ICT) are actively utilised in the teaching and learning process. The Government of Kazakhstan has embarked on an ambitious reform to equip the country's schools with modern digital resources to keep up with the educational needs of the 21st century. Through the e-learning programme schools have received computer hardware and software, interactive classroom equipment, and so forth. Curricula are being adapted to use the newly available digital resources, including multimedia manuals, exam software, encyclopaedias, and a wide range of web-based resources. Several schools visited during the course of this Review proudly displayed their interactive classrooms (e.g. smart boards) and demonstrated how the resources are used by teachers in the instructional process.

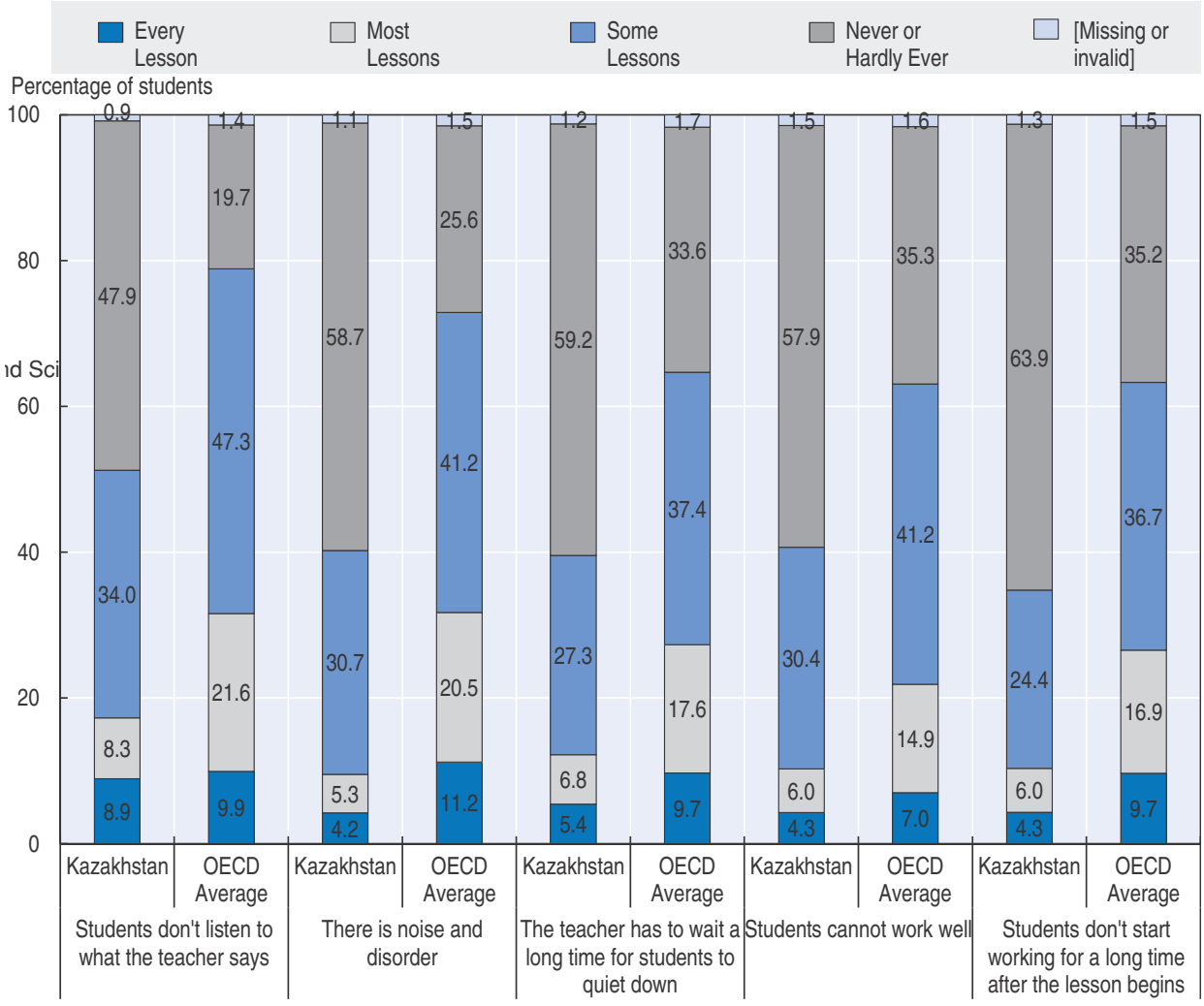
The official instructional time is provided with few disruptions and complemented with widespread after-school activities

The official amount of instructional time is provided with few disruptions

Schools have the flexibility to ensure that students receive the intended learning time, at an appropriate time of day. When students miss class for illness, they get extra classes from their teachers. Both students and teachers told the review team that students could receive make-up classes if they missed school for an excused reason such as illness. In some schools substitute teachers, typically colleagues within the same school, are available to cover teacher absenteeism. The availability, however, depends on the subject of the class as certification in the subject is required for substitution. In shift schools, principals can adjust the schedule and determine which grades attend the first, second or – in a few cases – third shift. This allows the principal to take into account the age of students. Norms require that grade 1 students attend the first shift, and generally all the primary grades attend the first shift, but the review team was told that other decisions related to the shift schedule were made at the school level.

In Kazakhstan, classes are orderly, without loss of time for student behaviour or teacher absenteeism. Principals of schools participating in TIMSS 2011 in Kazakhstan reported the lowest levels of problems with school discipline of any country participating in the study (Mullis et al., 2012). Only 10% of grade 4 students and 56 % of grade 8 students were in schools where the principal reported either "minor" or "moderate" problems, as compared with the international averages of 40% and 84%, respectively. Data from PISA 2012 also show a similar low incidence of disruptive behaviour that could reduce instructional time, which is substantially lower than the average for OECD countries (see Figure 4.4).

Figure 4.4. **Perceptions of disruptive classroom behaviour in Kazakhstan and OECD average, 2012**



Note: This figure shows the percentage of students who reported in PISA 2012 that the phenomena displayed above "never or hardly ever" occur, occur "in some lessons", occur in "most lessons" or occur in 'every lesson", in their mathematics lessons.
Source: PISA 2012 Compendium for the Student Questionnaire, *www.pisa.oecd.org*.

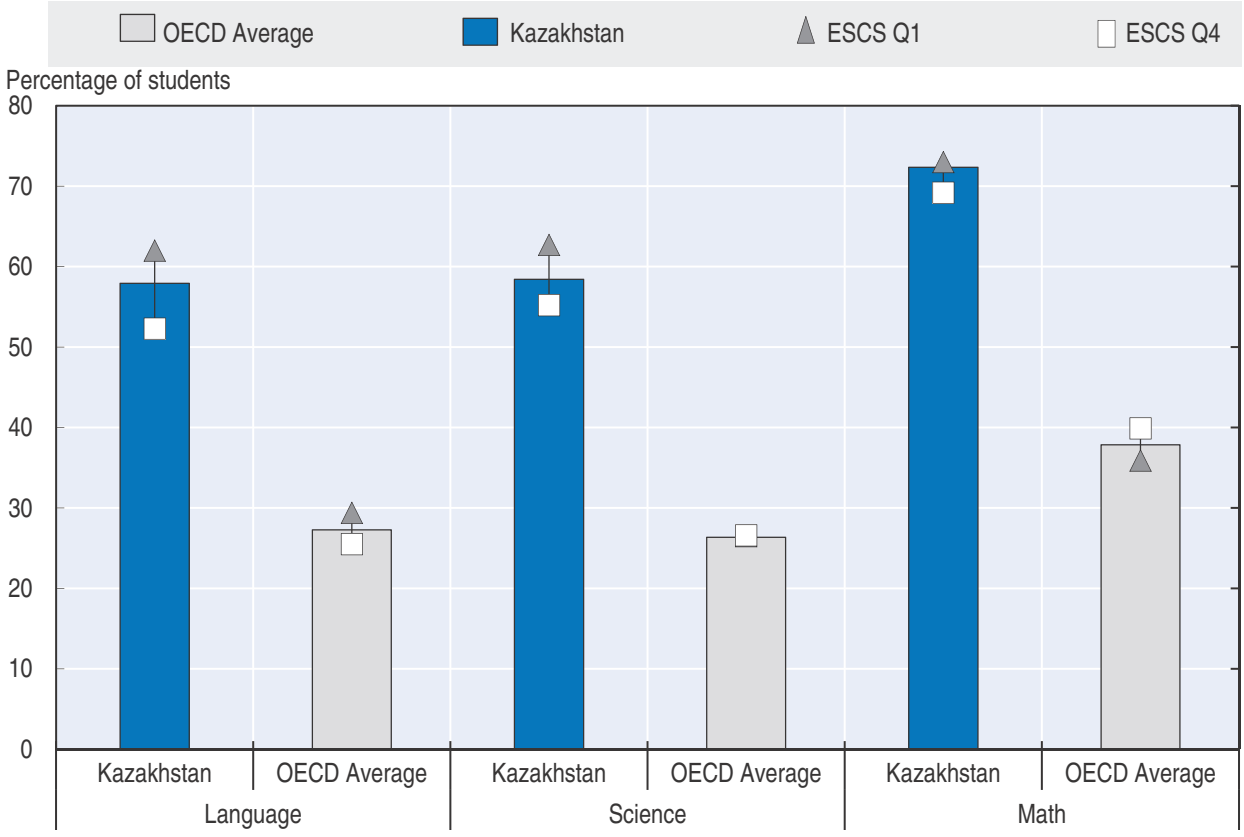
The prevailing collaborative spirit among teachers and school leaders combined with a supporting learning environment results in a positive school climate in Kazakhstan. School climate is a somewhat elusive concept: often recognisable, but difficult to measure (Anderson, 1982). But there is widespread consensus that school climate is a strong correlate of students' attitudes and achievement (Cohen et al., 2009). Recent international studies have classified four dimensions of school climate that are positively associated with student achievement: an emphasis on academic success as indicated by rigorous curricular goals; teachers who are effective in implementing the curriculum for all students; students that desire to do well; and parental support. In particular, schools with strong community involvement and teacher collaboration promote student achievement. Two other dimensions of school climate, a disorderly environment and frequent bullying, contribute to lower student achievement (Mullis et al., 2012).

After-school programmes are widespread and available to all students

Schools and other specialised public or private institutions offer many optional after-school programmes that provide students with the opportunity to learn after school hours and to participate in a wide range of activities, based on their interests. Public schools offer these programmes without cost to students, while private organisations offer similar or different programmes and charge fees. Some programmes are compensatory while others cater to higher achieving students. Teachers may also offer tutoring services in academic areas; tutoring services are classified as individual teaching activities and are regulated by law.

Many after-school programmes focus on the mandatory academic subjects, and a much higher share of 15-year-old students in Kazakhstan attend after-school lessons in core academic subjects as compared with students in the average OECD country (see Figure 4.5). A 2012 survey of over 12 000 parents of ninth grade students in four *oblasts* of Kazakhstan found high usage of tutoring services. Over one third of parents reported that their children used tutoring services in preparing for the UNT (Unified National Test). The tutors mainly helped with academic issues in mathematics, physics and English (NCESE, 2012).

Figure 4.5. **Attendance of after-school classes of 15-year-olds, 2012**



Note: This figure displays the percentage of 15-year-old students attending after-school lessons and the difference between the top and bottom quartile of the PISA index of economic, social and cultural status (ESCS).
Source: OECD (2013a), *PISA 2012 Results: What Makes Schools Successful (Volume IV): Resources, Policies and Practices*, *http://dx.doi.org/10.1787/9789264201156-en*.

Disadvantaged students seem to participate in after-school programmes. The review team was told that all students had access to extended remedial education in key subjects and that this was provided free of charge to students. Self-reported evidence from 15-year-olds in PISA confirms that a similar share of students from lower socio-economic groups participates in after-school lessons, which suggests some effort to target these programmes (Figure 4.5). In spite of this, students from low socio-economic backgrounds might have more difficulty attending extracurricular classes or tutoring services that prepare for admission to elite secondary schools and higher education.

After-school lessons appear to be matched to students' individual learning needs. For example, over 90% of schools offer after-school lessons in mathematics, and 26% of these schools report that whether the lessons are enrichment or remedial depends on the prior achievement of the student. Over half of schools offer both enrichment and remedial mathematics lessons, which is comparable to the OECD average, although fewer schools concentrate on remediation – about 4% of schools as compared with about one-third of schools in OECD countries (OECD, 2013a). Students told the review team that when they had difficulty with a subject they asked their teacher for an explanation and they also could study each subject after school free of charge.

Greater attention is paid to staff, school and school system evaluation

Teachers benefit from a certification process

In Kazakhstan, teachers benefit from a clearly established career structure with four steps (see Chapter 3) associated with a teacher certification process (teacher attestation). As explained in Chapter 3, the functions accomplished by the career structure (recognition of skills and matching skills to roles in schools) convey the important message that the guiding principle for career advancement is merit and have the benefit of rewarding teachers who choose to remain in the classroom.

Teachers, as they access higher categories of the career structure, are expected to have deeper levels of knowledge, demonstrate more sophisticated and effective teaching, take on responsibility for curricular and assessment aspects of the school, assist colleagues and so on. Given the potential greater variety of roles in schools as the teacher goes up the career ladder, the career structure fosters greater career diversification. Such opportunities for diversification already exist in Kazakh schools as with management responsibilities for teachers at schools, participation in methodological associations and mentoring of beginning teachers. These are likely to have a positive motivational effect. However, the different categories in the teacher career structure are not clearly associated with given roles and responsibilities in schools.

Appropriately, access to higher categories of the career structure involves a formal certification process (teacher attestation). These processes that are linked to career development can help provide incentives for teachers to perform at their best, bring recognition to effective teachers, support professional learning, and help recognise and spread good practice more widely. Certification (including certification renewal) at certain key stages in the teacher career can also provide useful information for accountability (as certifying teachers as fit for the profession and identifying underperformance), professional development and promotion. Given the high stakes of teacher attestation, it is appropriate that elements external to the school are involved (e.g. external evaluators, especially for the higher categories), some common references exist ("standard qualification characteristics of teachers"), and several types of evidence and multiple evaluators are used.

The requirement of certification/attestation renewal has clear benefits. It provides incentives for teachers to update their knowledge and skills continuously and it potentially allows the school system to identify core areas in which teachers need to keep improving. However, it is unclear why there are no provisions for a probationary period for new teachers in the school system as a key initial step in the teaching career. Similarly, a gap in the organisation of the teaching career is the absence of a regulated systematic induction or mentoring process for teachers as they enter the school system, which could be associated with the teacher's probationary period. While mentoring programmes are in place in most schools, these vary in their quality and are not formally integrated in the organisation of the teacher's career.

Another positive aspect of the teaching career in Kazakhstan is the internal teacher appraisal which typically takes place regularly in schools. These help teachers learn about, reflect on, and improve their practice in the specific school context in which they teach. It also grants them the opportunity to identify areas for improvement. However, such internal teacher appraisal practices are not validated externally.

External school evaluation is increasingly important as a tool to ensure the quality of school services

Kazakhstan shows a clear commitment to external accountability based around school evaluation with a regular cycle of external school evaluations carried out by the Committee for Control in the Field of Education and Science. Some aspects of the approach to external school evaluation draw appropriately on international good practice. The process of external evaluation undertaken by the Committee is structured and systematic. Each stage in the process is clear and the approach builds logically. A self-evaluation report is part of the school attestation process. There is a regular 5-year inspection cycle and the data collected during these inspections are made available for consultation at the school in the form of the inspection report. Attestation commissions include experienced and recognised teachers.

School attestation includes provision for classroom observation which is important to emphasise the importance of teaching and learning processes and to address pedagogical matters while it is seen as relatively low threat by teachers as they are not assessed individually by the attestation commission. Giving teaching and learning prominence in the evaluation process is important to send clear signals about what matters. Furthermore, the approach to external evaluation in Kazakhstan is designed to be evidence informed. School documentation is sought and analysed as a key part of evidence gathering and a sample of stakeholders is interviewed in the course of the attestation (students, teachers, parents). In addition, data on student achievement is collected through the application of specifically-designed student assessments. As a result, attestation commissions have a wide body of evidence upon which to base their judgements.

School attestation also provides some opportunities for follow-up, even if those are only granted to schools which originally receive a non-attestation decision. This is mostly the responsibility of local authorities (*rayons* and city departments) as they have the responsibility for working with such schools to ensure that an appropriate improvement action plan is developed. The Committee for Control undertakes a follow-up inspection to assess whether improvements were undertaken to address the challenges previously identified (in which case the concerned school gets its license re-activated).

There is progress towards a framework for education system evaluation

There has been progress in establishing the bases for monitoring the education system. This reflects increasing attention among policy makers to the development of instruments and analysis to assess the quality and progress of educational outcomes. This involves the collaboration of a number of players, such as the Ministry of Education and Science, the Information-Analytic Center, the National Center for Educational Statistics and Evaluation (NCESE) (as of 2015, part of IAC) and the Committee for Control in the Field of Education and Science. Education policy is giving a growing strategic role to system evaluation as an essential part of policy planning and development and there is a concern in increasing analytical capacity to analyse the available data.

The progress towards a framework for education system evaluation is reflected in the establishment of education standards as a reference for system evaluation, the establishment of an education indicators framework for data collection, the development of an integrated Education Database, the design of a sample-based national assessment for system evaluation (EASA), the development of stakeholder surveys to assess their satisfaction with the education system, the participation in international student assessments such as PISA and TIMSS, openness to external views such as with OECD policy reviews and the preparation of analytical reports with results of the education system. There have also been some efforts in publishing and disseminating information about student learning outcomes.

Challenges

There is no systematic policy to support students who are falling behind

Kazakhstan has a well-developed system to address social or economic problems that may hinder the participation of students in schools, as discussed in Chapter 3, but support to students who are falling behind is entirely left to the schools. In practice, the review team observed that schools have neither the incentives nor the resources to support students who are falling behind. The strong national emphasis on Olympiads and gifted students encourages teachers to focus on higher performing students and thereby direct less effort to lower performing students (see Chapter 3). Teachers may also hold lower expectations for the academic success of less gifted students. Although two-thirds of Kazakhstan's fourth and eighth grade students study in schools with a high emphasis on academic success, about one-third do not. In many OECD countries more than 85% of students study in schools with high expectations and emphasis on success. In addition, schools have little ability to direct additional resources to low performing or disadvantaged students, due to their strict application of norms.

Kazakhstan also does not implement standardised testing at the primary or lower secondary level (other than EASA in ninth grade), so that the information such tests could provide to help identify students who are falling behind is not available. Regular testing and feedback to teachers has been found effective in helping teachers and tutors focus on the specific areas in which students are falling behind, and consequently in boosting learning (Slavin and Madden, 2010; Fryer, 2014).

There are concerns about ability and gender grouping of students

Ability grouping

The identification and nurturing of top-performing students begins early. Although ability grouping is not officially allowed for primary grades, the review team was told how – in one larger school that had multiple classes of each grade – the school psychologist and teachers evaluated students before assigning them to the class and teacher with whom they would spend the next four years. A review of fourth grade school attestation test scores from a different school showed significant differences in achievement across three classes, which could have resulted from initial ability grouping in grade 1. Staffing of one *rayon*-level "methodological cabinet," whose mission is to work with teachers, included a methodologist for teachers working with gifted children but no methodologist for teachers working with children who are struggling with learning (IAC, 2014).

There is evidence that some schools group students within grade level by ability. Norms for schools call for a balanced distribution of students by ability across classes of the same grade and some schools that the review team visited reported not dividing students of the same grade-level into homogeneous classes or groups according to their ability. However, as described earlier, school attestation results from one school showed significant differences in scores between classes of the same grade, which could be due to ability grouping or differences in teacher quality (Table 4.4). Moreover, data from PISA 2012 suggest that a relatively high share of 15-year-old students in Kazakhstan are grouped by ability; only 2.4% of 15-year-old students attend schools where no ability grouping is used for any class and 76.7% of students attend schools where students are grouped by ability within some or all of their mathematics classes, according to school principal perceptions (OECD, 2013a). Ability grouping has been found to disadvantage lower performing children, while providing an extra advantage to higher-achieving students, thus exacerbating inequities without improving efficiency (Gamoran, 2010).

Table 4.4. **Differences in fourth grade school attestation test scores, by class**

	Subject	
Section	Mathematics	Russian
Class 4A	91.3%	95.0%
Class 4B	78.3%	82.6%
Class 4C	54.0%	54.0%

Note: Tests are administered to students by school attestation services.
Source: Observation of the review team on a school visit.

Ability grouping can be particularly harmful in "multi-year teaching" for primary grades, which may disadvantage students who are placed with a less qualified teacher in first grade. That is, if the norm is to remain with the same teacher for four years, and – for whatever reason – that teacher is a poor quality teacher, the students who remain with that teacher for four years will have been exposed to a poorer quality education than the students who are initially placed with and remain with a higher quality teacher.

Gender segregation

Gender segregation for certain subjects results in inefficient use of subject classrooms. State school education standards require that, for selected subjects taught in fifth-eleventh grades (labour studies, crafting and technology), boys and girls are divided without regard to the size of the class. In schools with only one or two classes of each grade, this gender segregation results in very low student-teacher ratios for these classes. Moreover, it limits the opportunity for students of one gender to learn skills typically learned by the other gender group. The review team was told that girls could elect to take "boys" subjects and boys could elect to take "girls'" subjects, but in practice this never happened.

Gender segregation for some subjects deprives students of equal opportunities. In lower secondary school, girls and boys attend single-gender groups for such subjects as woodworking (for boys) and sewing (for girls). This is permitted in the education norms. The review team was told that either classes were open to either boys or girls, but that no students chose non-stereotyped subjects, which resulted in single-gender classes. This practice sustains gender stereotypes about occupational choices and life preferences and deprives both boys and girls of the opportunity to develop a wider variety of skills. In most OECD countries, both boys and girls learn both types of subjects in co-educational groups. While little gender differences are observed in the performance of 15-year-olds and their educational achievement (see Chapter 1), gender segregation is likely to influence performance in the labour market by biasing professional choices, possibly towards sectors with lower earnings for female students.

There are some concerns about the management of instructional time

Multi-shift schools can hinder learning

Multi-shift teaching, which is prevalent in Kazakhstan, might reduce the official instructional time. Schools operating in a double or triple shift might face difficulties to schedule the required number of instructional hours per week, which range from 24 hours in grade 1 to 39 hours in grade 11, and limit the amount of time allocated to teaching and mastering the material. In practice many children study far less than the maximum number of hours allowed – sometimes as little as four hours per day in areas where school facilities are scarce. Research has shown that the length of instruction time is one of the factors affecting how much students learn (Gromada and Shewbridge, forthcoming).

The organisation of the school day can also influence learning. Reliance on multi-shift teaching implies that children are sometimes asked to study early in the morning or late in the evening, times which are generally associated with low alertness levels (Gromada and Shewbridge, forthcoming). In particular, the shift system for crowded schools places some primary school students at risk. Primary school students who are assigned to the second shift must attend classes from approximately 2pm until 8pm, which is inappropriately late for children ages 8-10. Norms for shift schools require primary students in grade 1 only to attend the first shift; students in all other primary grades may be assigned to a second shift.

The school calendar is not adjusted to local conditions and needs

Schools or local governments have no discretion to adjust the academic calendar in accordance with local reality. National norms regarding the school calendar – when the school year begins, holidays, or the duration of the summer break – leave little level of flexibility at the school or local level to adjust to local conditions. An example is the wide

range of climate and topographical conditions that affect the school calendar. While there are few school closures due to temperatures, which are regulated by detailed norms, a more flexible school calendar could reduce the impact of weather on school attendance.

Instructional time might be inadequately distributed

Instructional time for students in primary grades may be inadequate for students who come from disadvantaged backgrounds. Insufficient time for learning in primary school can contribute to lower levels of achievement later on. Children in Kazakhstan are expected to master two or more languages as well as to learn the basics of other subjects including mathematics and science. TIMSS 2011 and PISA 2012[1] provide information about performance and the amount of instructional time devoted to selected subjects as taught in grade 4, grade 8 and to 15-year olds. While increasing the amount of time, alone, cannot guarantee improved student learning, insufficient time spent on early learning may account for lower achievement. The comparison shows:

- Insufficient attention given to mathematics in fourth and eighth grades may contribute to lower student achievement. In comparison with fourth grade students in the highest performing countries, fourth grade students in Kazakhstan have much less opportunity to learn mathematics (140 hours of mathematics instruction per year (4.2 hours per week) as compared with the international average of 162 hours per year and 208 hours per year in top-scoring Singapore). Similarly, eighth grade students in Kazakhstan study mathematics for 117 hours per year (3.5 hours per week) which is less than the international average of 138 hours per year, and also less than the 137 hours per year in top-scoring Korea (Mullis et al., 2012).
- Insufficient attention to science in fourth grade may not prepare students for the intensity of science instruction in eighth grade. In fourth grade, students in Kazakhstan study science 57 hours per year (1.7 hours per week) as compared with the international average of 85 and 92 hours for top-scoring Korea (Martin et al., 2012). In one tri-lingual school, primary school students studied science little more than once a week, for a total of 169 lessons over four years (Figure 4.A2.1 of Annex 4.A2). In contrast, there is an over-attention to science in eighth grade which may "crowd out" opportunities for study of other subjects. According to data from TIMSS, eighth grade students in Kazakhstan study 244 hours of science per year (7.4 hours per week), more than 50% above the international average of 158 hours per year for science, and well above the 115 hours for top-scoring Singapore. This seems to reflect the study of science as separate subjects (biology, chemistry, physics and earth sciences) at this grade, which – at the country level – is not related to differences in science achievement (Martin et al., 2012).
- Insufficient attention to reading in the upper grades may also contribute to lower student achievement in reading. In grade 9, 15-year-old students report studying about the same amount of science (3.3 hours per week) as the OECD average (3.5 hours per week), somewhat fewer hours of mathematics (3 hours per week as compared with 3.6 hours per week), but significantly fewer hours of "language of instruction" (1.8 hours per week as compared with an OECD average of over 3.6 hours per week) (OECD, 2013a).

The Olympiads and the UNT draw attention away from the curriculum

Students spend significant amounts of time preparing for Olympiads and the UNT. The emphasis on high performing students means that both students and teachers allocate a considerable amount of time to preparation for competitions and tests. The

consequence, noted previously, is that little attention is paid to students who are struggling and to what would be needed to reduce the achievement gap between higher and lower status students (OECD, 2014b).

There are concerns about the frequency, significance and incentives for professional development

Professional development for teachers might not be responding to their needs

There are concerns that the current framework for professional development is not responding adequately to teachers' needs. First, there is little flexibility in the current provision. Teachers are only eligible for external-to-the-school professional development activities once every five years, for a period not exceeding four months. Hence the frequency of professional development is questionable and results from the little incentive to engage in more regular professional development.

Second, it is unclear whether adequate learning opportunities for teachers are available. Currently, it appears that many schools struggle to connect their teacher evaluation processes appropriately to professional development and improvement (see below). The regulations and guidelines regarding teacher evaluation do not provide detailed indications about how results from the teacher evaluation processes inform the supply of professional development opportunities. At the same time, the review team formed the impression that schools take little responsibility for managing whole-school strategies for professional development.

Third, incentives for individual teachers to engage in professional development seem to be increasingly related to salary increases (through access to "higher-level" training programmes designed by the NIS network) and career advancement (through the teacher attestation process). This raises issues about whether such motivations lead to genuine interest in professional learning.

School leaders receive little preparation for their roles

The little training available before and after taking up leadership duties limits the effectiveness of school leaders. School leaders might not feel ready to fulfil their tasks when taking up leadership positions. Indeed, there is evidence from school leaders across OECD countries that when taking up their posts they do not feel that they have the knowledge and skills to become instructional leaders and manage human and financial resources as most of them have a background as teachers (Pont et al., 2008). This is also the case in Kazakhstan as evidence on the age and years of service of school principals suggests that most of them were experienced teachers before taking up the position. Moreover, recruitment of school principals focuses on their educational qualifications as well as their management and teaching experience and their responsibilities have not been clearly defined in a set of standards.

There is no systematic approach to school leadership development, few opportunities exist to take up training and development needs are not taken into consideration in the design of training programmes. The participation of school principals and other leaders in in-service training courses is very low, and it is likely that participation rates in rural areas are even lower. Most training opportunities take the form of courses of short duration. Courses are disconnected from each other which might impede a progressive development of skills necessary to lead schools. Moreover, the content of the existing courses focusses

on theoretical and legal aspects that might be difficult to relate to the daily practice of school leaders. Furthermore, many of these courses fail to reflect the breadth of the education reforms undertaken in recent years, which demand schools headed by leaders rather than leaders who are able to foster new approaches to learning, innovation, communicate effectively with communities, and use modern technologies (IAC, 2014). School leaders who have been in the system the longest might face difficulties in keeping up with current practices, particularly if they do not participate in training courses. The new model of leadership development of the Center of Teaching Excellence of NIS and Nazarbayev University opens promising avenues for leadership development but its design makes the expansion to the entire leadership workforce very costly. Furthermore, there are no networks for peer learning or mentoring schemes for school leaders in the country to enable them to exchange their experiences among peers in an informal setting.

The evaluation of teachers and school leaders places insufficient focus on their improvement

Teacher evaluation

The main mechanism for teacher evaluation in Kazakhstan is the teacher attestation process which certifies teachers as competent at a given level of the career structure and, as a result, it is a process with high-stakes for teachers. It is difficult to achieve the developmental function of teacher evaluation through a high-stakes process. As explained in OECD (2013b), combining the accountability and developmental functions in a single process of teacher evaluation raises a number of challenges. When teachers are confronted with high-stakes consequences of evaluation on their career and salary, they are likely to be less inclined to reveal weak aspects of their practice and focus on their own potential for development, which in turn jeopardises the developmental function. As such, self-evaluation of teachers might be less meaningful when it is associated with a process with high stakes for teachers. While in Kazakhstan teacher evaluation processes which are internal to the school are common, they tend to serve mainly as an input for the teacher attestation process and seem to be less used formatively to identify professional development needs of teachers. Overall, the review team formed the impression that there is an over-emphasis on the accountability function of teacher evaluation, with less attention paid to genuine professional discussions about effective teaching. The perception of teacher evaluation in the education sector and society is still more strongly focused on the controlling and accountability aspects.

Another problematic aspect is the use of raw student achievement data (results of standardised assessments such as the UNT, student prizes at Olympiads and other competitions) to evaluate individual teachers. However, UNT results or results in Olympiads carry much more than the impact of the evaluated teacher and also reflect, for instance, the impact of the student's family, the student's previous learning or the resources of the school (OECD, 2014b). Clearly, this puts certain teachers – such as those in more advantaged schools – at an advantage *vis-à-vis* other teachers in terms of receiving a positive evaluation. In addition, the use of certain measures of student performance to evaluate individual teachers can lead to strategic responses on the part of teachers and schools such as: (i) teachers focussing only on the learning outcomes that will be assessed in UNT or in assessments carried out at Olympiads rather than the full range of competencies of the curriculum ("teaching to the test" and "narrowing of the curriculum"); (ii) teachers ignoring the important cross-curricular learning outcomes; (iii) time diverted

from regular curriculum for special preparation of the assessments; (iv) negative effects on teacher-based assessments and student engagement in rich curriculum tasks through which teachers can genuinely understand student learning (see Morris, 2011, and Rosenkvist, 2010, for a detailed discussion).

Furthermore, the review team also formed the view that the provision of professional development does not appear systematically linked to teacher evaluation. The identification of professional development needs is not a requirement of established teacher evaluation practices. Teacher attestation does not result in a systematic professional development plan for each teacher evaluated. Similarly, even if practices differ across schools, in most cases teacher evaluation processes internal to the school do not have as their primary objective the establishment of a professional development plan for each teacher in the school. Without a clear link to professional development opportunities, the evaluation process is not sufficient to improve teacher performance and, as a result, often becomes a meaningless exercise that encounters mistrust – or at best apathy – on the part of teachers being evaluated (Danielson, 2001; Milanowski and Kimball, 2003; Margo et al., 2008). Similarly, the lack of teaching standards can also hamper the consistency of internal teacher evaluation processes across schools (raising issues of fairness across schools) and the inability of the system to assure the quality of such processes (see also Chapter 3).

Incipient school leadership appraisal

The school leadership appraisal system is still very incipient. A legal provision for an appraisal of the performance of the school principal exists but no official criteria or guidelines have been defined yet. This means that the appraisal performed is likely to vary widely across the country and thus that school principals are not hold accountable to the same standards. Some of the measures that are often considered (e.g. students' achievement, UNT results, teachers' professional development, medals in Olympiads) provide little information about the whole spectrum of responsibilities of a school principal. Moreover, the appraisal seems to be designed as a compliance check rather than an exercise to further develop the leadership potential of principals as there are no links to professional development opportunities or career progression. Instead, a negative assessment can lead to the dismissal of the school principal. School deputies are not appraised for their leadership roles but for their teaching duties. Lack of appraisal of school principals is particularly worrisome in Kazakhstan, where the majority of school principals have been in the position for more than ten years.

School evaluation is a heavy process with a dominant accountability function

A challenge for Kazakhstan is that, currently, external school evaluation by the Committee for Control in the Field of Education and Science is predominantly an assessment of how legal requirements are met, or how stipulations in the education standards are being fulfilled. School evaluation tends to emphasise compliance with legislation rather than the promotion of school improvement. It is thus compliance rather than improvement driven and this reflects the specific role ascribed to the Committee for Control in evaluating schools outlined in the education legislation. Follow-up to school attestations is only undertaken with "weaker" schools which are not granted the attestation in their original evaluation (in a process of re-attestation which takes place after the school is given a few months to improve its practices). There is not enough focus

on strategies for promoting improvements in the quality of teaching and learning and better outcomes for students including better progress and attainment for those schools that need it the most. The review team formed the view that the reports from school attestations are very limited in the recommendations they provide for the improvement of pedagogical practices. Most of the evaluative part of the report is devoted to the identification of the violations to the regulations. As a result, there is not enough guidance from the Committee for Control about what will lead to school improvement. There also seems to be an uneven capacity of schools to use the results of school attestation. Furthermore, little attention is paid to identifying and disseminating best practice in teaching, which could be used as examples to support improvement of teaching in lower performing schools.

The range of functions allocated to the Committee for Control underlines the tension between achieving both accountability and improvement. Indeed, it is responsible for monitoring of violations of legal and normative rules, and in this regard has already achieved remarkable successes. However, it is also responsible for methodological support to schools, to help them overcome their problems and improve pedagogical practices. These two functions are however to some extent incompatible. When the attestation commissions come to the school to check the adherence to norms and legal rules, the school principal will assume a defensive position, because any identified violations will indicate his or her failings. However when inspectors from the Committee for Control come to assess pedagogical processes in the school in view of helping it improve, the principal should be more open and cooperative, revealing the school's problems to outside experts and seeking expert advice. In practice, the verification function far outweighs the support function.

The current school attestation model also presents considerable inefficiencies: it draws lots of resources and does not yield all its potential benefits. Schools prepare a self-evaluation report that could be used as an opportunity for self-reflection rather than an administrative procedural task. The attestation commissions are composed by a large group with specialised knowledge. Typically commissions have 15-16 members and spend about a week in the school and their size does not vary according to the school's size (except in pre-primary education). In countries with more mature school evaluation systems, commissions are much more limited in size (5-6 members) as inspectors cover only the main subjects in terms of specialisms and more attention is given to pedagogy and the overall development of the school (OECD, 2013b). The attestation commission also obtains a wealth of information. It interviews and surveys a range of school agents, assesses student performance and observes classes. Clearly, it is inefficient that such rich information collected with such level of resources is not used to provide better guidance for school improvement. This process does not even lead the school to prepare a plan for its own development as a result of the attestation process. It is also unclear why the attestation report is not published electronically if the consultation of the printed copy is possible at the school level. In addition, there is little evidence that current research on effective teaching, school effectiveness and improvement is used to inform the attestation criteria or to provide guidance for teachers and schools. References for school attestation remain limited as there is no description of what a good school is.

Another problematic aspect is that school self-evaluation has not been recognised as a key instrument for school improvement. Its penetration across the school system remains at an early stage of development. It appears to the review team that schools have

only a limited understanding of the contribution which self-evaluation can and should make to improving practice and no clear models have emerged generally. There seems to be limited capacity amongst school staff and principals to engage in self-evaluation and ultimately school self-evaluation seems to have little prominence among school practices.

Also, the use of UNT results for comparing quality of education across schools and regions is problematic. A difficulty concerns the comparison of student outcomes across schools on the basis of raw UNT results. The average results of the UNT at the school level are publicly disclosed with no account for the socio-economic context of each school (or the characteristics of schools' student population). The same happens at the *rayon* and *oblast* level. This can considerably distort considerations about the educational performance of each school, *rayon* or *oblast* as average results do not reflect the value added by schools to student results or the result of policy interventions at the *rayon* and *oblast* level. Comparisons between schools, *rayons* and *oblasts* are of little utility if they are not conducted on a "like with like" basis.

The dangers of using raw UNT-based league table rankings to compare the performance of schools, *rayons* and *oblasts* (and therefore making UNT results "high stakes" not only for students but also for schools, *rayons* and *oblasts*) are wide-ranging and should be recognised and avoided. These result in teachers and schools adopting practices that maximise the "result" for their class/school, such as teachers focussing only on the learning outcomes that will be assessed in the UNT rather than the full range of competencies of the curriculum ("teaching to the test") (OECD, 2013b).

School facilities are underutilised in some areas and with little access granted to the community

In areas with declining student rolls, school facilities that were built for a larger student population are not being used to their full capacity and require high maintenance costs. These school buildings are typically immense education facilities following the standard Soviet design, often with capacity for 640 students, but serve student populations of less than half of their design. Low fertility rates and migration (both internal and abroad) have taken a toll in student enrolments, particularly in the north of the country, with no expectation that populations in these areas will rebound to their Soviet-era highs. Yet these facilities remain and require large amounts of public investment for their maintenance, often in the form of heating costs (since most such buildings can only be heated in full) and maintenance staff (since the number of certain categories of staff is dictated in the norms by the surface area of the building).

Also, school infrastructure seems underutilised for broader communal use and the potential scope for revenues-raising by schools or local authorities remains largely untapped. Few schools in Kazakhstan open their facilities to the use of the community, with or without a fee, outside of regular school hours. The majority of schools visited for the purpose of this Review reported virtually no revenue-generating activity taking place from the use of school facilities. Several categories of fee based services are allowed by the Law on Education, yet school leaders appear poorly informed about which activities are permitted and how to go about collecting fees for such services. For example, renting out school gyms and auditoria for community events were among the most common potential uses that school principals suggested to the review team; but few of the visited schools reported doing this, and when they did it was almost always done free of charge.

Teacher abilities to use available technologies in the educational process vary considerably. According to official statistics, only 9% of teachers have passed training courses on the use of ICT in the learning process.[2] Yet modern technologies are being rolled out to schools at a rapid pace. Whether teacher training on the effective use of new technologies in the learning process can keep up with their provision will, in large part, determine whether these technologies provide value for money in achieving the desired education results. Furthermore, uneven provision of ICT equipment to schools across different parts of Kazakhstan presents another obstacle to the effective and equitable use of these technologies in the classroom.

There is limited collaboration between schools

Overall, the review team formed the impression that, in general, there is little collaboration across schools. A greater scope for collaboration among schools also exists in the current scheme to support small-class schools through resource centres (see Chapter 3). This means that only a few of the more highly skilled teachers in one school have an opportunity to help other teachers in a different school, particularly for primary grades. Even when "sending school" teachers have the opportunity to visit "resource centre" schools, they typically learn only through classroom observations of more skilled teachers, rather than through a discussion of teaching practices.

Policy recommendations

Provide structured, regular and meaningful opportunities for professional development for teachers and school leaders

Make professional development a more regular practice for teachers

There is a clear need for professional development to become a more regular practice among teachers in Kazakhstan, with a greater diversity of activities, led by school development plans and with a supply which reflects teachers' developmental needs. There must be a recognised and explicitly stated norm that recognises the great complexity of good teaching, and insists, therefore, on the professional obligation of every teacher to be engaged in a career-long quest of improved practice. Authentic professional development requires a culture of professional inquiry (OECD, 2013b). Hence, the motivation for teachers to engage in professional development needs to go beyond potential better salary prospects. This is likely to require providing teachers with more frequent time release and financial support for professional development than is currently the case. It is important that the professional development system benefits all teachers, not only those who are already high-performing as might be the case with the "higher-level" training programmes designed by the NIS network. As proposed in OECD (2014b), the latter should be made available at a larger scale to generate improvements at all levels of the system and in all schools.

The concept of professional development needs to be broader than the attendance of courses, workshops or conferences. Effective professional development is ongoing, includes training, practice and feedback, and provides adequate time and follow-up support. Successful programmes involve teachers in learning activities that are similar to ones they will use with their students (OECD, 2005). In this context, school-based professional development activities are particularly important.

Teacher professional development also needs to be associated with school development if the improvement of teaching practices is to meet the school's needs. To be most effective, professional development programmes should be coordinated at the school level, so that teachers are aware of the learning goals pursued by their colleagues and potential areas for collaboration. Such joint efforts can contribute to establishing learning communities. In this spirit, schools could be provided with funds to be specifically devoted to teacher professional development. Also, new trends in professional development promote collective and collaborative learning through the formation of *networks of teachers*, and *communities of practice*. Teacher networks generate other knowledge and alter the traditional relationship between knowledge and hierarchy since they propose horizontal forms of training. Communities of practice are an opportunity for teachers to make their teaching more effective, to analyse the socio-cultural contexts of contemporary schooling and seek answers to problems they face in the classroom.

It is also important that the available supply of professional development activities fits identified teacher professional needs. This is why it is crucial to use the results of teacher evaluation processes to inform professional development needs, both at the individual and group levels. For example, if feedback to teachers is provided in relation to the criteria outlined in the teaching standards to be created (see Chapter 3), then professional development activities could be organised around those criteria and be managed locally. Areas where professional development is likely to be needed in Kazakhstan are the use of ICT, for instance training on the effective use of smart boards, and multi-grade teaching which is often required in small-class schools.

Further invest in the preparation of school leaders

There is a need to design and implement a systemic approach to the development of school leaders. This will continuously prepare school leaders for their roles and their ability to lead their schools in accordance with policy reforms. Strengthening the school leadership workforce in Kazakhstan is key to improve school performance. School leaders play a key role in improving school outcomes by influencing the motivation and skills of teachers, as well as the environment and climate in which they work. Investments in school leaders can have a multiplier effect in schools and the whole system and be a particularly efficient investment given the more limited size of the school leadership workforce. A first step for Kazakhstan to consider is to reorganise and clarify the roles of school leadership in schools (see Chapter 3) and, once the school leadership workforce is rationalised, investing in developing their leadership potential.

The state should carry out a diagnosis of the skills of current leaders in order to then inform a strategy of initial and continuous professional development for current and future leaders. Research on the effectiveness of managerial development programmes shows that the analysis of needs is essential to ensure that the right development is offered to the right leaders (Collins and Holton, 2004). The few programmes for leadership development currently available should be reviewed and, on the basis of the results, a systematic approach to leadership development could be implemented. Ideally leadership development would start at teacher level and continue for principal candidates and include induction for first-year principals. Pre-service training can facilitate the selection of candidates and provide a strong base on which to build upon (Pont, Nusche and Moorman, 2008). In Scotland, school leaders can opt for a Postgraduate Programme in Educational Leadership and Management (Scottish Qualification for Headship) or for a

more flexible and practice-based programme (Flexible Route to Headship) which has the creation of a portfolio, a 360 degree appraisal and meetings with a coach as its central features (Taipale, 2012).

Several studies have aimed at characterising "effective" leadership development programmes (Darling-Hammond et al., 2007; Davis et al., 2005; Day et al., 2009). Successful programmes combine common courses to all education leaders with others specific to their positions. Joint courses facilitate the development of a common language within which to discuss quality. The coursework should focus on how to solve practical problems rather than on legal aspects. Indeed, the inclusion of practical field experience in initial training is very important as it allows establishing linkages between the theoretical content learned in the coursework, and the practical problems they will be facing in schools. In addition, courses should be contextualised to the characteristics of schools (e.g. size, level of education) as well as their social, economic and cultural realities.

Similarly, the creation of mentoring schemes and professional communities could also be beneficial to strengthen leadership skills and facilitate spread best practice. Some of the reported benefits of mentoring programmes include increased self-confidence, decreased feeling of isolation, and improved job satisfaction and retention (Weinstein and Hernández, forthcoming). Ideally coaches should have experience and have demonstrated success in schools with the same characteristics as the schools in which the new school leader is operating (Morgan and Hawkins, 2004). Also, networks for peer learning could be beneficial to systematically share reflections about the leaders' experience and exchange of successful work practices (see Box 4.1).

Box 4.1. **Examples of leadership development programmes in Australia and Singapore**

In **Australia**, it is common for novice principals of small schools to learn "on the job". This learning covers formal and informal forms and configurations, in particular the use of mentors and cluster arrangements which link teachers and principals across schools. An increasing number of education systems in Australia have put in place various programmes that seek to address the needs and contextual issues of small schools and their leaders, e.g. in addition to a suite of leadership programmes available to all school principals. These programmes target key groups (e.g. those newly appointed to leadership roles) and issues (e.g. teaching and learning) through a variety of modes of learning (e.g. coaching, invited online discussion groups). A conclusion from the research to date on school leadership in small schools is that leading a small school is no straightforward matter: they are not miniature versions of large schools. Scale, cost, reach and the 'timeliness' of programmes are perennial tensions as are the access, time and cost constraints for those whom these programmes seek to support.

In **Singapore**, mentoring has historically been used as a key strategy in the training of school leaders. The main component of the Leaders in Education Programme (LEP) initial training is the assigning of each aspiring principal to a mentor principal. Additionally, since 2008, the Academy of Principals (APS) – in collaboration with the Ministry – provides the *Mentoring Scheme* induction programme to all recently appointed principals. In this programme, new principals are supported by experienced counterparts throughout their entire first year in the position. The mentoring-based initiatives in the country have undergone a change in focus from one based on the transference of abilities from a senior to a junior professional to one mainly focused on the mutual benefits of both parties. The

Box 4.1. **Examples of leadership development programmes in Australia and Singapore** *(cont.)*

mentoring initiatives for school principals in the country are shaped by a leadership development paradigm that has been organised around 3 interrelated dimensions: lead (identification and selection), learn (training and development), and leverage (systemic support). The latter dimension has been defined as the provision of opportunities for school system stakeholders in leadership positions (superintendents or principals) to learn from each other, including access to good role models, providing a support structure for good leadership and orientation on best leadership practices. This focus on systemic leadership in the country has been maintained also by other complementary efforts from the Ministry, including the recruitment of retired principals to hold offices within the institution and the installation of networks or clusters among schools.

Sources: Adapted from Dinham et al. (2011) "Breakthroughs in school leadership development in Australia", *School Leadership and Management*, Vol. 31, No. 2, pp. 139-154; and Weinstein, J. and M. Hernández (forthcoming), "Mentoring and networks among school principals: evidence and policy orientations for strengthening peer learning", *OECD Education Working Papers*, OECD Publishing, Paris.

Ensure that students with learning difficulties are supported

Encourage schools to identify and support students early-on

A greater focus on underperformance is key to raise learning outcomes. Ensuring that schools provide their students with adequate and timely support is essential to enable struggling students not only to stay at school but to get the most of their schooling years. Schools should be encouraged to use early warning systems to identify students at risk and support them as early as possible. Timeliness matters because later interventions are less cost-effective. Recent rigorous research from the United States demonstrates the efficacy of introducing five "best practices" of public charter schools into low performing public primary and lower secondary schools (Fryer, 2014). The five practices were: (i) increased instructional time through lengthening the school day and school year; (ii) better teachers and administrators; (iii) high-dose tutoring in very small groups; (iv) frequent use of data from monthly classroom assessments to inform instruction; and (v) a culture of high expectations. After three years of programme implementation, students' scores on standardised tests of mathematics increased by 21% of a standard deviation and the gap between low performers and high performers diminished significantly. Moreover, the most costly aspect of the programme – tutoring for students – was estimated to have a rate of return of approximately 14%, significantly above the 10% typically used in education, and – for secondary students – the impact was a stunning gain of 60% of a standard deviation in mathematics. Most of the five "best practices" could be adopted in Kazakhstan and could significantly boost the performance of poorly performing students.

Design a systemic policy to support students

Systemic support is cornerstone for the improvement of low performing or disadvantaged schools. As explained in Chapter 3, the new per student funding model should take into account differences between schools and differences among students within schools when determining the amount of resources the school should receive. In addition, specific strategies should be designed to support improvement in the lowest performing schools. Successful strategies in Ontario (Canada), Shanghai (China), the United States, and Uruguay are described in Box 4.2.

Box 4.2. **Systematic support to schools in the United States, Ontario (Canada), Shanghai (China) and Uruguay**

In the **United States**, the Success for All is a school-wide programme for students in pre-primary education through sixth grade that organises resources so that virtually every student acquires basic reading skills and does not fall behind. The programme was evaluated in the United States with a large-scale, national randomised control trial and was found to dramatically boost learning and close the achievement gap between advantaged and disadvantaged students; on average, students in the Success for All schools outperformed about 64% of comparable students in control schools. The main elements of the programme are: (i) a school-wide instructional process involving cooperative learning, direct instruction, practice, assessment and feedback; (ii) a school-wide curriculum including full-day pre-primary education and specific reading activities appropriate for each grade, including a requirement for students to read books of their own choice for twenty minutes at home each evening; (iii) tutors who are specially trained and certified teachers who work for 20 minutes daily, one-to-one, with any students who are failing to keep up with their classmates in reading; (iv) quarterly assessments and regrouping of students for reading to maintain reading groups of different ages but reading at the same level; (v) a solution team that works in each school to help support families and increase parent involvement; (vi) a facilitator that works with teachers as an on-site coach to help teachers implement the reading programme, manage the quarterly assessment and promote teacher communication to make certain that every child is making adequate progress.

In **Ontario (Canada)**, the Focused Intervention Program (OFIP, since 2006/07) provides targeted support to primary schools that have "experienced particular difficulties in achieving continuous improvement", measured through results on provincial assessments of reading, writing, and mathematics (grades 3 and 6). OFIP funds are used for professional development, additional student and professional learning resources, literacy and numeracy coaches, and teacher release time for collaboration and additional training. In 2006/07, schools qualified for OFIP support if less than 34% of students reached provincial standards in grade 3 reading. In addition, since 2009/10, resources from the OFIP programme were extended to over 1 100 schools in which less than 75% of students met provincial standards in the grades 3 and 6 assessments. From 2002/03 to 2010/11, the number of schools with fewer than 34% of students achieving at provincial standard in grade 3 reading was reduced by two thirds (from 19% to 6%), showing significant success in reducing the number of primary schools in which students fail.

In spite of the considerable social and economic inequalities, **Shanghai (China)** has managed to obtain high average scores and low variability in school performance in PISA with efforts to improve the school system by converting "weaker schools" into stronger schools. Measures included: (i) systematically upgrading the infrastructure of all schools to similar levels; (ii) establishing a system of financial transfer payments to schools serving disadvantaged students and transferring high-performing teachers from advantaged to disadvantaged schools, either temporarily or permanently; (iii) pairing high-performing districts and schools with low-performing districts and schools, where the authorities in each exchange discuss their educational development plans with each other, work together to deal with problems and share their curricula, teaching materials and good practices; and (iv) commissioning "strong" public schools to take over the administration of "weak" ones and sending a team of experienced teachers to lead in teaching. These arrangements not only benefit weak schools but also strong schools, for example providing the latter with more opportunities to promote their teachers (OECD, 2011).

Box 4.2. **Systematic support to schools in the United States, Ontario (Canada), Shanghai (China) and Uruguay** *(cont.)*

Uruguay has managed to improve learning outcomes rapidly in recent years. Its quality improvement efforts have been informed by sample-based assessments aimed at strengthening pedagogical management in schools. By combining the assessments with cluster-based teacher training and support, spread over the whole school year, education authorities have turned information into policy practice. Evidence suggests that learning outcomes improved in certain grades by 30% over six years. Special measures have been taken to improve the functioning of weaker schools. Important moves to redress learning disparities have included targeting financial resources primarily on the basis of poverty rather than test results and using test results to provide targeted support to teachers in weaker schools and districts.

Sources: Slavin, R. E., and N. A. Madden (2010). "Success for All: Prevention and early intervention in school-wide reform", in Meece J. and J. Eccles (Eds.), *Handbook of research on schools, schooling, and human development, Routledge*, New York; OECD (2011), *Lessons from PISA for the United States*, *http://dx.doi.org/10.1787/9789264096660-en*; UNESCO (2008), EFA Global Monitoring Report 2009: Overcoming inequality: why governance matters, Chapter 3, Unesco, Paris, pp. 145-170.

Raise student expectations

Greater attention should be placed to ensure that students are not grouped by ability. This might require reinforcing the current norms on student grouping. By comparison, the use of ability groups within heterogeneous-ability classrooms allows teachers to adjust their instruction to student needs, and has been found to be beneficial under some conditions (Slavin, 1987).

In addition, the state could consider expanding mentoring and career guidance services in order to build student confidence and encourage students to aim higher. Lack of mentoring and career guidance means that students might be confined with their own personal experiences and life expectations. As resources are limited, priority should be given to disadvantaged and at-risk students as research shows that it can have the greatest impact on them (OECD, 2012). Considering the size and recognition of the higher education sector in Kazakhstan, one option that the state could consider is to involve higher education institutions in activities to raise the expectations of disadvantaged students. For example, in Australia, university staff and students of Victoria University participate in activities to raise the education expectations of low income and minority school students.

Limit gender segregation

There is a need to revise state standards for gender-segregated classes in grades 5-11. Although traditionally labour-related classes have been gender segregated, most OECD countries no longer follow this practice. Both boys and girls have the opportunity to learn traditionally stereotyped skills and a variety of approaches have been identified to encourage boys and girls to enrol in non-stereotyped classes (Lufkin, 2007).

Review the use of time in schools

Sustain the efforts to reduce the number of multi-shift schools

Kazakhstan should sustain the efforts to remove three-shift schools and explore ways to minimise the impact of double-shift schools on younger students. In shift schools, all primary grades should be taught during the first shift, which would have the result of

benefitting both the younger students and the older students whose learning is enhanced by starting school later in the day. While multi-shift schooling can facilitate access to education when rapid demographic changes stress existing facilities or construction of new schools is difficult, it has a negative impact on quality of learning and Kazakhstan should envisage full removal of multiple-shift schools in the long term.

Review instructional time

There is a need to adjust the norms for instructional hours to be more in line with OECD averages for official instructional time, particularly for students in grades 1-4. Having a relatively short school day, in terms of hours of instruction, may place children, particularly those from disadvantaged backgrounds and those who may be struggling, at risk of failure. Lengthening the school day has been found to benefit learners. For example, in the United States, a large longitudinal study compared reading and mathematics learning outcomes for children who attended "full-day" kindergartens (31.5 hours per week) with those who attended "half-day" kindergartens (15.8 hours per week). The researchers found that children who had attended the "full-day" programme learned more than those who had attended the "half-day" programme, and that the learning advantage persisted through grade 3 for students whose home language was not English (Lee et al., 2005; Walston et al., 2005). Teachers reported spending about 50% more instructional time on reading and mathematics, and also on activities to broaden the children's social and other academic experiences. In addition, increasing instructional time by lengthening the school day, adding Saturday classes, and shortening breaks between classes was one element of a package of interventions that significantly boosted math performance of low performing schools (Fryer, 2014).

Schools could be encouraged to explore different and additional ways of organising the learning time in the school. In addition, in some cases schools' learning time can be organised differently, changing the number of hours per day and/or days per week. Different learning time options can include the organisation of after-school and holiday programmes, study support or breakfast clubs (Mahoney et al., 2005; MacBeath et al., 2005). The participation of disadvantaged children should be particularly encouraged as, while they are the ones who can benefit the most, they are typically less likely to participate due to several reasons including costs, access, and limited knowledge on how to participate (Horgan, 2009).

Encourage greater collaboration between schools

Greater collaboration between schools could facilitate a more effective utilisation of resources in Kazakhstan. School leaders, for instance, could be encouraged to take a more active role in collaborating with other schools. Also, schools should be encouraged and given incentives to explore ways to make greater use of their existing school facilities and equipment. Despite few legal prohibitions, school leaders are either unwilling or unable to maximise the use of their facilities for communal use. As an added benefit, scope exists for increasing the revenue base of schools and local authorities through the provision of fee-based access to educational facilities after hours. Such revenue-generating activities should be carefully monitored and all funds raised should be recorded in the official budgets of the respective budget institutions. School leaders and local executive bodies should have a clear understanding of which activities should be allowed to be conducted within educational facilities and to which budget the fees from such activities should flow. Table 4.5 provides some examples of the wide variety of approaches to collaboration between schools in OECD countries.

Table 4.5. **Selected approaches to school collaboration in OECD countries**

	Type of school collaboration
Belgium (Fl.)	School communities have been created as voluntary collaborative partnerships between schools. They aim to have common staffing, ICT and welfare resources management.
Denmark	Co-operation in post-compulsory education has been promoted by way of the creation of administrative groups that can be set up locally or regionally between self-governing institutions to optimise their joint resources.
England (United Kingdom)	A variety of approaches to co-operation are stimulated by the government – federations of schools, national leaders of education, school improvement partners, etc.
Finland	2003 legislative reform has enhanced school co-operation aiming to ensure integrity of students' study paths.
France	"School basins" have been implemented to ensure collaborative partnerships between schools to work together in student orientation, educational coherence between different types of schools, common management of shared material and human resources.
Hungary	Micro-regional partnerships based on economic and professional rationalisation were created in 2004 and have resulted in the spreading of common school maintenance in almost all Hungarian micro regions. These networks for co-operation are the scenes of professional and organisational learning in a way that can function as new forms of education governance and efficient frames of innovation.
Korea	Small schools cooperate to overcome problems of size in teacher exchange, curriculum organisation, joint development activities and integrated use of facilities.
Netherlands	In primary education, "upper management" takes management responsibility for several schools. About 80% of the primary school boards have an upper school management bureau for central management, policy staff and support staff.
New Zealand	School clusters based around geographical communities and communities of interest have been facilitated.
Northern Ireland (United Kingdom)	Post-primary schools share provision of courses with other schools and further education colleges. "School Collaboration Programme" focuses on school co-operation for increased curricular access on the local level. "Specialist Schools" model requires post-primary specialist schools to partner with primary schools and at least one other post-primary school.
Norway	Tendency to merge several schools to form an administrative unit governed by a school principal. It is quite common for principals to network in the municipalities.
Portugal	Common patterns of school governance are that schools are grouped together with a collective management structure. Executive, pedagogical and administrative councils are responsible for their areas for groups of schools under a school cluster.
Scotland (United Kingdom)	Important political promotion of collaboration. "Heads Together" is a nationwide online community for sharing leadership experience.
Sweden	Municipal directors of education steer principals. Most of them are members of directors of education steering groups where strategy, development and results are discussed.

Source: OECD (2008), *Improving School Leadership Vol.1: Policy and Practices, http://dx.doi.org/10.1787/9789264044715-en.*

Use evaluation to foster learning

Strengthen the developmental function of teacher evaluation

There needs to be a stronger emphasis on teacher evaluation for development purposes. Given that there are risks that the developmental function is hampered by the high-stakes teacher attestation process, it is proposed that a component predominantly dedicated to developmental evaluation, fully internal to the school, be formalised. This development evaluation would have as its main purpose the continuous improvement of teaching practices in the school. It would be an internal process carried out by line leaders, senior peers, and the school management. The reference standards would be the suggested teaching standards but with school-based indicators and criteria. This evaluation should also take account of the school objectives and context. The main outcome would be feedback on teaching performance which would lead to an individual plan for professional development for each teacher in the school. It can be low-key and low-cost, and include self-evaluation, peer evaluation, classroom observation, and structured conversations and regular feedback by the school management and experienced peers. It could be organised once a year for each teacher, or less frequently

depending on the previous appraisal of the teacher. The key aspect is that it should result in a meaningful report with recommendations for professional development. Of course, it can draw on the experience most schools in Kazakhstan have had with internal teacher evaluation processes. The need is for these to become systematic and consistent across schools through the introduction of teaching standards as the main reference (see Chapter 3) and the provision of guidelines and instruments at the national or regional level.

In order to guarantee the systematic and coherent application of teacher developmental evaluation across Kazakh schools, it would be important to undertake the external validation of the respective school processes. An option is for school attestation processes to include the audit of the processes in place to organise teacher developmental evaluation, holding the school principal accountable as necessary. The support structures from local education authorities could play an important role in ensuring that schools develop ambitious developmental evaluation processes to be properly documented in school activity reports.

The teacher attestation process should remain as the component of teacher evaluation predominantly dedicated to accountability. Its main purpose should continue to be holding teachers accountable for their practice and determining career advancement but should also inform the professional development plan of the teacher. This approach conveys the message that reaching high standards of performance is the main path to career advancement in the profession. A much-needed improvement to the teacher attestation process is the way student results are considered as an evaluation criterion. As explained earlier, raw UNT results or prizes at Olympiads do not necessarily capture the performance of a teacher. The particular context of Kazakhstan which calls for "objective" measures to be used (for transparency reasons) as well as the need to convey a strong message about the importance of student results, should continue to grant available student results an important role in teacher evaluation. However, results in the UNT can be taken into account in more qualitative ways as with the analyses of portfolios, self-evaluations and teacher interviews.

Introduce school leader appraisal

All school leaders should be required to undergo a meaningful appraisal process. This requires designing specific criteria, guidelines and consequences for the appraisal system. It should provide school leaders with feedback to foster improvement, recognise their achievements and identify those who might need more support. To be effective, the appraisal should be well-rounded rather than based in narrow measures of school performance. Also, more rigorous processes to inform professional development opportunities as well as recognise performance are needed.

Use school evaluation as a lever for sustained improvement in schools

External school evaluation processes should strengthen their focus on school improvement and move away from the current "compliance" driven model. This could involve the separation of school attestation into two distinct processes: (i) external evaluation focussing on teaching and learning processes at the school; and (ii) an audit process to assess the school's compliance with school regulations, including possibly financial regulations. This would mean that the Committee for Control in the Field of Education and Science would run separate processes with these two distinctive functions.

The external evaluation focussing on teaching and learning processes would involve providing advice for improvement to all schools evaluated. This would require developing nationally agreed criteria for school quality to guide school evaluation. The criteria and questions governing judgements and the methods employed should all focus much more directly on the quality of learning and teaching and their relationship to student outcomes (OECD, 2013b). An agreed framework of school quality indicators should then be established and made widely available to schools and the wider public, granting the transparency of the evaluation process. Follow-ups should be generalised, and not be organised in "failing" schools only, as the result of requiring schools to establish an improvement plan regardless of the results of the school evaluation. All schools should be provided with feedback and recommendations for improvement. A programme of follow-up visits, suitably differentiated on the basis of the original report, would give added impetus and credibility to the overall evaluation process.

External evaluation reports, or parts of them, should become public to inform the school's community and the wider public. Attempts should be made to make the reports user-friendly including, for example, succinct summaries highlighting key findings from evaluations and priorities for improvement. Processes to organise external evaluations could also be made more efficient than is currently the case in Kazakhstan by considerably reducing the size of evaluation commissions, simplifying the content and structure of the evaluation report, reducing the paperwork involved and ensuring the school's self-evaluation report feeds into its own self-improvement processes.

An important aspect of providing advice to schools consists of identifying good practice in the school system. Systematic analysis of key features and sharing examples of good practice would be useful, especially for those schools which are identified as having lower performance. Overall, it seems that the identification and sharing of good practice is still fairly uncommon in Kazakhstan and the Committee for Control should reinforce its role in this function. The idea is that high quality schools and examples of good practice in specific areas are identified, and showcased to other schools as exemplars.

School self-evaluation is of key importance to school improvement and quality assurance and needs to be consolidated in Kazakh schools. An option to strengthen self-evaluation is to establish requirements for schools that promote strategic planning, for example, the drawing up of a 4-to-5 year strategic plan and regular updates of school progress on this plan, or the development of annual school reports about their achievements, challenges and strategies for improvement. The process of meeting specified strategic planning requirements would be a stimulus for many schools to further their self-evaluation practices and would hold strong potential for school improvement. School self-evaluation is also an opportunity for engaging the school community. An important element in promoting school self-evaluation is to ensure that schools are provided with self-evaluation instruments designed at the national or regional level as well as guidelines to help them through the process.

Develop contextual information on schools to publish alongside student results

Due to the strong associations between student performance at the school level and student intake evident in educational effectiveness research conducted in many countries, it is recommended that any publication of UNT results at the school level should be presented in ways that take account of intake differences including, for example, the socio-economic background of students. In some countries data on student attainment are presented for

"like" groups of schools (sometimes termed families of schools that have similar intakes) or contextualised value added measures have been adopted (e.g. in England). Also, it needs to be recognised that the UNT, as mostly a higher education entrance examination, has not been designed to evaluate individual schools and is taken on a voluntary basis by students who want to enter higher education. It is therefore not clear whether such tests can actually capture the value each school has added to the learning of its students, which raises questions about the interest of their publication at the school level.

Also, contextual information to explain the performance of each school can be provided through the publication of school attestation reports alongside any school-level data on student achievement. School attestation reports have the potential to provide a more holistic view of the school's performance to parents and the wider community. However, to be fully meaningful to all stakeholders, the narrative of school attestation report must be expressed in ways which convey clear and simple messages and do not require highly sophisticated understanding of either statistics or education.

Notes

1. TIMSS 2011 reports the number of hours per year for instruction in mathematics and, separately, for science. These numbers of hours were calculated from teachers' and principals' reports of the number of days in the school week and the school year, the number of instructional hours per day, and the number of hours in the school week for teaching science and mathematics. PISA 2012 asked students to report the number of minutes in a class period and the number of class periods per week for mathematics, language of instruction and science, from which the number of minutes per week was computed. These numbers are consistent with the sample schedule of lessons from one tri-lingual school, summarised in Figure 4.A2.1 of Annex 4.A2.
2. This figure excludes Karaganda and North Kazakhstan regions, as well as the city of Almaty, for which data were not readily available.

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ANNEX 4.A1

Staffing requirements in schools

Table 4.A1.1. **List of school employees other than teachers**

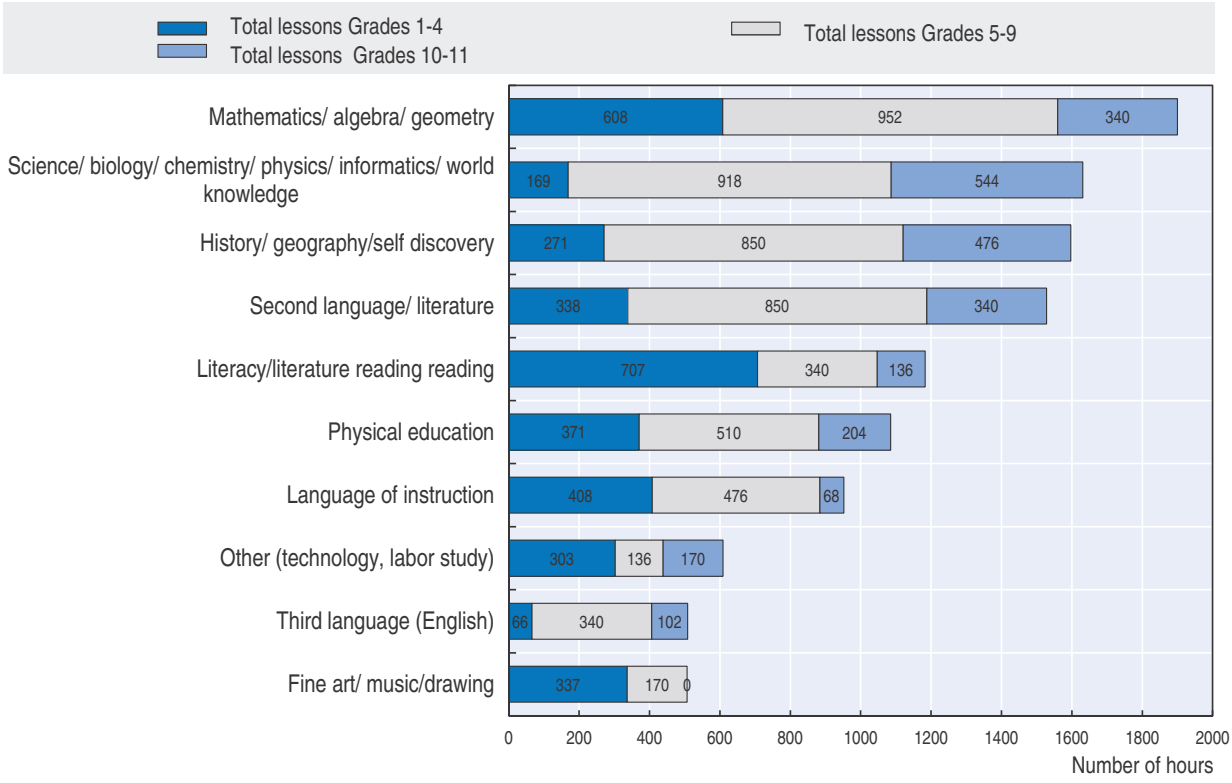
Positions	Workloads (on the basis of the number of consolidated classes)						
	till 6	6-10	11-13	14-16	17-20	21-29	30 and more
Principal	1	1	1	1	1	1	1
Deputy Principal for academic affairs	-	0.5	1	1	1	1.5	2
Deputy Principal for educational work	-	0.5	1	1	1	1.5	2
Deputy Principal for economic activities	-	-	-	-	1	1	1
Head of the household	1	1	1	1	-	-	1
Chief accountant	-	-	-	1	1	1	1
Accountant	1	1	1	1	1	1	2
Educational psychologist	0.5	1	1	1	1	1.5	2
Senior leader	0.5	0.5	0.5	1	1	1	1
Nurse	0.5	0.5	0.5	1	1	1.5	1.5
Medical attendants	-	-	-	0.5	0.5	0.5	0.5
Chief librarian	-	-	-	1	1	1	1
Librarian	-	0.5	0.5	-	-	-	1
Clerk	0.5	0.5	0.5	1	1	1	1
Secretary	-	-	-	1	1	1	1
Work on complex maintenance and repair of buildings (per building)	1	1	1	1	1.5	2	2
Guard	3	3	3	3	3	3	3
Doorman for each building	1	1	2	2	2	2	2

Note: The table specifies the staffing requirements in public schools for leadership and support positions. One full load (indicated as 1 in the table) is equivalent to 40 hours per week. It is important to note that one person might hold more than one position and teaching duties or other tasks. In primary schools, the position of principal is set at 8 or more classes and not less than 240 students. Staffing requirements vary for specialised schools (e.g. gymnasiums, lyceums).
Source: Government Decree of the Republic of Kazakhstan dated January 30, 2008, No. 77.

ANNEX 4.A2

Example of lesson allocation in a school, by subject

Figure 4.A2.1. **Example of lesson allocation, by subject (hours per year)**



Source: IAC (2014), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Kazakhstan*, *www.oecd.org/edu/school/schoolresourcesreview.htm*.

ANNEX 4.A3

Additional information on teachers

Table 4.A3.1. **Requirements for teachers to access "higher-level" training programmes, by programme level**

Basic Level
3-year teaching experience (if higher education qualifications) 5-year teaching experience (if VET qualification at secondary or post-secondary level)
Results of participation in professional competitions at a school, *rayon* (city) level
Results and prizes in subject Olympiads, creative contests, scientific and sports competitions at a school, *rayon* (city) level
Knowledge and application of innovative methods in the educational process
Dissemination of experience (e.g. publications) in the course of preparing and conducting *rayon* (city) conferences, seminars and forums.
Basic knowledge of ICT technologies
Intermediate Level
5-year teaching experience (if higher education qualifications) 7-year teaching experience (if VET qualification at secondary or post-secondary level)
Results of participation in professional competitions at a school, *rayon* (city) and *oblast* level
Results and prizes in subject Olympiads, creative contests, scientific and sports competitions at a school, *rayon* (city) and *oblast* level
Knowledge and application of innovative methods in the educational process
Development, or taking part in the development of training manuals and education programmes
Dissemination of experience (e.g. publications) in the course of preparing and conducting *oblast* (national) conferences, seminars and forums.
Knowledge of ICT technologies
Advanced Level
7-year teaching experience (if higher education qualifications) 9-year teaching experience (if VET qualification at secondary or post-secondary level)
Results of participation in professional competitions at a school, *rayon* (city), *oblast*, national (international) level
Educators of winners of subject Olympiads, creative contests, scientific and sports competitions at a *rayon* (city), *oblast*, national (international) level
Use of innovative methods and teaching technologies in the educational process
Development, or taking part in the development of training manuals and education programmes
Publications in teaching journals and periodicals
Dissemination of experience (e.g. publications) in the course of preparing and conducting national (international) conferences, seminars and forums.
Conducting training seminars and programmes at a *rayon*, *oblast* (city), international level, and is a mentor for beginning teachers
Advanced user of ICT technologies

Source: IAC (2014), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Kazakhstan*, *www.oecd.org/edu/school/schoolresourcesreview.htm*.

Table 4.A3.2. **Qualification requirements for teacher attestations, by category**

Teacher category		Educational Attainment and years of experience	Teachers should be able to do
School teachers with a VET qualification at secondary or post-secondary level	No Category	Pedagogical technical and vocational education (specialised secondary, vocational)	Not specified in document.
	2nd Category	Technical and vocational education (specialised secondary, vocational) + 3 years of teaching experience	Must be able to use the forms and methods of active learning, develop student assessments, provide lasting educational benefits to students, participate actively in work groups, teaching unions, and schools of excellence within the educational establishment.
	1st Category	Technical and vocational education (specialised secondary, vocational) + 4 years of teaching experience	Must meet all requirements for teachers with 2nd category; must also be able to create their own methods of teaching the subject, assess students, supervise the work of art groups, teaching unions, schools of excellence, and a publication in the pedagogical publications on education.
	Highest Category	Technical and vocational education (specialised secondary, vocational) + 5 years of teaching experience	Must meet all requirements for teachers with 1st category; must also be able to develop original programmes for teaching the subject, new curricula and educational technology, as well as on their assessments, conduct research addressing issues in their subject, and lead creative teams to develop topical issues in education.
School teachers with a higher education qualification	No Category	Higher teacher education	Not specified in document.
	2nd Category	Higher teacher education + 3 years of teaching experience	Must be able to create their own methods of teaching the subject, use the forms and methods of active learning, develop student assessments, provide lasting educational benefits to students, actively participate in work groups, teaching unions, and schools of excellence within the educational establishment.
	1st Category	Higher teacher education + 4 years of teaching experience; or a candidate of science degree + 2 years of teaching experience; or doctoral degree + 1 year of teaching experience	Must meet all requirements for teachers with 2nd category; must also be able to develop their own analysis techniques for teaching the subject, prepare and implement individual training programme, lead creative workshops, performance art groups, and use the best educational experience in their work.
	Highest Category	Higher teacher education + 5 years of teaching experience; or a candidate of science degree + 3 years of teaching experience; or doctoral degree + 2 years of teaching experience	Must meet all requirements for teachers with 1st category; must also be able to design new curricula and educational technology, design training programmes and assess them, conduct research on subject related issues, lead creative teams focusing on current issues in education.

Source: OECD (2014b), *Reviews of National Policies for Education: Secondary Education in Kazakhstan*, *http://dx.doi.org/10.1787/9789264205208-en*.

Chapter 5

School resource management in Kazakhstan

This chapter looks at capacity building for resource management, the monitoring of resource use, transparency and reporting, and incentives for the effective use of resources. School leaders might not be adequately prepared for resource management as related abilities are not taken into consideration in their recruitment and professional opportunities are limited in this area. Increased attention has been paid to creating, collecting and making data available, including the development of a national database of education. However, a recurrent problem with education data in Kazakhstan is the lack of processes to ensure their quality and validity. Lack of reliable data does not allow adopting an evidence-based approach in the formulation and evaluation of education policies. Moreover, the existence of detailed norms provides clear expectations on resource management and facilitates their monitoring. Monitoring is purported to check compliance and gauge progress towards national objectives, mainly the State Program for Education Development in the Republic of Kazakhstan for 2011-20 (SPED). However, the monitoring approach is compliance-driven and entails no analysis of educational performance. As such, it is limited in the way it evaluates efficiency, equity, and value for money. Furthermore, low autonomy at the local level and the little flexibility in the norms prevent educational actors making decisions that could lead to greater efficiency. There is also room to improve the transparency of school budget information. School and local education budgets can be publicly accessed upon request but the format used makes it difficult for parents and citizens to understand them and hold schools accountable. The existence of school Boards of Trustees, while still a nascent change, opens up avenues for improved transparency and reporting procedures at the school level. Finally, opportunities for misallocation of resources and corruption exist throughout the system. In particular, loopholes in the system of norms are a gateway for resources to be misappropriated and misused.

This chapter is concerned with how resources can be effectively managed at all levels of the school system. It looks at capacity building for resource management; the monitoring of resource use (e.g. audit systems, evaluation of resource managers); transparency and reporting; and incentives for the effective use of resources.

Context and features

Capacity and incentives for resource management

Schools

School leaders do get some opportunities to participate in professional development activities (see Chapter 4). However, these place little emphasis on skills for managing school resources and, in particular, skills to administer school budgets. At the same time, there are no training requirements prior to the appointment to the position. School leaders tend to be selected on the basis of their good performance as teachers and acquire administrative skills mostly once in office. The availability of courses on school management is limited (see Chapter 4). Also, attendance of these is neither required nor linked to compensation or appraisal.

The norms tend to be very detailed as to how the resources should be allocated within schools. In some cases, guidelines are developed to ensure a greater understanding of norms but often adopt a legalistic approach. For example, the document "Methodological guidance on the implementation mechanism of per capita normative financing" is meant to inform and guide school principals in resource management under the envisaged new funding model. The document is 72 pages long. It includes seven introductory pages of the reasons for adopting per capita funding, its definition and coverage, and its implementation. The body of the document (47 pages) provides the detailed legal and regulatory framework. It also includes the five reporting forms that school principals will have to fill in compliance with the new funding scheme. It concludes with a short section (5 pages) of frequently asked questions. Other non-governmental organisations have also taken steps to improve the capacity of school leaders for resource management. The "Finance manual for school principals" (2013) is the result of the collaboration between the Soros Foundation and Sange Research Centre to increase the "budget literacy" of school principals. It includes a detailed description of their tasks in the preparation and execution of the budget as well as in procuring goods and services.

Public Administration

Little documentation and evidence is available on the administration of the education sector. Research on the general public administration in Kazakhstan has shown that significant challenges remain ahead for the modernisation of the public service, although major reforms have resulted in a more qualified and rationalised workforce in recent years (Ibrayeva and Nezhina, 2013). Some informal recruitment practices still prevail: vacancies might not be announced publicly with proper notice and the majority of the population

considers receiving a job or promotion through connections. Turnover rates are high and have been associated to lower salaries compared to the private sector, lack of opportunities for professional development, and low efficiency of the governance system. Official compensation does not include other financial benefits such as bonuses, which can account for up to 57% of total emoluments at the central government level and 30% at the regional level but are often left to the discretion of a supervisor and disconnected from a performance evaluation (Ibrayeva and Nezhina, 2013). These authors argue that the prevailing culture in the Kazakh public service is one of strict subordination within a highly centralised hierarchy, lack of critical feedback and initiative on the part of a subordinate.

A major civil service reform was delineated in the decree on "Measures to Modernise Public Administration System" dated 2007. The reform defined major administrative values and related goals. Among them are effectiveness, transparency, accountability, client-centred service delivery, and professionalism. The reform embraced performance management as a tool to improve quality, efficiency, effectiveness, and coordination of public service provision. In this way, performance management is purported to develop professional awareness of the goals of the public service, establish service standards, rate performance, conduct effectiveness audits, annual reporting, and client feedback through regular public opinion surveys (Ibrayeva and Nezhina, 2013). The government has taken steps to build a computerised information system, train qualified auditors, and provide staff with training on performance management.

Data information system

Kazakhstan is currently in the process of developing a National Education Database based on the electronic collection of data and the development of an Education Portal to make the data publicly accessible. Prior to the current initiative, statistics on education were collected from individual schools using a large number of paper forms (reduced in 2013 from 467 forms to 162 forms), and communicated in a sequential manner to *rayons*, *oblasts* and Ministry of Education and Science (and its agencies). Primary and secondary schools are responsible for completing 83 forms that result in 16 636 indicators. The National Centre for Educational Statistics and Evaluation (NCESE) co-ordinates this effort and uses the collected statistics in yearly reports about the state of the education system (as of 2015, this responsibility was transferred to the Information-Analytic Center).

The National Education Database, being currently developed, seeks to integrate different sources of information on education, simplify and render more reliable the collection of data from schools, and offer transparency within the education system through the public release of the data. It is expected that, by 2015, the collection of data from schools will be carried out electronically and education statistics will be integrated into a single platform. Such platform should provide information on students, teachers, schools and the quality of education services, for all levels of education. Giving the current availability of an individual identification number, it is envisaged to collect data at the individual student and teacher levels. An ICT organisation, JSC NIT, is the developer of the National Education Database while the Ministry of Education and Science and NCESE (replaced, as of 2015, by the Information-Analytic Center) are involved at the conception level and have access to the data.

Incentives for an effective management of resources

There are few incentives to encourage a more effective management of resources in Kazakhstan. The strict observance of the extensive planning and regulatory system is presumed to already deliver the optimal outcomes. There is little flexibility in the use of existing incentives, such as opportunities to reward performance or attract professionals to rural areas. Also, as schools are not allowed to reallocate or transfer to the following year the remaining budget of a given year, they have little incentive to make savings and produce efficiencies.

Monitoring and reporting

The objective of monitoring is mainly to gauge progress towards the achievement of education goals, in the short-term (Action Plan 2011-15 for implementation of the SPED), in the mid-term (SPED 2011-20), and in the long-term (Kazakhstan 2050 Strategy). Monitoring and evaluation reports provide comprehensive and detailed information about the whole system towards the accomplishment of national goals to the top levels of governance. Monitoring and internal reporting on resource use takes place at multiple levels of the governance structure of the education system. It is operated in a bottom-up cascade in which every unit and level regularly reports to the hierarchically upper level about itself and the levels below. Annual school reports are sent from the school to the *rayon* education department, then to the *oblast* education department for consolidation, and finally to the Ministry of Education and Science. In addition to the standard reports on the achievement of the planning goals, there are thematic reports on specific issues of interest (e.g. textbooks provision, preparedness for the next school year, organisation of School Olympiads) (ADB, 2004).

Central level

The Department of Strategic Planning and Information Technologies is responsible for monitoring educational policies within the Ministry of Education and Science. A number of other departments or agencies within or subordinated to the Ministry are also involved in the monitoring process. Also, monitoring reports integrate input from the *oblasts*, which include consolidated reports from *rayons* and schools. The Ministry prepares monitoring reports for both the SPED 2011-20 and the Action Plan for 2011-15 as well as the annual operational plan.

The monitoring report of any strategic or programme document has to contain (Pomfret, 2014): (i) stage of accomplishment of the quantitative indicators; (ii) analysis of the causes of failure in case some of the indicators were not achieved; (iii) analysis of the actions that were planned, implemented or not implemented and their outcomes; (iv) analysis of spending; (v) analysis of coordination and interaction in the process of implementation; (vi) internal and external factors that influenced the performance; (vii) analysis of the overall effectiveness of implementation and its influence on the social and economic situation; (viii) level of satisfaction of citizens with government services; (ix) results of audit activities performed by other government agencies, including financial audit; and (x) conclusions and suggestions.

Local and regional levels

Oblast education authorities – and the cities of Astana and Almaty – and *rayon* education authorities monitor compliance with educational norms and financial

regulations in their territories. Education Departments at the *rayon* level compile the data received from schools and transmit the consolidated report to the level up (*oblast*) for further aggregation and submission to the Ministry of Education and Science, which in turn prepares a national consolidated report on progress toward pre-established objectives outlined in the SPED for 2011-20.

Schools

School principals and Boards of Trustees are the primary monitoring authorities at the school level. Schools transmit the results of their monitoring activities in the form of reports to *rayon*/city authorities. Schools complete 83 forms every year to report on a wide range of issues (e.g. students, human resources, financial resources, and physical infrastructure) (IAC, 2014). The number of forms, to be filled out at the different levels, has recently been reduced from 467 in order to decrease the reporting burden that falls on education departments and schools. Schools submit information about their human resources on an annual basis (e.g. date of birth, age, nationality, qualification grade, positions, subject taught, education, length of service, teaching load, year of last appraisal, most recent participation in professional development).

On a monthly, quarterly, and annual basis, schools submit financial reports on monitoring of salaries, transfers, accounts receivable/payable, public procurement and the remaining balance at the end of the reporting month. As for school infrastructure and materials, fixed assets are reported in an annual inventory, material supplies on a quarterly basis, cash on a monthly basis, and library stock every five years. Reports on deterioration are submitted on a monthly basis and missing physical infrastructure has to be certified and removed from the school balance sheet by local authorities (IAC, 2014).

Inspection and audit

The Committee of Control in the Field of Education and Science was created in 2011 to introduce an external school evaluation system (see also Chapter 4). The Committee is mainly entrusted with the control of the system understood as compliance with the existing set of norms. Its main activities are to issue and withdraw licenses for school operation, carry out teacher appraisal and school evaluation, disseminate and supervise the implementation of laws and regulations, impose administrative penalties for violations, develop and approve the Audit plan for educational organisations, keep records of inspected entities, coordinate and supervise the activities of territorial bodies, and render methodical support to territorial bodies.

The Ministry of Economy and Budget Planning (which became, as of 2015, the Ministry of the National Economy) evaluates the monitoring reports in the framework of the system of annual assessment for central government bodies and local government agencies. This assessment incorporates several dimensions (Pomfret, 2014): effectiveness of implementation of the government acts and assignments, effectiveness of budget allocation and management, effectiveness of human resource management, quality of services provided, and effectiveness of ICT implementation. The evaluation report has to include (Pomfret, 2014): (i) results achieved during implementation, targets achieved (and causes for non-achievement of targets); (ii) a list of actions that were and were not implemented with indication of the causes for non-implementation; (iii) analysis of factors that influenced the implementation; (iv) analysis of budget resources allocated and not used in the period of implementation; (v) information on the control activities; (vi) a list of

amendments incorporated in the strategic or planning document on the basis of the previous evaluation report; (vii) conclusions on the effectiveness of implementation; (viii) conclusions on the quality of coordination in the process of implementation; (ix) conclusions on the outcomes of the implementation in the process of social and economic development; and (x) recommendations.

Assessment of the effectiveness of budget allocation is a separate cross-sectoral assessment that is part of the evaluation for overall performance of all levels of the government (Pomfret, 2014). In the analysis of spending, effectiveness is equated to the accomplishment of the objectives laid out in the multiple educational strategies rather than associated with overall cost-effectiveness or efficiency. The Accounts Committee,* which is the agency with the maximum responsibility for controlling the central budget, can conduct a separate independent evaluation of both the programme's implementation and each government agency's performance. The internal and external audits appear to be closer to a self-evaluation exercise, rather than a comparison to international norms, evident in the function of the audit results. The Accounts Committee is accountable to the President of the Republic of Kazakhstan.

The Ministry of Finance, who holds responsibility for financial compliance and audit reports, conducts an annual evaluation of the effectiveness of budget spending based on government agencies' reports (Pomfret, 2014). Financial inspectorates – operating in *oblasts* and the cities of Almaty and Astana – serve as regional divisions of the Financial Control Committee, part of the Ministry of Finance (IAC, 2014). The financial inspectorates are responsible for: (i) controlling legal compliance of national and local resource use; (ii) checking reliability and accuracy of accounting and reporting; (iii) ensuring use of public financial control standards; (iv) bringing to court public procurement violations to ensure compensation and invalidation of contracts; (v) coordinating with other authorities to foster compliance with budgetary and procurement legislation; (vi) auditing public procurement processes; (vii) compiling reports, reviewing cases on administrative offenses and imposing administrative penalties in the areas of public procurement, accounting and financial reporting, audit activities and budgetary legislation; (viii) exercising public control in the area of accounting and financial reporting; and (ix) exercising public control in the area of audit activities and activities of professional audit organisations (IAC, 2014).

The Agency for Combating Economic Crimes and Corruption (Financial Police) undertakes law-enforcement activities focused on preventing and detecting criminal violations related to economic and financial crimes. As such, the Agency's investigations of corruption-related offenses cover all sectors, including the education system. Media reports citing the Financial Police indicate a growing number of registered corruption-related crimes in the education system, as well as criminal cases of misappropriation of resources (Tengri News, 2014a). The Agency revealed that 221 crimes in the education system were registered in 2013, while 121 were registered in the first quarter of 2014. However, the core functions and responsibilities of the Financial Police – tackling corruption – were recently transferred to the Agency for Civil Service Affairs and Fight against Corruption, while functions related to economic and financial offenses were transferred to the Ministry of Finance (Tengri News, 2014b).

* A key body tasked with monitoring financial resource use and associated transparency procedures – the Accounts Committee – was not available to meet with the Review Team during the Review visit.

Kazakhstan has introduced several measures to fight corruption across the public sector, including a comprehensive legal and institutional framework to criminalise any kind of bribery and abuse of office, began implementation of an e-government programme, initiated a public awareness campaign, and increased salaries in the public sector to make them comparable with those in private companies (Ibrayeva and Nezhina, 2013). Anticorruption laws are enforced by agencies such as the Agency for Combating Economic Crimes and Corruption, the National Security Committee, the Ministry of Internal Affairs, and the Agency of Public Service. In the past decade, many activities to inform and educate key stakeholders have been introduced in Kazakhstan. Open debates, education forums and monitoring audits to track financial transparency in schools are some of the key activities introduced up to 2007. Other activities such as corruption surveys were introduced, and state agencies conducted 11 sociological surveys on trends in corruption in 2008-10, financed by the government (OECD, 2013a). The international Corruption Perceptions Index worsened between 2012 and 2013. Kazakhstan fell seven places in the 2013 index, being ranked 140 out of 177 countries (Transparency International, 2013), which indicates a worsening perception of corruption in the public sector.

Transparency and external accountability

The Ministry of Education and Science publishes an annual report with aggregated information about the education system. Information in this report is limited, including only consolidated data that prevents in-depth analysis of the results (World Bank, 2013). The report provides information on licensing of education organisations, teacher and school leader professional development and appraisal, graduation rates, ranking of schools, and analytical and sociological research. However, it does not provide information on student learning outcomes. The Statistical Agency serves as the intermediary body to oversee quarterly reporting procedures and agree on the indicators. The report can be accessed electronically at the Ministry's Website but data cannot be downloaded in a readable format. Prior to the report's release by August 1st of the post-reporting period, a summary is prepared by March 1st in the form of a national digest.

Transparency on the inputs, processes, outputs and outcomes of schools is still very incipient. The review team heard mixed evidence. It seems that a minority of schools proactively informs parents about the conclusions from the school attestation and encourage parents to consult the attestation report in the school premises. Most urban schools have Internet-resources, where they publish the number of students who won or participated in various international or national Olympiads. Also, city websites contain information about the schools that have received international or national rewards. They also contain results of national competitions "100 Best Schools", "Best Teacher", "Best Secondary Education Organization". However, no schools proactively disclose full information about their performance and make it available on their website or in a visible place at their premises.

Boards of Trustees have been established as a new initiative to guide decision-making at the school level. Introduced as part of a pilot programme outlined in the SPED for 2011-20, these Boards existed in 36% of schools in 2012, and are set to expand to 45% and 60% of schools by 2015 and 2020, respectively. The role of these entities includes organising public control of school activities, and increasing decentralisation of school management (IAC, 2014). The sustainability of the Boards hinges on the pilot's results. No safeguards exist in the current SPED that the Boards will be introduced nationwide. Given

the lack of safeguards in the SPED about the future of these Boards, it is no surprise that the role of Parents' Committees – which predate Boards of Trustees in school administration and continue to exist alongside them – remains unclear.

To date, the role of Parents' Committees in transparency and reporting, as well as their participation in school-based management decisions, has been restrained given their limited functions in the acquisition and use of school resources. Parents' Committees have no legal standing or authority on learning inputs in the classroom, nor is there any provision for an open election of their members. However, Parents' Committees have legal standing to have a voice, but not legal oversight authority on budget issues (World Bank, 2013). Even as the number of functioning Parents' Committees grew throughout the country, significant decision-making authority remained in the hands of school principals.

Strengths

There is considerable work in building an education data information system

Increased attention has been placed to creating, collecting and making data available. Numerous data collection exercises exist (administrative, performance, stakeholder surveys, indicators). Most education actors are involved in the collection and reporting of data. Also, data are not limited to nationwide indicators but include breakdowns by regions and use international indicators in order to facilitate benchmarking (IAC, 2014).

A national database of education information is currently being developed. This comes alongside efforts to modernise data collection processes, including computerised approaches for data input. The reduction of the administrative burden of data collection that falls on regional and local education departments and schools, by more than halving the number of forms to be filled out from 467 to 162, is also remarkable. An important objective is the development of an Education Portal to make education data accessible publicly. This is an important step in ensuring education data is used for analysis at the different levels (central, regional, local and school) and by the whole set of stakeholders (practitioners, policy-makers, employers and general public).

A wide range of controls facilitate the monitoring of resource use

The existence of detailed norms provides clear expectations on resource management and facilitates their monitoring. Monitoring is purported to check compliance and gauge progress towards national objectives, mainly the SPED for 2011-20. The Government's awareness of the importance of monitoring and evaluation is manifested in the existence of several agencies with responsibilities in the analysis of the impact of national policies, such as the Information-Analytic Center and the National Center for Educational Statistics and Evaluation (whose services, as of 2015, were integrated in the Information-Analytic Center). A wide range of controls of resource use are in place at multiple levels. Educational inspection and financial inspection, led by the Committee of Control in the Field of Education and Science and the Financial Inspectorate respectively, provide more specialisation on the required tasks. Annual statistics of the Committee of Control suggest that it is very active in ensuring enforcement of national norms.

At the school level, one of the functions of newly-piloted Boards of Trustees is to provide input for school decisions. Previously, those decisions were entrusted to the principal. The existence of Boards, while still a nascent change, provides an additional layer of controls in the system at the school level. The Boards have the potential to positively impact the results of monitoring activities transmitted up the hierarchy to local authorities.

Recent efforts to make schools more transparent and participative are encouraging

The recent introduction of Boards of Trustees, which include agents external to schools such as parents and local businesses, is an important step in ensuring community engagement in the management of school resources. This is likely to improve the responsiveness of schools to communities' needs, strengthen the external accountability of schools and foster greater collaboration with schools' surrounding communities. At the same time, this is part of a government's policy to decentralise decision-making within the education system with the objective of making schooling more relevant to local needs. The legal standing of these Boards is better defined than that of Parents' Committees and are well recognised in strategic documents such as the SPED for 2011-20. Indeed, the decisions of Boards are binding while Parents' Committees can only make recommendations. For example, the school principal now makes recommendations on teacher bonuses but the Board decides on the list of recipients.

Challenges

Limited training, tools and incentives hamper the potential for resource management

Limited training and capacity on resource management at the local level

School leaders might not be adequately prepared for resource management as related abilities are not taken into consideration in their recruitment, no pre-service training programme is available and professional opportunities are very limited in this area (see Chapter 4). They might have an emerging notion of resource management and only while in office they become aware of resource responsibilities at the school as they have to prepare budgets, recruit and manage their personnel. Their ability to allocate resources in efficient ways might be limited.

Also, little autonomy, which results from the extensive system of norms, limits the potential of local actors to achieve better outcomes and reduces the usefulness of capacity building. School leaders might have little incentive to improve their skills, knowledge and capacities in resource management as they are not entrusted with significant resource management responsibilities. For example, little responsibility for planning and executing school budgets means that learning new budgeting skills or acquiring more experience in budget forecasting brings only relatively small benefits to what they can actually do in their roles.

Moreover, appraisal systems for assessing the performance of individual resource managers are deficient. As a result, data on the effectiveness of school leaders and local *oblast* and *rayon* administrators in managing budget resources is not routinely used to inform decisions. The lack of data on the performance of resource managers at schools indicates audit systems exist in theory, but are limited in application, monitoring only financial resources, and not the performance of the individuals tasked with managing those resources (IAC, 2014).

The data information system is faced with considerable quality assurance challenges

There is no single database of education statistics in the education sector, although the Ministry has already taken some steps towards the creation of a national database that will be managed by the Ministry and available in 2015. The existing forms of education statistics are scattered, there is no in-depth analysis of them and they are not publicly available (MERSK, 2010). Also, the indicators produced from national education statistics do not comply with the requirements of international statistics (MERSK, 2010).

A recurrent problem with education data in Kazakhstan is the lack of processes to ensure their quality and validity. The review team observed clear inconsistencies between the data it was provided about individual schools it visited and actual reality observed during the site visits. This is a problem recognised by the Ministry of Education and Science and statistical agencies and, to some extent, relates to the manual and administrative procedure which was in place to collect data from schools. No quality checks were part of the previous collection procedure which severely undermined the quality of education data. The current development of the National Education Database is seeking to develop some quality assurance processes to improve this situation and ensure the validity and reliability of the data.

Despite the large amount of information collected in Kazakhstan, lack of reliable data does not allow adopting an evidence-based approach in the formulation and evaluation of education policies. The large quantity of accurate data required to distribute resources to schools on the basis of a per-student formula illustrates the importance of mechanisms for data quality and validation. For example, school principals might have incentives to over report the number of students in order to obtain additional funding and, in the absence of verification mechanisms, this will result in a suboptimal allocation as some schools might receive more resources than they should to the detriment of others. If then a cost-effectiveness analysis was carried out in order to refine the formula, the results would be inaccurate and could lead to more inefficiencies and inequities in the education system.

Incentives to manage resources more efficiently are limited

A well-designed system that encourages and promotes efficiency in the use of resources is missing in Kazakhstan. The system of norms is very inflexible and enforces uniform approaches across the whole Kazakh education system, leading to inefficient use of resources. Low autonomy prevents educational actors to make decisions that could lead to greater efficiency. For example, norms dictate that the additional funds for schools receiving the award of the 'Best School' should be allocated to physical infrastructure, while higher marginal gains might result from allocating them to other types of resources.

School leaders have no incentives to make savings as budgets are incrementally negotiated on the basis of previous year's execution, and any savings, or unused amounts in the specific budget lines, are treated as indication that the allocation was excessive. Savings cannot be transferred to the budget of the following year and might provide grounds for cuts to the local authorities. This leads to inefficiencies as, even within the limited autonomy of school leaders, some room for savings is possible such as in the field of utilities (electricity, heating). However, any funds saved by the school benefit the *rayon* rather than the school itself.

Local authorities also lack incentives to manage their school networks efficiently and, in particular, to consolidate schools as their budgets are incrementally negotiated with the *oblast* on the basis of previous year's budget execution. In this way, any school consolidation or downsizing would generate complaints in the community and not bring about any benefit to the *rayon*. For example, the savings produced by larger class sizes cannot be allocated into higher teacher salaries, increased instructional time, or better school facilities. As the budgets of local authorities are based on relative need rather than the number of students, a more efficient use of resources is translated into lower future allocations. Regional authorities also face similar challenges as encouraging their local authorities to be more efficient results in lower regional budgets.

The monitoring of financial resources is inadequate

The control of budget implementation presents a number of limitations. No enforcement mechanisms exist to return amounts spent that exceed the authorised budget unless criminal charges are brought. Value for money is not considered as budgets that are sufficiently allocated, but poorly implemented, places intended beneficiaries at a disadvantage, and reduces system efficiency. As such, inadequate control of budget implementation is a symptom of the compliance-driven approach to monitoring, failing to assess value for money spent.

The Financial Control Inspectorate is responsible for internal financial compliance and audit controls (IAC, 2014). Its role extends into the procurement domain, providing a degree of oversight to prevent fraud and corruption, but this role applies only to compliance violations related to the budget (IAC, 2014). For example, school procurement activities which fall within budget guidelines would not violate the compliance rules. Any activity not regulated by the norms is not monitored and is thus not visible to the monitoring agency. Regulated activities are heavily monitored, while non-regulated ones are not scrutinised. For example, a bonus pay scheme was used in one locality in order to retain high-performing teachers by circumventing the rigid uniform salary grid used for teachers nationwide. Since norms provide strict regulation of salaries, which makes them easy to monitor, but do not regulate disbursement of bonuses, local authorities managed to bypass monitoring. The procedure provided a one-off payment of KZT 300 000 to roughly 1 000 teachers. However, it is unclear whether all teachers who received a bonus were actually high-performers, in other words, whether the procedure really rewarded the right school staff. While it is difficult to design comprehensive laws to cover all types of activities, loopholes weaken the effectiveness of the norms as tools of monitoring local authorities. By reframing the monitoring procedure to be more holistic in nature and less bureaucratic, by going beyond simply checking for violations of the norms and toward a broader evaluation of system effectiveness, its usefulness would certainly be enhanced.

Although norms guide the compliance-driven monitoring approach, budgets do not always balance. In Kazakhstan, quarterly budget corrections are allowed throughout the year, and final executed expenditures do not exceed them. An incentive exists for organisations to use all of their budget allocation in a given year and request mid-year (upward) adjustments. A gap emerges between the monitoring framework and its implementation regarding budget adjustments. This gap raises questions of whether the monitoring framework scrutinises activities, not just the expenditure associated with a particular activity to ensure a balanced budget.

The current system is compliance-driven with insufficient capacity to fully evaluate efficiency, equity, and value for money. A compliance-driven effectiveness assessment of public bodies is conducted annually. Implications for equity issues are well-understood by national and sub-national authorities, but the lack of proper monitoring mechanisms prohibits analysis to reduce equity issues evident in gender gaps and regional disparities.

Adequately resourcing policies and programmes to reduce school failure requires significant amounts of both financial resources and human capital. The importance of costing the resource requirements of initiatives and assessing costs against anticipated outcomes and impact is critical, particularly in the present resource-constrained environment. However, transparent, detailed and accurate estimates of costs are an all-too-rare phenomenon and resources are not always well spent. There is a general lack

of high quality cost-benefit analyses of different educational policies and programmes at school and educational authority levels, meaning that schools and governments often make decisions with minimal attention to the efficiency or effectiveness of their likely education outcomes (OECD, 2012).

The extensive reporting requirements raise concerns on the burden to national and local authorities, quality of information reported, data gaps and resulting analysis, and relevance of information. Reporting procedures appear to be driven by the need to produce the indicators outlined in the strategies. Additional concerns about the sustainability of reporting procedures emerge in the medium- and long-term, provided the various mandates for the education strategies have been fulfilled. As the deadline for the strategic goals draws closer, it is unclear what will become of the structures and personnel involved in the reporting process.

Little information is proactively disclosed at the school and administrative level

There is room to improve the transparency of school budget information

School and local education budgets can be publicly accessed upon request but the format used, which contains little explanation of the budget items, makes it difficult for parents and citizens to understand them and hold schools accountable. Some items are also not accounted for in the school budget, such as donations and in-kind contributions. The consolidation of individual school budget reports at the *rayon* level impedes a school-level analysis.

More transparency around parents' contributions, not accounted for in school budgets, would be beneficial for at least four reasons. First, it would provide a closer estimate to expenditure needs at the aggregate level and it will enable families to understand what improvements have already been made and identify future needs at the school level. Second, it would enable education authorities to take these contributions into account in their policy decisions. Third, publication would facilitate accountability: accurate, timely and broad dissemination of the parent associations' financial statements and financial management reports would enable education authorities and parents to hold these associations accountable. Finally, more transparency would normalise a widespread phenomenon and, thus it would facilitate the implementation of policy measures to redress its potential negative consequences.

Resource allocation at the national, regional and local levels could be made more transparent

Local authorities have some discretion in the allocation of resources to schools, even if they – theoretically – need to follow the norms. Budget transparency is lacking at the local level as the majority of schools do not have their own budgets due to centralised accounting; and budget information is generally not disclosed to parents and the principal. At the *oblast* and *rayon* levels, there are public consultations during the annual budget process. Overall, Kazakhstan provides the public with only some information on the national government's budget and financial activities (International Budget Partnership, 2012). Two surveys conducted by the Sange Research Center in Kazakhstan in 2005 and 2010 revealed that Kazakhstan has a considerable scope for improvement in the publication of budget documents according to the Open Budget Index. Kazakhstan scored 38 points out of 100, a result associated with minimal information on the central government budget and government financial activities (International Budget Partnership, 2012).

Without transparency checks and balances in budgeting, some schools might receive more funds than their peers with no appropriate justification, resulting in an inequitable allocation of funds within the same *oblast* or *rayon* (World Bank, 2013). This unilateral authority could result in budget reallocations failing to accurately reflect the needs of schools due to the decision-making authority of financial departments at the local level. In many countries, transparency has been promoted in order to ensure that scarce resources are used efficiently, and for their intended purposes.

The involvement of the school community is still limited

The involvement of parents and other key stakeholders in fostering school improvement and holding the school accountable is still incipient. About 90% of students are in schools whose school principal reported in PISA 2012 that pressure on the school to meet high academic standards came only from a few or a minority of parents, a larger proportion than on average in OECD countries (79%) (OECD, 2013b). In addition, reports on the annual activities and results of the attestation process of schools are not currently published and widely disseminated. Access to attestation reports is critical to ensure the attestation process adequately reflects the school environment. While parents have the right to access school attestation results, reports are not proactively disseminated. Parents might not know that they can access the report, a specific request has to be submitted, and the report might be difficult to interpret.

Also, the role of Boards of Trustees in monitoring resource use is still very incipient, although its existence opens up avenues for improved transparency and reporting procedures at the school level. A recent report on the functioning of Boards of Trustees noted that there does not seem to be a clear and common understanding of their functions and how they should act (Sange-SFK, 2013).

Opportunities for misallocation of resources and corruption exist throughout the system

Weak transparency and accountability mechanisms open up opportunities for the misuse of resources at different levels of the education system, and other sectors. Since 2013, more than USD 1.5 billion has been embezzled in Kazakhstan, according to the Agency for Combating Economic Crimes and Corruption (Financial Police). Opportunities for resource misallocation emerge throughout the education system. Growth in the number of corruption offenses has also occurred at the grassroots level, linked to the distribution of places in pre-primary schools, school meals, and appointment of principals (Tengri News, 2014). In 2013, Kazakhstan was included for the first time in the Transparency International Global Corruption Barometer. About 55% of the respondents indicated that the education system is corrupt or extremely corrupt, a proportion smaller than the police (66%) or judiciary officials (63%) but larger than for other services (e.g. medical) and actors (e.g. parliament, public officials, media). About 31% of the respondents indicated that they or someone else in their household had paid a bribe for education services in the previous 12 months, a proportion only smaller to that of the police and land services. The reasons to pay the bribe for a service were as a gift or to express gratitude (39%), to obtain the service faster (33%), to obtain the service (19%) and to get a cheaper price (8%).

Corruption matters because it can jeopardise efficiency and performance, cause damage particularly to the most disadvantaged in society, as well as fuel attitudes and values such as favouritism, bribery, and fraud. A country's corruption level tends to be

negatively associated with its performance on international assessments. Also, increased public spending on education is associated with a significant increase in primary education completion rates only in the least corrupt countries and those with better-quality bureaucracies.

Loopholes are a gateway for resources to be misappropriated and misused. While loopholes bypass monitoring mechanisms and transparency safeguards, stakeholders who met with the review team did not view such instances as acts of corruption. Opportunities for misallocation of resources have been decentralised to a greater number of stakeholders, and have also generated new opportunities for corruption at the local level (Hallak and Poisson, 2007). Poor quality services prompt the emergence of informal methods to obtain advantages. Illegal fees, paid to obtain an education or a diploma, distort the education process at all levels (Hallak and Poisson, 2007). Such fees are a heavy burden for the poor, with implications for future employment upon graduating. Most importantly, the general public, while complaining about the high rate of corruption, prefers informal and fast ways to receive a service or to solve any problem by engaging in bribes.

Policy recommendations

Strengthen the managerial skills of school leaders

Building capacity for resource management at all levels is a prerequisite before providing greater autonomy. Specific training programmes should be designed in order to improve the capacity to manage resources at the local level. For school leaders, this means integrating resource management training into the development of leadership skills (see Chapter 4). Also, local authorities could benefit from management courses.

Moreover, guidebooks to assist with school finance and management procedures for different levels of school administration (school leaders, *rayon* officials, *oblast* officials) and for different subsectors of education (pre-primary education, primary education, general secondary schools, vocational schools) should be developed and widely disseminated. Over time, the Ministry should develop a range of guidebooks addressing different needs of different stakeholders. Specific areas for the guidebooks should include financial management, including submission of budget requests (school principals) and assessment of budget requests (*rayon* and *oblast* officials).

Introduce incentives to encourage a more effective use of resources

Moving from the present system of norms to a system of proper incentives for efficiency is a difficult process, because as mentioned earlier, the norms play a protective role for individual schools and their removal puts the beneficiaries of resources in an endangered situation if transparency conditions are not met. In other words, the quality of teaching and adequate resources for school operation need to be safeguarded both during the reform process and in the future, reformed education system.

Some opportunities to increase efficiency, which have been dealt with in greater detail in other parts of the report, include for example adopting a per student funding formula to encourage schools, local and regional authorities to foster efficiencies and enable them to retain the savings. This will help relax the norms governing the budget process, and should include the allocation of a specific freely disposable budget amount to be used according to school's own priorities. The saved amounts from the previous year may result in a contribution to this freely disposable amount.

Improve monitoring mechanisms and data collection

There is ample room to improve the external and independent monitoring systems of Kazakhstan's education system. Designing well-functioning monitoring systems can be overwhelming difficult for any country, taking a decade or more to develop (World Bank, 2010). However, once systems are established, widespread benefits emerge from proper monitoring mechanisms: benchmarking and monitoring indicators of school resource use allow any country to rapidly assess its education system, setting the stage for improving policy planning and implementation (World Bank, 2013).

In Kazakhstan, concerns emerge about the effectiveness of the monitoring systems, since an independent and external evaluation agency does not exist. The current monitoring system is based on self-evaluation of education system performance, which brings clear benefits for some purposes, but is also subject to strong bias and thus has limited value for other purposes. National and local authorities stand to benefit from instituting both self- and external evaluation, mitigating the challenges of relying on the use of one approach. As such, an external independent monitoring system for resource use should be a priority. External and independent bodies would strengthen the analysis of the ample data generated by existing monitoring systems and may provide additional data on misuse of funds, currently not available.

Improvement of data collection systems and practices is also needed. To complement an external independent monitoring system, data collection systems and practices should be strengthened to allow for in-depth analysis of school-level data. In particular, procedures to ensure the quality of the data should be introduced at every step of data collection and processing. This would considerably improve the validity and reliability of the data. Also, in-depth analysis of data will be a deviation from the current approach that focuses on compliance with existing norms. Stronger data collection systems would benefit many aspects of the monitoring system and will be important to the impending task of rolling out per capita financing nationwide.

It will also be important to revise the categorisation of schools. While the monitoring system aims to monitor all schools, small-class schools tend to be treated the same as larger peers. This treatment would pose few problems in a system without limitations to resource access and availability. However, in reality, the needs and resources of small-class schools are much different. As such, equal treatment of small and large schools in the monitoring system, results in small schools being placed at a distinct disadvantage. The profile of small-class schools within the system needs to be raised. Clear guidelines for defining small-class schools should be established to improve the monitoring these schools and raise equity of education provision, particularly for those in rural areas.

Strengthen transparency and monitoring of budget execution

The distribution of resources between levels and sectors of education should be monitored. Kazakhstan should introduce budgetary reporting of education expenditures by level and by subsector, to provide the Government with clear information about resource use. Per student expenditures should be compared with curriculum norms and with class sizes, so that the Ministry of Education and Science is able to determine whether the relative funding of sectors is in accordance with Government priorities. For example, it may turn out that pre-primary education or vocational education is relatively over-financed or relatively under-financed compared to school general education. In such

a case some reallocation of resources between the sectors would improve efficiency. Similarly, the funding levels and staffing levels of NIS schools should be made public and compared to other sectors of education.

There is also a need to implement national budget reporting of all recurrent and capital expenditure in the education sector, with information about the source of funds for investments (Republican, local, external). The budget reports covering all detailed budget execution should be filed, put together and maintained by the Ministry of Education and Science and should be made publicly available. It is of vital importance that these budget reports should not only be aggregated (for example, at *oblast* level), but should also be collected for individual education institutions. Appropriate coding of all education institutions will be necessary to ensure that budget reports from consecutive years can be matched and compared. For that purpose existing coding of schools in the national education database may be used.

Place greater emphasis on performance-based effectiveness analysis

Stronger analytical capacity would ensure that the Government is able to implement the designed policy changes more effectively. Presently, low analytical capacity in accounting, monitoring, and supervision, combined with a lack of external audit mechanisms and a developing judiciary system reduce the opportunity to detect fraud (Hallak and Poisson, 2007). With more detailed budgetary reporting of education expenditures by levels of education, expenditure categories, localities or even individual schools, Kazakhstan's policymakers can have clear information about resource use on which to base their decisions. Moreover, robust analysis of detailed financial and non-financial data can greatly enhance the quality of policy decisions in a way that the current compliance-based approach simply cannot.

The current monitoring system is heavy on quantitative indicators embedded in the State Program for Education Development 2011-20 (SPED) but does little in the way of measuring the effectiveness of resource use in relation to performance. At the subnational level little performance-based monitoring takes place. A budgeting process that is better informed by the tracking of relevant outcomes at all levels of the education system will go a long way to increasing the effectiveness of resource use. Additional autonomy and accountability in resource use at local and school levels can further enhance sector efficiency. It should be stressed that simple quantitative increases in budget allocations to the education sector (such as across-the-board increases in teacher salaries) will not achieve the desired objective of effective growth in the education sector without the corresponding systemic reforms to accountability and monitoring within the education system.

Proactively disclose information at the school level

Kazakhstan needs to improve dissemination of information about activities at the school and local levels, including information on school and local education budgets. While dissemination of reports may be viewed as another burden in the reporting process, school oversight bodies (in particular the Committee of Control of Education in the Field of Education and Science) should consider using a single nationally-developed format to ensure that parents and voters know how schools operate in their community and how school resources are used. This could consist in the publication of school attestation reports (or parts of them) in a language that can be accessible to the wider public (see also

Chapter 4). This publication should avoid the public release of private information as with the identification of those individuals liable for the violations demonstrated in the school attestation report. Similarly, school principals should disseminate their school's activity report and financial plan, in accessible language, by posting them on the web or on school bulletin boards, thus increasing transparency.

School "report cards" are another way of increasing transparency. Several countries publicly disclose "school report cards" to inform parents and the community about how well the school is performing. Such "report cards" typically contain information such as student learning outcomes at the school level (e.g. using school value-added measures based on results in national standardised assessments), socio-economic characteristics of the school's student population and information about resources available at the school. In Pakistan, an experiment that provided school and child-level learning report cards to communities and parents found that they boosted third grade students' learning by 10% of a standard deviation (Andrabi et al., 2015). In Bangladesh, a report card provided information regarding the collection of unauthorised fees by primary schools (Karim, 2004). The effectiveness of report card programmes is open to debate, since some large ones have not received rigorous evaluations. In the Paraná state of Brazil, a report card programme operated between 1999 and 2002 but was not rigorously evaluated (Bruns et al., 2011). In Chile, a programme that has informed parents and communities about the quality of their local school has not been evaluated for its impact on student achievement (Mizala and Urquiola, 2007). However, it is clear that report cards, as a policy, should only be implemented once the associated data are of high quality and clearly inform the public of the actual contribution of the school to student learning.

Strengthen community involvement in schools as a complement to budget transparency at the school level

In general, budget transparency is a positive public policy that is believed to increase the effectiveness and efficiency in the use of school resources. In countries where resource "leakages" occur, budget transparency has reduced leakages and improved the flow of resources to schools (Reinika and Svensson, 2005). A recent review of the impact of transparency and accountability initiatives, however, found few countries where such initiatives had been implemented in the education sector and hence little evidence of impact on learning outcomes (McGee and Gaventa, 2011). By comparison, community involvement regarding school decision-making, including decisions about the use of budgets, has been shown to boost student learning in El Salvador, Cambodia and Argentina (World Bank, 2003).

In this context, the usefulness of Boards of Trustees can be further enhanced through the training of their members to improve their capacity to engage in educational and resource issues. Boards appear to operate in an ad hoc manner, shaped by approaches defined at the school level. The piloting of Boards and uncertainty about nationwide expansion may help to explain the absence of a formal operating protocol. Boards should receive greater guidance from national and local authorities. There should also be particular care in the selection of their members with due attention to the range of competencies Boards need. Also, to enhance the functioning of Boards of Trustees, national and local authorities should build their capacity to interpret and analyse school financial plans. Capacity development efforts would focus on increasing the knowledge of the Boards in areas such as: (i) understanding the existing transparency and reporting

mechanisms; (ii) monitoring school resource use; (iii) operating independently from local authorities; and (iv) understanding equity and efficiency issues in education resource use.

Greater attention should also be paid to contributions raised by schools. Kazakhstan is a relatively rich country, so there is no desperate need to increase private contributions to public schools. The rules governing private contributions to schools are not presently well understood at the local level. Moreover, the change of legal status and introduction of Boards of Trustees opens up more opportunities for fundraising and, at the same time, creates some room for corruption. While there seems to be some scope for fundraising in many schools through the provision of extracurricular activities, meal provision, and rental of facilities, these need to be better regulated, accounted in the school budgets, and closely monitored.

Tackle and reduce the opportunities for corruption

Reducing opportunities for misuse of resources and corruption should be an urgent priority. Failing to reduce opportunities for corruption threatens the effectiveness of resource use – and perception – of transparency and reporting procedures and can hamper equity. Indeed, if corruption in the education system is not addressed, other efforts to improve the effectiveness of resource use lose their significance. However, enhancing the transparency and reporting framework is a one-sided approach to reduce corruption in the system. Improving the education system needs a complementary policy of reducing opportunities and loopholes to misuse resources. Such an approach requires a balance between monitoring resource use, and the implementation of transparency and reporting frameworks.

To tackle corruption, authorities must identify its causes, raise awareness of its costs and encourage whistleblowing. The causes for corruption can be rooted in economic issues, regulations and criteria (i.e. imprecise, incomplete, over complex, opaque), cultural practices, weak governance (capacity, control) and law enforcement, and weak community involvement. National and local authorities can adopt a multi-pronged approach to uncover corruption through: informing and educating key stakeholders; and community action and mobilisation. Kazakhstan can leverage its experience with corruption surveys to identify the current state of irregularities in education, building on the work of the Agency for Civil Service Affairs and Fight against Corruption (Financial Police). However, policymakers must go further by rigorously analysing the survey data to guide decision-making, and not just perform another survey. It is also essential to reduce the opportunities for corruption by, for example, developing codes of conduct for teachers and revising the norms to identify potential conflicts of interest and reduce incentives to misreport. In addition, capacity building with appropriate training and instruments on accounting, financial management, expenditure tracking, information management, and supervision mechanisms can also contribute to the identification of malpractices. More broadly, greater transparency, computerisation, and automation of financial transactions reduce the potential interferences of individuals.

A recent OECD report by the Istanbul Anti-Corruption Action Plan (IAP) indicates that Kazakhstan's new anti-corruption strategy must be better defined, involving key stakeholders, with targeted actions and goals that address the key corruption challenges facing the country (OECD, 2014). In particular, the report recommends: (i) bringing corruption incriminations in compliance with international standards; (ii) ensuring effective and dissuasive liability of legal persons for corruption; (iii) establishing

anti-corruption specialisation of prosecutors; (iv) adopting an access to information law in line with international standards without further delay; (v) ensure the independence and integrity of the judiciary system; (vi) promote, jointly with business associations, integrity and good governance in Kazakhstan's companies; and vii) ensure verification and publication of asset declarations for public officials (OECD, 2014).

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ANNEX A

The OECD Review of Policies to Improve the Effectiveness of Resource Use in School

The ***OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools*** (also referred to as the *School Resources Review*) is designed to respond to the strong interest in the effective use of school resources evident at national and international levels. It provides analysis and policy advice on how to distribute, utilise and manage resources so that they contribute to achieving effectiveness and efficiency objectives in education. School resources are understood in a broad way, including financial resources (e.g. expenditures on education, school budget), physical resources (e.g. school buildings, computers), human resources (e.g. teachers, school leaders) and other resources (e.g. learning time).

Fifteen education systems are actively engaged in the Review. These cover a wide range of economic and social contexts, and among them they illustrate quite different approaches to the use of resources in school systems. This will allow a comparative perspective on key policy issues. Participating countries prepare a detailed background report, following a standard set of guidelines. Some of the participating countries have also opted for a detailed Review, undertaken by a team consisting of members of the OECD Secretariat and external experts. As of early 2015, the participating countries were (in bold those that have opted for an individual Review): **Austria**, **Belgium (Flemish Community)**, Belgium (French Community), **Chile**, **Czech Republic**, **Denmark**, **Estonia**, Iceland, **Kazakhstan**, **Lithuania**, Luxembourg, **Slovak Republic**, Spain, Sweden and **Uruguay**. The final comparative report from the OECD Review, bringing together lessons from all countries, will be completed in 2016.

The project is overseen by the Group of National Experts on School Resources, which was established as a subsidiary body of the OECD Education Policy Committee in order to guide the methods, timing and principles of the Review. More details are available from the website dedicated to the Review: *www.oecd.org/edu/school/schoolresourcesreview.htm*.

ANNEX B

Composition of the Review Team

Jeremie Amoroso is an Analyst in the Education Department of the World Bank, since joining in 2013. He uses his private sector experience to provide research and analytical support to multiple projects in the Europe and Central Asia region. These currently include Romania, Tajikistan, and Kazakhstan, across general and higher education. He holds a Master of Public Policy degree from the College of William and Mary's Thomas Jefferson Program in the United States. He is a Trinidad and Tobago national.

Jan Herczyński is a Senior Researcher at the Institute for Educational Research in Warsaw. He has 15 years of experience in education finance, in education policy and in formulation and analysis of education strategy. He has advised on education finance and decentralisation the Polish Ministry of National Education (1999-2001) and the Macedonian Ministry of Education and Science (2002-07), including on the development and implementation of a per student funding formula. Between 2010 and 2012, he coordinated a project on strengthening the strategic capacity of Polish local governments on education and edited the 7-volume Library of Local Government Education. He has authored reports and consulted for many short term projects on education finance, strategy and management in transition countries, including Albania, Belarus, Bulgaria, Georgia, Kosovo, the Kyrgyz Republic, Lithuania, Macedonia, Moldova, Poland, Romania, Serbia, Tajikistan, and Ukraine. He holds a Ph.D. in Mathematics. He is a Polish national.

Igor Kheyfets is an Economist in the Education Department of the World Bank, where he has been since 2008. His work focuses on fiscal policy and the efficiency of resource use in education systems. He is the author of several World Bank Public Expenditure Reviews in education for countries across the Eastern Europe and Central Asia region, as well as other reports on topics covering higher education, skills, and the use of public resources. He holds a Master of Public Policy degree from Georgetown University, United States. He is an American national.

Marlaine Lockheed has over 40 years of experience advising governments, donor agencies and private organisations on reforms for education quality, gender equity and school effectiveness. She served at the World Bank for 19 years, initially as a researcher on education effectiveness, equity and quality and later holding senior management responsibilities in education policy and lending for MENA countries and in the evaluation of internal training programmes. She was furthermore appointed interim Education Director. Previously, she directed research on gender equity in schools and testing at ETS. She has served on the boards of numerous professional associations and scientific journals. Lockheed is author or editor of 80 chapters and journal articles, four journal

special issues and seven books. She has been a visiting fellow at the Center for Global Development, and has taught at Harvard, Stanford, Princeton, and University of Texas. She holds a Ph.D. in International Development Education from Stanford University. She is an American national.

Anna Pons is a Policy Analyst in the OECD Directorate for Education and Skills since 2010. She is currently involved in the OECD Accession Reviews of Colombia and Latvia. Anna has co-ordinated or contributed to reviews of the effectiveness and equity of a wide range of school systems. She is also co-author of a thematic report on equity (*Equity and Quality in Education*, 2012). Previously, Anna contributed to the work on competition policy, public integrity and transparency. Prior to joining the OECD, Anna had worked for the Higher Education Commission of the Government of Catalonia and the private sector. Anna holds a BA in Economics and a BA in Political Science from University Pompeu Fabra, Spain, and a Master in Economics and Public Policy from Sciences Po, ENSAE and École Polytechnique, France. She co-ordinated the Review of Kazakhstan and the preparation of the report. She is a Spanish national.

Paulo Santiago is a Senior Analyst in the OECD Directorate for Education and Skills, where he has been since 2000. He is currently the co-ordinator of the OECD School Resources Review. He has previously assumed responsibility for three major cross-country reviews, each with the participation of over twenty countries: a review of teacher policy (2002-05), leading to the OECD publication "Teachers Matter"; the thematic review of tertiary education (2005-08), leading to the OECD publication "Tertiary Education for the Knowledge Society"; and a review of evaluation and assessment policy at the school level (2009-13), leading to the OECD publication "Synergies for Better Learning". He has also led reviews of teacher policy, tertiary education policy and educational evaluation policy in over 25 countries. He holds a Ph.D. in Economics from Northwestern University, United States, where he also lectured. He is a Portuguese national.

ANNEX C

Visit programme

Monday, 31 March 2014, Astana City	
09:20-09:50	Planning and development of public education policy • President and vice-presidents of JSC "Information-Analytic Center"
10:00-13:00	Development of strategies and education policy, monitoring/analysis and evaluation Ministry of Education and Science • Director of the Department of Pre-school and School Education • Director of the Department of Strategic Planning and Information Technologies • Chairman of the Committee for Control in the Field of Education and Science • Chairman of the Committee for Protection of Children's Rights
15:00-15:30	Minister of Education and Science of the Republic of Kazakhstan, Mr. Aslan Sarinzhipov
16:15-18:00	Visit to School No 31, Astana City • Meeting with school leadership team • Meeting with a group of teachers • Meeting with a group of students
18:30-19:45	Monitoring/analysis and evaluation of school education • Director of the National Center for Education Statistics and Evaluation of Kazakhstan
Tuesday, 1 April 2014, Astana City	
09:25-10:25	Planning of budget/financing of school education • Deputy Director of the Department of Finance and Investment Projects, Ministry of Education and Science • President of JSC "Financial Center"
11:00-11:50	Planning of budget/financing of school education • Deputy Director of the Department of strategic planning and analysis, then Ministry of Economy and Budget Planning (as of 2015, became the Ministry of the National Economy)
12:00-13:00	Planning of budget/financing of school education • Director of the Department of planning, performance analysis and implementation evaluation of budget programmes for social sphere, then Ministry of Economy and Budget Planning (as of 2015, became the Ministry of the National Economy)
14:30-15:15	Planning of budget/financing of school education • Centre for Strategic Elaboration and Analysis, Executive Office of the President
16:00-17:00	Planning of budget/financing of school education • Treasury Committee, Ministry of Finance: • Division of consolidated financial plan and implementation of plans for financing state budget programmes • Division of accounting of government requirements and liabilities on loans • Financial Control Committee, Ministry of Finance

Wednesday, 2 April 2014, Talgar rayon, Almaty oblast	
09:00-11:30	Visit to School No. 49, Talgar *rayon* (participating in the pilot per capita financing project) • Meeting with school leadership team • Meeting with a group of teachers • Meeting with a group of students
11:50-12:35	Department of Education of Talgar *rayon* • Head of the Division of Education
12:50-14:00	Department of Economics and Finance of Talgar *rayon* • Head of the Division of Economics and Finance
17:30-20:00	Visit to a small-class school, Enbekshikazakh *rayon* • Meeting with school leadership team • Meeting with a group of teachers • Meeting with a group of students
Thursday, 3 April 2014, Almaty City	
08:00-09:00	Meeting with local researchers (Mr. Kurmangali Bekishev, Ms. Meruyert Makhmutova)
09:20-10:10	Department of Education of Almaty city
10:50-11:40	Teacher Appraisal and School Evaluation • Department of Control in the Field of Education and Science of Almaty city
12:10-13:00	Initial Teacher Education and Professional Development • Kazakh National Pedagogical University • National Center for Professional Development "Orleu"
14:30-15:20	Soros Foundation – Kazakhstan • Research Center "Sange"
16:00-18:00	Visit to School No. 32, Almaty City • Meeting with school leadership team • Meeting with a group of teachers • Meeting with a group of students
Friday, 4 April 2014, Astana City	
09:00-09:40	Department of Education of Astana city
09:40-10:20	Department of Finance of Astana city
10:50-16:00	Improving Education Quality Round Table, World Bank – Ministry of Education and Science
Saturday, 5 April 2014, Astana City	
09:00-23:00	Review team meeting
Monday, 7 April 2014, Arshaly rayon, Akmola oblast	
10:00-12:30	Visit to a School, Konstantinovka village, Arshaly *rayon* • Meeting with school leadership team • Meeting with a group of teachers • Meeting with a group of students
15:10-15:50	Division of Education of Arshaly *rayon* • Head of the Division of Education
15:50-16:30	Division of Economics and Finance of Arshaly *rayon* • Head of the Division of Economics and Finance
17:30-19:30	Visit to School (Resource centre), Zhibek Zholy village, Arshaly rayon • Meeting with school leadership team • Meeting with a group of teachers • Meeting with a group of students

Tuesday, 8 April 2014, Astana City	
08:00-09:00	JSC "Information-Analytic Center", Meeting with Project Team
09:00-10:00	"Nazarbayev Intellectual Schools" • Managing Director of the Department of educational policy and programmes • Deputy Director of the Department of educational policy and programmes
10:00-11:00	Center for Development of Small-class Schools, National Academy of Education
11:10-12:10	UNICEF's office in Kazakhstan
12:10-13:20	Meeting with local researchers (Mr. Duishonkul Shamatov, Mr. Kairat Kurakbayev, Ms. Kaliyabanu Kertayeva)
13:20-15:40	Oral report by review team with preliminary conclusions • Information-Analytic Center
15:00-15:50	Meeting with a Senator (part of the review team)
16:00-17:00	Republican Labour Union of Workers' in the Field of Education and Science

Glossary

Disadvantaged: there is no common definition across OECD countries of what is a disadvantaged school. Typically a disadvantaged school is a school with a high proportion of disadvantaged students. In PISA (Programme for International Student Assessment), disadvantaged schools are defined as schools where the average socio-economic background of students is below the national average. Students are considered disadvantaged on the basis of their personal and social circumstances, such as ethnic origin and family's socio-economic status.

Equity in education: refers to the degree of fairness and inclusion in education. Equity as inclusion means ensuring that all students reach at least a basic minimum level of skills. Equity as fairness implies that personal or socio-economic circumstances, such as gender, ethnic origin or family background are not obstacles to educational success. Equitable education systems are fair and inclusive and support their students in reaching their learning potential without either formally or informally pre-setting barriers or lowering expectations.

Low performing: refers to schools failing to achieve adequate levels of student performance, without taking into account external factors, such as the average student intake's socio-economic background. Students who obtain scores below Level 2 in PISA can be considered as low performing as they lack basic skills.

School: refers to an educational organisation that offers primary, lower secondary and upper secondary education. In Kazakhstan, school education (grade 1 to grade 11) is known as *secondary* education.

Small-class schools: are characterised by having a small number of students, low student-teacher ratios and small classes (*malokomplektnyye shkoly*, in Russian). They typically provide multi-grade teaching (and are sometimes referred to as "ungraded schools").

***Stavka* system**: refers to the concept of teacher employment in Kazakhstan, whereby teachers are employed under a weekly teaching load system with their basic compensation purely associated with their teaching load.

Subnational governments ("*oblasts*" and "*rayons*"): includes regional governments (also referred to as *oblasts*) and local/district governments (also referred to as *rayons*).

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