Reviews of National Policies for Education

Secondary Education in Kazakhstan

OECD

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BETTER POLICIES FOR BETTER LIVES

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Foreword

This first OECD review of policies for secondary education in the Republic of Kazakhstan was requested by the Government of the Republic of Kazakhstan as part of the process of deepening co-operation with the OECD in key areas of development, such as education. The purpose of the review is to evaluate the education reform agenda – its feasibility and focus – by taking stock of present-day strengths and weaknesses of the secondary education system of Kazakhstan. The review also seeks to provide, where needed and possible, guidance on adjusting the reform implementation plans in line with international experiences and best practices regarding educational change.

An added value of this activity for both the authorities of Kazakhstan and the OECD is that during the preparation of this report, much of the previously dispersed (national) data on secondary schools in Kazakhstan has been consolidated into a common base of evidence, validated by the education authorities. Strengthening the reliability of evidence is a long process and this work can only be the first step. Nevertheless, it is already benefiting a number of follow-up activities with the Republic of Kazakhstan, such as the *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools* (carried out in co-operation with the World Bank), the *OECD Review of Policies for Vocational Education and Training (Skills Beyond School)*, and the *OECD Country Review of Early Childhood Education and Care*.

Chapter 1 of this report provides an overview of the country, its education system and reform plans. Subsequent chapters provide analysis of and recommendations on equity and effectiveness of schooling; assessment and evaluation practices; policies for teachers and principals; expenditure patterns and financing mechanisms; vocational education and training; and a summary of the recommendations.

The report was prepared in the Directorate for Education and Skills by Mihaylo Milovanovitch (rapporteur and review team leader), José-Luis Alvarez-Galván (OECD Secretariat), Julie Bélanger (OECD Secretariat), Simone Bloem (OECD Secretariat), and Caroline Macready (independent education expert). Cassandra Davis, Célia Braga-Schich and Anne-Lise Prigent from the OECD Secretariat, and Ian Whitman (United States)

provided editorial guidance and support for the production of this publication. The layout was prepared by Peter Vogelpoel. Brigitte Beyeler, Claire Chetcuti and Deborah Fernandez provided overall administrative support.

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Table of contents

Acronyms **15**

Executive summary **17**

***Chapter 1.* Overview of the education system of Kazakhstan** 23

The education reform agenda in pre-university education 36
The OECD review: sources and the review process 41
Annex 1.A1. A note on the review process 43
Annex 1.A2. Request for meetings submitted prior to the site-visits 45
Annex 1.A3. Review framework 48

***Chapter 2.* Equity and effectiveness of schooling in Kazakhstan** 63

Access to education 64
Equality of educational opportunity 66
Annex 2.A. The hierarchy of thinking skills 111

***Chapter 3.* Assessment of learning outcomes and teaching quality in Kazakhstan** 115

The aims and purposes of assessment 116
Assessment of student performance. 116
Recommendations 147

***Chapter 4.* Good policies for better teachers and school leadership in Kazakhstan** 153

Introduction 154
Good policies for better teachers 154
Conclusions and recommendations 198
Annex 4.A1. Salary progression of teachers and principals, Kazakhstan (2011) 203
Annex 4.A2. Evidence-driven approach to reform and management of teacher policies: An example 204

Chapter 5. **Education expenditure and financing mechanisms in Kazakhstan** . . . 213

The dual purpose of the chapter . . . 214
The fiscal and macroeconomic context in Kazakhstan . . . 214
The focus of analysis of education expenditure . . . 218
How much does Kazakhstan invest in public education? . . . 219
Recommendations . . . 266
Annex 5.A1. Additional data on education expenditure used in the report . . . 273
Annex 5.A2. Planning and managing capital investment in education in Alberta, Canada . . . 311
Monitoring and assessment of school facility condition . . . 311
Prioritisation of School Capital Projects . . . 312
Property Disposal Incentives Scheme . . . 313
Leasing parts of the school . . . 314
Reporting of capital expenditures . . . 314

Chapter 6. **Vocational education and training in Kazakhstan** . . . 319

The aims and purposes of vocational education and training in Kazakhstan . . . 320
Outline of the VET system . . . 321
Students at VET institutions . . . 324
Regional differences in VET resources . . . 326
Governance of the VET system . . . 331
Teaching staff . . . 332
The quality and relevance of VET instruction . . . 332
Recent assessments by other international institutions . . . 335
Recent reforms of the VET system . . . 336
Provisional conclusions . . . 340

Chapter 7. **Recommendations of the OECD review of secondary education in Kazakhstan** . . . 349

Annex 7.A1. Ownership and involvement in reforms . . . 367

Figures

Figure 1.1 Kazakhstan and provinces . . . 25
Figure 1.2 GDP per capita and GDP growth in Kazakhstan from 1990 to 2011 . . . 28
Figure 1.3 Trends in total and youth unemployment, by gender . . . 30
Figure 1.4 The education system of the Republic of Kazakhstan . . . 31
Figure 2.1 The network of special educational organisations for gifted children (2011) . . . 71
Figure 2.2 Performance on the aspect reading subscales compared to overall reading scale, for selected countries, PISA 2009 . . . 87

Figure 2.3 Performance on reading continuous and non-continuous texts compared to overall reading scale, for selected countries, PISA 2009 88
Figure 3.1 Prototype tool for assessing pupils' creativity in schools. 123
Figure 4.1 The autonomy of school principals, OECD and Kazakhstan (2009) . .192
Figure 4.2 Leadership development approached across OECD countries (2007) 195
Figure 4.3 Salary progression: teachers and principals in Kazakhstan (2011) 197
Figure 5.1 GDP and GDP per capita growth (annual %), Kazakhstan and selected countries and regions (1996-2011). 214
Figure 5.2 GNI per capita trends 2005-11 (2005 = base year), Kazakhstan and upper middle income group of countries 215
Figure 5.3 General government total expenditure as proportion of GDP, Kazakhstan, OECD and selected world regions (2011) 216
Figure 5.4 Trends in general government total expenditure as proportion of GDP, Kazakhstan, OECD and regional average (2007-11). 217
Figure 5.5 Ratio of cumulative expenditure per student over the theoretical duration of primary and secondary studies to GDP per capita, Kazakhstan, OECD and benchmark countries (2009) 225
Figure 5.6 Reform expenditure as share of total education expenditure (2009-12) and share of annual education budget increase allocated to reforms (2010-12) 229
Figure 5.7 Education expenditure by resource category – capital expenditure as share of total expenditure, Kazakhstan (2009, 2012) and selected OECD and benchmark countries (2009). 231
Figure 5.8 A-D Allocation of resources for long and mid-term reform goals by type of expenditure (2009-14) 232
Figure 5.9 Average student populations per full time secondary school and average class size across regions of Kazakhstan, general secondary education (2010). 236
Figure 5.10 Variance in per student expenditure across regions in Kazakhstan, local budgets (2011). 239
Figure 5.11 Cost of living and per student expenditure (all levels) across Kazakhstan, 2011 241
Figure 5.12 Instruction related per student expenditure in the regions of Akmola, Aktobe, Eastern and South Kazakhstan and average share of payroll expenses in rural and urban school budgets, 2011 243
Table 5.11 Mid-career teacher salaries in USD PPP and in proportion to GDP per capita, Kazakhstan (2011) and OECD countries (2010) 248
Figure 5.13 Average annual inflation rate (consumer prices) in Kazakhstan and selected countries and regions for the period 2005-11. 257
Figure 5.14 Income trends after adjustment for inflation, secondary education teachers in Kazakhstan, OECD and EU from 2005 to 2010, constant price levels (2000 = 100; 2004 = 100 for Kazakhstan) . . 258

Figure 5.16 Decentralised governance structure, Kazakhstan 259
Figure 6.1 Students per college, 2009 327
Figure 6.2 Students per lyceum, 2009 327
Figure 6.3 Students per teacher in colleges, 2009 328
Figure 6.4 Students per teacher in lyceums, 2009 328
Figure 6.5 Structure of the department of technical and professional education in the Ministry of Education and Science 331
Figure 6.6 Self-employed population by level of education 2006-12. 334

Tables

Table 1.1 Population size by provinces, 1999 and 2009. 26
Table 1.2 Kazakhstan's HDI trends 27
Table 1.3 Types of secondary schools and students enrolled in them, 2010 and 2011 33
Table 2.1 Enrolment rates for pre-primary, primary and secondary schooling in Kazakhstan and selected countries (2010) 65
Table 2.2 Number of winners of international school competitions in fundamental science 72
Table 2.3 Percentages of students reaching the highest proficiency levels in PISA 2009 in Kazakhstan and selected countries and economies . . 73
Table 2.4 Percentages of students below the baseline level, Level 2, in PISA 2009 in Kazakhstan and selected comparators. 76
Table 2.5 Reading, mathematics and science performance of students speaking Kazakh and Russian at home 81
Table 2.6 Average scores and percentage of boys and girls below Level 2, PISA 2009 82
Table 2.7 Achievement in mathematics cognitive domains, 8th grade, TIMSS 2011 89
Table 2.8 The hierarchy of thinking skills 91
Table 3.1 The use of assessment results in PISA participating economies . . .133
Table 4.1 Percentage of teachers in general secondary education schools in each age category (2010, 2011) 156
Table 4.2 Percentage of teachers in general secondary education schools in each category of years of teaching experience (2005, 2010). 157
Table 4.3 Percentage of teachers in general secondary education schools by highest level of education completed (2007-10) 157
Table 4.4 Percentage of teachers of lower secondary education (ISCED level 2) by highest level of education completed (2008) . . .158
Table 4.5 Percentage of teachers who reported that these factors heavily influence student achievement 159
Table 4.6 Percentage of teachers with higher education in each region and in villages 160

Table 4.7 Percentage of teachers in each category in urban and rural areas . . 161
Table 4.8 Vacant teaching posts in public general secondary schools at the beginning of the 2010/11 school year 163
Table 4.9 Qualitative composition of secondary school teachers, as % of their total number 168
Table 4.10 Qualification requirements for teacher attestations[5]. 170
Table 4.11 Percentage of teachers participating in professional development, by development area 176
Table 4.12 Salaries of public employees, employees of organisations sustained by the state budget, and employees of public enterprises in Kazakhstan:
Income groups, base wage and multiplication factors 183
Table 4.13 Additional bonuses for qualification categories 184
Table 4.14 Potential impact of selected SPED 2020 objectives on the work of principals in Kazakhstan 190
Table 4.A1.1 Salary progression of school teachers and principals in Kazakhstan (2011). 203
Table 4.A2.1 Indicator Framework for Informing Teacher Policy 204
Table 5.1 Total public expenditure on education per level as share of GDP, Kazakhstan (2009, 2011) and benchmark countries (2009) 220
Table 5.2 Expenditure per student and level of education in USD PPP, Kazakhstan (2009, 2011) and benchmark countries (2009) 222
Table 5.3 Change in expenditure per student by educational institutions for all services at primary, secondary and post-secondary non-tertiary levels of education, Kazakhstan, OECD and benchmark countries (1995, 2000, 2005, 2009). 226
Table 5.4 Change in the number of teachers and students, in average teacher wages, and in the share of ungraded schools 2004/05 and 2011. . . 228
Table 5.5 School buildings in emergency condition or requiring overhaul per region in Kazakhstan (2010). 234
Table 5.6 Characteristics of the secondary school network in Kazakhstan by region, with potential impact on expenditure (2010) 237
Table 5.7 Distribution of financial burden for education, republican and local tiers of government, 2009-11 (millions KZT) 238
Table 5.8 Allocations from the republican budget for the education reform strategy, 2009-11 (millions KZT) 239
Table 5.9 Cost factors and per student expenditure, Kazakhstan (2010/11). . 240
Table 5.10 Statutory salaries of teachers with 15 years of experience relative to earnings for full-time, full-year workers with tertiary education, OECD (2009) and Kazakhstan (2011). 246
Table 5.12 Teacher salaries in current local currency units (LCU), 2000-11, net of compensation payments and bonuses 251
Table 5.13 Statutory salaries in education relative to average national income, 2011 253

Table 5.14 Compensation payments for additional qualifications of teachers, Kazakhstan 254
Table 5.15 Annual statutory teachers' salaries in public institutions at starting level with minimum training and at the top of the scale with maximum qualifications, by level of education, Kazakhstan, OECD and EU (2010) 255
Table 5.16 Average expenditure on education and other sectors, local budgets, 2011 263
Table 5.A1.1 Public expenditure on education as share of GDP per level of education, upper middle income countries for which there is data (2009 or latest available year) 273
Table 5.A1.2 Spending on education in Kazakhstan as share of GDP, 2010-12 (national data) 274
Table 5.A1.3 Expenditure per level of education in current and constant LCU and in USD PPP, Kazakhstan (2011). 275
Table 5.A1.4 Ratio of cumulative expenditure per student over the theoretical duration of primary and secondary studies to GDP per capita (2009) 276
Table 5.A1.5 Salaries of public employees in Kazakhstan: income groups, base wage and multiplication factors 279
Table 5.A1.6 Overview of compensation payments for education professionals in pre-university education, Kazakhstan 287
Table 5.A1.7 Wages of education professionals: currency conversions and inflation adjustments 290
Table 5.A1.8 Maximum monthly salary simulations, teachers in primary and secondary education (KZT) 299
Table 5.A1.9 Ratios of statutory and maximum salaries of mid-career teachers (15 years of experience) to earnings for full-time, full-year workers with tertiary education in Kazakhstan (2010, 2011) 301
Table 5.A1.10 Annual statutory teachers' salaries in public institutions at starting salary, after 10 and 15 years of experience and at the top of the scale, by level of education, in equivalent USD converted using PPPs for private consumption, Kazakhstan, OECD and European Union (2010) 303
Table 5.A1.11 Inflation adjustment of statutory teachers' salaries in Kazakhstan after 15 years of experience with minimum qualifications 304
Table 5.A1.12 Long- and mid-term reform goals (2009-14) – coding of expenditure items and priorities 304
Table 5.A1.13 Allocation of resources for long and mid-term reform goals by type of expenditure (2009-14): Calculation of allocations per category (thousands of KZT) 308
Table 5.A1.14 Indicators used for the linear regression in Table 5.9: Cost factors and per student expenditure (2010/11) 310

Table 6.1 Indicators of workforce education and training by firm size in Kazakhstan 2009 (average values) 323
Table 6.2 Enrolment in VET (TPE) institutions in Kazakhstan, 2010 325
Table 6.3 Number of graduates from VET institutions, 2010 329
Table 6.4 Graduates from VET institutions by occupational field, 2011 330
Table 6.5 Employment rates (15+) by education level 334
Table 7.1 Overview of recommendations and areas of policy intervention . . .361

Boxes

Box 1.1 Continuity and consistency of education policy in Chile 37
Box 2.1 Approaches to closure of schools with under-enrolment in OECD countries 68
Box 2.2 Using ICTs to connect rural schools in Alberta (Canada) 69
Box 2.3 The "PISA shock" in Germany. 77
Box 2.4 Success by targeting under achievement: the examples of Singapore and Finland 80
Box 2.5 Fostering creativity and critical thinking: Outcomes of the OECD-CCE-Singapore workshop. 94
Box 2.6 Parental guidance and influence: the career choice of students in Kazakhstan 98
Box 2.7 Significance and elements of good career guidance. 99
Box 3.1 Criteria-based assessment in England 119
Box 3.2 University entrance exams in Georgia 129
Box 3.3 Approaches to setting entrance criteria into tertiary education in OECD countries 132
Box 3.4 Assessing the value-added of schools: Enhancing fairness and equity 141
Box 4.1 Finland: Highly selective teacher education programmes 167
Box 4.2 Using professional standards as a basis for accrediting teachers: systems in three countries. 172
Box 4.3 Involving teachers in national education policy-making: examples from two countries 180
Box 4.4 Additional payments for teachers in OECD countries 185
Box 4.5 Initiatives in four countries to develop stronger links between schools and the community 187
Box 4.6 Improvements and realities of schools 189
Box 4.7 Sector outsiders as principals? 193
Box 4.8 Professionalising recruitment procedures in Austria 194
Box 5.1 The impact of crisis on government expenditure in OECD countries 216
Box 5.2 Sound management of infrastructure investment. 235

Box 5.3 Trade-offs and school resources 244
Box 5.4 Actual teachers' salaries 245
Box 5.5 Who makes key decisions in the education systems of OECD countries? 260
Box 6.1 Defining vocational education and training 320

Acronyms

ADB	Asian Development Bank
CAD	Canadian Dollar
EAG	Education at a Glance
EAAA	External Assessment of Academic Achievement
ECTS	European Credit Transfer and Accumulation System
GR	Government Regulation
IAC	Information Analytical Centre
ITPD	Institutes for Teacher Professional Development
KZT	Kazakhstan Tenge (local currency)
LCU	Local currency units
MESRK	Ministry of Education and Science of the Republic of Kazakhstan
NAP	National Action Plan
NCESA	National Center for Educational Statistics and Assessment of Kazakhstan
NCEQA	National Center for Education Quality Assessment
NSA	National Statistical Agency of the Republic of Kazakhstan
NIS	Nazarbayev Intelectual Schools
PCF	Per capita funding
PISA	OECD Programme for International Student Assessment
RIPD	Republican Institute for Professional Development of Education Managers, Teachers and Researchers

SPED	State Programme for Education Development of the Republic of Kazakhstan for 2011-2020
TIMSS	Trends in International Mathematics and Science Study
UGS	Ungraded schools
UNDP	United Nations Development Programme
UNT	Unified National Testing
VET	Vocational Education and Training
WDI	World Bank Development Indicators

Executive summary

Overview

Kazakhstan is an upper-middle income economy located in Central Asia and the 9th largest country in the world by land surface. In 2011 the population of Kazakhstan counted 16.4 million people of which a quarter was 14 years old or younger.

The national education system of Kazakhstan comprises preschool, primary, basic (lower) secondary, upper (general or vocational) secondary education, as well as post-secondary and tertiary (graduate and postgraduate) education. On average, 57% of the 7 696 public schools (primary and secondary) in Kazakhstan are "ungraded", meaning that they do not have enough pupils to give each year group its own class and so teach students of different age groups together in one class. The quality of learning outcomes in secondary education as measured by the Trends in International Mathematics and Science Study (TIMSS) and OECD Programme for International Student Assessment (PISA) is the below international average. Smaller schools in rural locations tend to perform considerably worse than bigger schools in urban areas.

The lower-than-anticipated results in international assessments are among the principal factors that motivate the development of ambitious plans for reforming education – a sector to which Kazakhstan traditionally attaches great importance. These plans include measures to re-structure the system, foster excellence, develop teachers and functional literacy, expand pre-school education, introduce new financing mechanisms, improve infrastructure, and modernise vocational education and training.

Equity and effectiveness of schooling

Kazakhstan is investing considerable effort in improving the capacity of and the learning conditions in its primary and secondary schools and in some respects education in Kazakhstan is more equitable than in OECD countries

on average. Yet, much remains to be done to eliminate persisting inequities in access to good quality schooling that are determined by factors such as school location, gender, and language of instruction.

The policy interventions designed to address these issues benefit mostly those schools that have the mandate to nurture academic excellence. Students who struggle academically and underachieve are thereby largely left on their own. If Kazakhstan is to improve the quality of learning outcomes in its schools, targeted and urgent action is needed to help under-achievers get back on track.

Learning in secondary schools in Kazakhstan is not as effective as it could be. Data from TIMSS and PISA suggest that the Kazakh secondary school system is quite effective at imparting theoretical knowledge and ensuring that students remember, recognise and retrieve information. It is relatively weak at enabling students to acquire and practice higher-order thinking skills, such as applying and reasoning in maths, or reflecting on and evaluating texts when reading. The predominantly academic and extensively broad secondary school curriculum is a major impediment to the effectiveness of instruction.

To raise the effectiveness of learning the government plans to introduce a 12th year of schooling and to reorganise grade 11 to allow for more in-depth instruction in natural science and mathematics, social sciences and the humanities, and the technological field. This is an ambitious endeavour. Its success will depend on the ability of Kazakhstan to purpose-build a 12-year education model that retains the good features of the present system and avoids perpetuating its weaknesses. Capacity restraints, however, might render the establishment of good quality technology studies very difficult.

Assessment of learning outcomes and teaching quality

Students in primary and secondary schools in Kazakhstan are regularly assessed by their class teachers, as well as externally through the External Assessment of Academic Achievement (EAAA) of a sample of 9th grade students and the Unified National Test (UNT), a combined, standardised school-leaving and university entry test taken by almost all students at the end of 11th grade.

In its current form, classroom assessment in Kazakhstan does not provide a clear picture of the knowledge and skills students have (or have not) acquired in school. There are no differentiated criteria by which to assess and compare learning outcomes in various subjects and, consequently, there can be no assurance that two students given the same mark by different teachers in different schools are performing at the same level. Appropriate methods of “criteria-based assessment” can help overcome the disadvantages

described above and are currently being developed and piloted in the so called Nazarbayev Intellectual Schools.[1]

The external assessments in place, the EEEA and UNT, both have serious shortcomings which prevent them from achieving the full potential that standardised testing has proven to have in other countries for monitoring student progress, identifying potential under-achievers, and testing relevant knowledge and skills. The simple multiple-choice format of the UNT and EEEA is well suited to "knowledge" questions, but it does not feature the comprehension, application or analysis questions which students should also be asked if their higher-order skills and university potential are to be properly assessed. It is suggested to improve the external assessments so that they can capture not only knowledge but also the ability to apply knowledge and a wider range of thinking skills, and to introduce standardised national tests at the end of each phase of education.

Teachers and school leadership

The teaching profession in Kazakhstan suffers from low status and prestige. In many OECD countries, teachers report feeling undervalued and there are similar concerns about the image and status of teaching (OECD, 2005). Also, the relative salaries of teachers in Kazakhstan are low and the salary scheme is not favourable particularly to teachers in the first years of service. There is an inequitable distribution of teachers among schools, with highly effective teachers being less likely to work in disadvantaged schools, but more likely to work in schools for gifted students where additional school resources and support are available.

Addressing these issues is among the top priorities of the State Programme for Education Development 2011-2020 (SPED), and the implementation of reforms to that end is already underway. Remuneration levels of teachers have been on the rise since 2009, strong financial incentives for acquiring higher level teaching qualifications have been put in place and the SPED features ambitious benchmarks of achievement. This, however, is just the beginning and success so far is fragile. The reform will depend on the extent to which the State authorities will succeed in motivating a critical mass of teachers in the system to benefit from the new possibilities and endorse a new notion of professional excellence. Part of the problem is also the fact that Kazakhstan is still missing a coherent system that links detailed professional standards that reflect a shared understanding of what is considered to be accomplished teaching for different subjects and different levels, with standards for the attestation of teacher education programmes, for regular teacher evaluation and attestation processes, and for the development of formal professional development plans.

In comparison, policies in support of school principals are considerably more limited, despite an anticipated increase in responsibilities for principals in connection with the education reform. Policies should be put in place that ensure that the best people possible are recruited for the job, that sufficient investment is made in raising the capacity of those already in the profession, and that professional development and growth are appropriately rewarded.

Education expenditure and financing mechanisms

Reforms are essential for improving education, but investment in the day-to-day operation of schools is not less important if they are to absorb the new ideas and deliver according to new quality standards.

In recent years spending on education in Kazakhstan has increased dramatically, but it is still below international average and the additional resources were allocated predominantly in favour of educational change. The school network has therefore remained underfunded and the wages of education professionals are still well below the national average income of workers with similar level of qualification. The State authorities are called to increase spending on education and to thereby strike a more healthy balance between investment in reforms and financing for the day-to-day operation and maintenance of schools across the country.

The resource shortages are partially due to shortcomings in the financing mechanisms for education, which at present fail to direct financial resources where they are most needed. The State authorities are well aware of these deficits and intend to address them through the introduction of a per capita funding formula. This is a step in the right direction, yet the nationwide implementation of per capita funding will require better planning, the inclusion of ungraded schools in the funding formula, further increase of education expenditure, and more realistic timing than is currently the case.

Vocational education and training (VET)

The country's industry and economy desperately need the skilled and qualified labour that VET institutions exist to provide, yet before these institutions can fulfil their important mission, a number of problems need to be addressed. The main challenge is not so much that VET graduates in Kazakhstan lack skills, but, rather, that the skills they possess when they emerge from the VET system are not the skills best suited to meeting employers' needs. Furthermore, there is some mismatch between the occupations the highest numbers of students choose to pursue at VET schools and the occupations in greatest demand on the labour market. Last but not least, VET in Kazakhstan is traditionally seen as a channel for young people

who have not completed compulsory education, who have been unsuccessful in general or higher education or who have dropped out.

Investment in VET is helpful to the employment prospects of young people and the State authorities of Kazakhstan have drawn an ambitious roadmap for reform that addresses many of the persisting problems in the VET system. These measures aim at increasing the quantity, standards and relevance of VET programmes, enhancing the status and prestige of VET, and developing the VET infrastructure. Implementation has already commenced and the State authorities appear determined to take all action necessary to ensure that VET ceases to be the least-regarded part of the education system, and makes its proper contribution to the national economy. The good VET reform plans would, however, become even better if few additional, important issues were included, such as better university entry procedures for VET graduates, better career guidance, and greater autonomy for VET schools.

Note

1. This is a network of schools of excellence supported by a state-funded, non-profit company and used for trying out new educational practices before their introduction in the public school system.

Reference

OECD (2005), *Teachers Matter: Attracting, Developing and Retaining Effective Teachers*, Education and Training Policy, OECD Publishing. http://dx.doi.org/10.1787/9789264018044-en.

Chapter 1

Overview of the education system of Kazakhstan

Chapter 1 sets the context for the report by providing a general overview of Kazakhstan's political and demographic structure, linguistic make up and economic and labour market indicators. It describes the national education system and its anticipated reform trajectory and provides a snapshot of Kazakhstan's performance in international assessments such as the Trends in International Mathematics and Science Study (TIMSS) and OECD Programme for International Student Assessment (PISA). Finally, it gives the rationale for the OECD review of secondary education.

Country overview

Geography[1]

Kazakhstan is a located in Central Asia. It is the 9th largest country in the world by land surface (more than twice the combined size of France, Germany and Poland) and 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 climate of Kazakhstan is dry continental. In summer the temperatures average more than 30° C and in winter they fall down to an average of −30° C. More than half of the country, including the entire West and most of the South, is either semi-desert (12%) or desert (44%). The remaining part consists of treeless prairie, mixed with forest in the North and the West. The highest point in Kazakhstan is Khan Tengri mountain in the Tian Shan range at the Kyrgyz border, with an elevation of 7 010 metres above sea level. The lowest point (132 metres below sea level) is Vpadina Karagiye in Mangystau province east of the Caspian Sea.

The country has to deal with significant environmental concerns as a consequence of past military nuclear testing programmes and industrial and mining activities, as well as with land degradation, desertification, and water scarcity problems (World Bank, 2012).

Political structure

Kazakhstan is divided into 14 provinces (Kazakh: облыстар, *oblıstar*) which are further divided into districts (Kazakh: аудандар, *awdandar*). The cities Almaty and Astana do not belong to any province. Baikonur city which hosts the *Baikonur Cosmodrome*[2] is leased to the Russian Federation until 2050 and has a special status. Each province is led by a provincial governor, *akim*, appointed by the President of the Republic. Districts are headed by municipal governors, appointed by the *akim*. In 1997 the capital was moved from Almaty, the largest city in the country, to Astana in the more northern Akmola province.

Kazakhstan declared independence from the Soviet Union in 1991 and adopted its first Constitution in 1993. A new Constitution was adopted in 1995, which describes the Republic of Kazakhstan as a secular democracy with a presidential government and a separation of powers between its legislative, executive and judiciary branches.

The political landscape of Kazakhstan is dominated by the ruling *Nur-Otan* (Light of the Fatherland or the Fatherland's Ray of Light) party which is also by far the largest party in the country. The main opposition comprises

Figure 1.1. **Kazakhstan and provinces**

Note: This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Source: Bernard Tom, Wikimedia Commons.

the coalition "For a Just Kazakhstan" consisting of the Communist Party of Kazakhstan, the Ak-Zhol Party and Democratic Choice of Kazakhstan. There are numerous other, smaller political parties which can be characterised as pro-presidential, loyal opposition and opposition (Heinrich, 2010).

Demographic indicators

According to data from the State Agency of Statistics of the Republic of Kazakhstan (further National Agency of Statistics – NSA), in 2011 the population of Kazakhstan counted 16.4 million people, a quarter of which was 14 years old or younger. In OECD countries this age group accounts for 19% of the population on average (2011). In the same year population growth in Kazakhstan was 1.4%, down from 6.9% for the period 1999-2009.

In 2011 around 54.7% of the population lived in urban areas. The most urbanised regions are Karaganda (78.2%), Pavlodar (68.8%) and Aktobe (61.6%). The rural population is concentrated in Almaty (76.7%), North Kazakhstan (59%), Zhambyl (60%) and Kyzylorda (57.6%).

Table 1.1 shows that in 2009 the most populated province was South Kazakhstan (15.1% of the total population), followed by Almaty region (11.3%) and East Kazakhstan (8.7%). Internal migration rates are considerable. The capital Astana has witnessed the highest inflow of people since 1999 (86.7%), whereas in the same period the already scarcely populated province of North Kazakhstan has lost 17.8% of its inhabitants to more attractive regions. East Kazakhstan, Kostanay and Karaganda, North and West Kazakhstan, Akmola and Pavlodar have all experienced population decreases in the period 1999-2009. The least populated provinces are Mangystau and Atyrau in the West.

Kazakhstan ranked 68 of 187 countries covered by the 2011 Human Development Index (HDI) of the United Nations Development Programme (UNDP) – a summary measure of long-term progress in the dimensions "long and healthy life, access to knowledge and a decent standard of living". With a HDI value of 0.750 (2011), Kazakhstan is classified as a country with a high level of development.

Table 1.1. **Population size by provinces, 1999 and 2009**

Regions	Population size in 1999 (per 1 000)	Population size, % of total population in 1999	Population size in 2009 (per 1 000)	Population size, % of total population in 2009	increase (+), decline(-)	
					per 1 000	% change (reference 1999)
Republic of Kazakhstan	14 981.3	100	16 009.3	100	1028.2	9.3
Akmola	827.3	5.5	737.5	4.6	-89.8	-10.8
Aktobe	682.6	4.6	757.8	4.7	75.2	11.0
Almaty	1 557.3	10.4	1 807.9	11.3	250.6	16.0
Atyrau	440.3	2.9	510.4	3.2	70.1	15.9
West Kazakhstan	616.8	4.1	598.9	3.7	-17.9	-2.9
Zhambyl	988.8	6.6	1 022.1	6.4	33.3	3.4
Karaganda	1 410.2	9.4	1 341.7	8.3	-68.5	-4.8
Kostanay	1 017.1	6.8	885.5	5.5	-131.6	-12.9
Kyzylorda	625.0	4.2	678.8	4.2	53.8	8.6
Mangystau	314.7	2.1	485.4	3	170.7	54.2
South Kazakhstan	1 978.3	13.2	2 469.3	15.1	491.0	24.8
Pavlodar	807.0	5.4	742.4	4.6	-64.6	-8.0
North Kazakhstan	726.0	4.8	596.5	3.7	-129.5	-17.8
East Kazakhstan	1 531.0	10.2	1 396.5	8.7	-134.5	-8.8
Astana city	328.3	2.2	613.0	3.8	284.7	86.7
Almaty city	1 130.6	7.5	1 365.6	8.5	235.0	20.7

Source: National Statistical Agency of the Republic of Kazakhstan (NSA).

Table 1.2. **Kazakhstan's HDI trends**

	Life expectancy at birth	Expected years of schooling	Mean years of schooling	GNI per capita (constant 2005 USD)	HDI value
1980	65.0	11.6	6.1	.	.
1985	66.9	11.6	7.0	.	.
1990	66.7	12.4	7.7	.	.
1995	63.9	11.9	8.8	4 462	0.642
2000	63.5	12.3	9.9	5 039	0.663
2005	65.2	14.9	10.2	7 880	0.721
2010	66.7	15.0	10.4	9 569	0.744
2011	67.0	15.3	10.4	9 920	0.750

Source: UNDP (2013), *Human Development Report 2013, Explanatory Note on 2013 HDR Composite Indices: Kazakhstan*, UNDP, New York.

However, life expectancy remains low in comparison with countries with similar a level of income and, despite improvements in the last decade, maternal mortality, infant mortality and under-five mortality rates are still high. Kazakhstan has not yet achieved the Millennium Development Goals in the area of health but intends to do so by 2015 (World Bank, 2012).

Linguistic, ethnic and religious diversity

Kazakh society is culturally and ethnically very diverse. The diversity is due partly to historic reasons, partly to proactive policies of multiculturalism initiated by the government to attract and retain diverse ethnic groups and leverage their contribution to the national economy. These state-guided immigration and citizenry policies have earned the country the name "Singapore of the Steppes" (Heinrich, 2010).

According to the latest census (2009), 63.1% of the population in Kazakhstan is ethnic Kazakh, 23.7% is Russian and 2.9% Uzbek, 2.1% is Ukrainian, 1.4% Uzghur, 1.3% Tatar, 1.1% German, and 4.4% belong to other minorities. Kazakhstan is predominantly Islamic (70.2%), around one quarter of the population declares itself Christian (26%) and 3.5% indicate other or no religious affiliation. Holders of non-Kazakh citizenship account for only 0.4%.

Kazakh is spoken by two thirds of the population and is designated as the official "state" language. The second official language – Russian – is spoken by around 94% of the population and is therefore called "language of inter-ethnic communication". According to the 2009 census, Kazakh language is understood by 74% of the population but is written and read fluently by

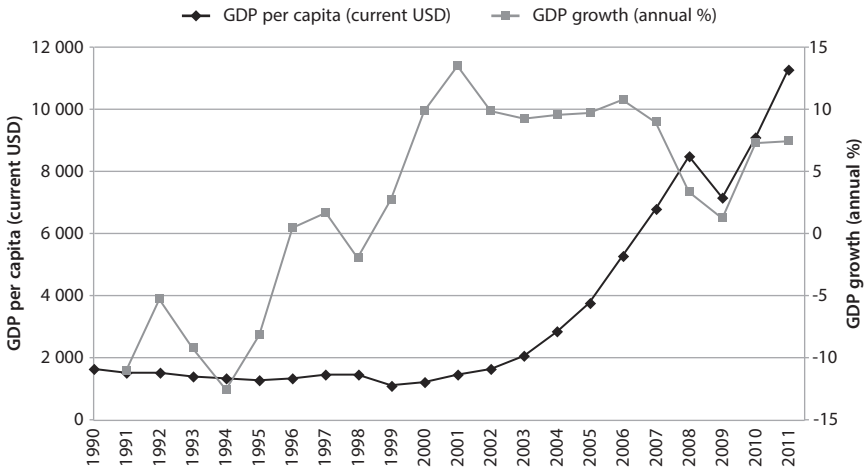
only 62%. Around 94% of the population understands spoken Russian, and 88.2% is fluent in reading and 84.8% in writing it. English is understood by 15.4% and written and read fluently by only 10.2%. For the sake of fostering national identity and confirming Kazakh as primary language of communication, since 2008 Kazakh is replacing Russian as language of instruction in a growing number of schools. In 2011 almost two thirds of all students in the country were studying in Kazakh.

Economic indicators

During the Soviet Union era Kazakhstan's economy was closely linked to that of Russia. The breakup of the Union in 1991 led to a severe economic downturn that persisted throughout the 1990s. GDP per capita fell from USD 1 647 in 1990 to USD 1 229 in 2000. By 2002, new oil extraction operations have helped to raise national income, to substantially improve overall economic performance and to sustain a trend of rapid growth. Kazakhstan was hit hard by the economic crisis of 2008/09 but in 2011 its GDP growth was nevertheless at 7.5%. Today, with a per capita GDP of USD 11 357 (2011), Kazakhstan belongs to the group of upper-middle income economies.

Despite widespread privatisation since 2000, the economy remains poorly diversified, with economic activity and investment concentrated mainly around the extractive industries. In 2009 their output accounted for 65% of Kazakhstan's exports, and attracted 70% of the inflow of foreign direct

Figure 1.2. **GDP per capita and GDP growth in Kazakhstan from 1990 to 2011**



Source: World Development Indicators, World Bank.

investment (OECD, 2011). Most non-resource sectors continue to be less productive and not very competitive. The crisis of 2008-09 also highlighted the vulnerability of the economy *vis-à-vis* commodity price fluctuations (World Bank, 2012). Today, the authorities are investing a lot of effort in stimulating diversification by establishing development agencies, research centres, technology and science parks, and by developing clusters in tourism, textiles, agriculture and processed foods, and minerals (OECD, 2011). In 2010 the authorities set the accelerated diversification of the economy as a main strategic target and outlined the diversification priorities in a Presidential decree (Republic of Kazakhstan, 2010).

To stimulate trade by creating a common market and economic space, in 2010 Kazakhstan established a customs union with Russia and Belarus. The government is also pursuing accession to the World Trade Organization (WTO) and a closer partnership with the OECD in view of membership at a later date.

Equity of distribution of national wealth – regions and cities

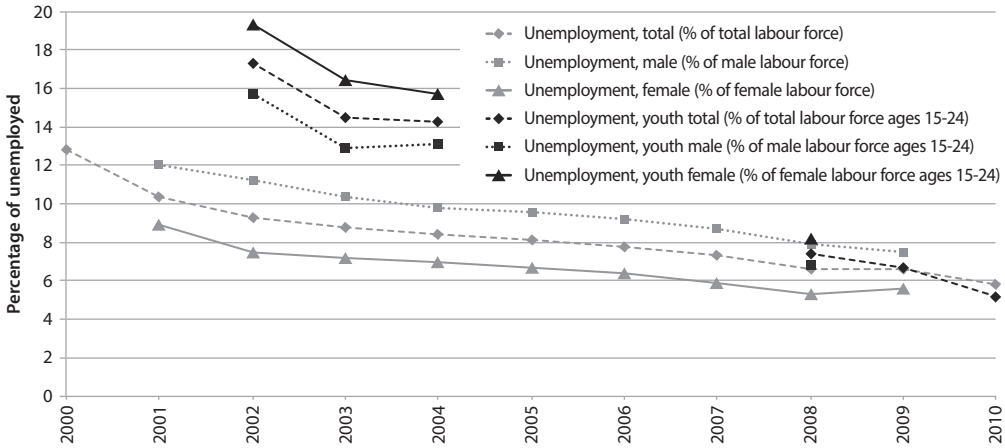
The Gini index of Kazakhstan, a coefficient that measures the inequality in a society and ranges from 0 (perfect equality) to 1 (maximal inequality), has decreased steadily in the past decade, from 0.41 in 2001 to 0.29 in 2009. Poverty (share of the population living below the poverty line) has dropped to 5.3% in 2011. Yet, the gap between rural and urban populations remains wide. There are 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).

Employment and unemployment (adult and youth)

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). According to data from the World Bank for 2004 (the latest year for which data is available), 50% of the workforce had tertiary education (55% for women and 46% for men). This is a higher share than in the OECD (30%) and European Union (28%) on average (OECD, 2012a). The age dependency ratio (ratio of those not working to those who do) is at 46%, or around 5 percentage points below the average share of dependent people in OECD and European Union member countries.

Trends in unemployment statistics suggest that Kazakhstan was successful in reducing unemployment from 12.8% in 2000 to 5.4% in 2011, the latest year for which data is available (WDI Database and NSA data). The drop in unemployment was even starker for the youth population: from 17.3% in 2002 to 6.7% in 2009. These figures might be an indication that Kazakhstan is successful in integrating young graduates into the labour market.

Figure 1.3. **Trends in total and youth unemployment, by gender**



Source: World Bank Indicators Database, World Bank.

Most of the employed labour force works in services (55% in 2011) and about one fifth in the industrial sector. Although agriculture accounts for only 5% of GDP, the sector continues to employ a large share of the working population: 27% in 2011, down from 35% in 2003 (World Bank, 2012).

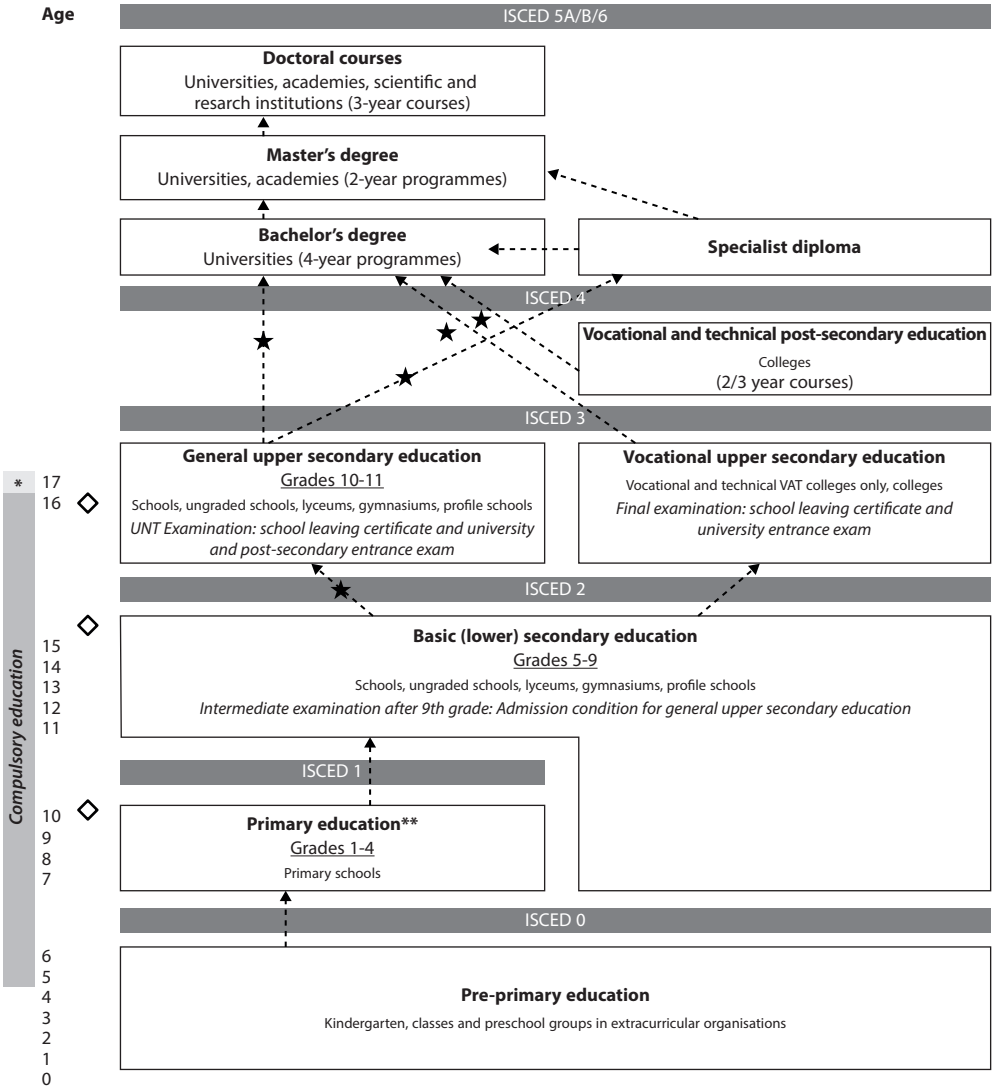
Unlike other countries in the Central Asian region, Kazakhstan is not losing its workforce to migration. In the period 2008-12 net migration (that is the total number of immigrants less the annual number of emigrants) was 6 990 people. The positive figure is in contrast to trends in most neighbouring countries. Uzbekistan lost 518 486 people to economic migration, Tajikistan 296 075, and Turkmenistan 54 499. The majority (29 832) of the 32 902 people who left Kazakhstan in 2011 immigrated to the Russian Federation. Most of the 38 004 immigrants that came to Kazakhstan in the same year were from Uzbekistan, followed by the Russian Federation and the Kyrgyz Republic (NSA data for 2012).

Education in Kazakhstan

Structure and organisation of the education system[3]

Education in Kazakhstan comprises preschool, primary, basic (lower) secondary, upper (general or vocational) secondary education, as well as post-secondary and tertiary (graduate and postgraduate) education (Figure 1.4). According to the Constitution and the Law on Education preschool, primary, lower secondary and upper secondary education are compulsory and provided free of charge.

Figure 1.4. **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: OECD review team.

Preschool education

A network of (mostly public) preschool organisations is providing pre-school education to children from 0 to 6 years of age. Extracurricular organisations, orphanages and boarding schools are ensuring pre-school provision to those children left without parental care. According to NSA data, in recent years the number of public kindergartens has multiplied reaching 7 221 establishments in 2012 with net enrolment of 584 305 children (a 151% increase in enrolment compared to 2007).

Primary and secondary education

The school system in Kazakhstan is a complex web of different types of schools. In 2011 there were 7 696 schools, of which 7 584 public and 112 private. Of the 7 584 public schools, 7 567 were administered by the Ministry of Education and Science (MESRK) and by regional authorities, and 17 by other Ministries. Of the 7 567 schools under the auspices of MESRK and of regional authorities, 7 465 were general education schools and 102 were organisations providing education to children with special educational needs.

Primary education starts at the age of 6 or 7 and takes 4 years. The duration of lower secondary education is 5 years, followed either by 2 years in general upper secondary education or 3 to 4 years in technical and vocational education. In 2011, around two thirds of 9th graders continued to general upper secondary education while one third enrolled in vocational education (IAC, 2012). Students that successfully complete general upper secondary education can attend shorter (2-3 years) technical and vocational training programmes

Secondary education is provided in schools, "ungraded schools" (UGS), gymnasiums, lyceums and schools offering in-depth study in core subjects (mathematics, physics, languages, etc.). Ungraded, or incomplete, schools (*malokomplektnaya shkola* in Russian) are small schools, mostly in rural areas, which do not have enough pupils to give each year group its own class and so teach students of different age groups together in one class. Even the smallest communities in Kazakhstan are entitled to have a school so long as they have at least five children of compulsory school age. As Table 1.3 shows, of the 7 465 general education schools in 2011, 4 221 (57%) were "ungraded schools" (56% in 2012), though these catered for just 15.9% of the student population (15.4% in 2012).

In some regions the vast majority of the schools are ungraded, notably in North Kazakhstan (85.9%), Akmola (81%), Kostanay (75.9%) and West Kazakhstan (74.3%). In 2010 some 20.9% of the UGS offered primary, 22.4% lower secondary, and 56.6% lower and upper secondary education.

Table 1.3. **Types of secondary schools and students enrolled in them, 2010 and 2011**

	2010		2011	
General secondary education organisations	Number of schools	Number of students	Number of schools	Number of students
Day-time secondary education organisations	7 516	2 486 449	7 465	2 479 044
Ungraded schools	4 225	397 538	4 221	396 840
Private schools	115	17 346	112	17 604
Evening schools	78	20 644	84	14 656
Schools for children with special needs or disabilities	101	15 854	102	15 639
Schools with in-depth study of core subjects (specialisation schools)	1 897	697 846	2 008	773 134
– gymnasiums	129	92 704	147	108 010
– lyceums	66	34 433	76	36 778
Kazakh-language schools	3 821	1 057 087	3 830	1 070 090
Mixed schools with Kazakh language of instruction	2 089	508 843	2 087	512 150
Russian-language schools	1 524	373 441	1 460	348 686
Mixed schools with Russian language of instruction	2 027	449 902	2 039	451 789

Source: MESRK (2011), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version) and Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana.

In the same year average enrolment in primary UGS was 12 students per school, in lower secondary 45 students, and in upper secondary 146 students per school. Some UGS have as few as 5 students (MESRK, 2011). As will be discussed later in the report, ungraded schools are confronted with particular problems such as multi-grade classes, very small class-sizes, infrastructure and staff shortages, and generally lower quality of education.

Technical and vocational education is provided in professional lyceums, schools, colleges and higher technical schools, whereas in 2013 the professional lyceums were renamed as colleges.[4] There is also a growing number of evening schools for young people in work who left school without completing their general secondary education.

Table 1.3 also shows "specialisation schools". These schools aim to offer education focused on certain groups of curriculum subjects in which their pupils have shown special interest or aptitude – currently either maths and natural sciences or social science and humanities. Between 2010 and 2011 the numbers of specialisation schools rose from 25.2% to 26.8% of the general MESRK schools, and their pupil numbers increased from 28% to 31% of all pupils in general MESRK schools.

In 2011, among the daytime secondary education organisations administered by the MESRK there were 115 specialised schools for gifted children, some of which called Murager or Daryn boarding schools. Their students may be gifted in maths and science or humanities, or in the skills required for the army, music, art or dance. Between 2010 and 2011 the number of pupils in these schools rose by 13.8%. However, there are many other schools for gifted children in Kazakhstan. The most prestigious are the Nazarbayev Intellectual Schools (NIS), supported by a state-funded non-profit company set up for the purpose; there are to be 20 of these when the national network is complete, and the government uses them to try out new educational practices which will then be disseminated throughout the system. But there are many others, which may be called gymnasiums, lyceums, or just schools. Because terminology is not standardised, there is no easy way of identifying the total number of schools for gifted children or the total number of pupils they serve. By contrast, there are no schools dedicated to serving students who are struggling academically.

Special needs education in 2011 was provided by 102 "correctional schools", as they are called in Kazakhstan, as well as 274 special groups and 1 318 special classes in general education schools, while 7 882 children studied in their homes. 15 639 children with special needs were receiving special education services in correctional schools and 9 144 were receiving them in special classes in general education schools.

Despite an increase of private schools over the last decade, the share of private at primary and general secondary levels remains very low in the country. Only 1.5% of the schools in Kazakhstan are private, but their total pupil numbers – almost half of them in Almaty city – increased slightly between 2010 and 2011. They tend to offer a more international curriculum and experience, which appeals particularly to better-off families who wish their children to go to universities abroad.

Typically, schools in Kazakhstan teach either in Kazakh or in Russian, with the other as their second language and English as their third. The percentage of pupils attending Kazakh-language schools has increased in recent years, and by 2011 was around 63.8%. There are 29 Turkish lyceums which teach some of the subjects in four languages, including Turkish. And a number of schools – generally schools for gifted children or international schools – offer multilingual education, which in practice means teaching more subjects in English or offering additional languages.

Postsecondary education

Post-secondary education is provided in humanitarian (duration: 2 years) or technical and vocational specialisations (duration: at least one year). In 2011/12 a total of 146 universities, academies, institutes, conservatoires and higher

schools and higher colleges are offering post-secondary and tertiary education. Graduates can obtain the academic Bachelor degree after minimum of 4 years of study and minimum 128 ECTS. Admission is based on the results of the National Unified Test (UNT) at the end of grade 11, which is a combined upper secondary school leaving certification and university entrance examination. In 2011 it covered 79% of all secondary school graduates. Kazakhstan joined the Bologna process in 2010.

Education in Kazakhstan in international comparison

In 2009, Kazakhstan was ranked first on the UNESCO Education for All Development Index, which uses four of the six *Education for All* goals, notably universal primary education, adult literacy, quality of education and gender. According to data from the UNESCO Institute of Statistics for 2010, Kazakhstan has achieved universal primary education (99.0%) with a close to 100% progression rate to grade 5, universal adult literacy (99.6%) and high gender parity (99.3%). The level of educational attainment of the population is high as well. 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. The share of adults with education at lower secondary level or below was only 3% in 2010. The educational attainment level of women is higher than that of men; 28% of women attained tertiary education level compared to 23% of men; and 33% of women obtained a post-secondary degree compared to 29% of men.

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 the 5th place among 98 participating countries. In addition, Kazakhstan has participated in international student assessments – the first time in 2007 in the Trends in International Mathematics and Science Study (TIMSS) conducted by the International Association for the Evaluation of Educational Achievement, followed by participation in the 4th cycle of the OECD Programme for International Student Assessment (PISA) in 2009.

TIMSS provides data on the mathematics and science achievement of 4th- and 8th-grade students compared to that of students in other countries. TIMSS takes place in 4-year cycles with data having been collected in 1995, 1999, 2003, 2007, and 2011. OECD PISA is a triennial international comparative study of student learning outcomes in reading, mathematics and science. For each survey cycle, one of the three testing areas is selected as the major domain; the other two areas are the minor domains and have fewer items in the survey.

Kazakhstan took part in TIMSS 2007 and 2011, as well as PISA 2009 and PISA 2012 (results of the 2012 PISA cycle were not yet available at the time of preparation of this report). In the TIMSS 2007 study Kazakhstan ranked 5th in mathematics and 11th in science among 4th-graders from 36 countries. System performance dropped significantly in the next cycle of TIMSS-2011 to around average performance. The country ranked 27th in the 4th grade mathematics test and 32nd in the 4th grade science test among 50 countries, and 17th in mathematics and 20th in science for 8th graders out of 42 countries. In PISA 2009, Kazakhstan scored 405 points in mathematics (place 56 of 74 participating economies), 400 points in science (place 64) and 390 points in reading (place 64). After the good rankings in TIMSS 2007, the PISA results were perceived as disappointing by education authorities and the wider public alike.

The education reform agenda in pre-university education

Kazakhstan looks back at a long and proud past, but its history as a modern state is still very young. The spirit of change can be felt and witnessed in most areas of life, and ambitious visions for the future are a common source of guidance for policies in sectors that are of key importance to the economy, such as education. The national vision for the future of education is contained in the State Programme for Education Development for 2011-2020, which suggests that by 2020 Kazakhstan will become an educated country with smart economy and highly qualified labour force (MESRK, 2010). The plan for the development of national education to that end is more than just a technical outline of a reform undertaking. It is a comprehensive strategy for a full overhaul of the sector and its transformation into a carrier of hope for economic, political and socio-cultural prosperity. The reform programming is thereby meant to serve also as a guarantor of continuity – an aspect of educational change which can be of decisive importance for the success of reforms (see Box 1.1).

The reforms aim at changing a broad set of education aspects such education content, system structure, infrastructure and education technologies, establishment and management of educational institutions, financing and financial management, and expansion of education coverage at the pre-primary level. The ambitious list is presented in the following sub-sections, whereas the reforms concerning education quality and equity, assessment of learning outcomes, teaching, education financing, as well as vocational education and training are discussed in more detail in the corresponding chapters of this report.

Universal pre-primary education

The *Strategic Plan of the Ministry of Education and Science of the Republic of Kazakhstan for 2011-2015* (MESRK 2012a) envisages rapid

Box 1.1. **Continuity and consistency of education policy in Chile**

A striking feature of education policy in Chile over the last thirteen years is its continuity and consistency. This is considered to be one of the main factors contributing to Chile's impressive improvement in student performance.

Average reading performance in PISA increased by 40 score points from 2000 to 2009. Although Chile's average performance still lies below the OECD average, this improvement has lifted Chile's performance above that of Argentina, Bulgaria, Mexico, Romania and Thailand, all countries with similar or higher performance in 2000. Improvements are particularly strong for low achieving students. Their performance has increased by 51 score points and the percentage of students with a reading performance below proficiency Level 2 has declined by 17.6 percentage points.

In the past decade the government adopted a prudent, pragmatic and gradual process of change without setting out to restructure the inherited school system (which, like the Spanish system, includes public, private subsidised and fully private schools). It concentrated instead on promoting two central cannons of policy – quality and equity in education – within the existing framework of schooling. From the start it was recognised that education was central to a strategy to consolidate democratic governance and to promote and support economic and social development. From the outset, the Ministry worked with external assistance and in 1994, a high-powered technical committee presented a draft blueprint for moving education forward. This fed into the National Commission on the Modernisation of Education in 1995. By skilful political action, a strong consensus was nurtured, even among the political opposition, to support the emerging strategic policy on education.

With a core team of reform architects who enjoyed unusual continuity in office for almost two decades, the Ministers of Education persistently placed education at the centre of the agenda and, together with the reform team, developed a narrative about education that, for the first time, recognised it as strategic to the country's future and as a matter calling for sustained and considerable State efforts to support improvement.

As a result, there has been considerable consensus in Chile over the last 13 years, and this consensus has allowed fundamental continuity in education strategy, allowing reforms to mature and deepen and allowing the architects of these reforms to learn from experience. Even among groups that differ ideologically and in political views, there is a core of education issues on which there is consensus, and education is clearly an issue of public debate. Throughout these years Chile was actively co-operating with the OECD in education, and joined the Organisation in 2010.

Source: OECD (2012b), *Guidance from PISA for the Canary Islands, Spain*, Strong Performers and Successful Reformers in Education, OECD Publishing, http://dx.doi.org./10.1787/9789264174184-en.

expansion of pre-primary education which, by 2014, should cover 70% of the relevant age cohort (3-6). The resources devoted to this reform goal (the "Balapan" Programme for pre-school education) are substantial and cover the building of kindergartens, update of pre-service training content, the provision of free meals, and the setting-up of a preparatory programme for children of pre-school age (5 and 6). The commitment of the authorities seems to be paying off. Between 2005 and 2010 Kazakhstan doubled the rate of pre-school enrolment across the country (from 23% in 2005 to 42% in 2010). The achievement is particularly impressive in rural areas where in 2010 some 35% of the children were provided with a kindergarten place, up from only 6.7% in 2005 (MESRK, 2011).

Quality of secondary education

The participation of Kazakhstan in the two international student surveys PISA and TIMSS confronted the local education community with a mixed message. Students in Kazakhstan ranked high in the TIMSS mathematics assessments of 4th and 8th graders (5th place) and TIMSS science assessment (11th place), but very low in PISA. The disappointing PISA results are ascribed "to the unfinished agenda of raising student learning achievement beyond basic literacy and numeracy" (World Bank, 2012). The "PISA shock"[5] of Kazakhstan triggered the Ministry of Education and Science of the Republic of Kazakhstan to look for ways to revise the very traditional approaches related to content, technologies and training methods that currently dominate teaching and learning in schools (MESRK, 2012a) in view of a positional improvement in the rankings of international student assessments.

Development of functional literacy for school children

A five-year National Action Plan for Development of Functional Literacy for School Children (NAP) was set up in 2012 to support the building of functional literacy skills, stimulate creative thinking and problem-solving, and strengthen the readiness of school children to study throughout life. The NAP incorporates a number of measures, most notably an update of education standards, programmes and curricula, accompanied by a governance reform to give schools more autonomy in adjusting the curriculum.

Fostering excellence

Part of the PISA shock response was the establishment of centres of excellence through a network of new schools called Nazarbayev Intellectual Schools (NIS) mentioned above. These are designed as incubators of innovation that focus on providing students with incentives to learn, teachers with a new system of professional development, and schools with the capacity

to offer a personalised education environment which is more sensitive to the needs of each student. In parallel, the authorities are working on improving the assessment system through the introduction of standardised national evaluations at the end of each education cycle and of assessment standards for classroom assessment of student performance.

The authorities are devoting special attention to the problem of ungraded schools and the reforms envisage the establishment of a network of 26 resource centres to support them. These centres will offer short training sessions and intermediate and final student certification exams for the teachers and students of ungraded schools.

Re-structuring education

Kazakhstan is also striving to switch from 11 to 12-years of secondary schooling to give schools more time to prepare future high school graduates for tertiary education or for transition to the labour market. In the same vein the reform plans foresee the introduction of English language learning from grade one. All of this goes along with the development of new teaching materials, adjustments in the curriculum, and the establishment of new types of education institutions, notably schools that will offer specialised (profile) education after grade 10 (see Chapter 2). The package of measures envisages also the intensification of parental involvement through the establishment of school boards and parental associations for the sake of better school accountability and transparency of assessment practices. At the time of preparation of this report the 12-year model was being piloted in 104 schools.

Developing teachers

Last but not least, the improvements are aiming at the professional development of teachers. New centres of pedagogical skills have been established to work with the innovative approaches and content developed in the NIS network. At the time of visit of the OECD review team (second half of 2012), the new generation of professional training was being piloted in a selection of model schools.

System management and financing

One of the primary goals of the State Programme for Education Development for 2011-2020 is the overhaul of financing mechanisms in education. By 2015, school funding will be determined through a per capita formula which takes into consideration the number of students enrolled per school and a selection of additional factors to account for differences in schools and regions. The new funding mechanism should also work to

the benefit of schools that operate under more challenging conditions such as smaller number of students, higher maintenance costs, remote location etc. The implementation plan envisages a development phase in 2011-12 (also for VET schools), followed by piloting in general education in five regions[6] and in the VET schools in two regions. By 2015, per capita funding should be implemented in all pre-primary, primary and secondary education institutions in Kazakhstan, except in the ungraded schools (MESRK, 2012b).

Infrastructure improvements

The authorities of Kazakhstan have made and continue to make considerable investments in school buildings and infrastructure. During fieldwork the OECD review team visited a number of schools. The state of school buildings varied considerably, from very good (recently-opened schools, elite schools, recently-refurbished colleges) to severely dilapidated. Though schools generally had sports halls, very few had facilities on site for the full range of sport, artistic, musical and other activities available in secondary schools in many OECD countries. This is partly because Kazakhstan, like many former Soviet Union countries, has a tradition of offering many such activities in separate extracurricular education institutions. Even so, the government has recognised – in the State Programme for Education Development of the Republic of Kazakhstan for 2011-2020 (SPED) – the need to improve a number of aspects of school infrastructure, including the following:

- Proportion of schools with chemistry, biology, physics and language classrooms that have been modernised according to new standards (32% in 2010) to be increased to 80% by 2020;
- Number of students per computer (18 in 2010) to be reduced to one by 2020;
- Percentage of schools "in emergency condition" (2.6% in 2010) to be reduced to 1% by 2020;
- Percentage of schools offering classes in three shifts (0.9% in 2010) to be reduced to zero by 2020.

No objective is stated for reducing the percentage of schools offering classes in two shifts, although double shift schooling can also have educational disadvantages, particularly for students in the second shift. A study published in 2012 of the maths and science performance of a sample of 5th and 9th grade students found that 85% of the schools participating in the study still operated in two shifts (MESRK, 2012c).

The Programme notes that rural and ungraded schools are particularly affected by low quality teaching and learning and that the vast majority of educational institutions in rural areas do not meet national education

standards. Over the next few years the authorities intend to continue to devote resources to expansion and improvement of facilities and infrastructure, with a special focus on increasing Internet connectivity and providing schools (especially in remote areas) with ICT and interactive classroom equipment.

Modernisation of technical and vocational education

The country has shifted its focus in education to post basic education, with the modernisation of technical and vocational education as key priority which is supported by the World Bank in form of technical assistance and an investment project. Therefore, a new State Programme on Accelerated Industrial and Innovation Development was introduced with its main objective to establish a competitive and productive workforce in the priority sectors (World Bank, 2012). A new holding company, Kasipkor, was set up to lead the development of high-quality technical education and to pioneer new approaches to VET provision. The main activity of the Kasipkor holding is to build world-class colleges in the cities of Astana and Almaty and also to manage inter-regional professional centres for training and re-training of staff. Such centre is already operating in Atyrau (opened in 2013), and in 2015 further centres will be established in Ust-Kamenogorsk, Ekibastuz and Shymkent. Chapter 6 provides a comprehensive overview of reforms in the VET sector.

The OECD review: sources and the review process

The analysis in this report is based on data from a combination of national and international sources, and on information contained in analytical reports and gathered through site visits.

- The national data sources included the Ministry of Education and Science of the Republic of Kazakhstan (MESRK), the National Statistical Agency, the National Centre for Education Statistics and Evaluation of Kazakhstan (NCESE), the National Academy of Education, the Kasipkor holing, and a background report provided by the Information-Analytic Centre (IAC) of the MESRK.
- The international data sources included the database of the UNESCO Institute of Statistics, the World Development Indicators Database of the World Bank, the World Economic Outlook Database of the International Monetary Fund, the LABORSTA Database of the International Labour Organisation, and the OECD PISA and IAE TIMSS databases.
- The review team also reviewed all of the available analytical documentation by IAC, NCESE and the MESRK, and made extensive use of the PISA and TIMSS in-depth reports. Last but not least, the site visits proved their value as a valuable source of information on

how to contextualise the data and interpret it in view of formulating feasible and most of all – relevant recommendations.

Annexes 1.A1-1.A3 provide further detail on the review process, its analytical framework and on the way evidence was used in preparation of this report.

Notes

1. The sources of information on the geography of Kazakhstan include the *Library of US Congress Country Studies*, the *CIA World Factbook*, *Wikipedia*, and *Geography of Kazakhstan* at http://expat.nursat.kz.
2. The Baikonur Cosmodrome is the world's first and largest operational space launch facility (www.ilslaunch.com/). It is located in the desert steppe about 200 kilometres east of the Aral Sea at 90 metres above sea level. It is managed jointly by the Russian Federal Space Agency and the Russian Space Forces.
3. Source of all data in this section: MESRK, 2011 and IAC, 2012.
4. Lyceums can also refer to some general education schools, which the Law on Education defines as "educational institution implementing lower and upper secondary education programmes providing extended and advanced education in science and mathematics" (Article 1). These schools are not unaffected by the renaming of VET schools.
5. The "PISA shock" is a term describing the tremendous impact of the lower-than-expected performance of German students in PISA on education policies in Germany. It was coined in the aftermath of the release of results from the first PISA assessment round in 2000.
6. Akmola, Eastern Kazakhstan, Mangystau, Pavlodar and Southern Kazakhstan.

Annex 1.A1

A note on the review process

The OECD review of policies for secondary education in the Republic of Kazakhstan (the Review) was set-up and carried out as an OECD peer review.[1] The Review features most of the structural elements of an OECD peer review, which are:

- A basis for proceeding (formal review request by the country and subsequent approval by the Education Policy Committee);
- An agreed framework (set of principles, standards or criteria) leading the review process (see sub-section on review framework, Annex 1.A3);
- Designated team (the OECD Secretariat or external experts on its behalf);
- A set of procedures leading to the report as a final result (background report – site visits – draft report – feedback – final report – dissemination).

Site visits

Site visits and meetings with stakeholders took place in 2012 over a period of 14 days (19 November to 2 December) in four regions, namely, Karaganda, Shymkent, Almaty and the capital Astana. The list of visits was prepared by the Ministry of Education and Science of Kazakhstan, the Information-Analytic Centre of the Ministry, and regional authorities in line with a detailed prior request by the OECD Secretariat (see Annex 1.A2 for a pre-visit list of requests for meetings). It was subjected to regular update in the course of the site visits in response to outcomes from interviews and suggestions from the interview partners. The OECD team met with over 250 counterparts directly or indirectly involved in education or holding stakes in the sector, and gathered supporting documents and information, statistics

and other relevant data, the majority of which could be validated and is presented in this report and its annexes.

Validation and use of evidence

The validation of data and findings presented in the report took place between June and September 2013. It is the result of a cross-divisional effort involving several national institutions in the Republic of Kazakhstan, most notably the Ministry of Education and Science, the State Agency for Statistics, the Ministry of Finance, the National Centre for Educational Evaluation and Assessment, the Information-Analytic Centre, the Nazarbayev Intellectual Schools Network, selected Higher Education institutions active in the field of education research, the National Academy of Education, and the National Testing Centre. The quantitative and qualitative information secured in this way was used to:

- Contextualise the evidence and gain guidance on how to interpret it;
- Assess the system against national and international benchmarks;
- Identify relevant case studies to be included in the final report.

Review framework

The analytical framework of the Review draws on the following OECD projects: the Programme for International Student Assessment (PISA); the Teaching and Learning International Survey (TALIS); the OECD Policy Reviews of Vocational Education and Training; the OECD Review on Evaluation and Assessment Frameworks for Improving School Outcomes; the Improving School Leadership project; the work of the OECD Centre for Effective Learning Environments. The Review framework is presented in Annex 1.A3.

Note to Annex 1.A1

1. Peer reviews are a method of co-operation used by the OECD since its creation and characterising the work of the Organisation in most of its policy areas (OECD, 2003).

Annex 1.A2

Request for meetings submitted prior to the site-visits

Due to their relevance for more than one area, some institutions and counterparts might be listed more than once (such institutions/counterparts are marked in ***bold****). The requests nevertheless are for one visit per institution only, which will be simultaneously attended by the team members covering the areas concerned.*

I. Visits of overarching relevance

- The Minister of Education and Science in the beginning of the OECD visit and also at the end to brief him on the preliminary findings and recommendations and hear his comments;
- The Deputy-Prime Minister of Kazakhstan (for national development overview and network of schools of excellence);
- Institutions on central level with responsibilities for education policies and/or system management;
- **Institutions on regional level such as regional education office (s), and education departments in municipalities;**
- **National statistical institute;**
- Departments in the Ministry of Education and Science-MESRK (or outsourced institutions) in charge of strategic planning;
- International development partners (World Bank, Asian Development Bank, Open Society Institute, UNESCO, European Commission);
- **National Centre for Education Assessment of Education Quality;**
- **Information-Analytic Centre.**

II. Visits concerning SCHOOL SYSTEM EXPENDITURE

- Departments in the Ministry (or outsourced institutions) in charge of budget;
- Ministry of Finance – sector budget planning;
- **Regional authorities; school administrations;**
- **National statistical office;**
- **Information-Analytic Centre;**
- **National Centre for Education Evaluation and Assessment.**

III. Visits concerning QUALITY, EQUITY and RELEVANCE

- Bodies/institutions responsible for curriculum development and educational standards;
- Ministry of education department responsible for curriculum development and educational standards;
- **Meetings with stakeholders (employers, trade unions, parents and parental associations);**
- **Meetings with education institutions.**

See EDUCATION INSTITUTIONS and STAKEHOLDERS, below.

IV. Visits concerning ASSESSMENT

- Departments in the Ministry (or outsourced institutions) in charge of assessment;
- **National Centre for Education Assessment of Education Quality;**
- **Information-Analytic Centre;**
- Institutions responsible for national assessments.

V. Visits concerning TEACHERS

- Institutions responsible for teacher training;
- Institutions responsible for professional development;
- **Teacher trade unions;**
- **Education institutions.**

See EDUCATION INSTITUTIONS and STAKEHOLDERS, below.

VI. VET

- Departments in the Ministry (or outsourced institutions) in charge of VET;
- VET education institutions;
- Stakeholders.

See EDUCATION INSTITUTIONS and STAKEHOLDERS, below.

EDUCATION INSTITUTIONS

- Visits to schools in the capital and other cities but also in rural areas; a mix of schools (such considered good by the MESRK and those that MESRK considers having problems);
- Private schools;
- Schools from the network of schools of excellence;
- Universities – department;s in charge of teacher training, including few of their students.

In the schools and universities the OECD would be interested in parallel talks with teachers/professors, principals/administrators, and students.

STAKEHOLDERS

- Meeting with parents, and/or parental association, if any;
- Meeting with teacher trade unions, if any;
- Association of school principals, if any;
- Chamber of commerce;
- Employers association;
- Non-governmental/private sector organisations responsible for teacher training and/or professional development, if any.

Annex 1.A3

Review framework

I. OVERVIEW

A. General demographic and economic indicators

1. Country overview.
2. GDP per capita, in national currency, for the year of data provided on education expenditure, and for the past 5 years.
3. GDP structure.
4. Equity of distribution of national wealth – regions and cities.
5. Employment and unemployment (adult and youth).
6. Adolescent fertility rate (births per 1 000 women aged 15-19), most recent year and for the past 10 years.
7. Share of youth in the total population (population aged 0-14 in % of total), most recent year and for the past 10 years.
8. Educational attainment of the adult population.
9. Migration trends.
10. UN and WEF indicators on educational, human and economic development.

B. Education in Kazakhstan

1. Main features of the education system, including years of schooling (progress towards universal implementation/availability of year 12); the stages of education; types of school; academic/vocational differences; provision for special educational needs and disabilities.
2. Participation in education by stage, gender, school type, academic/vocational.
3. Governance arrangements, extent of decentralisation of school management.
4. National Education Development Programme – goals, benchmarks and assessment of implementation
5. National Development Strategy – priorities and role attributed to education and training.

II. EDUCATION EXPENDITURE

A. Financial management framework and budgeting processes

1. Budget cycle:
   a. General procedure of budget formulation and budget execution.
   b. Laws and regulations governing public finance management, including budget formulation and execution.
2. Distribution of responsibilities for funding education across tiers of government.
3. Budget formulation and budget execution for the education sector.
4. Is there a medium term budget framework or an equivalent in place?
5. Accounting and financial reporting systems.
6. Internal control and audit.
7. Outline of public procurement arrangements, with references to relevant legislation, and procurement in education.

B. School system expenditure

1. Patterns of spending on education:
   a. Annual public expenditure on education as share of GDP (EAG B2.1 and B2.2), per level of education (pre-primary, primary, secondary and post-secondary non-tertiary institutions, tertiary institutions) and of GDP/capita (EAG B1.4).
   b. Annual public expenditure per student for all services, by level of education, in national currency and as share of GDP per capita.
   c. Private sources:
      - Total public expenditure on primary, secondary and post-secondary non-tertiary education as % of total expenditure on education;
      - Household spending on education (if available).
   d. Composition of current expenditure – primary, secondary and post-secondary non-tertiary education:
      - Compensation for teachers;
      - Compensation for non-teaching staff;
      - Non-wage current expenditure.
2. Drivers of cost:
   a. Salary cost per student (based on salary after 15 years of experience, total annual instruction time of students in hours, annual teaching hours for teachers, class size, and the ratio of students to teaching staff).
   b. Teacher salaries in public institutions
      - Annual salaries: starting salary, salary after 15 years of experience, and salary at the top of the scale, in primary and in secondary education, in national currency.
      - Pay-scale career progression: Ratio of salary after 15 years of experience to starting salary.
   c. School buildings according to year of construction and condition, by location (rural vs. urban).
   d. Teacher pupil ratio, by school type, academic/vocational.
   e. Repetition and dropout rates in secondary education, by gender, school type, academic/vocational.

f. School meals, transport and accommodation – who qualifies? Share of secondary school population catered for? Who is paying for it? Cost to those who pay?

g. Textbooks and other teaching materials and equipment (e.g. computers) – who pays? Cost? Coverage?

h. Who is paying for continuing professional development of teachers, obligatory/optional? What is the cost to those who pay?

i. Subsidies paid to private schools, if any.

C. Trends in spending on education

1. Annual public expenditure on education as share of GDP for the past 5 years.
2. Annual public expenditure per student for all services, by level of education, in national currency, for the past 5 years.
3. Composition of current expenditure – wages and non-wage expenditure over the past 5 years.
4. Total public expenditure on primary, secondary and post-secondary non-tertiary education as a % of total expenditure on education over the past 5 years.
5. Salaries: starting and top of the scale salaries in secondary education over the past 10 years, in national currency.
6. Teacher pupil ratios for the past 10 years.
7. Drop out and repetition rates for the past 5 years.

III. QUALITY, EQUITY and RELEVANCE of SECONDARY SCHOOLING

A. Learning outcomes

1. Scores and rankings;
2. Proficiency levels;
3. Differences between boys and girls, Russian and Kazakh speaking students, students in vocational and academic tracks. Difference in TIMSS and PISA performance: possible explanations.

B. Factors influencing performance

1. Impact of socio-economic background on performance;
2. Impact of language of instruction on performance;
3. Impact of student attitudes, behaviours, the learning environment on performance;
4. Impact of other factors on performance, including after-school lessons, pre-primary school attendance, learning time at school.

C. Current policy responses to low achievement and drop-out, support for high performing students

D. Transition to tertiary education and the labour market (*What do students do after completion of upper secondary schooling? → Indication of relevance*)

1. Entry and graduation rates tertiary education, by field of study and gender;
2. Youth (un-)employment statistics;
3. Evaluation of relevance of secondary curriculum for tertiary education.

IV. CURRICULUM, ASSESSMENT and SYSTEM EVALUATION

A. The secondary school curriculum

1. Compulsory and optional subjects in each year of secondary school (including year 12, if decided).
2. Who decides on subjects to be taken by individual pupils (schools, pupils, families, combination of these)?
3. To what extent do school subject choices determine or constrain students' upper secondary, tertiary and career options? What support, guidance and information do students receive for their choices?
4. How much scope is there for schools/teachers to decide on the syllabus to be taught for each subject?
5. How much scope is there for the curriculum/syllabus to be adapted to meet the needs of individual or groups?
6. Who decides what textbooks, teaching materials and teaching equipment should be used (central government, regional/municipal government, school leadership, class teacher)?

B. The evaluation and assessment framework – overview

1. Governance and main components, including:
   a. Bodies responsible for setting and evaluating national and any other externally-marked tests;
   b. People in charge of administering national/external tests;
   c. People in charge of marking national/external tests;
   d. Influence on assessment practices by school boards, parent groups, tea;cher groups, external examination boards, education authorities.

C. Student assessment

1. In what ways are the performance and progress of students assessed by their schools/teachers?
2. Frequency of student assessments:
   a. Of standardised tests;
   b. Of teacher-developed tests;
   c. Of teacher judgmental ratings;
   d. Of student assig;nments/homework.
3. Use of student assessment outcomes:
   a. To inform parents? If so, how?
   b. In decisions on student progression. Points of impact (which year of schooling, how often per year?) Rates of success/repetition? Effect of assessment results on students' chances of graduating from secondary school, or remaining in academic (as opposed to vocational) education?
   c. For grouping by ability?
   d. Formative approaches, i.e. to diagnose learning problems and improve students' performance?
4. What follow-up is there to below-average student performance? Are remedial classes provided, or extra teaching support?

D. Appraisal and assessment of teachers (*OVERLAP WITH SECTION ON TEACHERS)*

1. Frequency and source of teacher appraisal.
2. Criteria for and focus of teacher appraisal:
   a. Student performance and test results;
   b. Teacher content and pedagogical knowledge;
   c. Teacher classroom practices;
   d. Teacher collaborative practices;
   e. Student behaviour and classroom management;
   f. Parent feedback;
   g. Student feedback;
   h. Inspectors' feedback.
3. Impact of teacher appraisal:
   a. Does it influence remuneration or other benefits?
   b. Does it influence career development?
   c. Actions undertaken if teacher appraisal reveals weak or unsatisfactory teaching?
   d. Impact on teacher recognition?
   e. Impact on teacher professional development?
   f. Impact on teacher job responsibilities?
   g. Impact on teacher confidence, motivation, self-efficacy, job satisfaction, etc?
   h. Impact on classroom practices?
   i. Impact on teacher collaboration?

E. School evaluation

1. How is the performance of whole schools assessed and evaluated?
2. Who (i.e. which agencies apart from the school) are involved?
3. Frequency and type of school evaluations.
4. Description of criteria for school evaluations.

5. Do secondary schools (all or some) do self-evaluations? If yes, what are the criteria used?
6. Role and functioning of school inspectorates.
7. Use of school evaluation outcomes:
    a. Do they influence budget allocations, and/or non-monetary support?
    b. Accountability to parents, including publication of results?
    c. Use in national or regional evaluations of schools?
    d. Use in teacher appraisal?

F. System evaluation

1. Features, such as:
    a. Mandatory national examination and/or assessment required?
    b. Frequency;
    c. Subjects;
    d. Standardisation of test questions.
2. Link to international assessments.
3. Use of system assessment outcomes:
    a. Performance feedback to schools?
    b. Performance feedback to parents?
    c. Performance influence on budget allocations?
    d. Main aim of national standardised tests?
    e. Accountability.

V. TEACHER POLICIES

A. Characteristics of the teacher workforce

1. Age distribution of teachers:
   a. <25 years;
   b. 25-29 years;
   c. 30-39 years;
   d. 40-49 years;
   e. 50-59 years;
   f. >60 years and more;
   g. Retired but still active teachers.
2. Typical age of teachers on initial recruitment and on retirement.
3. Distribution of active teachers by years of experience.
4. Gender distribution of teachers
   (females in % of total).
5. Teachers' educational attainment:
   a. Minimum educational requirements for primary and secondary teachers;
   b. % of teachers with completed degree-level education;
   c. % of teachers with degree-level education in the subject they teach.
6. Employment status:
   Teachers with permanent employment, as % of all teachers.
7. Salaries and career progression (overlap with system expenditure)

B. Recruitment and retention

1. Recruitment into the teaching profession:
   a. How is initial recruitment into the teaching profession organised, and by which agencies?
   b. Do people wishing to become teachers have to meet additional requirements (apart from the minimum educational requirements) to achieve teacher status? If so, what?

2. Recruitment into teacher training programmes:
   a. Attractiveness of teacher profession and working conditions?
   b. How are teacher working conditions decided, and by whom?
3. Hiring and appointing teachers:
   a. Are teachers employed by the state, the region/municipality or the school where they work?
   b. In practice, which of these decides to hire a teacher for a particular school? If not the school, what influence does the school principal have on the decision?
   c. Criteria used for hiring decisions.
   d. Teacher mobility (extent of movement between different schools). Can employers oblige teachers to move if they do not choose to move?
   e. Do teachers have a compulsory retirement age? Do they have pensions? Can they choose to retire early? Can their employer retire them against their wishes?
4. What percentage of teachers stay in the profession until retirement age? Is the retention of good teachers a problem?

C. Initial teacher training (ITT)

1. Institutions involved;
2. Quality of student intake and criteria for access;
3. Course design and exposure to teaching practice.

D. Induction and mentoring

1. Induction for new teachers and monitoring of performance in the beginning of the teaching career:
   a. Content and structure of induction?
   b. Target audience for induction?
2. Mentoring for new and other teachers:
   a. Criteria for selecting mentors?
   b. Target audience for mentor programme?

E. Professional development (PD)

1. Laws and regulations governing PD of teachers.
2. Who provides PD in KZ?
3. What is the cost of PD, and who pays for it?
4. What (non-monetary) support is available for teacher PD?
5. Participation in PD:
   a. Share in % of all teachers who undertook PD in the previous 12 months;
   b. Average days of professional development;
   c. Number of days of compulsory and of voluntary PD;
   d. Perceived need for PD (by teachers) and perceived barriers for taking more PD.
6. Types and content of PD available to teachers.
7. Impact of PD:
   a. Teacher content and pedagogical knowledge;
   b. Classroom practices;
   c. Impact on teacher collaboration;
   d. Classroom management;
   e. Impact on teacher confidence, motivation, self-efficacy, job satisfaction, etc.
8. Quality of PD:
   a. Who trains the trainers?

VI. VOCATIONAL EDUCATION AND TRAINING

A. Scope

1. Programmes;
2. Institutions involved in VET delivery.

B. Statistical overview (data for the last year available and for the past 10 years)

1. Student numbers in different upper-secondary VET programmes.
2. The share of students enrolled in upper-secondary VET programmes.
3. The make-up of the student population in terms of age/gender, educational background and field of study, and social background.
4. Learning outcomes of VET students (based on PISA).
5. Dropout or completion rates (and how these are defined).
6. Labour market outcomes from upper-secondary VET programmes.
7. Trends in demand and supply for different skills disaggregated by level (e.g. upper-secondary, post-secondary, tertiary), type (e.g. VET vs. general education), and field of study.
8. Transitions into other educational programmes including academic tertiary programmes.

C. Mix of provision

D. Workplace training

E. Access routes, second chance opportunities and equity

F. Transition to the labour market

G. Steering and governance

H. Funding and incentives

I. Social partners

J. Qualifications framework

K. Teaching (training, qualifications, quality assurance, shortages)

L. Career guidance

M. Quality assurance

N. Policy development and initiatives (past 10 years, to recent)

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Chapter 2

Equity and effectiveness of schooling in Kazakhstan

Chapter 2 provides analysis and recommendations on equity of education in Kazakhstan and on improving the effectiveness of learning in its schools. It assesses the educational opportunities in urban vs. rural areas, those of gifted students vs. those who struggle academically, and the impact of language and socio-economic background on learning outcomes. The chapter discusses also provision for children with special educational needs, the organisation of schooling and the learning environment, the role of parents and the curriculum, as well as the plans for transition to 12 years of schooling.

An important message of the OECD Programme for International Student Assessment (PISA) is that the provision of equitable learning opportunities is complementary to the pursuit of high student achievement. PISA also proves that policies that target underperformance pay off with better learning outcomes. The top performing countries and economies in PISA 2009 were also those with the greatest equity in student outcomes (OECD, 2010a). How equitable is the distribution of learning opportunities in Kazakhstan? What are the factors that have an impact on the quality of learning outcomes?

Access to education

Table 2.1 shows Kazakhstan's enrolment rates in pre-primary, primary and secondary education and compares them to averages for OECD member countries, EU countries, neighbouring countries, South Asia region, Russian Federation and China.

In terms of **pre-primary education**, Kazakhstan has higher enrolment than its Central Asian neighbours Uzbekistan and Kyrgyzstan but lower enrolment than China, the Russian Federation and the other countries shown (all of which registered average or above average performance in PISA). Kazakhstan's State Programme for Education Development 2011-2020 (SPED) aims to raise the percentage of 5-6 year olds in pre-primary education (83% in 2010) to 100% by 2015, and the percentage of 3-6 year olds (40% in mid-2010) to 100% by 2020 (MESRK, 2010).

As regards **primary education,** Kazakhstan gross enrolment rate of 104% shows that there are more children in primary school than in the official primary age group; but the net enrolment rate of 88.3% shows that many of them are over or under age. None of the other countries or regions shown in the table has such a large gap between net and gross enrolment, though Kyrgyzstan and the region of South Asia are not far behind. The reasons for this gap are unclear. Gross enrolment figures above 100% are generally due to making children who have failed to progress repeat school years – though repetition is not an acknowledged strategy in the school system of Kazakhstan – or to rapid falls in the population of official school age (not true of the country overall, though maybe true of certain regions) or of official population statistics failing to keep up with rapid population growth (which could well be true of areas like Astana city). However, net enrolment figures significantly below 100% generally indicate that some children entitled to primary education are not accessing it, and will be disadvantaged for the rest of their lives as a result. It is not a coincidence that the countries whose students perform at or above the PISA average have appreciably higher net primary enrolment rates.[1]

Kazakhstan's enrolment rates for **secondary education,** 104% gross and 90% net, indicate that in the secondary phase, one in every ten students in the

age group is either not in school or does not appear in school statistics. The country's net enrolment rate is above the OECD average, but below Korea, the United States, the United Kingdom, Finland, Uzbekistan and the EU average. As in the primary phase, it seems that over-age children are occupying the places.

Reasons why children of compulsory school age are not accessing education appear to include lack of school places, lack of transport and lack of suitable

Table 2.1. **Enrolment rates for pre-primary, primary and secondary schooling in Kazakhstan and selected countries (2010)**

	Notes	Pre-primary, gross (%)	Primary, gross (%)	Primary, net (%)	Secondary, gross (%)	Secondary, net (%)
		(1)	(2)	(3)	(4)	(5)
Kazakhstan	1, 2, 3	**32.2**	**104.1**	**88.3**	**104.3**	**90.2**
OECD members		81.6	104.7	97.0	98.0	87.7
EU		97.0	104.1	97.6	104.6	91.7
South Asia	4	48.3	106.2	88.1	58.1	50.1
Russian Federation	5	89.9	98.6	93.4	88.6	-
China		53.9	111.2	-	81.2	-
Korea		118.9	105.6	98.6	97.1	96.0
United Kingdom	5	81.1	106.2	99.6	105.3	96.0
United States		69.0	101.6	94.6	96.0	89.5
Finland		67.7	98.9	97.7	107.5	93.9
Uzbekistan		25.9	94.2	89.4	104.8	92.0
Kyrgyzstan		19.1	99.6	78.9	84.0	87.5

Notes: Gross enrolment (%) is total enrolment, regardless of age, as a proportion of the population of the age group that officially corresponds to the level of education shown. Net enrolment (%) is the enrolment in school of children of official school age, as a proportion of the population of the corresponding official school age.

1. Column 1: 1 to 6 years of age.
2. Columns 4-5: lower secondary education.
3. Primary education in Kazakhstan can likewise start at the age of 6 (57% of first grade enrolment in 2010) or at the age of 7 (40% of first grade enrolment in 2010). Consequently, official (compulsory) school age can be 6 to 14, or 7 to 15. The figures in columns 2-5 show the average gross and net enrolment for both cohorts (6 to 14 and 7 to 15).
4. 2008.
5. 2009.

Source: UNESCO UIS Database, except data for Kazakhstan: Agency for Statistics of the Republic of Kazakhstan (National Statistical Agency – NSA).

facilities for those with special needs and disabilities. The SPED acknowledges a deficit of 74 300 primary and secondary school places in 2010 and declares an aim of reducing the deficit to 30 000 places by 2020. The SPED also acknowledges that in 2010 on average only 63% of schoolchildren had quality, comfortable transport to take them to and from school, and declares an aim of raising this to 100% of those who need it by 2020. The SPED does not provide an indication of the proportion of children who are actually prevented by these transport difficulties from getting to schools with places for them, or of how many of those affected are primary and how many are secondary school children. And the SPED acknowledges that by 2010 only 10% of primary and secondary schools had created the conditions for inclusive education. The aim is to raise this 10% to 70% by 2020.

Equality of educational opportunity

To establish that all school-age children in Kazakhstan have equal access to education, it is necessary to consider not only whether all can find a school place, but also whether all school places give their occupants equal chances of a good education. A priority objective of Kazakhstan's national education policy is to ensure equal access for all children to quality education, irrespective of age, sex, ethnicity, religion, or health.

PISA 2009 indicates that in some respects schooling in Kazakhstan is more equitable than in OECD countries on average. This is true, for example, when one considers the outcomes for students from different socio-economic and family backgrounds. In all PISA countries, other things being equal, students with a more favourable family background tend to perform better than peers from less advantaged backgrounds. In Kazakhstan, student-level factors account for slightly less of the difference in reading performance (18.6%) than is the case with students across the OECD (22.1%). Specifically, parents' occupational status, education and wealth all have less influence on outcomes than in OECD countries on average (1.1% of difference attributable solely to these factors in Kazakhstan compared to 3.2% across the OECD). Another example of the weaker influence of background factors on learning outcomes is the performance of Kazakh students from single-parent families. Kazakhstan has more such students than OECD countries on average (19.6% versus 16.9%) but they achieved higher reading scores than students from other types of family (averaging 401 points compared to 392), whereas across the OECD, children from single-parent families had lower reading scores than their peers having another type of family (averaging 483 points compared to 501). Also, whereas across the OECD native students scored significantly higher in reading than immigrant students, for first- and second-generation students in Kazakhstan there *w*as no statistical difference between native and immigrant students (only 6 score points difference in favour of

the immigrant students). However, the second generation students scored significantly higher than the native students (average score 25 points higher).

The review team has however identified some aspects of the Kazakhstan secondary school system which – in the team's view – lead to inequities in access to *good* teaching and learning. The following sections consider why these aspects are problematic, and what might be done about them.

School location

It has already been mentioned that 16% of Kazakhstan's schoolchildren are in ungraded schools (2011), too small to be able to have a class for every year group. Nationally 57% of schools are ungraded, but certain regions have far higher proportions – particularly North Kazakhstan (86%), Akmola (81%), and Kostanay (76%) – while others, such as Kyzylorda (14%) and Mangystau (15%) have few (data from 2011). The SPED acknowledges the need to address a number of issues related to these schools, such as extremely low number of students per class, combined classes, teachers teaching multiple subjects, acute shortage of trained staff, inadequate infrastructure and facilities, and limited use of information and communications technologies (ICT) in teaching.

There is strong evidence that secondary students attending these small, ungraded, usually rural schools perform worse in both national and international tests. In PISA 2009, average reading performance was 376 score points for children in villages or rural areas, 383 for children in towns, 419 for children in large cities and 431 for children in the cities of Astana and Almaty. In the UNT, Kazakhstan's Unified National Test taken as a combined school-leaving and university entry test (see Chapter 3), students in rural schools scored an average of 66.50 points, while students in urban schools scored 76.16. Though by no means all students in rural areas will be in schools so small as to be ungraded, it seems a safe assumption that the students who are in ungraded schools will tend to get even lower scores than rural students in general.

According to the state authorities, a number of solutions are already being implemented, such as the establishment of a Republican Centre for the Development of Ungraded Schools and training programmes for their teaching staff. The main remedy the Plan proposes is to set up "base schools" as resource centres for local ungraded schools to hold short training sessions (three times during the school year for a period of 10 days) and intermediate and final student certification exams, and to promote distance learning. It is also hoped that small schools can be induced to merge to form larger ones. There were 59 such resource centres established in 2011-12.

Resource centres, which students will visit only briefly, will hardly be able to fully compensate for years of sub-standard or poor learning conditions and lower quality teaching. Students only have one chance to be educated

in school, and once it's gone it's gone. Achieving equal opportunity for all of them irrespective of the location and size of their schools might require a wider action than currently planned. It might be useful to explore in greater depth more efficient and equitable alternatives for the provision of education in rural areas, which might include (after an assessment of needs and viability of options) closing of schools, transforming the schools' purpose for community (or other) use and perhaps leasing or selling facilities and/or land that is not used for the school's purpose, or connecting schools via ICTs.

Box 2.1. **Approaches to closure of schools with under-enrolment in OECD countries**

School closure can have considerable impact on communities, but some OECD countries have developed approaches to assess and manage it.

In **Portugal**, schools with less than 21 students are closed for economic and education reasons (according to official statistics, small schools do not perform well enough). Rather than resist this, the municipality of Óbidos converted schools to community premises for social, cultural and economic projects, creating social capital (www.oecd.org/edu/country-studies/centreforeffectivelearningenvironmentscele/Portugal.pdf, accessed 10 February 2013).

In **Scotland**, 35% of schools (920) are classified as "rural" (i.e. with a population of under 3 000 with more than 30 minute drive to a bigger settlement). The government had a presumption ***against*** rural school closures, which should only happen after all other viable alternatives have been considered. In 2012, it became clear that the legislation was not working due to different interpretations by local authorities, communities and the government. A Commission was created to assess the provision of rural education. Its recommendations as regards **school buildings**, **school closure consultations** and **community resource allocations** could be instructive in confronting the ungraded schools challenge in Kazakhstan (www.scotland.gov.uk/Publications/2013/04/5849/0, accessed 28 March 2013).

The province of **Alberta, Canada** does not have a legislated minimum number of students required in order to operate a public school; however, much of the operating funding provided to school boards is calculated at least partly on a per-student basis. This means it may not be cost effective for school boards to operate schools that are under-enrolled. Decisions regarding school closure are the responsibility of local school boards, and low enrolment is often a factor in these decisions. In cases where it is deemed necessary for a school board to operate a school despite low enrolment, additional funding by way of a specified grant (Small Schools by Necessity) may be provided. Eligibility for this funding is based on the school's proximity to other schools and the capacity of those other schools to accommodate students from

Box 2.1. **Approaches to closure of schools with under-enrolment in OECD countries** *(continued)*

the "small" school (i.e. whether it is reasonably possible to educate the students elsewhere). Information regarding formulas for funding to school boards is publicly available in the Funding Manual at http://education.alberta.ca/admin/funding/manual.aspx (accessed 30 May 2013).

In the case of the **United States**, school districts are facing particularly strong budget pressures because a major source of revenue – property taxes – is in decline owing to the foreclosure crisis. Funding cuts mean school closures are increasingly considered among the options to bridge budget gaps. A national survey indicates that some 6% of U.S. districts closed or "consolidated" schools in 2010 – double the number of 2009. The lessons learned about what to do to avoid insufficient planning, poor implementation and unsatisfactory, even unintended outcomes from school closing are available at http://nepc.colorado.edu/files/PB-Consol-Howley-Johnson-Petrie.pdf (accessed 10 February 2013).

Source: Interview with Hannah von Ahlefeld, OECD Centre for Effective Learning Environments (CELE).

The review team suggests that the Government of Kazakhstan considers setting minimum ("threshold") standards for school size, facilities, and teacher quality (see recommendation in Chapter 4 on teachers' professional standards), and allowing small communities to have a school only if those standards are met. If they cannot be met, alternative ways of providing schooling to small rural communities should be explored, such as free, convenient transport to schools elsewhere, or harvesting the full potential of new technologies for distant learning (see Box 2.2).

Box 2.2. **Using ICTs to connect rural schools in Alberta (Canada)**

Supernet

Alberta's "SuperNet" network was developed by the Alberta Government (Canada) to deliver broadband connectivity to public buildings in all areas of the province, and was completed in 2005. SuperNet is a secure and reliable high-speed broadband network linking almost 4 000 government offices, schools, post-secondary institutions, municipalities, child and family services, health-care facilities and libraries in over 429 communities across the province.

Box 2.2. **Using ICTs to connect rural schools in Alberta (Canada)** *(continued)*

SuperNet provides more than 1 800 schools and other learning sites with affordable broadband access. Schools can use SuperNet to create networks that individual students can use to access online resources, collaborate with their peers and contact subject matter experts from around the world.

Use

Alberta Education provides monthly SuperNet Service Funding for each connected school site to ensure that all students benefit from SuperNet. School authorities use videoconferencing on SuperNet to support both full course delivery as well as supplementing in class activities. Full course delivery is most common in rural Alberta where schools may not have access to teachers with specialisations such high school physics or advanced high school math. In those circumstances two or more schools may partner with a school that has a teacher with that skill set to provide the instruction over a distance. Schools sometimes supplement classroom activities with videoconferencing, for example by accessing museums or the Canadian Space Agency, to bring in subject matter experts they would not have access to in any other way. Alberta currently has approximately 800 videoconference devices in the system and the system and the architecture of the SuperNet network ensures that videoconferencing has a higher priority on the network compared to other traffic such as webpages.

Cost

The Government of Alberta invested CAD 193 million when SuperNet was being built. The Department of Education also provides access funding in the amount of CAD 800/month per eligible site. The access funding allows schools to purchase between 20mb/s and 100mb/s depending on the type of service ordered. In the department's budget for the current year (2013), this amounts to CAD 17.5 million. Any additional costs, including Internet services which are not included on SuperNet, are the responsibility of the school.

Note: Further information about *Supernet* is available at www.servicealberta.gov.ab.ca/AlbertaSuperNet.cfm (accessed 30 May 2013).

Source: Capital Planning Sector of the Alberta Education Department for the purposes of this OECD review.

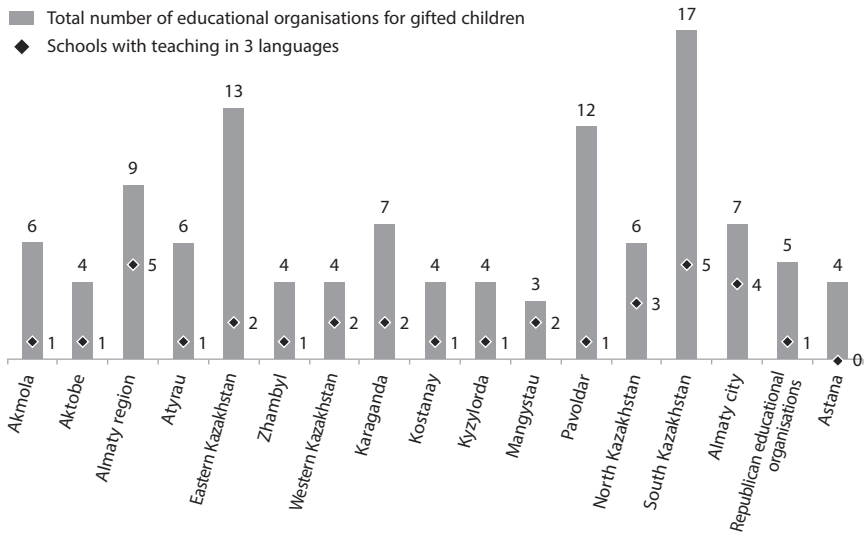
Provision for gifted children

Figure 2.1 shows the number of schools catering for gifted children in each region of Kazakhstan, but as noted, there are many other schools within the "normal" system which also cater for gifted children. Overall, education

policy in Kazakhstan attaches high priority to "gifted children" (a category for which there appears to be no exact definition), which expresses itself through more favourable resource allocations, rewards, and overall attention in government plans and statements that spell out the importance of helping them to develop their gifts. Schools for gifted children also have better buildings and facilities. As the Background Report notes: "One of the objectives of the national education policy is to identify and provide guidance and support to gifted children to facilitate the development of well-educated, competitive, and creative personalities. The network of special educational organisations for gifted children in Kazakhstan has been expanded to create better conditions and opportunities for uncovering and developing children's abilities and fulfilling their potential."

Even in (and between) "normal" schools that are not specialised in supporting young talent there seem to be an extraordinary number of competitions, awards and prizes for high performers. The rewards for emerging victorious from these competitions and contests go not just to the students themselves, but also to their teachers and schools; teachers may receive

Figure 2.1. **The network of special educational organisations for gifted children (2011)**



Source: MESRK (2012a), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version) and Appendix to the Report with Tables with Statistical Data and Indicators*, Ministry of Education and Science of the Republic of Kazakhstan, Astana.

special titles and benefits and schools, if persistently successful in producing outstanding results in competitions and on the Unified National Test (UNT), might ultimately be granted a more privileged status such as "experimental" school, "specialisation" school (see Chapters 1 and 2), or lyceum.[2] To that end, it seems that the best teachers are expected to devote their time and attention to making the best students even better. By contrast, there are no special schools or programmes for children who are less gifted, or who are struggling academically, either in regular schools or in centres offering extra-curricular education.

Considering the priority that gifted children in Kazakhstan are given, it is interesting to see how they fare, academically, when compared to youth in other countries. The team was told that they do perform very well in international Olympiads, particularly those hosted by organisations from Kazakhstan and other former Soviet Union countries with similar education systems, and that over the past few years the number of winners in these competitions have been increasing (Table 2.2).

Table 2.2. **Number of winners of international school competitions in fundamental science**

2005	2006	2007	2008	2009	2010
154	168	194	354	544	881

Source: MESRK (2012a), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version) and Appendix to the Report with Tables with Statistical Data and Indicators*, Ministry of Education and Science of the Republic of Kazakhstan, Astana.

But how well did Kazakhstan's most talented students perform in PISA 2009? And – more importantly, if gifted children are to make an important contribution to Kazakhstan's future economic health and prosperity – how many excellent performers does the country have? The top proficiency level in PISA is Level 6. Table 2.3 compares Kazakhstan's performance at Levels 6 and 5 to the OECD average and to a selection of other PISA participants.

As the table shows, there were relatively few excellent performers among the Kazakh students who participated in PISA 2009. Kazakhstan's Level 6 and 5 percentages were less than a tenth of the OECD averages in all subjects, and just one OECD country, Mexico, had fewer top performers (in maths and science: in reading, the percentages were the same).

Three possible explanations could be given. The first is that Kazakhstan's very best students (those capable of beating the world's best in other international competitions) were not tested. This might or might not be an

Table 2.3. **Percentages of students reaching the highest proficiency levels in PISA 2009 in Kazakhstan and selected countries and economies**

	Reading (%)		Mathematics (%)		Science (%)	
Comparator	Level 6	Level 5	Level 6	Level 5	Level 6	Level 5
Finland	1.6	12.9	4.9	16.7	3.3	*15.4*
Korea	1.0	11.9	*7.8*	*17.7*	1.1	10.5
New Zealand	*2.9*	*12.9*	5.3	13.6	*3.6*	14.0
Poland	0.7	6.5	2.2	8.2	0.8	6.8
Turkey	0.0	1.8	1.3	4.4	0.0	1.1
United Kingdom	1.0	7.0	1.8	8.1	1.9	9.5
United States	1.5	8.4	1.9	8.0	1.3	7.9
OECD average	0.8	6.8	3.1	9.6	1.1	7.4
Kazakhstan	**0.0**	**0.4**	**0.3**	**0.9**	**0.0**	**0.3**
Kyrgyzstan	0.0	0.1	0.0	0.0	0.0	0.0
Mexico	0.0	0.4	0.0	0.7	0.0	0.2
Russian Federation	0.3	2.8	1.0	4.3	0.4	3.9
Serbia	0.0	0.8	0.6	2.9	0.0	1.0
Shanghai-China	*2.4*	*17.0*	*26.6*	*23.8*	*3.9*	*20.4*
Singapore	*2.6*	*13.1*	*15.6*	*20.0*	*4.6*	*15.3*

Note: The OECD and partner countries with the highest percentages at Level 5 or 6 are shown in italics.

Source: OECD PISA 2009 Database.

explanation. The school sample countries prepare for participation in PISA must meet strict standards in order to be accepted by the PISA consortium. One of them is the requirement for the sample to be representative. Since Kazakhstan is selecting and concentrating all of its excellence students in few dedicated institutions, it is possible that none or only very few of these schools were sampled, which is a reflection of the fact that the share of such students in the average Kazakh cohort of 15-year-olds is very small – certainly not big enough to be the foundation of the country's economic future.

The second possible explanation is that PISA 2009 did not test students in those aspects of reading, maths and science on which their class teaching focuses. This explanation seems plausible. Kazakhstan shares a teaching heritage with other countries formerly hidden behind the iron curtain, all of which have disappointing PISA results such as Kyrgyzstan, the Russian

Federation, Albania, Azerbaijan and Romania. But if, as all participant countries agree, PISA assesses the reading, maths and science skills most important for young people to possess if they are to succeed in life and work, there is a need – explored later in this chapter – to improve either the secondary school curriculum in Kazakhstan, or the focus and relevance of teaching in Kazakh classrooms, or both. A number of countries which share the same systemic heritage have shown that improvement is possible. Poland, shown in Table 2.3, and the Czech and Slovak Republics, Estonia, Hungary, Slovenia, Croatia, Latvia, Lithuania and Bulgaria, not shown, all have far greater numbers of Level 5 and Level 6 performers than Kazakhstan.

The third possible explanation is that Kazakhstan's emphasis on identifying gifted children as special, giving them special attention and rewards and putting pressure on schoolchildren of all abilities to compete for prizes, is not necessarily the best way to foster high performance as measured by PISA. The highest-performing countries in PISA do not divide children into "gifted" and the rest in this way, nor do they have a similar emphasis on competitions. Competitions, by definition, produce visible winners and losers. If intended to be won by those with the highest ability, rather than those who have made the greatest effort, they can discourage both the winners and the losers from further improvement: the winners because they believe their natural gifts will help them to further success without trying, the losers because they see themselves as failures who will not succeed in future however hard they try. Even students in the middle range can lose motivation, because the top prizes seem out of their reach.

As OECD publications on learning from PISA success[3] have pointed out, in Finland, Japan, Singapore, Shanghai-China and Hong Kong-China, parents, teachers and the public tend to share the belief that all students are capable of achieving high standards and need to do so. This belief is key to educational excellence and equity. Some of the highest-performing countries have moved over time from a system in which students were streamed into different types of secondary schools according to their abilities, to a system in which all students now go to secondary schools with curricula set to much the same high level of cognitive demand. Those countries "levelled up", requiring all students to meet the standards formerly expected only of elite students. As a result, high proportions of their students achieve the baseline level of proficiency in PISA tests.

Provision for students who struggle academically

The future of human capital in Kazakhstan will depend not only on the few who are the "best of the best", but also on the ability to develop the abilities, personalities and potential of all other children.

PISA describes students' levels of proficiency in the subjects assessed by PISA as follows:

- **Top performers** are those students proficient at Level 5 or 6 of the assessment;
- **Strong performers** are those students proficient at Level 4 of the assessment;
- **Moderate performers** are those students proficient at Level 2 or 3 of the assessment;
- **Lowest performers** are those students proficient at Level 1 or below of the assessment (OECD, 2011a, p. 8).

Level 2 is considered to be the baseline level of proficiency, at which students begin to demonstrate the functional skills and competencies in reading, maths or science that will enable them to participate effectively and productively in life. Table 2.4 shows the percentages of students reaching the baseline Level 2 in Kazakhstan and in benchmark countries, in each subject tested. It also shows for each subject the percentages of students at the lowest proficiency level(s). In reading, students below Level 2 may be categorised as Level 1a, Level 1b or below Level 1b (lowest). In maths and science, students below Level 2 may be categorised as at Level 1 or below Level 1 (lowest).

As shown in Tables 2.3 and 2.4, the PISA participating country with the highest overall average scores in the 2009 round in all three subjects is Shanghai-China. Shanghai-China (like Singapore in reading and science) has the highest share of students at the top end of the distribution, at Levels 5 and 6, of all countries assessed. Even more importantly, it has very few students who appear at the bottom end of the scale below baseline Level 2: only 4.1% in reading, 4.8% in maths and 3.2% in science, compared to OECD averages of 18.8% in reading, 22.0% in maths and 18.0% in science. The low proportion of low achievers is the biggest contributory factor to the success of Shanghai-China in PISA. OECD's best overall performers, Korea and Finland, also have single-figure percentages of students below Level 2 in all three subjects.

In Kazakhstan, by contrast, in all three subjects, more than half of all students assessed were below Level 2. The SPED sets an objective to raise PISA rankings (which in 2009 were 58-60 in reading, 53-54 in maths and 53-58 in science) to 50-55 by 2015 and 40-45 by 2020. It will not be possible to achieve this objective unless effective action is taken to reduce the number of under-achievers which pull down the average score. As in many other countries, the PISA results are highlighting the problem and offer the Government of Kazakhstan a wake-up call.

Table 2.4. **Percentages of students below the baseline level, Level 2, in PISA 2009 in Kazakhstan and selected comparators**

Comparator	Reading (%)		Mathematics (%)		Science (%)	
	Below Level 2	Of which, Level 1b and below	Below Level 2	Of which, below Level 1	Below Level 2	Of which, below Level 1
Finland	8.1	1.7	*7.7*	*1.7*	*6.0*	*1.1*
Korea	*5.8*	*1.1*	8.1	1.9	6.3	*1.1*
New Zealand	14.3	4.1	15.5	5.3	13.4	4.0
Poland	15.0	3.7	20.5	6.1	13.2	2.3
Turkey	24.5	6.4	42.2	17.7	29.9	6.9
United Kingdom	18.5	5.1	20.2	6.2	15.0	3.8
United States	17.7	4.6	23.4	8.1	18.1	4.2
OECD average	18.8	5.7	22.0	8.0	18.0	5.0
Kazakhstan	**58.6**	**27.9**	**59.2**	**29.6**	**55.4**	**22.4**
Kyrgyzstan	83.3	59.5	86.6	64.8	81.9	52.9
Mexico	40.1	14.6	50.8	21.9	47.3	14.5
Russian Federation	27.4	8.4	28.5	9.5	22.0	5.5
Serbia	32.9	10.8	40.5	17.6	34.4	10.1
Shanghai-China	*4.1*	*0.7*	*4.8*	*1.4*	*3.2*	*0.4*
Singapore	12.4	3.1	9.8	3.0	11.5	2.8

Note: The OECD and partner countries with the fewest performers below Level 2 are shown in italics.

Source: OECD PISA 2009 Database.

Urgent action is now required on widespread under-achievement. Improving PISA scores is thereby not an aim in itself. The main purpose of this action should rather be to equip Kazakhstan's secondary students with the skills that will enable them to prosper and contribute to their country's prosperity. Better PISA results will be a logical consequence of a successful policy to provide equal access to quality education for all.

The Government of Kazakhstan has taken or planned a number of education reforms since the PISA 2009 results were published, but only one appears to be targeted at students whose skills are below the PISA baseline level. That is a new functional literacy programme, approved by a Decree of the Government of Kazakhstan on 25 June 2012. The SPED mentions several new initiatives focused on gifted students, elite schools or selected teachers

Box 2.3. **The "PISA shock" in Germany**

For many years, the German public and policy makers assumed that Germany had one of the world's most effective, fair and efficient school systems. It was not until 2000 that they discovered this not to be the case at all, and that in fact Germany's schools ranked below the average when compared to the PISA-participating countries.

The first PISA assessments, administered in 2000, focused on language literacy. The results shocked the German nation. According to Kerstan (a journalist with the German weekly newspaper *Die Zeit*), "no one expected that one quarter of German 15-year-olds could not read fluently. And worse yet, the PISA results showed that German at-risk students' performance was among the worst in the world." Germany came well below the average overall for all the countries tested. A substantial fraction of German students tested below Mexico. Germany did no better in mathematics and science than it did in language. And it turned out that student performance was more closely tied to the socio-economic background of the students than was the case for many other OECD countries … Major newspapers (started to) run four, five and six-page special sections on the PISA results. The news and discussions of the results were all over the radio and television. The news about Germany's poor results received far more coverage in Germany than the surprise news that Finland had topped the PISA league tables got in Finland. Suddenly, educators could no longer make the case that what was most important about education could not be measured. If Germany was far behind in every important area of the curriculum, if Germany's education standards generally lagged those in the rest of the developed world and if Germans could no longer maintain, as they had for so long, that Germany had one of the most equitable education systems in the world, then, clearly, something had to be done … Now, ten years into the 21st century, Germany has substantially improved its position in the PISA league tables.

Source: OECD (2011b), *Lessons from PISA for the United States*, Strong Performers and Successful Reformers in Education, OECD Publishing. http://dx.doi.org/10.1787/9789264096660-en.

and a large number of initiatives intended to improve the quality of education in general, but no specific programmes or initiatives for academic strugglers, those of below average ability or those who are falling behind their peers.

Part of the problem appears to be the lack of an effective system by which such students can be identified. As the next chapter will explain more fully, there is no national assessment before the end of the ninth grade. Until then, a student's achievement and progress is assessed only by his or

her teacher. Most schools still use a 5-point scale, which is not criterion-based; consequently the student's mark depends entirely on the teacher's un-moderated personal judgement. During fieldwork visits the review team looked at a number of teachers' mark books, and formed the view that most are reluctant to use the lower end of the 5-point scale, marking the vast majority of students 3 or above. This is understandable, given teachers' natural wish not to discourage their students and the fact that the teacher's own performance will be judged on the basis of their students' marks; but it inhibits the early identification of under-achievers.

Data from PISA 2009 suggests that, unfortunately, there is also a relationship between the average socio-economic background of schools in Kazakhstan and the resources they have. Disadvantaged schools, i.e. those with the highest proportions of students from less advantaged families, tend to have higher student-teacher ratios than advantaged schools and lower proportions of full-time teachers, lower proportions of teachers with university-level degrees and lower-quality educational resources than advantaged schools. Those schools, as discussed in Chapter 5, tend to be disadvantaged also in terms of financial resources.

Another aspect of the problem is that many teachers do not take effective steps to help children who are struggling academically. The report "Factors Influencing the Quality of 9th grade Students' Knowledge" (MESRK, 2012b) contained results of representative surveys of various school stakeholders. When parents were asked who offered their children help in resolving educational problems, 56.3% said that teachers "held consultations", but 27.8% said "teachers are not always ready to work extra with children falling behind in their study. Usually they keep in such students after school and just give them tasks for independent work"; 13.3% said "many teachers believe that if the child did not understand material it is [the child's] problem"; and only 12.5% said "After class lessons [teachers] work with students falling behind in study". The survey also revealed that students often relied on help from people other than their teachers. 27.3% of parents said they helped their children with maths problems; almost one in five students received help from classmates in one way or another (18.2%); and private tutors were used extensively – 33.1% of parents used them to prepare their child for the UNT in maths and physics, 12.4% to help their child learn English.

When teachers were asked about the reasons for 9th grade students' low results, they cited a number of reasons. Most if not all of these were evidently seen by the teachers as beyond their control. High proportions of teachers thought that 9th grade students' results were heavily influenced by family factors, such as absence of parental care (38%), socio-economic status of the student's family (53.4%), disadvantaged family (54.5%); school organisation factors such as absence of supplementary lessons in the school (35.2%),

inadequacies in educational programmes and textbooks (50%), and the number of students in the class (56.8%); and – interestingly – the insufficient qualification of teachers (65.9%).

It is not clear whether, by "insufficient qualifications", teachers meant subject qualifications or pedagogic training or both: but it is clearly worrying that nearly two of every three teachers in Kazakhstan feels that they are lacking the skills for the job they do. This response sends the Government of Kazakhstan a strong signal on the need to reform teacher selection, training and in-service support (see Chapter 4). The perceived inadequacies in educational programmes and textbooks are not specified; this complaint deserves further investigation. However, the remaining factors cited – particularly the family factors – would not be accepted as alibis for poor performance in countries whose students do well in PISA. These countries expect and achieve high performance from all students, whatever their background. Supplementary lessons would not be required if children are taught effectively in regular lessons; analysis of PISA 2006 results has shown that if regular lessons are not of the desired quality, low performers will get limited benefit from supplementary lessons which in practice offer them more of the same (OECD, 2010b). Kazakhstan's class sizes are not large by the standards of PISA participant countries: the PISA 2009 report shows that the 15-year-old students in Kazakhstan schools who took part in PISA were in classes of 22.5, on average, in the language of instruction. This is more than the average in Finland, but less than the average across the OECD (24.6) and far less than the averages in Singapore (34.9), Korea (35.9) and Shanghai-China (39.0).

The OECD review team formed the view that the biggest problem Kazakhstan has to solve is the absence of knowledge and concern among education stakeholders about under-achievers. None of the Kazakh stakeholders met by the OECD review team at national level and in the regions, showed awareness of the importance of addressing the needs of academic strugglers. The only exception was the Education Department in Almaty, which described a programme to narrow achievement gaps between the best and worst-performing students through conferences, experience-sharing, an increased emphasis on quality, having their own quality team to coach teachers and principals, and dealing with under-performing principals by re-assigning them to deputy or class teacher posts. Almaty's UNT results have risen consistently over time, even in years when average UNT scores have fallen, and this was pointed out as a result of the programme.

Educators in other countries often talk about narrowing achievement gaps between highest and lowest performers, about how to ensure that the lowest achievers are brought up to acceptable minimum standards, about tailoring teaching to meet individuals' needs, and about providing catch-up programmes for those who have fallen behind. The United Kingdom has for

some years had a range of policies, plans and programmes to address the needs of this group, designed on the principle that "Every Child Matters". The United States declare similar principles in the title of the 2001 law on education, the "No Child Left Behind" Act.

At the moment, education in Kazakhstan does not follow this principle. The authorities would be well advised to design action targeting the long tail of under-achievement, and to make it a top educational priority. This will involve declaring the government's commitment to the principle that all students are capable of achieving according to high standards and need to do so; ensuring that students at risk of under-achievement are identified early; and ensuring that schools and teachers take effective steps to help them and get them back on track. The review team's conclusion is that Kazakhstan

Box 2.4. **Success by targeting under achievement: the examples of Singapore and Finland**

The Singaporean education system is underpinned by the belief that education is the route to advancement for students of all ethnic backgrounds and all ranges of ability, and that hard work and effort, not inherited intelligence, is the key to success in school. Singapore used to have a system of streaming in its elementary schools, but changed this system as it raised its standards. Singapore uses a wide range of strategies to make sure that student difficulties are diagnosed early and that students who are even just beginning to fall behind are immediately diagnosed and given whatever help is needed to get them back on track as quickly as possible.

Finland has special teachers whose role is early diagnosis and support. They work closely with classroom teachers to identify students in need of extra help, and then work with those struggling students, individually or in small groups, to provide the extra help and support they need to keep up with their classmates. It is not left solely to the discretion of the regular classroom teacher to identify a problem and alert the special teacher; every comprehensive school has a "pupils' multi-professional care group" that meets at least twice a month for two hours, and which consists of the principal, the special teacher, the school nurse, the school psychologist, a social worker, and the teachers whose students are being discussed. The parents of any child being discussed are contacted prior to the meeting and are sometimes asked to be present.

In both Finland and Singapore, universal high expectations are not a mantra but a reality. The processes of identifying students who start to fall behind, diagnosing their problems promptly and taking the appropriate action inevitably mean that some students get more resources than others; but it is the students with the greatest needs, rather than the highest attainers, who get the most and highest-quality resources.

needs a plan to divert more of the best teachers and best-quality educational resources to under-achievers in less favoured schools, which inevitably means diverting them away from gifted children and elite schools. In going down this path Kazakhstan will be adopting best international practice and following in the footsteps of the best performing countries in PISA, as shown by the two examples in Box 2.4. Chapter 4 also provides examples of how other countries attract good teachers to schools and classrooms that need them the most.

The impact of language of instruction on learning outcomes

According to PISA 2009, almost two third of students in Kazakhstan speak Kazakh at home; around 30% speak Russian and the remaining 3% another language. Analysis of PISA results by the language students speak at home reveals large performance gaps between Kazakh- and Russian-speaking students, who generally attend separate schools with a different language of instruction. Table 2.5 shows the differences in scores between the Kazakh- and Russian-speaking students.

Table 2.5. **Reading, mathematics and science performance of students speaking Kazakh and Russian at home**

	Reading Mean Score	Reading % Below Level 2	Reading % Levels 5+6	Mathematics Mean Score	Science Mean Score
Kazakh	362	66.1	0.3	383	375
Russian	453	27.1	4.5	453	457
Difference (R-K)	91	-39.0	4.2	70	82

Source: OECD PISA 2009 Database.

Russian-speaking students outperform their Kazakh-speaking peers in all 3 subjects, but still lag nearly 50 score points behind the OECD average of 500 points. The gap between Russian- and Kazakh-speaking students is smallest in maths and biggest in reading, where it corresponds to more than 2 years of schooling (39 points is roughly equivalent to one year's schooling, and the gap is 90 points). There are also dramatic differences in proficiency levels, particularly the fact that 66% of students in Kazakhstan were below Level 2, whereas this was true of just 27% of the Russian-speakers.

These differences suggest the presence of inequities in the education system in Kazakhstan, but closer inspection reveals that much of the performance difference between Russian and Kazakh speakers can be attributed to differences other than language. Russian-speaking students had higher pre-primary attendance rates than Kazakh-speaking students. They also had, on

average, higher socio-economic status, higher family income and more educational resources in their homes, though Kazakh-speaking students had more cultural possessions in theirs. The proportion of girls was higher in the Russian-speaking sample (51.1% compared to 48.7%) which is likely to have had a positive influence on the outcomes of the reading test, at which in all countries participating in PISA girls outperform boys. The proportion of Russian-speaking students participating in academic as opposed to vocational programmes was higher, and more of the Russian-speakers were in private schools, whose students generally perform better in PISA than their peers from public schools. Last but not least, significantly fewer Russian than Kazakh speakers were schooled in villages (21.3% to 39.8%) and significantly more in cities (40.9% to 28%) and in large cities (12.2% to 4.8%).

The comparison of proportions of Russian- and Kazakh-speaking students who fail to reach the baseline Level 2 reveals that the schools attended by Kazakh-speaking students are less effective in teaching them the skills they need for life and work. The results of the Unified National Test for 2012 and 2013 confirm the presence of a performance gap, but also suggest that it might be diminishing. Even if the next round of PISA would confirm such a trend, an effective programme to identify and help academic strugglers and below-average performers and to narrow achievement gaps is still very likely to be of particular benefit to Kazakh-speaking students.

The impact of gender on learning outcomes

A disaggregation of Kazakhstan's PISA results along gender lines is shown in Table 2.6. In all three subjects tested, girls outperform boys by a greater margin than in OECD countries on average: 39 points in reading on average in the OECD, 43 points in Kazakhstan; 11 points behind boys in maths (OECD, 2010a), but equal performance in Kazakhstan; same score between girls and boys in science, but 9 points difference in favour of girls in Kazakhstan.

Table 2.6. **Average scores and percentage of boys and girls below Level 2, PISA 2009**

	Reading				Mathematics (%)				Science (%)			
	Average score		Below Level 2 (%)		Average score		Below Level 2 (%)		Average score		Below Level 2 (%)	
	M	F	M	F	M	F	M	F	M	F	M	F
Kazakhstan	369	412	67.5	49.7	405	405	59.3	59.0	396	405	57.9	53.0
OECD average	474	513	25.0	12.6	501	490	20.9	23.1	501	501	18.8	17.1

Source: OECD PISA 2009 Database.

The gender-based variations in learning outcomes in Kazakhstan do not deviate by greatly from the OECD average but they suggest that, compared to girls, boys in Kazakhstan underachieve to a greater extent than on average in OECD countries. It is worrying that only one-third of the boys reach proficiency Level 2 (a level reached by half of the girls). Two out of every three boys do not demonstrate the functional skills and competencies in reading that will enable them to participate effectively and productively in life and work. This scale of male under-achievement will – unless tackled promptly and effectively – condemn large numbers of boys to unemployment and drag down national prosperity. An effective programme to identify and help academic strugglers and below-average performers and to narrow achievement gaps will also be of benefit to under-achieving boys.

Regional differences in learning outcomes

As in many countries, education standards in different regions vary. The only "common currency" available in Kazakhstan to indicate which regions offer the best education are the relative results of students in the national test at the end of the 11th grade (the UNT). In interviews with the review team, regional education administrations were very conscious of their rankings in the latest league tables of regional results. Rankings vary from year to year, but test results from various years consistently suggest that students in the cities of Almaty and Astana do relatively well, while students in regions which are sparsely-populated, have high numbers of small rural schools and/or a high level of social disadvantage, do considerably worse.

Given the difficulty of changing regions' economic circumstances and population patterns, the only feasible approach to improve the opportunities of students in the lower and lowest-achieving regions is the programme already recommended to identify early on (well before the 9th grade) the academic strugglers and those students who perform below-average, and to provide them with the extra support needed to narrow achievement gaps.

Students with special needs and disabilities

Kazakhstan provides education for children with special needs and disabilities in separate "correctional schools", in special groups and classes in general education schools; and in the children's homes. The remit of the current review did not to include a detailed assessment of how well the needs of this group of students are being met. However, a 2009 review by the OECD of provision for students with special needs and disabilities in Kazakhstan, the Kyrgyz Republic and Tajikistan flagged a number of concerns about whether these children enjoy equal access to quality education. The main reason for concern was the concept of disability in Kazakhstan, still heavily

influenced by the traditional Soviet concept of "defectology", which focuses on a person's particular disability and trains practitioners as specialists in that single disability's care and correction. The risks of the defectology approach are that it often leads to the education of many children in correctional schools, giving them limited opportunities to access the full curriculum, interact with other children and develop the abilities and potential that they share with other children. The 2009 review team recommended that Kazakh authorities adopt the wider concept of "special needs education" already adopted by the majority of OECD and many other countries, under which separate schooling is reserved for those with serious disabilities constituting compelling reasons why they cannot be educated in a mainstream school environment, and inclusion in a mainstream school is the aim for all others – even if this means adapting school premises, supplying special equipment, or giving teachers extra training and extra resources. Another reason for concern that the 2009 review team identified was the large numbers of disabled and special needs children who were not in any school, special or mainstream, and receiving little or no useful education in their own homes.

The legislation of Kazakhstan has now espoused the principle that children with special needs and disabilities should be able to go to mainstream school if their parents so choose. The Background Report also records improvements in 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. However, parents will not be able to exercise their right to send their child to a mainstream school until all mainstream schools they might wish to choose are able to accommodate their child, either with the facilities they have or with "reasonable adaptations", to quote the term used in England's law on the rights of children with disabilities. An example of making "reasonable adaptations" is installing access ramps for wheelchairs.

As in other countries, in Kazakhstan too there is some way to go before inclusion aims can be realised. The Background Report acknowledges that the action still required developing curricula and training programmes, producing instructional materials, training and re-training teachers, creating a barrier-free learning environment, and changing the perceptions of society. According to the SPED, only 10% of schools had the facilities to provide inclusive education in 2010, but this share is rising rapidly (19.1% in 2011 and 23% in 2013) and the government hopes to raise this to 30% by 2015 and 70% by 2020 (MESRK, 2010). The Report does not say how many children with disabilities are currently enrolled in inclusive education, but the target for 2020 is to raise the proportion to 50%. If this means that in 2020 half of all children with special educational needs will still be in correctional schools, than the target might not be set high enough.

The objective for the proportion of schools that will have created "barrier-free access" for children with disabilities by 2020 is just 20%. Neither the SPED nor the Background Report mentions objectives for reducing the numbers of special needs children educated in their own homes, or improving the quality of the education they receive. A further issue is that children needing barrier-free access are unlikely to be able to access extra-curricular education. The review team visited Astana's Centre for Extended Education, a modern building which provides a variety of extra-curricular education activities for some 9 000 students a day. In the two years since the building opened, the review team was told, not one wheelchair-bound student had entered it.

In sum, it seems that children with special needs and disabilities continue to suffer from severely unequal opportunities, and that the improvements planned for this group in the future will not be sufficient to remedy current inequities. The OECD suggests that the authorities' plans to make inclusive education a reality need to be made more ambitious and speeded up.

Effectiveness of teaching and learning

The learning environment

Students in classrooms in Kazakhstan strike visitors from Europe and America as exceptionally well behaved, respectful of their teachers and unlikely to disrupt fellow-students' learning. This impression is borne out by international comparison surveys. The TIMSS 2011 report recorded that only 4% of the students assessed in Kazakhstan were in classes whose teachers said that instruction was limited "a lot" by disruptive students – only Japan and Indonesia had lower percentages.

The PISA 2009 report tells a similarly positive story about relations between students and teachers in the classroom. Positive teacher-student relations are crucial in establishing an environment that is conducive to learning, because research finds that students, particularly disadvantaged students, learn more and have fewer disciplinary problems when they feel that their teachers are devoted to their academic success (Gamoran, 1993) and when they have good working relations with their teachers (Crosnoe, Johnson and Elder, 2004). Students participating in PISA 2009 were asked five questions about teacher-student relations and, somewhat surprisingly, the students in Kazakhstan gave more positive answers than their peers in OECD countries on average to all of them. The percentages agreeing or strongly agreeing to the statements were: "I get along well with my teachers" (Kazakhstan 93%, OECD 85%); "Most of my teachers are interested in my well-being" (Kazakhstan 83%, OECD 66%); "Most of my teachers really listen to what I have to say" (Kazakhstan 80%, OECD 67%); "If I need extra help, I will receive it from my teachers" (Kazakhstan 93%, OECD 79%); "Most of my teachers treat me

fairly" (Kazakhstan 89%, OECD 79%). Students' responses give Kazakhstan a score of +0.4 on the PISA index of teacher-student relations, higher than a large majority of PISA participants (OECD average is 0).

Unfortunately, positive teacher-student relations – while more helpful to learning than negative relations – do not guarantee success in PISA. All six of the countries with lower mean reading scores than Kazakhstan's also have positive index scores. The two best-performing OECD countries, Finland and Korea, actually have negative index scores, as does Japan. Of the three best-performing non-member countries, Shanghai-China and Singapore have positive index scores, but still lower than Kazakhstan's; Hong Kong-China has an index of zero.

Learning strengths and weaknesses

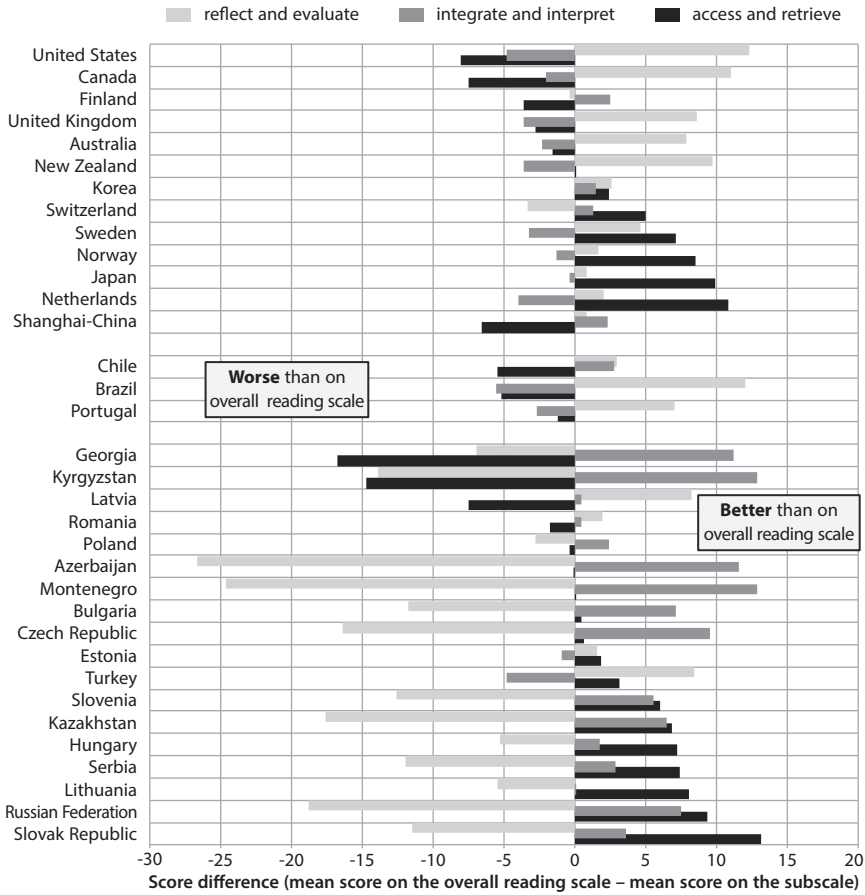
The diversified information delivered by international comparisons of learning outcomes such as PISA and TIMSS holds clues to the strength and weaknesses of particular aspects of classroom teaching and learning, in Kazakhstan and in any other participating country. Figures 2.2 and 2.3 present the analysis of such aspects in PISA 2009, and Table 2.7 outlines selected aspects of TIMSS 2011 performance in mathematics.

Students in Kazakhstan who took the PISA test did better than their overall reading score in the subscales "access and retrieve" and "integrate and interpret", but much worse than their overall reading score in the subscale "reflect and evaluate". Other countries in which the "reflect and evaluate" subscale pulled down overall performance results include the Slovak Republic, Russian Federation, Lithuania, Serbia, Hungary, Slovenia, the Czech Republic, Bulgaria, Montenegro, Azerbaijan, Poland, Kyrgyzstan and Georgia. Of all the other former Soviet Union countries shown, only Estonia, Latvia and Romania did better on this subscale than overall. By contrast, almost all the countries shown from Europe, the Americas, the Far East and Oceania did better on "reflect and evaluate" than overall, the two exceptions being Switzerland and (by a very small margin) Finland.

Figure 2.3 compares the performance of selected countries on reading continuous and non-continuous texts, with their overall reading score. It shows that students in Kazakhstan are better in reading continuous texts, but less able when it comes to dealing with non-continuous texts (for example tables, graphics, maps, forms or diagrams). This is a reading performance pattern common to all former Soviet Union countries except Estonia and Latvia, but also to a number of other economies outside of the common Soviet legacy, including Shanghai-China, Japan, Finland, Norway and the "PISA improvers" Chile, Brazil and Portugal.

Table 2.7 shows that students from Kazakhstan who participated in the TIMSS 2011 assessment were relatively good at "knowing", but with scores

Figure 2.2. **Performance on the aspect reading subscales compared to overall reading scale, for selected countries, PISA 2009**



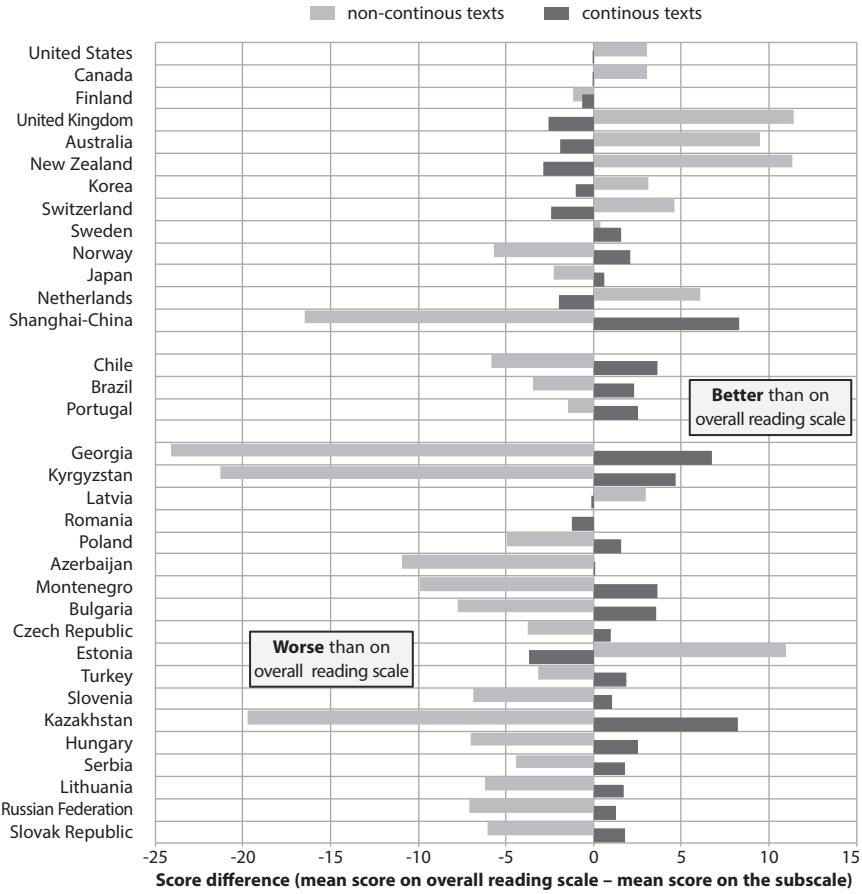
Source: OECD PISA 2009 Database.

significantly below their overall score, not so much at applying knowledge or reasoning. Of the 16 countries to score higher than Kazakhstan in TIMSS 2011, only 2 – the United States and Slovenia – had a similar pattern, but this pattern is also seen in a number of lower-performing countries, mainly from the former Soviet Union (Armenia, Romania, Georgia, Former Yugoslav Republic of Macedonia) or the Middle East and North Africa (UAE, Lebanon, Qatar, Tunisia, Saudi Arabia). In fact, teaching traditions and approaches in former Soviet Union and Middle Eastern countries have something in common: frontal teaching with relatively little interactivity or

work with small groups, and with a focus on theory rather than practice and an emphasis on memorising key texts and facts.

Both PISA 2009 and TIMSS 2011 point to the same conclusion. The secondary school system of Kazakhstan is quite effective at imparting theoretical knowledge and ensuring that students remember, recognise and retrieve information. It is relatively weak at enabling students to acquire and practice higher-order thinking skills, such as applying and reasoning in maths, or reflecting on and evaluating texts (particularly texts in an unfamiliar format) when reading.

Figure 2.3. **Performance on reading continuous and non-continuous texts compared to overall reading scale, for selected countries, PISA 2009**



Source: OECD PISA 2009 Database.

Table 2.7. **Achievement in mathematics cognitive domains, 8th grade, TIMSS 2011**

Country	Overall maths score	"Knowing" average score (diff from overall score)	"Applying" average score (diff from overall score)	"Reasoning" average score (diff from overall score)
Korea	613	616 (+3)	617 (+4)	612 (-1)
Singapore	611	617 (+6)	613 (+2)	604 (-7)
Chinese Taipei	609	611 (+2)	614 (+5)	609
Hong Kong	586	591 (+5)	587 (+1)	580 (-6)
Japan	570	558 (-12)	574 (+4)	579 (+9)
Russian Federation	539	548 (+9)	538 (-1)	531 (-8)
Israel	516	516	513 (-3)	520 (+4)
Finland	514	508 (-6)	520 (+6)	512 (-2)
United States	509	519 (+10)	503 (-6)	503 (-6)
England	507	501 (-6)	508 (+1)	510 (+3)
Hungary	505	507 (+2)	505	502 (-3)
Australia	505	504 (-1)	506 (+1)	506 (+1)
Slovenia	505	508 (+3)	502 (-3)	500 (-5)
Lithuania	502	502	508 (+6)	493 (-9)
Italy	498	494 (-4)	503 (+5)	496 (-2)
New Zealand	488	481 (-7)	491 (+3)	494 (+6)
Kazakhstan	**487**	**489 (+2)**	**484 (-3)**	**482 (-5)**
Sweden	484	478 (-6)	489 (+5)	478 (-6)
Ukraine	479	481 (+2)	480 (+1)	467 (-12)
Norway	475	465 (-10)	480 (+5)	478 (+3)
Armenia	467	476 (+9)	458 (-9)	451 (-16)
Romania	458	460 (+2)	454 (-4)	455 (-3)
UAE	456	467 (+11)	442 (-14)	449 (-7)
Turkey	452	441 (-11)	459 (+7)	465 (+13)
Lebanon	449	464 (+15)	436 (-13)	426 (-23)
Malaysia	440	444 (+4)	439 (-1)	426 (-14)
Georgia	431	438 (+7)	425 (-6)	414 (-17)
Thailand	427	423 (-4)	428 (+1)	429 (+2)
Macedonia	426	430 (+4)	417 (-9)	424 (-2)
Tunisia	425	425	421 (-4)	423 (-2)
Chile	416	405 (-11)	425 (+9)	422 (+6)
Iran	415	410 (-5)	411 (-4)	428 (+13)

Table 2.7. **Achievement in mathematics cognitive domains, 8th grade, TIMSS 2011** *(continued)*

Country	Overall maths score	"Knowing" average score (diff from overall score)	"Applying" average score (diff from overall score)	"Reasoning" average score (diff from overall score)
Qatar	410	418(+8)	396(-14)	406(-4)
Bahrain	409	411(+2)	400(-9)	415(+6)
Jordan	406	405(-1)	397(-9)	416(+10)
Palestine	404	406(+2)	397(-7)	404
Saudi Arabia	394	402(+8)	375(-19)	388(-6)
Indonesia	386	378(-8)	384(-2)	388(+2)
Syria	380	374(-6)	379(-1)	371(-9)
Morocco	371	363(-8)	378(+7)	357(-14)
Oman	366	365(-1)	360(-6)	369(+3)
Ghana	331	331	316(-15)	324(-7)

Note: Figures in bold indicate statistically significant differences. Country names in italics indicate that those countries' average achievement may not have been reliably measured, because they had so many students with achievement too low to be estimated.

Source: Mullis, I.V.S. et al. (2012), *TIMSS International Results in Mathematics*, TIMSS & PIRLS International Study Center, Massachusetts.

During fieldwork the review team formed the impression that stakeholders in Kazakhstan realise that these weaknesses exist but are unsure how to remedy them, partly because of uncertainty about what is involved in "applying knowledge", and what these much-talked-about higher order thinking skills involve.

Table 2.8 sets out the hierarchy of thinking skills and the focus of assessment of each of them (See Annex 2.A1 for a full table). The skills are listed in order, from the lowest and simplest – knowledge – to the highest and most complex – evaluation. The evidence from international assessments is that learning and teaching in Kazakhstan are quite strong in the lowest two, knowledge and comprehension, but weak in all four thinking skills from "application" upwards. The term "higher order thinking skills" usually refers just to the top three, analysis, synthesis/creation and evaluation.

In *Strong Performers and Successful Reformers in Education: Lessons from PISA for the United States* (OECD 2011b), the authors observed "It is noteworthy that every one of the high-performing education systems profiled in this volume is focused on the acquisition of complex, higher-order thinking

skills and, in many, on the application of those skills to real-world problems." Kazakhstan can only expect to join those high-performing education systems if it pursues and strengthens higher-order thinking skills in all its students.

Table 2.8. **The hierarchy of thinking skills**

SKILL	Assessment focus
Knowledge	Can the student recall or remember the information?
Comprehension	Can the student explain ideas or concepts?
Application	Can the student use the information in a new way?
Analysis	Can the student distinguish between the different parts?
Synthesis/creation	Can the student create a new product or point of view?
Evaluation	Can the student justify a position or decision?

Source: Adapted from Bloom's Taxonomy at www.teachers.ash.org.au/researchskills/dalton.htm (accessed 10 February 2013).

The review team understands that some private schools and the Nazarbayev Intellectual Schools (NIS) already aim to teach their students enquiry, research, problem solving and critical thinking skills. And when NIS schools assess students' performance and progress, they use criteria which require students to demonstrate all the thinking skills in Table 2.8, as Chapter 3 will explain. If the teaching methods used in these schools are effective they could perhaps be generalised to all secondary schools and their pupils: part of the mission of the NIS schools is to be pathfinders for new developments that may later be spread round the system. However, in the case of higher-order thinking skills it must be more than usually uncertain whether teaching methods that work for the gifted pupils in these schools will work equally well for children from less advantaged families and their teachers in village schools, for example. It would be better to design thinking skills curricula and programmes (including teacher training programmes) to serve the needs of all ability levels. Though the recommendations in the rest of this report will focus on secondary schools, it is desirable for the development of complex thinking skills to start in primary schools.

The secondary curriculum

Basic secondary education presently lasts five years and covers grades 5 to 9. In these years the curriculum is intended to teach the fundamentals of science, to promote high standards of interpersonal and interethnic communication and to facilitate identity formation and future career choices. The curriculum consists of seven subject areas: language and literature,

mathematics, natural sciences, human and social sciences, arts, technology, and physical education.

Upper secondary education covers grades 10 and 11. The upper secondary education curriculum is intended to be more work-focused and again consists of seven subject areas: language and literature, mathematics and computer science, natural sciences, human and social sciences, arts, technology, and physical education and elementary military training. At upper secondary level there are two specialisations, referred to as "profiles", the first being mathematics and natural sciences, the second being social and human sciences (humanities). At present it is not the case that every school providing upper secondary education has a profile, but when the transition to 12-year schooling is completed all upper secondary schools will feature a profile. Once in place, this will allow students to choose their subject specialisations without needing to change schools.

In the near future, Kazakhstan will be making the long-planned transition to a twelfth year of school education. A working group is currently developing the twelve-year education model. Under this model, there will be six years of basic secondary education spanning grades 5 to 10, and upper secondary education will cover grades 11 and 12. In grade 12, students will learn broadly what is now taught in the first (broadly-based and general) year at university. As a result, students who do not go on to tertiary education will have benefited from an extra year of study which should improve their employability and their potential for the economy of Kazakhstan. Those who do go on to tertiary education will be able to start studying their chosen subject straightaway and not be in need of attending a remedial course (as is the case at present). Universities will be admitting students with higher general education standards, and can either achieve the same exit standards as before with shorter courses, or leave course length unchanged and train students to a higher level.

Implementation of twelve-year education is scheduled to begin in 2015 and to be completed by 2020. The model is already being tested in 45 rural and 55 urban schools. The review team understands that the change is intended to allow upper secondary schooling to be more competency-based, and to be delivered through more "profile" schools, but is not aware of any intention to make major changes in the structure of and subjects studied in the current curriculum for grades 7 to 11. Therefore the following observations, based on the review team's fieldwork and analysis, and on discussions with students, teachers and principals, should still be relevant.

First, the standard secondary school curriculum in Kazakhstan consists almost entirely of academic subjects. Except at schools for gifted children which have classes in self-development, and specialised schools catering for students gifted in music, dance or art, every non-academic subject except physical education is banished from the curriculum after 7th grade. Some

students the team spoke to regretted that it was not possible to continue with subjects they had enjoyed – such as music and art – except in after-school clubs or extra-curricular centres. The review team sympathised with these students, having seen some splendid displays of young people's talents in these areas during fieldwork visits. Moreover, the academic subjects are taught in ways that emphasise the theory and spend little time on potential practical applications, leaving students ill-equipped to apply and use the knowledge they have learnt in new situations. This narrowly academic, heavily theoretical curriculum must be particularly unrewarding for the less academic students, who must spend almost all their school time on activities they are not good at and for which they can see limited practical use.

It would be desirable for Kazakhstan to undertake a major review of the current curriculum. One aim should be to complement the offer of academic subjects with others – such as music, dance, drama and art – that will develop the imaginative and creative parts of students' brains that need to be activated for higher-order thinking, and also (if, for example, they sing or create performances or artworks together) develop the collaborative and teamwork skills valued by employers. Music can be a particularly valuable addition because of its links with mathematics. A recent study by San Francisco State University discovered that listening to music in maths lessons can dramatically improve children's ability in the subject and help them score up to 40% higher in examinations, with particular benefits for slow learners.[4] Another important aim of curriculum reform should be to maintain students' motivation and enthusiasm for learning. In particular, if the curriculum is to engage and be accessible to academic strugglers and under-achievers, it needs to become more practical and more relevant to their likely future careers, as well as to be taught in ways more likely to catch and hold their interest. Currently, state standards determine the proportion of practical training schools and colleges can give: in future it would be helpful to allow schools more flexibility to increase the practical elements for all or some students. Another helpful change would be to refer specifically in Kazakhstan's national curriculum documents to the higher-order thinking skills the government wishes teachers to teach and students to acquire.

Second, at upper secondary stage, the curriculum appears to be too wide and not deep enough. All students interviewed during the site visits for this review reported feeling overloaded by being taught too many subjects, particularly in grades 10 and 11, as they work towards the national school-leaving and university entry test, the UNT. Seen as hugely important to the futures of many students, and being a multiple-choice test of knowledge in a limited number of school subjects, the UNT skews student and teaching priorities (a theme returned to in the next chapter); the subjects which will not be tested continue to be taught because they have to be, but because they are no longer seen as important, the effectiveness of learning in those subjects declines.

Box 2.5. **Fostering creativity and critical thinking: Outcomes of the OECD-CCE-Singapore workshop**

A recent international workshop, jointly organised by the OECD, the UK based charity *Creativity, Culture and Education* and the Government of Singapore, shared with education decision-makers from 12 countries the lessons from Asian educational initiatives to foster pupils' creativity and critical thinking. Singapore and Korea both emphasise creativity, critical thinking and character building in their curricula. Since 2009, Korea expects its schools to foster creativity as part of quality subject-based learning – but also to devote almost 10% of overall school time to projects and other transversal activities that foster creativity. Singapore's "Desired Outcomes of Education" include critical and inventive thinking as well as social and emotional competences. At the end of secondary school, among other things students are expected to be "resilient in the face of adversity", "innovative and enterprising" as well as "able to think critically and communicate persuasively".

Source: http://oecdeducationtoday.blogspot.fr/2013/01/creativity-in-schools-what-countries-do.html (accessed 10 February 2013).

Except in private and "pathfinder" schools, upper secondary students cannot choose to alter the balance between their subjects so as to spend more time on and study in more depth the subjects most interesting to them and relevant to their future studies or careers. Students who had studied abroad and seen how much more choice existed elsewhere were particularly keen to be able to alter the balance of their subjects, as were students who had found themselves in a school with an unsympathetic "profile" but did not wish to transfer out of it. Moreover, in each curriculum subject the numerous aspects that have to be covered are covered in too little depth to be of great use when the student moves on to college or university; and much of the knowledge students have to acquire is of little practical use. Most schools have too little experimental time for science and too few science laboratories; where laboratories exist they tend to be under-used because of the lack of depth in the syllabus.

The curriculum should be revised to allow for deeper study of a more limited range of subjects and aspects, and students should be given more choice of which subjects and aspects those are. The prospects of developing higher order thinking skills will then be greatly enhanced.

Thirdly, textbooks and other study aids still need to be improved. The review team recorded students' complaints about textbooks that were too old and too "monochrome", with few charts, pictures, diagrams and

illustrations. For example, one student asked how he could understand the course of a battle without a map of the battlefield in his textbook, particularly as the school's slow Internet connection made Internet search unfeasible. The lack of charts, diagrams, etc. may partly explain students' difficulties understanding non-continuous texts when assessed in PISA.

According to the TIMSS 2011 report, secondary students in Kazakhstan enjoy a better student-computer ratio than in many countries, and schools the team visited had reasonable if not generous numbers of computers and interactive whiteboards. However the potential of computers to support innovative teaching in schools is not yet being fully exploited. The team did not see evidence of their regular use in subjects other than computer studies, or of students being encouraged to use them to develop research skills, or of their use (widespread in Western countries) to help children with learning difficulties. As part of its modernisation effort the government is training teachers in "e-learning" – but when the team observed e-learning in action, the students seemed to be doing a traditional memory-based test of mathematical knowledge, except that the questions appeared on a computer screen rather than on a blackboard.

Better teaching aids and resources, more imaginatively used, could assist both the development of higher-order thinking skills and those students who struggle to learn with current textbooks and teaching methods. This will work only under the condition that teachers are given appropriate opportunities to learn how to make best use of these tools.

Finally, the present review team wishes to re-iterate a recommendation made in the 2007 OECD report on *Higher Education in Kazakhstan*: that a national curriculum should be developed for the 12th grade of schooling to be introduced shortly, that will equip Kazakhstan school-leavers with subject knowledge and skills comparable to those of 18-year-old school leavers in high-performing European countries.

Learning hours and timetable

Another perspective on the curriculum in Kazakhstan is gained by looking at the number of teaching/learning hours spent on the three main subjects, reading, maths and science, to see whether these are above or below international averages.

PISA 2009 asked participating students about their weekly learning time in minutes as part of regular school lessons. Kazakh students reported spending 198 minutes per week in lessons in their language of instruction (OECD average 217); 174 minutes per week in maths lessons (OECD average 214); and 290 minutes per week in science lessons (OECD average 202). Therefore, the weekly teaching time in the average OECD member country

is roughly the same for language of instruction and maths, and a little less for science. Students in Kazakhstan spend the least part of their time on maths, appreciably more on the language of instruction, and very much more on science. Indeed, according to students' reports, the time spent on science in Kazakhstan is 43% above the OECD average and 67% above the time spent on maths. Of all PISA participants, only Bulgaria and Uruguay have an equal or bigger gap between science time and maths time. Students in top PISA performer Shanghai-China spend 256 minutes on their language, 274 minutes on maths and just 202 minutes on science in the course of a week. Shanghai-China scored an average of 600 in maths and 575 in science: Kazakhstan's average scores were 405 in maths and 400 in science.

Because PISA is administered to 15-year-old participants within a country may be in different grades (some in the lower secondary level and some in the upper secondary level), the PISA 2009 report also records answers from lower and upper secondary students separately. In Kazakhstan, the upper secondary students spent 208 minutes per week (12 more than lower secondary) on their language of instruction, 178 minutes per week (5 more than lower secondary) on maths and 317 minutes per week (33 more than lower secondary) in science lessons, making the science time 78% more than the maths time. The OECD averages for upper secondary level are 208 minutes on language, 211 minutes on maths and 217 minutes on science. Shanghai-China's figures are 206 minutes, 223 minutes and 191 minutes respectively.

TIMSS 2011 tells a similar story to PISA as regards maths and science, though its currency is instructional hours on maths and science per year, reported by principals and teachers. Kazakhstan's hours per year are reported as 117 in 8th grade maths (all except four of the 42 participating countries have longer hours) and 251 in 8th grade science (again only four countries have longer hours); yet Kazakhstan was placed higher in maths (17th) than in science (20th). The top performer in TIMSS 8th grade maths, Korea, recorded 137 instructional hours on maths per year. The top performer in TIMSS 8th grade science, Singapore, recorded just 115 instructional hours on science per year.

There seems to be an imbalance between maths and science in the Kazakhstan secondary curriculum, particularly at upper secondary level. Also, the time invested in science does not seem to pay off in terms of results. The curriculum reform recommended here should aim to increase the effectiveness of teaching in science, reducing the number of hours devoted to it, and consider increasing the time spent on maths instead.

The school week and school year

The state curriculum in Kazakhstan requires lessons to be taught for six days a week, Monday through Saturday. Very few OECD member countries require students, teachers and education administrators to work six full days a week. During the team's fieldwork interviews with students and teachers, a strong view emerged that this schedule is very tiring, leaving students and teachers insufficient time for rest and private life, and should be changed. It proves particularly exhausting for teachers in two-shift schools, who teach through both shifts. The report on results of the Unified National Testing in 2012 by the National Centre for Educational Statistics and Evaluation (MESRK, 2012c) records that in the 2012 UNT, the higher the percentage of students studying on second shift, the lower the average UNT score.

One concern about moving to a five-day week may be the manageability of this change for double shift schools. The review team's initial discussions with some double shift schools during fieldwork suggest that it is feasible, even for them, but further research on this is needed, as well as reform of the present curriculum. It is hard to think of any other reform that would have a more positive effect on teacher morale and work-life balance. Student motivation to learn should also improve. There is no reason to expect that the quality of learning outcomes would suffer. Kazakhstan's private schools, which recorded higher average scores in PISA, already work five-day weeks.

Another important difference between state schools and private schools in Kazakhstan is that many private schools have terms of more even length. State schools have a three-month summer holiday during which a lot of learning is lost or forgotten, putting further pressures on students and teachers when they return to school. This long summer holiday is not necessitated by climatic conditions, as relatively few regions of Kazakhstan are unbearably hot throughout those three months; more public money would be saved by a longer holiday during the winter instead, when schools need heating.

A curriculum review, as already proposed, would give Kazakhstan the possibility of re-designing the curriculum for a five-day week, and adjusting term dates to avoid such a long summer holiday.

Parents and schools

The role of parents

In the Kazakh society, parents and family are regarded as extremely important and commonly take a keen interest in their children's education and educational development. They also play an important role at key decision points in the life of students. This traditionally important role of

parents in caring for their children and guiding their educational decisions is a reason why Kazakhstan regards orphans as a group with special needs who should have special provision made for them to compensate for their disadvantaged background.

Box 2.6. **Parental guidance and influence: the career choice of students in Kazakhstan**

According to school principals interviewed, a high proportion of students have only vague ideas of what careers they wish to pursue by the 9th grade, the year in which decisions critical to their future careers must be taken; and parents tend to be particularly influential at this stage. One principal told the review team that whether individual students left after 9th grade to go to college, or stayed in school to study for university, depended much less on the talent and potential of the student than on what the parents wanted their child to do. Another principal mentioned difficulties with parents who failed to understand that their children could not all be doctors or astronauts. No doubt all parents have their children's best interests at heart, but it is very likely that their advice will be influenced by their own experiences and choices, made when labour market conditions were different. In a fast-changing economy like Kazakhstan's, parents' views on better and worse careers to enter may have become out of date. Employer representatives interviewed by the review team mentioned that an over-supply of graduates in certain fields has made the job prospects of new graduates in those fields very uncertain, and that in a number of occupational areas, technician jobs obtainable with a college qualification are now much better-paid than graduate jobs. Yet even though this information is freely available on the Internet, it has not got through to most Kazakhstan parents; until it does, parental advice may conflict with children's best interests.

Source: OECD review team.

A possible reason why parents are so influential when students are making choices about their higher studies and future careers is that formal careers guidance to students in schools is very patchy. As far as the review team could discover, at the time of preparation of this report there was no general national policy or minimum standard describing what career information and guidance schools should provide. Some schools hold sessions at which representatives of professions such as doctors or lawyers talk to students; other schools bring in faculty staff from universities to answer students' questions about the programmes they offer. There seems to be no system, however, for ensuring that students are given – or told where to find – information on all the potential careers they may wish to pursue, including comparative

information on pay and employment prospects in different careers. Nor is there a system for ensuring that they have appropriate advice on the best way of acquiring the entry qualifications for their chosen career. (Which subject to study? Is college, or university, or college then university the best route? Which institutions offer the best preparation in my chosen subject/for my chosen career? Which institutions have courses sponsored by employers who may offer graduates jobs? If I wish to go to university X to study subject Y, which optional subject(s) should I choose to take in the UNT?)

Box 2.7. **Significance and elements of good career guidance**

As careers diversify, career choices and therefore career guidance are becoming both more important and more demanding. To meet this challenge, there needs to be a coherent career guidance profession, with personnel experienced in labour market issues and separated from psychological counselling. Guidance needs to be adequately resourced, with some assurance of pro-active one-to-one delivery of guidance at key career decision points. Guidance personnel need to have an independent base to underpin their objectivity, and be able to call on a wide range of information and web-based material. Strong links between schools and local employers are very important means of introducing young students to the world of work. Guidance initiatives also need to be carefully evaluated.

In Switzerland for example, career guidance and information sessions are mandatory in secondary education. All teachers receive some training on labour market opportunities. In grades 7, 8, and 9 students learn in their own schools about different career options and the main institutions for guidance and counselling Berufsinformationszentren, BIZ). The BIZ centres are free-standing institutions providing information and counselling for all levels of education and training. Students can meet with generalist career counsellors, and may then be directed to specialists in different fields. BIZ centres work closely with schools, and sometimes provide some services at the school rather than at the BIZ site.

Source: OECD (2010c), *Learning for Jobs*, OECD Publishing, Paris, pp. 75, 83. http://dx.doi.org/10.1787/9789264087460-en.

The career information and guidance available in secondary schools in Kazakhstan should be improved, including by the government promulgating a national minimum standard. As parents play such an important role in decisions on their children's career choice it would be desirable to provide career guidance to parents as well as students.

Parental involvement in schools

Every school has its Parents Committee. Parents Committees include community representatives and sometimes alumni. Almaty Education Department told the review team that Parents Committees in their region meet the Education Department regularly and have a role in principal appointments.

The team met parents during several school visits. They seemed supportive of the schools and to have few criticisms; but the schools concerned tended to be relatively advantaged schools. The national survey of 9th grade parents[5] (mentioned above) showed that:

- 40% of parents regularly go to school events and participate in class activities, while the rest only go to occasional teacher-parents meetings;
- 47% of parents discuss their child's problems with the teacher regularly, 51% sometimes and 2% never;
- Less than half of parents say they are interested in their child's school achievements;
- 75% of parents regularly do homework with their child;
- Of the parent survey questionnaires, 72% were filled in by mothers, 19% by fathers and the rest by other relatives.

PISA 2009 collected evidence from participating students' parents about their involvement in schools, but only from parents in eight OECD member countries and six partner countries. On average across the 8 member countries, parents reported that in the last academic year 78.5% of them had discussed their child's behaviour or progress with a teacher; 8.6% had volunteered in physical activities (e.g. sport) in the school; 17.7% had volunteered in extra-curricular activities; 10.1% had assisted a teacher in the school; and 14.9% had participated in local school government. It is always hazardous to compare results of different surveys that ask different questions, but it appears that the overall level of parental involvement in Kazakhstan and the eight OECD countries is broadly similar.

Research suggests that students perform better when parents, teachers and schools have high expectations for them. A driving force behind school expectations is parental pressure for the school to set high academic standards for its students (Epstein, 2001). PISA 2009 asked school principals whether the school experienced pressure to achieve high academic standards from "many parents", "a minority of parents" or "very few parents". In Kazakhstan, 13.2% of the students attend schools whose principals said "many", 67.5% attend schools where principals said "a minority" and 19.3% were in schools whose principals responded with "very few". Across the OECD, principals of 18.8%

of participating schools said "many", principals of 48.1% of participating schools said "a minority" and principals of 33.1% of participating schools said "very few". Therefore in Kazakhstan more principals than the OECD average (two-thirds) said "a minority", but fewer than the OECD average said "many" or "very few". Shanghai-China has a similar pattern, as does Korea. Other top performers, though, have different patterns. In Singapore parents seem to push harder for high standards than anywhere else: 48% of principals said "many" and 47.7% said "a minority", leaving just 4.2% saying "very few". Yet in Finland, only 2.9% said "many" and 24.9% said "a minority", leaving 72.3% – the highest percentage of any country – saying "very few".

There could be a number of reasons why parents in different countries exert differing amounts of pressure on schools to achieve high academic standards. The reasons may be cultural. In China, for example, even though parents care passionately about their children's results, natural deference to authority and fear of losing face may discourage pushiness. Conversely, the lack of such inhibitions in English-speaking countries may explain the high percentages of principals saying "many parents" in the United States, England, Ireland, Canada, New Zealand and Australia. Another reason why parents may not push for high standards is that they believe their children's schools are already achieving them. In Finland, which has been at or near the top of international assessment rankings for at least a decade and where it is widely known that only the best and most suitable graduates go into teaching, parents' belief is clearly justified. Moreover, whatever school they attend, the students have the same chance to succeed. In almost all other countries, including Kazakhstan, the following questions need to be asked and answered: "How good or bad are the results being achieved in each school? And how can parents be sure of knowing how well or badly their child is doing?" These questions will be addressed in Chapter 3.

Planned organisational changes

12th year of schooling

The Government of Kazakhstan intends to make quite radical changes in the school system when the 12th year of schooling is added. The SPED envisages that after the 10th grade, all students will take a new national test to identify their future learning path. Then 40% of students are expected to go on to colleges and the other 60% to a new type of specialist (specialisation) school or classroom for 11th and 12th grade students intending to progress to university. The model is to be fully developed and tested by 2015. However the new national test has not yet been developed and the Ministry of Education was unable to indicate what it will look like.

This new type of school or classroom is called *beyindik mektep,* which translates as "subject-oriented instruction". It seems likely that some existing schools, or their upper secondary classes, will be re-designated as *beyindik mektep,* and some new schools will be created, from scratch or on university premises (MESRK, 2010 and IAC, 2012). *Beyindik mektep* schools will provide 11th and 12th grade students with tuition in:[6]

- A common core of ten obligatory subjects: maths, natural science, language of instruction, the other national language (Kazakh/Russian), foreign language, information technology, physical culture, Kazakhstan in a modern world, man and society, elementary military training. These will take 60% of tuition time.
- Other subjects specific to the field of specialist study; the fields students choose between are *(1)* natural science and maths, *(2)* social science and humanities and *(3)* technological. The first two of these are the same as the "profiles" students currently work to, in the "profile schools" already mentioned. These subjects will take 30% of student time.
- Applied subjects and interests in the field of specialist study. These will take 10% of tuition time.

In principle, the creation of new, or newly-designated, upper secondary schools or classes for the 11th and 12th grades would create a new and more promising setting to address the current shortcomings of the last few years in school. The estimation that these schools or classes would cater for 60% of the students leaving 10th grade, these being the students planning to go on to university, while the other 40% would go to college, seems broadly consistent with the proportions now staying on at school and leaving for college after 9th grade, as far as can be judged from the Background Report.

It is less obvious how promising the intention is to provide this new setting through a network of profile or specialisation (*beyindik mektep*) schools. The declared aims of establishing the profile schools are:

- To improve and modernise school conditions and facilities (laboratories, workshops, media rooms, common rooms etc.);
- To create a suitable environment for enhancing teachers' skills and qualifications;
- To adopt international practice.

The first two of these aims are unarguably worthwhile, though there could be debate about why a new type of school has to be created to achieve them.

The third aim is to adopt international practice. The *beyindik mektep* concept is said to be based on the subject-oriented instruction provided by high schools in the United States, *lycées* in France and *gymnasium*s in Germany. However, all of these are rather different from Kazakhstan's intended model. Even if the *beyindik mektep* concept were an exact copy of the Unites States, German or French upper secondary system, that would not necessarily make it right for Kazakhstan. There are real dangers in "buying in" unmodified international models: systems that work well in one country may not suit another country with a different economy, culture and educational heritage.

American high schools are large establishments catering for students of all abilities and interests; there is no entry test and high schools allow individual students to choose from a very wide range of compulsory and elective subjects, ranging from maths, sciences, languages and humanities to career or technical, performing and visual arts options. In Germany, there are three different types of school catering for different orientations (*gymnasium* for students heading for academic studies at university, *realschule* leading to high-level and highly-esteemed technological studies and *hauptschule* for those intending to join the labour market at lower levels) rather than the two types – *beyindik mektep* school or college – envisaged in Kazakhstan; and the nearest German school type to the United States high school is the *Gesamtschule,* or comprehensive school which replaces all three of the other types. In France, similarly, there are three different types of *lycée*, the *lycée général,* the *lycée technologique* and *the lycée professionel;* but in most areas these three types are combined into one large standard *lycée,* allowing students a free choice of career path.

The review team suggests that, to meet the needs of its students and of the national economy, Kazakhstan should purpose-build a 12-year education model which keeps good features of the present system, avoids perpetuating its weaknesses, and motivates students to acquire the skills that will maximise their contribution to the country's future.

Issues concerning the 12th school-year reform

The review team has questions and concerns about several aspects of the current reform plans which – as explained below – might lead to a perpetuation of weaknesses in the current system, rather than supporting its strengths.

A first point to consider is the strategic choice of a way decisions will be made on which students go to *beyindik mektep* schools and which go to college after 10th grade. Such decisions should respect, as far as possible, student choices. Certainly, safeguard mechanisms should be put in place to

ensure that students are not below a *minimum* threshold standard to avoid admitting those with no foreseeable prospect of completing the *beyindik mektep* studies and graduating from the 12th grade successfully. Chapter 3 will recommend introducing a national assessment for all students at the end of 10th grade, which can be used (along with criterion-based teacher assessment of any subjects not assessed nationally) to set that *minimum* threshold standard.

The suggestion to set minimum standards for entry is not to be interpreted as a recommendation to introduce yet another, competitive, standardised national testing after grade 10 comparable to the present UNT. In fact, a test-based selection by ability at this point of the students' educational path would be a very unfortunate choice. It will reinforce the prevailing yet unfortunate conviction among students and their parents, that university is the only respectable option for a young person's future and that the pathway to colleges is for people not able and smart enough to obtain an academic degree. Such a conviction is already undermining the efforts of employers and business people in Kazakhstan to secure parity of esteem for professional, technical and technological training and to encourage high-calibre students to undertake such training. Also, it would be unfair to students in the many groups affected by inequities in the present system – they will be less likely to succeed in the entry exam because, through no fault of their own, they have been less well prepared. Turning Kazakhstan's largely comprehensive system into a selective system could even increase social inequities and depress performance overall. In the next chapter this report describes how the prospect of the high-stakes but narrowly-focused UNT test skews teacher and student priorities and inflicts stress and overload on students and teachers throughout the two years of upper secondary school; introducing another high-stakes and narrowly-focused ability test at the end of lower secondary school would extend these skews and stresses to the last two years of lower secondary school as well. Last but not least, even if there would be a plan to introduce standardised admission exam for the profile schools, such an exam has not yet been designed, let alone developed and trialled – it is highly doubtful that a reliable, valid test capable of the necessary fine distinctions between candidates with marginal differences in performance could be ready in time for the implementation of the 12th year reform.

A second point to consider is that the curriculum envisaged for *beyindik mektep* schools and classes does not address the review team's concerns about the secondary curriculum generally: that there is an overload of academic subjects, not enough time for creative subjects and too little room for student choice. If the ten compulsory subjects are all to be taught within 60% of curriculum time, this can only aggravate the existing problem of too many subjects being taught in too little depth. If all compulsory subjects are

taught to all students for the same total time, this implies that every student, regardless of field, will be taught every compulsory subject in the same way and to the same depth. In practice this means that students who choose to specialise in maths and science, for example, will find all their field subjects within the compulsory subject time allocation while those who choose to specialise in social science and the humanities may find all or most of their subjects outside that allocation. The review team recommends revisiting and redesigning the curriculum plan for *beyindik mektep* schools, so that each of the three fields has its own separate, well-balanced curriculum allowing students to study their field subjects in the greatest depth, to study other subjects deemed essential but less relevant to their field in less depth, and still have a reasonable percentage of curriculum time left for elective subjects and activities. Other curriculum recommendations made earlier in this chapter are also relevant.

A third point that needs to be raised is that the current plans for 12-year education do not yet encompass all the other changes that would be needed to create an effective and relevant technology studies programme in upper secondary schools. Although the authorities in Kazakhstan have rightly recognised the need to encourage more young people to acquire qualifications related to technology, and have named technology as a subject field in its own right alongside maths/natural science and social science/humanities, to be effective and relevant the technology studies programme must offer high quality and challenge to even the most able of *beyindik mektep* students. The programme must also be relevant to the needs of future employers; this is far more important in technology than in maths/natural science and social science/humanities, where the requirements of universities are of more immediate (if not longer-term) relevance. It must also offer extensive opportunities for practical work on up-to-date, industry-standard equipment, and train technology students to a standard competitive with graduates from a German *realschule* or French *lycée technologique.*

Achieving these objectives in the *beyindik mektep* schools will be particularly difficult for Kazakhstan, because it is doubtful whether they are now being achieved by any public institution – school or college – which is administered by and offers programmes devised by the Ministry of Education. At present, Kazakhstan has no "profile schools" teaching technology. It is also doubtful that there is a critical mass of subject teachers skilled in teaching technology subjects in schools (except for ICT). During fieldwork, the review team learned that only the new pathfinder professional and technical colleges being set up by Kasipkor (an educational holding company for these colleges) will have programmes designed in conjunction with employers and aligned with international standards. Kasipkor has several partners among the public colleges who try to follow their best practice, but are prevented from doing so in full by the legal requirement to follow Ministry curricula. Curricula

Kasipkor has already developed could not simply be "bought in" by *beyindik mektep* schools, because they are designed for students with at least 11th grade education.

Another potential barrier to making the technology field an attractive choice to talented students is Kazakhstan's decision to go for a 12-year education system with two different types of institution, *beyindik mektep* schools and colleges. Student choices of pathway – and, even more, parental choices for their offspring – are inevitably influenced by perceptions of institutions' respective status. Germany and France have three types of institution, which enables their technological schools to be a highly respectable middle option. The Unites States has one, which avoids issues about the respective status of different paths; in practice France also has one, in the many areas served by standard *lycées,* as does Germany, in the rather fewer areas with *Gesamtschulen*. Under Kazakhstan's planned system, the danger is that – unless action is taken to ensure that it is high-quality, high-demand and exciting – the technology programme, being nearest in content and career terms to the professional training others get at college, will be perceived as the least demanding and lowest status field, taken mainly by students who just scraped entrance to the *beyindik mektep* schools.

The review team recommends the authorities to consider whether it would be feasible to set up *beyindik mektep* technology schools as institutions that are separate from those for maths/natural science and social science/humanities, as is the case in France or Germany. If or where this is not feasible because of limited numbers of upper secondary students, Kazakhstan should consider combining upper secondary schools and colleges, as in United States high schools and the United Kingdom's sixth form colleges. Whichever configuration is decided upon, it is recommended that separate curricula are developed for each of the three *beyindik mektep* fields. It is also recommended that for the technology field the Ministry of Education works with Kasipkor and employer representatives to develop a wholly new, high-quality, exciting and business-relevant curriculum, and a new programme to train teachers to teach it effectively. Finally, whichever configuration is decided upon it is recommended that decisions on the institution individual students attend after 10th grade should take into consideration student choices, provided that they meet the minimum threshold standard for their chosen pathway in the national assessment proposed in the next chapter.

Recommendations

Equal educational opportunities

- The government of Kazakhstan should declare its commitment to the principle that all students in Kazakhstan, whatever their background, are capable of achieving high standards and need to do so; and should make it a top national priority to tackle the long tail of educational under-achievement revealed in PISA. This will involve developing plans and programmes to ensure that students at risk of under-achievement are identified early, and that schools and teachers take effective steps to get them back on track. Under-achievers in less favoured schools deserve (and need) good teachers and good-quality resources as well, and the authorities should ensure that they can get them.
- Plans and programmes to identify and help academic strugglers and slower learners should specifically aim to tackle under-achievement and equalise outcomes for the following groups of students in secondary school: students in small schools and rural locations; lower-attaining boys; students in Kazakh-language schools; students in lower-attaining regions; and students from less socio-economically advantaged families.
- In the interests of students in small schools and rural locations, it is also recommended that the government consider setting minimum school size and teacher quality standards, at least for secondary schools; allow small communities to have a school only if those standards are met; and if not, provides students with free, convenient transport to schools elsewhere and with distant learning opportunities.
- As children with special needs and disabilities continue to suffer from severely unequal opportunities, it is recommended that the government's plans to make inclusive education a reality should be re-visited and made more effective.

Effectiveness of teaching and learning

- The Government of Kazakhstan should undertake a full review and revision of the current secondary school curriculum, which has not proved effective. It has not delivered high performance, enabled all students to achieve a minimum level of functional literacy and numeracy or fostered higher-order thinking skills.
- Problems to be addressed in the present curriculum include: the overload of academic subjects; suppression after 7th grade of other

subjects important for the development of imagination, creativity and collaborative skills; the over-emphasis on theory rather than practical application, which among other disadvantages makes the curriculum difficult for academic strugglers to access and engage with; and (by international standards) the high proportion of teaching time devoted to science – not paying off in results – and low proportion devoted to maths.

- Objectives when the curriculum is revised should include: enabling secondary, particularly upper secondary, students to study a more limited range of subjects and aspects of subjects, so that they may study them in greater depth; giving students within each school more choice of which subjects they study; giving schools more flexibility to adjust the balance between theoretical and practical elements within subjects; and referring specifically in curriculum documents to the higher-order thinking skills the government wishes teachers to teach and students to acquire.
- Better teaching aids and resources should be developed, and teachers trained to use them more imaginatively, for two purposes: to assist the development of higher-order thinking skills, and to cater for those students who struggle to learn with current textbooks and teaching methods.
- A national curriculum should be developed for the 12th grade that will equip Kazakh school-leavers with subject knowledge and skills comparable to those of 18-year-old school leavers in high-performing OECD countries.
- To help reduce unproductive overload on students and teachers, it is recommended that Kazakhstan consider moving to a five-day school week. To avoid the learning loss inevitable during Kazakhstan's current three-month summer holiday, it is recommended that the school calendar be adjusted to incorporate terms and holidays of more even length.
- To help ensure that students pursue the learning opportunities most relevant to their future careers – particularly if or when they have greater choice in the subjects they study – it is recommended that the career information and guidance available in the secondary schools of Kazakhstan be improved, including by the government promulgating a national minimum standard. As parents play such an important role in decisions on their children's career choice it would be desirable to provide career guidance to parents as well as students.

Planned organisational changes

- Kazakhstan should purpose-build a 12-year education model which keeps good features of the present system, avoids perpetuating its weaknesses, and motivates students to acquire the skills that will best serve the country in future.
- The review team endorses government plans to create new, or newly-designated, upper secondary schools or classes for the 11th and 12th grades, known as *beyindik mektep* or "subject-oriented instruction" schools, for an estimated 60% of 10th grade leavers that are likely to go on to university.
- To minimise risk that student choices of pathway will be unduly influenced by the perceived status of different institutions and to give the new technology subject field the importance it deserves, the government is recommended to consider setting up technology schools separately from the *beyindik mektep* schools for students of maths/natural science and social science/humanities, and/or merging upper secondary schools and colleges so that all pathways are available in one institution.
- It is also recommended that separate curricula be developed for each of the three *beyindik mektep* subject fields. For the technology field, the Ministry of Education should work with Kasipkor and employer representatives to develop a high-quality, exciting and business-relevant curriculum and a new programme to train teachers to teach it effectively.
- Whatever the final shape of the upper secondary system, it is recommended that decisions on which institution individual students attend after 10th grade should depend primarily on student choice, subject to meeting the minimum threshold standard for their chosen pathway in the national 10th grade assessment proposed in the next chapter.

Notes

1. Where these rates are known – net primary enrolment rates are not available for all of the countries.
2. Lyceum here refers to those general education schools, which the Law on Education defines as "educational institution implementing lower and upper secondary education programmes providing extended and advanced education in science and mathematics" (Article 1).
3. See, for example, *Lessons from PISA for the United States*, Strong Performers and Successful Reformers in Education (OECD 2011b). http://dx.doi.org/10.1787/9789264096660-en.
4. www.telegraph.co.uk/education/9159802/Music-helps-children-learn-maths.html downloaded from Daily Telegraph website 22 February 2013.
5. *Factors Influencing the Quality of 9th Grade Students' Knowledge* (NCESA, 2012).
6. At the time of preparation of this report the 12-year model of schooling was still being piloted. The outline described here might be subject to adjustments before its nation-wide implementation.

Annex 2.A

The hierarchy of thinking skills

Skill	Assessment focus	Useful verbs	Typical questions
Knowledge	Can the student recall or remember the information?	Tell, list, describe, relate, locate, write, find, state, name.	What happened after…? How many…? Who was it that…? Can you name the…? Describe what happened at…? Can you tell why…? Find the meaning of… What is…? Which is true or false…?
Comprehension	Can the student explain ideas or concepts?	Explain, interpret, outline, discuss, distinguish, predict, restate, compare, describe.	Can you write in your own words…? Can you write a brief outline of…? What do you think could have happened next? Who do you think…? What was the main idea…? Can you distinguish between…? What differences exist between…? Can you provide an example of what you mean by…? Can you define…?
Application	Can the student use the information in a new way?	Solve, show, use, illustrate, construct, complete, examine, classify.	From the information given, can you develop a set of instructions about…? Would this information be useful if you had a…? Do you know another instance where…? Could this have happened in…? Can you group by characteristics such as…? What factors would you change if…? Can you apply the method used to some experience of your own? What questions would you ask of…?

Skill	Assessment focus	Useful verbs	Typical questions
Analysis	Can the student distinguish between the different parts?	Analyse, distinguish, examine, compare, contrast, investigate, categorise, identify, explain, separate, advertise.	What was the underlying theme of…? How was this [similar to] [different from]…? If… had [not] happened, what might the result have been? What do you see as other possible outcomes? Why did… changes occur? Compare your… with that presented in… Can you explain what must have happened when…? What are some of the problems of…? Can you distinguish between…? What were some of the motives behind…? What was the turning point in the [game][story]?
Synthesis/ creation	Can the student create a new product or point of view?	Create, invent, compose, predict, plan, construct, design, imagine, propose, devise.	Design a… to… Compose a song about… Can you see a possible solution to…? If you had access to all resources how would you deal with…? Devise your own way to deal with… What would happen if…? How many ways can you…? Create new and unusual uses for… Write a new recipe for a tasty dish Develop a proposal which would…
Evaluation	Can the student justify a position or decision?	Judge, select, choose, decide, debate, verify, recommend, assess, rate, determine.	Is there a better solution to.? Judge the value of…. Can you defend your position about…? Do you think… is a good or a bad thing? How would you have handled…? What changes to… would you recommend? How would you feel if…? How effective are…? What do you think about…?

Source: Adapted from Bloom's Taxonomy at www.teachers.ash.org.au/researchskills/dalton.htm.

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Chapter 3

Assessment of learning outcomes and teaching quality in Kazakhstan

Chapter 3 looks at the three principal ways of assessing learning outcomes in formal education in Kazakhstan: assessment by (class) teachers; external assessment at the end of the 9th grade; and the Unified National Test (UNT) – a standardised test administered at the end of grade 11 which serves as both school leaving exam and admission exam to post-secondary (tertiary and non-tertiary) education. The chapter also offers an analysis of the Complex Test (CT) which is taken by certain categories of students who did not attend upper secondary school but who wish to enrol at university. The chapter then suggests improvements in the quality, relevance and frequency of assessment (both classroom and external) and emphasizes the need for better use of assessment results.

The aims and purposes of assessment

The OECD publication *Synergies for Better Learning: an International Perspective on Evaluation and Assessment* (OECD, 2013), which compares the experience of 28 OECD countries, observes that governments and education policy makers are increasingly focused on the evaluation and assessment of students, teachers, school leaders, schools and education systems. These are used as tools for understanding better how well students are learning, for providing information to parents and society at large about educational performance and for improving school, school leadership and teaching practices. Well-designed assessment frameworks can play a key role in building consensus about education goals, standards and criteria to judge proficiency. They can also be a lever to drive innovation in education by signalling the types of learning that are valued. Establishing clarity about the purposes and appropriate uses of different assessments is important to ensure that assessment frameworks optimally contribute to improvements at the classroom, school and system levels. Building the assessment competencies of students, teachers and other stakeholders in the education system is crucial to ensuring the effective implementation of such frameworks. For assessment to be meaningful, it must be well-aligned to the type of learning that is being evaluated. For example, while simple knowledge tests are well-suited to assess the outcomes of traditional teaching approaches based on rote learning and knowledge transfer, such tests are less adequate when it comes to assessing complex competencies. Coherent assessment frameworks should aim to align curriculum, teaching and assessment around key learning goals and include a range of different assessment approaches and formats, along with opportunities for capacity building at all levels. (OECD, 2013, p. 13, 214).

Assessment of student performance

The performance of students in primary and secondary schools in Kazakhstan is assessed in three ways:[1]

- By their class teachers: regularly on a rolling basis in every grade, and at the end of grade 9 in the form of a lower secondary school leaving examination;
- Externally through the External Assessment of Academic Achievement (EAAA) of a sample of 9th grade students
- Externally through the Unified National Test (UNT), the combined, standardised school-leaving and university entry test taken by almost all students at the end of 11th grade.

Classroom assessment by teachers

Throughout compulsory schooling, teachers regularly assess student performance in classroom, as well as at the end of grade 9 in the form of a school leaving examination in three core subjects (language of instruction, algebra, and Russian in schools with Kazakh language of instruction, or Kazakh in school with language of instruction other than Kazakh), and in two elective subjects. Teachers assess their students by using a 1 to 5 scale, and a set of general didactic criteria that were first developed during Soviet times is supposed to provide them with broad and subject-independent guidance to classroom assessment. In practice, teachers' judgments are based on comparing each student's achievements with those of other students in the same class. This "norm-referenced" approach to classroom assessment has many disadvantages. There are no differentiated criteria by which to assess and compare learning outcomes in various subjects, which can be explained to students and their parents. Teachers tend to award grades by benchmarking against the median, highest and lowest level of student knowledge in their class; there can be no assurance that two students given the same mark by different teachers in different schools are performing at the same level. The grades awarded to students do not provide a clear picture of the knowledge and skills they have acquired (or have not yet acquired) in specific aspects of the subject being assessed, so the grades cannot be used to track students' progress over time or to identify knowledge and skills gaps. The results of the assessments cannot validly be used to compare the performance of students in the class to the performance of students in other schools, or to national expectations of students in their grade. Nor can they be validly used to determine whether a pupil has mastered all the knowledge and skills they will need in the next grade.

These disadvantages apply to all norm-referenced assessment systems, but in Kazakhstan the review team noted an additional problem. Examination of a number of students' workbooks[2] suggested that teachers are very reluctant to use the lower end of the 5-point scale. Whether for fear of de-motivating students or of reflecting badly on their own teaching, they seemed not to use scale points 1 or 2 – with the result that large numbers of students, presumably including both average students and the lowest attainers in each class, were lumped together on point 3. This is not a normal ability distribution and not helpful in identifying those with the greatest learning difficulties. And if under-performing students are not being told that their work is below standard, they have no reason to strive to improve their own performance.

The disadvantages described above can all be overcome by using appropriate methods of "criteria-based assessment", training teachers to use them effectively. Criteria-based assessment has already been introduced

in Kazakhstan and is operating in the leading private schools and in the Nazarbayev Intellectual Schools – NIS (NIS, 2012).

A criteria-based assessment model compares students' achievements with clearly defined, collectively developed criteria, which are known to all participants of the process (teachers, students, their parents, education school administrators) in advance. The criteria used are chosen to correspond with the goals and content of the students' education. The criteria are used in both "summative assessment" – assessment undertaken at the end of a period of education (e.g. primary school) to establish and define the level of knowledge and skills reached by that point – and "formative assessment". Formative assessment is undertaken by teachers in the course of their classroom teaching, to establish the level of knowledge and skills currently reached by each student; what that student already knows and can do or, conversely, what they have yet to learn; and how far they have progressed towards their learning goals and objectives. Summative assessment is assessment of past learning, while formative assessment is assessment for future learning.

Criteria-based assessment is fairer to students than the traditional method applied in Kazakhstan. It compares students' achievements to objective standards based on real learning goals stated in advance, rather than to subjective standards based on how well fellow students do. It reflects on the quality of particular work rather than the student's general ability, enabling teachers to justify their marks, whether good or bad, more easily. It can be used to measure progress along a trajectory from each student's individual starting point. It can increase student motivation for developing skills to achieve the expected outcomes. And, by setting up a constructive dialogue between pupil and teacher on the basis of shared goals, it can improve the quality of teaching and learning. In the *PISA in Focus* policy paper on grade expectations referred to earlier,[3] OECD set out a list of "effective marking practices". The first two were "Marks should communicate clear and useful information with the purpose of promoting learning" and "Marks should be based on clear and specific criteria, measuring achievement against pre-established goals".

For criteria-based assessment systems to achieve all that they promise a number of conditions need to be satisfied. First, national criteria should be in place which state clearly the level of knowledge and skills students are expected to reach by the end of each grade and stage of their learning process. Second, there should be a suitable "measuring stick" or common currency with which to measure the steps students take towards their learning goals and record the levels of attainment they reach, from the lowest to the highest.[4] Third, teachers need to be trained to use the assessment system effectively. This involves training them both to make accurate assessments of the point students have reached – which in turn will involve other experienced teachers

checking or moderating their assessments, at least initially or in a sample of cases – and to use the results constructively to diagnose what a student has already learnt and to address knowledge and skills gaps effectively. Fourth, to make the results of assessment and measurement meaningful, it must be possible not only to compare an individual student's attainment and progress towards national expectations, but also to compare their attainment and progress to that of other pupils, within the school, regionally and nationally. It is even better to be able to compare results to those of other pupils with similar characteristics.

To permit and enable these comparisons, there need to be national or nationally-compatible systems in place to collect assessment results and information on pupil characteristics from schools, generate user-friendly comparative information and disseminate this to education stakeholders such as parents. Parents should receive it either privately from their children's schools or from published sources or both. Parents will then have the information they require to track the progress of their children and to engage in a discussion with their children's school on improving results. Examples of such systems can be drawn from several OECD countries: Box 3.1 describes the system in England. Putting criteria-based assessment systems in place in primary and secondary schools, having established the necessary conditions, could make a very important contribution to improving teaching quality and raising standards in Kazakhstan schools and classrooms.

Box 3.1. **Criteria-based assessment in England**

In England, student attainment is assessed throughout schooling. The use of defined criteria at all stages enables the assessment system to fulfil its four purposes: to optimise the effectiveness of pupils' learning and teachers' teaching; to hold individual schools accountable for their performance; to provide parents with information about their child's progress; and to provide reliable information about national standards from one year to another. The assessment system involves both summative assessment (assessments conducted at a point in time to measure student attainment) and formative assessment (ongoing assessments conducted by class teachers to monitor how student learning is progressing).

Summative assessment

Criterion-based assessments are conducted at the end of each stage of education, in different ways suited to the students' age. These assessments follow nationally standardised procedures. The results are used by schools, shared with parents, collected to inform national policy and in some cases published.

Box 3.1. **Criteria-based assessment in England** *(continued)*

At the end of the Early Years Foundation Stage, when children are aged 5, their teachers use ongoing observation of daily classroom activities and events to assess attainment against defined Early Learning Goals, recording their judgments on each child in an **Early Years Foundation Profile**. The Profile shows whether that child has reached, not yet reached or exceeded the expected level in three prime areas of learning (communication and language; physical development; personal, social and emotional development) and four specific areas of learning (literacy; mathematics; understanding the world; expressive arts and design). The Profile also describes how the child displays three learning characteristics (playing and exploring; active learning; creating and thinking critically). To ensure that different teachers adopt the same criteria, they all work from the same guidance handbook and some assessments are moderated (independently checked to ensure that ratings are consistent with recorded observation evidence).

In year 1 of studying the National Curriculum, when children are aged around 6, they take a **phonics screening test*** to check whether they have the basic linguistic skills needed for reading. The aim is to confirm whether children have learnt phonic decoding to an appropriate standard and to identify those who need extra help. The phonics screening test is a list of 40 words (distributed to all schools by the Department for Education) that a child reads aloud to their teacher on a one-to-one basis. Children who do not meet the required standard take the test again the following year. Children's results are reported to their parents but not made public.

Towards the end of year 2, when children are aged around 7, the end-of-**Key Stage 1 assessment** takes place. Statutory National Curriculum tasks, and nationally-set tests in reading, writing and mathematics, are administered by classroom teachers to almost all pupils as part of regular teaching and learning. Teachers use the tasks and tests, along with other classwork evidence, to inform their own assessments of the National Curriculum level each child has reached. Teacher assessment results are reported to each child's parents and collected in regional and national data systems, but are not made public. (Pupils who have particularly severe special educational needs are assessed in a different way. A special teacher assessment system called P scales has been devised to measure and record their smaller steps of progress.)

Towards the end of year 6, when children are aged around 11 and in their last year of primary school, the end-of-**Key Stage 2 assessment** takes place. All pupils (except those with the most severe special educational needs, as explained above) take nationally-set tests in reading comprehension; spelling, punctuation and grammar (new in 2013); and mathematics. Tests are externally marked. The former writing test has now been replaced by teacher assessment. Test results and teacher assessment results are reported to each child's parents

Box 3.1. **Criteria-based assessment in England** *(continued)*

and collected in regional and national data systems. They are also made public, appearing in national Achievement and Attainment tables (published by the Department for Education) which present them school by school, enabling the performance of different schools to be compared. For each school the tables show the school's context, the pupils' characteristics, the National Curriculum levels they attained, how many pupils reached or exceeded expected standards, how much progress the pupils had made since they were assessed at the end of Key Stage 1, and the value added by each school.

The end-of-**Key Stage 3 assessment** takes place when pupils are aged around 14. It is based entirely on teacher assessment, although teachers may use nationally-set "optional tests" to inform their judgment. Teachers are required to base their judgments on the level descriptions in the National Curriculum, using their knowledge of a pupil's work over time to judge which level description is closest to the pupil's performance; and to make an overall assessment of the levels pupils have reached in every subject studied, with a more detailed assessment for English, mathematics, science and modern foreign languages. Teacher assessment results are reported to each child's parents and collected in regional and national data systems, but are not made public.

Criteria-based summative assessments also take place when pupils are around 16 and around 18, based on their results in **national exams** known as GCSEs and A levels respectively. National Achievement and Attainment tables are published showing school-by-school performance at both these stages. The tables giving the results of schools and colleges in GCSE or equivalent exams show progress and value-added since the Key Stage 2 assessments at age 11. The tables showing the results of schools and colleges in A level or equivalent exams show progress and value-added since pupils took GCSEs at age 16.

Formative assessment

Formative assessment is, in brief, the use of assessment to give the learner and the teacher information about how well something has been learnt so that they can decide what to do next. In England, teachers make extensive use of formative assessment – also known as "assessment for learning" – between summative assessments, both to assess whether pupils are on track to reach the nationally-set standards expected for their age, and to check pupils' progress against their own locally-set individual achievement targets. Teachers find the criteria on which to base their formative assessments in the comprehensive and specific statements of knowledge and skills in the National Curriculum level descriptors (for pupils up to 14) and in the syllabuses of the GCSE, A level and equivalent exams students will be taking (for pupils over 14).

Box 3.1. **Criteria-based assessment in England** *(continued)*

National Curriculum levels are made up of sub-levels, and systems have been devised to translate sub-levels into numbers of points. The results of formative assessments up to age 14 can therefore be expressed in terms of the number of sub-levels, or points, by which students have progressed in a particular subject in the course of a term or a year. Teachers, schools and educational administrators can use the currency of sub-levels and points to compare the attainment and progress of their students to regional and national averages, to report the results of formative assessment to students and their parents, and to discuss achievement against targets with individual students.

Source: developed by the review team drawing on Department for Education, England, website: www.education.gov.uk/schools/teachingandlearning/assessment (accessed 15 March 2013).

*"Phonics is a method for teaching reading and writing the English language by developing learners' phonemic awareness – the ability to hear, identify, and manipulate phonemes – in order to teach the correspondence between these sounds and the spelling patterns (graphemes) that represent them. The goal of phonics is to enable beginning readers to decode new written words by sounding them out, or in phonics terms, blending the sound-spelling patterns. Since the turn of the 20th century phonics has been widely used in primary education and in teaching literacy throughout the English-speaking world. More specifically synthetic phonics is now the accepted method of teaching reading in the education systems in the United Kingdom and Australia." (http://en.wikipedia.org/wiki/Phonics). For more information see also www.education.gov.uk/schools/teachingandlearning/pedagogy/a00198207/faqs-year-1-phonics-screening-check (accessed 30 May 2013).

Chapter 2 recommended that curricula for both lower and upper secondary schooling be reviewed and revised, in time for the introduction of the 12th grade and associated changes in the schooling system. Definitions in curricula and syllabuses of what students are required to learn should always be accompanied by "success benchmarks", defining how their teachers will know that they have learnt it. Therefore, assessment criteria should be an integral part of the new curricula and syllabuses developed for every grade for all subjects to be taught in 12-year education; documents describing the new curricula and syllabuses should include or attach the assessment criteria to be used at every stage; and criteria-based assessment should be introduced simultaneously with 12-year curricula and syllabuses.

At present, few teachers in Kazakhstan outside the NIS schools have been trained to use criteria-based assessment effectively. While it is crucial that they should have been trained to use it by the time the 12-year model is introduced in all secondary schools, it would be helpful to start their training

as soon as possible. The NIS criteria-based assessment system can be used until curricula and syllabuses are revised as recommended.

Chapter 2 also recommended referring specifically, in documents describing the new national curricula, to the higher-order thinking skills the government wishes teachers to teach and students to acquire. Assessable success criteria need to be defined for those skills too.

A recent OECD working paper, "Progression in student creativity in school" (Lucas et al., 2012), offers a prototype tool for assessing pupils' creativity in school, shown in Figure 3.1. This assessment tool maps creative habits of mind along five dimensions: inquisitive; persistent; imaginative; collaborative; disciplined (each dimension including three sub-dispositions). The findings of two field trials in English schools show that use of this tool led teachers to be more precise and confident in developing their pupils' creativity, and learners to be better able to understand what creative thinking entails and to record evidence of their progress.

Figure 3.1. **Prototype tool for assessing pupils' creativity in schools**

Source: Lucas, B. et al. (2012), *Progression in Creativity: Developing New Forms of Assessment*, Background Paper for the OECD Conference "Educating for Innovative Societies".

External assessment

In the PISA 2009 tests, students in school systems that used standards-based external examinations performed, on average across OECD countries, 16 points higher than students in school systems that did not use these examinations. In most of these school systems, the external exams have real-world consequences for the students, such as determining whether they may proceed to the next stage or year of education or the higher study institution or career of their choice. When exams are "high stakes" students are more motivated to acquire the knowledge and skills needed for a pass or good mark. Therefore, a very effective way for education systems to encourage students to master the knowledge and skills their country needs is to test for this knowledge and these skills in a high-stakes external exam, or several exams taken as they progress through school. Standardised, externally-set tests ensure that every student taking the test is being assessed on identical criteria, particularly if they are also externally marked using a common marking scheme.

External assessments up to 9th grade

Until 2011, the education authorities of Kazakhstan were carrying an *Intermediate State Control* assessment in grades 4 (one subject) and 9 (three subjects). The Control assessment was discontinued in 2012 with the introduction of the External Assessment of Academic Achievement (EAAA), which only covers grade 9.

In 2012, the government conducted an evaluation, or monitoring study, of student performance in mathematics and natural sciences, involving 2 761 students in the 5th grade or 0.6% of total 5th grade enrolment for that year (NSA, 2012) and 2 521 students in the 9th grade or 0.5% of total 9th grade enrolment for that year (NSA, 2012) in 96 schools, their principals and teachers. As the report on the results explains, "the study's focus was on the factors influencing the quality of student learning and possible ways to improve learning efficiency", and it was "developed using international best practice approaches". It was not primarily intended as an assessment of school and student performance, but more as an aid to quality teaching for practitioners: the report observed that it "included logical tasks for other schoolchildren to solve and for subject teachers to use as examples to develop their own tasks". Therefore it will be mainly discussed under the next headings.

Quality and relevance of teaching

The only true external assessment of student and school performance, undertaken before the point in time when the UNT is administered, is now the External Assessment of Academic Achievement (EAAA) for students

in the 9th grade, the grade typically most involved in PISA assessment in Kazakhstan.[5] The EAAA was introduced for the first time in 2012. Its aims are to assess – independently of the assessment done by teachers in schools – the quality of educational services and effectiveness of the education process and determine how well the students learn the curricula of basic secondary education. The 2012 assessment was taken by 37 799 students in 653 schools, chosen by taking a 10% sample of the schools in each region: the number of schools per region varied from 8 in Astana City to 77 in South Kazakhstan. Four subjects were assessed (language, history of Kazakhstan, maths and chemistry); the subjects were only announced just before the test, to discourage "drilling" (intensive preparation specifically for the test) by teachers. The assessments were not "high stakes" for the students participating, i.e. had no implications for their future careers. The government published the 2012 results in the report *Analysing Results of the External Assessment of Academic Achievement of 9th-grade Students* (MESRK, 2012a).

The review team sees considerable merit in having standardised national tests administered at the end of each phase of education (in Kazakhstan's case, at the end of primary school, currently the 4th grade, and at the end of lower secondary school, currently the 9th grade but in future the 10th grade). This is particular valuable where, as in Kazakhstan at present, there are currently no other standardised tests in the system. There will be greater public trust in the results if the test questions have not been seen by the students beforehand and if they are marked by teachers other than the students' regular teachers. Together with the outcomes of criteria-based classroom assessment by teachers, testing at the end of primary school can play a very important role in the earlier identification of academic strugglers and potential under-achievers. By the end of 9th grade it will be far too late for them to have any chance of catching up.

Some countries that have introduced standardised tests have done so primarily for the benefit of showing national and regional education policy-makers what is happening in the education system; if this is seen as the most important purpose, it is sufficient to test a sample of students, as long as the sample is representative. In the United States, where State governments are responsible for administering education, the Federal government adopts this sampling approach for its National Assessment of Educational Progress (NAEP) Tests. Other countries test every student at key points, so that every student can be tracked from a known starting-point through their next school or phase of schooling. England exemplifies this approach. It enables individual students' progress and attainment to be compared not only to students in the same year group, but also to those students in their year group who started from the same attainment level, or who share other characteristics with them – provided the necessary data tracking and information systems are in place.

In Kazakhstan's case – particularly in view of the desirability of identifying potential under-achievers earlier rather than later – the review team recommends testing every student at the end of primary and at the end of lower secondary school. It would also be desirable for the assessment taken at the end of the 9th (in future to be taken at the end of the 10th) grade to test not only knowledge but also the ability to apply knowledge and the higher-order thinking skills.

As Chapter 2 has already mentioned, when the 12-year education model is introduced and *beindik mektep* schools are expected to teach the 60% of 10th grade graduates intending to go on to university, there will need to be a test at the end of the 10th grade to assess whether those aspiring to enter *beindik mektep* schools have reasonable prospects of completing the courses successfully. The OECD team recommends using the universal standardised end-of-10th-grade assessment just discussed to check whether students meet a defined minimum entry standard in key subjects, such as language, maths and science. Chapter 2 has already set out many reasons why such a minimum entry standard assessment is preferable to creating another UNT-type exam and using it to allocate places to the envisaged 60% who scored highest, regardless of individual students' career aspirations. The next section sets out yet more reasons why the UNT is a highly imperfect assessment model, which should not be perpetuated in its current form.

The Unified National Test

By far the most important external assessment in the Kazakhstan system, and the one most widely used to measure and rank the performance of pupils, schools and regions, is the Unified National Test, or UNT. This test is very "high stakes" indeed for pupils, because it is the university entrance test as well as the school-leaving exam, and the majority of students still at school in the 11th grade, especially in urban areas, aspire to enter university.

In 2012, 117 333 students took the UNT. They constituted 75% of the total number of school graduates in the Republic of Kazakhstan. The number of participants in 2012 was 4.02% lower than in 2011, and their average score was lower, mainly because of minor changes in the test. The UNT is taken in five subjects. Four are compulsory: mathematics, Kazakh 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 (38 410), physics, chosen by 31% and geography, chosen by around 15%. The least popular were French (42 candidates) and German (93 candidates). The Ministry of Education and the National Centre for

Educational Statistics and Evaluation 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 (unsurprisingly, these tend to be schools for gifted children) and the 100 schools with the lowest average UNT scores.

The 2007 OECD/World Bank report (OECD, 2007) on Higher Education in Kazakhstan drew attention to a number of imperfections of the UNT. That report pointed out that the UNT does not cover all the important subjects students have learnt, and contains only multiple-choice questions, which can be answered correctly by luck rather than by judgment. Therefore, the UNT does not allow candidates to demonstrate their range and depth of knowledge of all subjects or their ability to apply it – as they could in an extended essay or by solving a complex maths or science problem. As a university student interviewed during fieldwork for the present review put it, the UNT "does not reveal scholarly potential". Students are only asked questions, whose answers appear in their school textbooks, and the simple multiple-choice format of the current test, though well suited to "knowledge" questions, cannot effectively include the comprehension, application or analysis questions which students should also be asked if their higher-order skills and university potential are to be properly assessed. The format is particularly unhelpful to testing advanced knowledge in maths or sciences: answers are marked as either correct or incorrect, with no credit given to students who understood perfectly how to arrive at the answer but made a small calculation error on the way.

There was similar criticism of tests like the UNT in the recent OECD report *Lessons from PISA for the United States* (OECD, 2011). This report said: "it is noteworthy that every one of the high-performing education systems profiled in this volume is focused on the acquisition of complex, higher-order thinking skills and, in many, on the application of those skills to real-world problems. For that reason, examinations in most of the countries described in this volume rely little, if at all, on multiple-choice computer-scored tests, which educators in these countries believe cannot properly measure higher-order thinking skills. Instead, they mostly use essay-type responses on their timed examinations and also factor into the grade the pieces of work that could not possibly be produced in a timed examination. Many nations also use oral examinations. In contrast, state assessments in the United States still predominantly consist of multiple-choice questions with limited cognitive and meta-cognitive demands. Two consortia, comprising 44 states, are seeking to address this issue by designing a new generation of assessments with federal funding. This holds significant promise for assessing a broader range of student skills and knowledge, even if it will take both time and persistence for such assessments to reach classrooms and students at scale. This is an area where the United States can draw on

rich experience accumulated in other countries." The present review team suggests that Kazakhstan too should draw on that rich experience.

Bearing in mind that the introduction of a 12th grade would require change in the UNT in any event, the 2007 OECD/World Bank report (OECD, 2007) recommended developing a separate school-leaving exam that would set the minimum standard for university entry, and enable all school-leavers – whether bound for work, college or university – to demonstrate more fully the knowledge and skills they have acquired in all their subjects. The 2007 report offered as examples (in Box 2.2) the school-leaving exams in England, France and Germany. The present review team was therefore very pleased to discover, when visiting the National Testing Centre, that it is already the government's intention, publicly announced in national strategy documents, that there will be separate school-leaving and university entry tests from 2015.

However, some of those the team met seemed to assume that both the new tests would involve the same old-style knowledge-based multiple-choice questions. This would be a mistake with serious consequences. If Kazakhstan wishes to develop in its upper secondary students the abilities to apply knowledge and the higher-order thinking skills that will enable the country's citizens to do well in international comparisons and compete on an equal footing with the biggest players in the global economy, the government must take this opportunity to modernise and improve the school-leaving exams which dominate the thinking and learning of every ambitious student in the country. As noted earlier, a sure way to inspire students to acquire the knowledge and skills they need is to test for that knowledge and those skills in your highest-stakes national exam.

The present review has highlighted a number of additional problems the present UNT creates for secondary schools and secondary students. First, because the choice of optional subjects is limited to one, the UNT has the effect of narrowing and skewing the upper secondary school curriculum and causing students' learning and teaching to focus on the four compulsory subjects while others are neglected. Second, the UNT might be creating incentives for teachers to focus on potential high achievers at the expense of other students, not least because teachers in Kazakhstan receive significant financial rewards when their students excel in the test. Indeed it is the only way they can get significant financial rewards, apart from attending the special teacher training courses developed at the Nazarbayev Intellectual Schools (which, however, are presently available only to "the best" teachers, defined presumably by UNT results). Third, according to reports by teachers and students met by the review team, success in the test depends solely on students memorising a wide range of factual knowledge, some of which also appears to be of limited relevance (the question example given by one student was "How many daughters did Sultan X have?"). This contributes to

stress and overload on students and teachers. Reform of the UNT therefore has great potential to improve learning and teaching in secondary education.

The present review can only reiterate the conclusions and recommendations of the 2007 OECD/World Bank report on higher education in Kazakhstan. A separate school-leaving exam should be developed, in time for the introduction of the 12th grade. This exam should set the minimum standard for university entry. It should be designed to enable all 12th grade school school-leavers – whether leaving for work, college or university – to demonstrate more fully in all their school subjects the knowledge and skills they have acquired, including the higher-order thinking skills. For these purposes, the multiple-choice style of the present UNT is unsuitable and should be abandoned. The 2007 OECD/World Bank report (OECD, 2007) also suggested that the selection of the best-qualified applicants for scarce university places (from among those who have passed the school-leaving exam) should in future depend not on the UNT, which can be passed well by any student with a good memory for facts already seen in textbooks, but on a university entry test more like the Scholastic Aptitude Test (SAT) used in the United States. A test of scholastic aptitude requires far less preparation than a test of knowledge, and would be fairer for less advantaged and rural schools. The 2007 report offered the example of Georgia to show how another national system combined tests of what has been learnt in school with tests of scholastic aptitude. That example is reproduced again in Box 3.2.

Box 3.2. **University entrance exams in Georgia**

A new model of University Entrance Examinations (UEE) was introduced in 2005 to combat corruption in university entrance and to reduce the inequities resulting from expensive private tutoring in preparation for university exams. The Ministry of Education and Science set up a National Assessment and Examinations Centre (NAEC), and it was decided to introduce three compulsory examinations – a General Aptitude Test (GAT), Georgian Language and literature, and foreign language (English, German, Russian or French) – and one optional subject. Optional subjects (2006) were mathematics, science, Georgian History, social sciences, and literature. Standardised scores (100 to 200) are used. The GAT consists of multiple-choice questions, while the subject examinations have a mixture of question types, closed and open ended, as well as an essay. (Markers of open ended and essay-type questions were trained extensively.) A scaling model is used to equate scores of candidates who take different versions of the same subject exam, and faculties give "weights" to exam subjects by allocating coefficients to them. Each entrant for each faculty then has a "competitive score" (= the sum of all scaled subject scores multiplied by their coefficients) on the basis of which they can rank-order

Box 3.2. **University entrance exams in Georgia** *(continued)*

applicants. Results are recognised by all HEIs, although individual HEIs can determine "weights". Candidates are now able to apply to several faculties simultaneously. About 50% of applicants obtain a university place. In 2006, there were 30 000 candidates each taking four exams. Administration of the exams is done in 14 exam centres in 10 cities throughout the country; these centres are closely monitored by trained supervisors and have video surveillance systems. Investments in information technology for registration, processing and barcoding proved to be important. Marked scripts are scanned into a database (120 000 scripts in 2006) and are placed on the NAEC website so that candidates can see their own marked papers, thus ensuring maximum transparency and reducing the need for appeals; in 2006 only 0.6% of the total number of scripts were subject to appeal. Early indications are that the new UEE has increased participation of students from rural areas and poor families, and that the number of non-Georgian applicants increased by 32% since the introduction of UEE.

Source: OECD (2008), *Tertiary Education for the Knowledge Society, Volume 2*, OECD Publishing. http://dx.doi.org/10.1787/9789264046535-en.

The Complex Test (CT)

The Complex Test is a UNT-equivalent test taken by students who wish to enter Kazakhstani higher education institutions, having studied in establishments other than the country's upper secondary schools. For those seeking entry from vocational and technical colleges, often those wishing to pursue university-level studies in the subject they have studied at college, the Complex Test provides the ladder. The CT is also taken by individuals who left Kazakhstan schools in previous years or left without taking the UNT; those who went to schools outside Kazakhstan but wish to return for university; foreign students; and graduates of the Republic's music boarding schools.

While numbers taking the UNT fell significantly in 2012, numbers taking the CT rose even more significantly, from 26 525 in 2011 to 65 439 in 2012. This increase is primarily because leavers from technical and vocational education institutions could take the test for the first time in 2012, and 51 369 of them did so, making up to 78% of all CT participants. The CT includes the same three compulsory subjects and ten optional subjects as the UNT, and produces a very similar analysis of annual results, which is published by the Ministry of Education and the National Centre for Educational Statistics and Evaluation.

In creating this ladder between college and university, the authorities in Kazakhstan have followed one of the recommendations of the 2007 OECD/World Bank report (OECD, 2007). The CT is, however, not yet fit fully for purpose as it exhibits pretty much the same weaknesses as the UNT. Furthermore, the college leavers had lower average CT scores than the other candidates, so are less likely to get into university. The 2012 results analysis attributes this to "insufficient attention to the level of general subjects teaching in technical and vocational education institutions and a strong focus on the students training for special disciplines", coupled with lack of preparation for taking the CT in colleges; and recommends that colleges improve their teaching of the general academic subjects taken in the test.

This suggestion is problematic. The students concerned will have left schools and gone to colleges in order to study technical/vocational disciplines useful to employers, rather than the general academic disciplines favoured by their peers who stayed on into upper secondary school. If those students then decide that they would be even more useful to employers by upgrading their technical qualifications to university level qualifications in the same discipline, it is difficult to see the point in requesting them to return to general classroom content to brush up their knowledge of Kazakh history and other academic subjects, that are most likely irrelevant to their career plans and their future employers.

The CT analysis report also suggests amending the rules for the admission of college graduates to higher education institutions, taking into account international practices. Best international practice is to assess candidates for university entry on their ability to demonstrate the skills and abilities they will need when they get there. Candidates seeking entry to university to pursue higher professional studies in the field in which they have earned lower-level qualifications have demonstrated skills and abilities in their chosen field already. In many countries those lower-level qualifications would be sufficient for university entry on their own.

Above, the OECD review team endorsed 2007 recommendations that school-leavers should take *(a)* a school-leaving exam which would show, among other things, whether they meet the minimum standard for university entry and *(b)* a university entry test more like the SAT test used in the United States. A similar two-part system is suggested for college leavers, replacing the CT. The college leavers' equivalent of *(a)* could be *either* the lower-level qualifications obtained at college – appropriate if they wish to pursue higher studies in the same discipline – *or* an additional test, but one designed to be relevant to college leavers. College leavers should be asked to present just two obligatory subjects, maths and Kazakh/Russian language, plus a selection from a wider range of optional subjects. The range should embrace not only subjects studied at school if potentially relevant (e.g. physics, chemistry, biology, foreign languages) but also specialities related to career fields (e.g. healthcare, engineering, agricultural science, education).

As regards *(b)*, the separate university entry test of scholastic aptitude, the review team suggests that college-leavers should take the same test as recommended above for school-leavers who currently take the UNT.

Box 3.3. **Approaches to setting entrance criteria into tertiary education in OECD countries**

In the OECD, approaches to entrance procedures into tertiary education can vary greatly from country to country. These differences also include the minimum admission requirements, as well as student selection criteria when there are more applicants than places in a given degree or programme.

Admission requirements are established by government authorities in most countries, and define the minimum requirements a student needs to meet to enrol in tertiary education, both in the public and private sectors. In New Zealand and Portugal, public universities are authorised to define supplementary criteria. In Croatia, Iceland, Japan, Mexico, Poland and Switzerland these requirements are defined by the higher education institutions but in line with national criteria. In Australia, Chile and New Zealand (for institutions other than universities), public universities exclusively determine minimum admission requirements.

In most OECD countries, universities have a considerable degree of discretion over student selection criteria when it comes to admission to degrees or programmes for which there are more applicants than places available. Only in Greece, Norway, Spain and Sweden are universities required to strictly follow rules defined exclusively by government authorities. In Portugal, public universities are allowed to develop criteria supplementary to those defined by government authorities. In Australia, Croatia, Czech Republic, Estonia, Finland and Japan, public universities define their selection criteria exclusively. In Chile, China, Iceland, Korea, Mexico, the Netherlands, New Zealand, Poland, the Russian Federation and Switzerland, universities determine their selection criteria but in line with national criteria.

Source: Based on OECD (2008), *Tertiary Education for the Knowledge Society, Volume 2*, OECD Publishing, p. 51-53. http://dx.doi.org/10.1787/9789264046535-en.

Use of assessment results

The PISA 2009 report compares the uses participating countries make of assessment information. The principals of participating schools were given lists of common uses of assessment results, and asked whether their school used assessment results for each purpose. Table IV.3.12 of the report – reproduced here as Table 3.1 – compares the percentages of students in schools which used assessment for that purpose, in each participating country.

Table 3.1. **The use of assessment results in PISA participating economies**

	Percentage of students in schools where the principal reported assessments of students in national modal grade for 15-year-olds are used for the following purposes																	
	To inform parents about their child's progress		To make decisions about students' retention or promotion		To group students for instructional purposes		To compare the school to (district or national) performance		To monitor the school's progress from year to year		To make judgements about teachers' effectiveness		To identify aspects of instruction or the curriculum that could be improved		To compare the school with other schools		To compare the school with other schools or with national/ regional performance	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD																		
Australia	99.0	(0.4)	67.9	(2.9)	81.2	(2.3)	60.4	(3.0)	82.9	(2.2)	44.3	(2.7)	86.1	(2.2)	43.5	(2.9)	64.0	(2.9)
Austria	92.9	(2.3)	94.0	(1.7)	31.9	(2.2)	9.5	(2.1)	48.7	(3.6)	26.0	(3.5)	62.6	(4.2)	21.1	(3.2)	26.0	(3.7)
Belgium	99.4	(0.5)	99.0	(0.7)	16.1	(2.3)	11.4	(2.0)	50.7	(3.5)	31.0	(2.6)	60.9	(3.2)	6.5	(1.3)	13.1	(2.0)
Canada	99.8	(0.2)	93.9	(1.3)	76.5	(1.9)	73.4	(1.6)	86.2	(1.5)	34.7	(2.0)	86.7	(1.4)	57.0	(2.4)	76.4	(1.6)
Chile	96.9	(1.5)	86.7	(2.8)	45.1	(3.9)	48.7	(4.5)	89.4	(2.6)	58.2	(3.5)	91.7	(2.2)	43.0	(4.4)	52.5	(4.3)
Czech Republic	97.3	(1.2)	89.1	(2.4)	40.1	(3.6)	65.2	(3.1)	89.1	(2.0)	60.4	(4.0)	84.2	(2.6)	62.4	(3.8)	71.6	(3.4)
Denmark	96.8	(1.1)	8.7	(2.0)	53.5	(3.2)	33.0	(3.1)	34.9	(3.4)	8.1	(1.9)	85.2	(2.3)	28.1	(3.0)	35.8	(3.3)
Estonia	97.9	(1.1)	81.7	(2.8)	25.8	(3.0)	67.2	(3.4)	85.0	(2.8)	71.9	(3.0)	77.9	(3.0)	61.0	(3.4)	74.0	(3.0)
Finland	98.2	(0.8)	94.4	(1.7)	16.3	(3.0)	49.7	(3.9)	52.5	(3.6)	23.7	(3.9)	56.3	(3.8)	27.2	(2.7)	53.4	(3.7)
France	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w
Germany	98.3	(0.9)	96.7	(1.2)	34.3	(2.7)	33.2	(3.4)	58.0	(3.3)	21.8	(2.5)	56.8	(3.6)	21.8	(3.1)	39.3	(3.6)
Greece	100.0	(0.0)	97.7	(1.1)	8.2	(1.7)	20.7	(2.9)	62.3	(4.1)	22.2	(3.3)	47.4	(3.7)	24.8	(3.2)	30.2	(3.4)
Hungary	97.5	(1.3)	82.6	(3.3)	51.9	(3.5)	68.6	(3.8)	86.9	(2.5)	59.6	(4.2)	64.8	(4.1)	61.1	(4.3)	73.0	(3.6)
Iceland	100.0	(0.0)	4.6	(0.1)	37.7	(0.3)	55.0	(0.2)	92.0	(0.1)	29.3	(0.2)	92.3	(0.2)	47.0	(0.2)	56.1	(0.2)
Ireland	100.0	(0.0)	a	a	73.8	(4.3)	44.3	(4.8)	67.1	(4.3)	37.0	(4.3)	64.8	(4.6)	23.8	(4.0)	46.5	(4.9)

Table 3.1. **The use of assessment results in PISA participating economies** *(continued)*

	Percentage of students in schools where the principal reported assessments of students in national modal grade for 15-year-olds are used for the following purposes																	
	To inform parents about their child's progress		To make decisions about students' retention or promotion		To group students for instructional purposes		To compare the school to (district or national) performance		To monitor the school's progress from year to year		To make judgements about teachers' effectiveness		To identify aspects of instruction or the curriculum that could be improved		To compare the school with other schools		To compare the school with other schools or with national/ regional performance	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Israel	99.2	(0.5)	82.4	(2.8)	96.1	(1.5)	53.9	(3.8)	87.4	(2.3)	84.9	(2.9)	90.7	(2.1)	29.0	(3.6)	56.3	(3.7)
Italy	99.1	(0.3)	87.0	(1.4)	64.0	(2.2)	34.0	(1.8)	72.1	(1.6)	20.3	(1.7)	88.8	(1.3)	23.2	(1.5)	40.8	(1.8)
Japan	99.5	(0.5)	91.3	(2.1)	41.5	(3.8)	22.3	(2.9)	61.1	(3.8)	78.3	(2.7)	83.3	(2.4)	19.6	(2.8)	23.7	(3.0)
Korea	95.3	(1.7)	36.9	(4.0)	78.1	(3.5)	75.2	(3.7)	83.4	(2.9)	66.4	(4.7)	88.3	(2.3)	62.3	(3.8)	77.8	(3.5)
Luxembourg	100.0	(0.0)	99.6	(0.0)	45.4	(0.1)	53.5	(0.1)	40.3	(0.1)	21.7	(0.1)	60.0	(0.1)	34.7	(0.1)	58.2	(0.1)
Mexico	98.4	(0.4)	93.4	(0.9)	67.8	(1.6)	72.6	(1.7)	88.5	(1.2)	80.1	(1.4)	92.0	(0.9)	70.4	(1.8)	79.6	(1.6)
Netherlands	99.4	(0.5)	96.9	(1.3)	54.2	(3.7)	42.5	(4.4)	73.5	(4.1)	50.1	(4.1)	62.9	(4.2)	39.8	(4.1)	50.2	(4.5)
New Zealand	99.3	(0.6)	77.2	(2.7)	91.1	(1.9)	92.2	(2.0)	97.2	(1.4)	60.8	(3.3)	98.3	(1.0)	82.5	(2.8)	93.5	(1.8)
Norway	98.0	(1.1)	1.1	(0.6)	58.6	(3.5)	68.7	(3.4)	82.0	(2.9)	24.4	(2.8)	69.8	(3.5)	52.1	(3.5)	73.0	(3.4)
Poland	99.4	(0.6)	98.4	(1.0)	32.6	(3.7)	57.0	(3.7)	95.0	(1.7)	78.7	(3.1)	92.2	(2.0)	57.0	(3.8)	63.1	(3.7)
Portugal	99.4	(0.6)	97.6	(1.0)	22.8	(3.6)	48.0	(4.3)	88.8	(2.3)	34.7	(4.0)	79.6	(3.0)	40.0	(3.9)	53.8	(4.3)
Slovak Republic	100.0	(0.0)	96.9	(1.4)	47.5	(3.7)	51.8	(4.4)	86.4	(2.7)	79.7	(3.3)	85.9	(2.9)	67.8	(3.3)	73.2	(3.1)
Slovenia	98.5	(0.0)	95.7	(0.3)	24.1	(0.6)	53.5	(0.4)	92.3	(0.3)	40.4	(0.4)	74.9	(0.4)	43.2	(0.4)	62.1	(0.4)
Spain	99.5	(0.4)	99.7	(0.1)	49.1	(2.6)	24.0	(2.2)	84.2	(1.9)	43.7	(2.8)	90.7	(1.5)	23.3	(1.9)	29.9	(2.2)
Sweden	98.9	(0.8)	38.8	(3.7)	38.5	(3.8)	78.3	(3.3)	93.1	(2.0)	21.8	(2.8)	83.0	(2.8)	75.5	(3.3)	83.5	(2.8)
Switzerland	89.7	(2.1)	86.9	(2.6)	25.1	(2.7)	38.2	(3.2)	41.1	(3.5)	40.6	(3.5)	49.5	(3.6)	22.7	(2.7)	43.0	(3.2)

Table 3.1. **The use of assessment results in PISA participating economies** *(continued)*

	Percentage of students in schools where the principal reported assessments of students in national modal grade for 15-year-olds are used for the following purposes																	
	To inform parents about their child's progress		To make decisions about students' retention or promotion		To group students for instructional purposes		To compare the school to (district or national) performance		To monitor the school's progress from year to year		To make judgements about teachers' effectiveness		To identify aspects of instruction or the curriculum that could be improved		To compare the school with other schools		To compare the school with other schools or with national/ regional performance	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Turkey	93.6	(1.8)	71.4	(3.1)	72.5	(3.7)	72.9	(3.8)	83.9	(3.0)	71.4	(3.6)	55.0	(3.9)	72.1	(3.4)	83.4	(3.1)
United Kingdom	99.6	(0.4)	69.8	(3.5)	94.8	(1.3)	91.3	(2.1)	97.1	(1.3)	82.7	(2.6)	92.7	(1.6)	82.2	(2.8)	92.1	(1.9)
United States	96.9	(1.3)	70.4	(3.3)	69.1	(4.2)	95.3	(1.5)	97.7	(1.1)	58.0	(4.1)	98.1	(1.1)	90.3	(2.4)	96.8	(1.3)
OECD average	98.1	(0.2)	77.8	(0.4)	50.5	(0.5)	53.5	(0.5)	76.7	(0.5)	47.5	(0.5)	77.4	(0.5)	45.9	(0.5)	59.0	(0.5)
Partners																		
Albania	97.0	(2.0)	87.7	(2.9)	68.2	(3.9)	77.6	(3.2)	99.7	(0.2)	89.9	(2.4)	88.5	(2.5)	76.9	(3.4)	87.7	(2.6)
Argentina	95.0	(1.7)	89.8	(2.3)	23.1	(3.5)	26.1	(3.7)	80.9	(3.2)	53.1	(4.0)	93.5	(1.7)	15.4	(3.0)	30.9	(3.7)
Azerbaijan	96.9	(1.6)	96.2	(1.8)	81.2	(3.6)	81.6	(3.5)	89.3	(2.8)	94.4	(1.9)	89.0	(2.4)	84.8	(3.6)	92.6	(2.7)
Brazil	97.3	(0.8)	95.3	(1.6)	51.6	(3.1)	79.1	(2.8)	94.7	(1.4)	80.2	(2.0)	91.6	(1.4)	54.7	(3.5)	82.5	(2.5)
Bulgaria	100.0	(0.0)	78.6	(4.3)	41.8	(5.0)	83.8	(3.4)	89.7	(2.6)	92.1	(3.0)	70.5	(4.6)	78.1	(3.6)	86.4	(3.1)
Colombia	100.0	(0.0)	95.4	(2.1)	41.4	(4.1)	62.7	(4.3)	94.8	(2.1)	62.6	(4.0)	92.8	(2.4)	53.8	(4.7)	67.1	(4.3)
Croatia	98.8	(0.9)	88.7	(2.8)	59.5	(3.9)	72.5	(3.4)	94.4	(1.9)	55.3	(3.9)	82.4	(3.2)	66.0	(4.0)	81.1	(3.2)
Dubai (UAE)	99.4	(0.0)	87.8	(0.1)	84.1	(0.1)	57.5	(0.2)	93.3	(0.1)	87.1	(0.1)	91.8	(0.1)	60.9	(0.2)	65.2	(0.2)
Hong Kong-China	98.6	(1.0)	99.4	(0.6)	80.4	(3.2)	34.3	(3.7)	95.4	(1.6)	75.7	(3.5)	96.5	(1.6)	22.3	(3.5)	35.9	(3.8)
Indonesia	99.9	(0.1)	93.1	(2.2)	86.6	(2.8)	78.8	(3.4)	98.2	(1.1)	97.6	(1.2)	98.5	(0.9)	86.2	(2.8)	91.7	(2.3)

Table 3.1. **The use of assessment results in PISA participating economies** *(continued)*

	Percentage of students in schools where the principal reported assessments of students in national modal grade for 15-year-olds are used for the following purposes																	
	To inform parents about their child's progress		To make decisions about students' retention or promotion		To group students for instructional purposes		To compare the school to (district or national) performance		To monitor the school's progress from year to year		To make judgements about teachers' effectiveness		To identify aspects of instruction or the curriculum that could be improved		To compare the school with other schools		To compare the school with other schools or with national/ regional performance	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Jordan	99.2	(0.8)	92.8	(2.0)	87.5	(2.4)	77.4	(3.4)	90.0	(2.4)	82.1	(2.5)	89.5	(1.9)	67.1	(4.0)	84.1	(3.0)
Kazakhstan	99.3	(0.7)	95.9	(1.5)	55.9	(3.8)	92.8	(1.9)	99.5	(0.5)	99.4	(0.4)	99.0	(0.7)	89.1	(2.5)	95.4	(1.7)
Kyrgyzstan	94.4	(2.0)	78.1	(3.2)	63.1	(4.1)	83.6	(3.0)	97.5	(1.2)	99.2	(0.7)	90.3	(2.3)	84.6	(2.8)	93.2	(2.0)
Latvia	98.8	(0.4)	94.4	(1.7)	34.2	(3.4)	91.7	(2.1)	98.2	(0.7)	92.5	(2.0)	97.5	(0.9)	81.6	(2.9)	92.4	(2.0)
Liechtenstein	73.7	(0.2)	78.4	(0.3)	71.2	(0.3)	53.3	(0.4)	42.5	(0.3)	21.7	(0.4)	58.7	(0.5)	7.0	(0.3)	53.3	(0.4)
Lithuania	98.8	(0.9)	94.1	(1.8)	55.5	(3.6)	55.1	(3.9)	95.0	(1.7)	71.0	(3.7)	81.1	(2.8)	47.9	(3.7)	62.4	(3.7)
Macao-China	100.0	(0.0)	93.7	(0.0)	61.7	(0.0)	9.1	(0.0)	78.3	(0.0)	73.6	(0.0)	100.0	(0.0)	23.3	(0.0)	23.8	(0.0)
Montenegro	40.0	(1.1)	11.8	(0.2)	20.6	(0.4)	37.6	(0.7)	54.8	(1.0)	55.6	(1.0)	56.7	(1.0)	44.9	(0.8)	47.4	(0.8)
Panama	90.2	(3.6)	86.9	(4.4)	47.8	(5.4)	32.1	(5.2)	77.2	(4.4)	58.2	(5.4)	74.3	(5.2)	32.6	(5.9)	42.8	(5.7)
Peru	98.7	(0.6)	88.6	(2.3)	53.7	(3.8)	39.6	(3.7)	87.6	(2.4)	79.6	(2.8)	93.0	(1.8)	35.9	(3.3)	49.4	(3.8)
Qatar	94.5	(0.0)	77.7	(0.1)	77.1	(0.1)	60.7	(0.1)	89.9	(0.1)	84.0	(0.1)	90.4	(0.1)	69.4	(0.1)	72.7	(0.1)
Romania	99.3	(0.6)	89.1	(2.8)	66.0	(4.1)	87.1	(3.0)	97.4	(1.3)	85.4	(3.2)	92.4	(2.3)	83.1	(3.2)	92.3	(2.1)
Russian Federation	100.0	(0.0)	95.7	(1.6)	52.4	(4.7)	82.6	(2.6)	98.6	(0.8)	97.6	(1.1)	100.0	(0.0)	95.0	(1.6)	97.9	(1.2)
Serbia	95.3	(2.0)	84.4	(3.2)	61.4	(3.9)	34.6	(3.6)	96.3	(1.7)	62.9	(3.8)	78.6	(3.8)	57.4	(4.2)	62.9	(3.8)
Shanghai-China	91.8	(1.9)	45.7	(4.0)	42.8	(4.2)	60.2	(4.1)	85.7	(2.8)	83.4	(3.0)	96.7	(1.3)	63.7	(4.0)	69.4	(3.9)

Table 3.1. **The use of assessment results in PISA participating economies** *(continued)*

	Percentage of students in schools where the principal reported assessments of students in national modal grade for 15-year-olds are used for the following purposes																	
	To inform parents about their child's progress		To make decisions about students' retention or promotion		To group students for instructional purposes		To compare the school to (district or national) performance		To monitor the school's progress from year to year		To make judgements about teachers' effectiveness		To identify aspects of instruction or the curriculum that could be improved		To compare the school with other schools		To compare the school with other schools or with national/ regional performance	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Singapore	100.0	(0.0)	88.2	(0.2)	95.1	(0.1)	93.4	(0.9)	98.8	(0.1)	85.2	(1.0)	97.4	(1.1)	81.7	(0.8)	95.1	(1.0)
Chinese Taipei	95.3	(1.8)	49.3	(3.8)	48.1	(3.9)	46.7	(3.3)	72.7	(3.8)	57.9	(4.0)	97.6	(1.2)	46.5	(3.9)	56.8	(3.7)
Thailand	100.0	(0.0)	99.4	(0.6)	91.8	(1.9)	82.8	(2.6)	96.7	(1.4)	94.7	(1.6)	98.0	(1.1)	81.7	(3.0)	86.7	(2.4)
Trinidad and Tobago	100.0	(0.0)	52.7	(0.3)	50.5	(0.3)	31.3	(0.3)	89.7	(0.2)	67.7	(0.3)	92.0	(0.3)	20.9	(0.2)	32.5	(0.3)
Tunisia	97.1	(1.4)	95.7	(1.7)	64.6	(4.4)	87.2	(2.9)	94.8	(1.9)	75.7	(3.8)	52.4	(3.7)	83.1	(2.9)	90.3	(2.5)
Uruguay	95.6	(1.2)	97.5	(1.0)	30.4	(2.9)	17.6	(2.5)	83.6	(2.7)	37.2	(2.5)	82.4	(2.2)	8.6	(1.6)	19.9	(2.5)

Note: Results based on school principals' reports.

Source: OECD (2010a), *PISA 2009 Results: What Makes a School Successful?: Resources, Policies and Practices (Volume IV)*, PISA, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264091559-en.

Reporting to parents

The most common use of assessment results – applicable to 98% of students across the OECD in the typical PISA participant grade, to 99% in Kazakhstan – is to inform parents about their child's performance. PISA also asked whether the information on the child's performance presented to parents was relative to other students in the same school (principals of schools covering 47% of students across the OECD said yes); relative to national or regional benchmarks (principals of schools covering 48% of students across the OECD said yes); and/or relative to students in the same grade in other schools (principals of schools covering 23% of students across the OECD said yes). The comparable figures for students in Kazakhstan were 94%, 75% and 73% respectively.

Kazakhstan's 94% figure for "student's performance presented to parents relative to other students in the same school" – twice the OECD average – implies that almost every teacher giving their child's results to parents routinely tells them the mark distribution of the child's entire year group in the school. This figure or rather – the reliability of information provided to parents in this way – is to be doubted, especially the principals' reports of high percentages of parents receiving reports relative to national or regional benchmarks and relative to students in the same grade in other schools. Comparisons like these are not possible to make unless *(a)* there are clear and detailed national standards are in place for the expected attainment of children in all grades, teachers are extremely well trained to assess against these standards and there are good moderation processes in place (within and across schools), or *(b)* for all grades, standardised tests are used. Neither of these conditions is fulfilled in Kazakhstan. Unless they are implemented, meaningful and valid comparisons cannot be made, either to national/regional benchmarks or between pupils assessed by different teachers.

Except for the UNT, the EAAA (which only covers 10% of 9th-graders and did not exist in its present form in 2009), and a limited number of international and criteria-based assessments used in certain private and international schools in Kazakhstan, there are no other tests which could be described as "standardised". Yet when PISA 2009 asked principals how often teachers in their school assessed students using standardised tests (a question related to usual assessment practice throughout the school, not specifically to the 9th grade), just 5% of principals in Kazakhstan said "never" (OECD average 24%), 53% said "1-5 times a year" and 42% said "at least once a month" (OECD average 7%). It can be assumed that this question was largely misunderstood as the general assessment practice in Kazakhstani public schools – the class teacher marking on a 1-5 scale using a subjective judgement – cannot be described as "standardised" in the sense intended by this PISA question.

Decisions on student retention, promotion and grouping and on teacher effectiveness

Other student-related uses of assessment information include decisions about students' retention in or promotion out of the class they are currently in (applicable to 78% of students on OECD average, 96% in Kazakhstan, according to principals) and decisions on grouping students for instructional purposes (applicable to 51% of students on OECD average, 56% in Kazakhstan, according to principals). Decisions on these matters are incredibly important to students and their families. For reasons already explained, they should be based on better evidence than the present Kazakhstan 5-point classroom assessment system allows for.

In 48% of all schools across the OECD, judgments on the effectiveness of teachers teaching in grades typically covered by PISA are at least partially based on students' assessment results. In Kazakhstan this figure is, again, based on principals' responses, is 99%. If the assessment results are both so important and based on teachers' own un-moderated opinion of their students' performance (as opposed to objective criteria or standardised test), teachers in Kazakhstan must be having a serious incentive to over-mark their students, overestimate their successes and underestimate cases of under-performance. This lends itself as possible explanation for the difference observed in review fieldwork and confirmed by aggregated data on student marks from selected regions, between teachers' generally high opinions of student performance and the reality revealed by PISA in 2009. It also explains the widespread use in teachers' mark books of ratings 3, 4 and 5 of the 5-point scale, and the almost total absence of 1 and 2. The avoidance of low marks extends even to the criteria-based assessment system developed for use in the Nazarbayev Intellectual Schools. Having applied the criteria, NIS teachers are asked for an overall rating on a 5-point scale. From the descriptions of these 5 points, it appears that students are to be rated 2 only if they are underperforming to such an extent that expulsion ("dismissal") from the school is imminent. There is no definition or description of point 1.

To ensure that these decisions on student and teacher performance are taken fairly and are seen to be fair, Kazakhstan's public schools should move, as already recommended and as soon as possible, to criteria-based assessment and standardised national tests. These steps will also improve the reliability of reports to parents on how well their child is performing, both in relation to standard assessment criteria and relative to others in their class, their region and the country. Provided that the new assessment systems are carefully managed and monitored to ensure comparable results, they should also remove the present incentive for teachers to overestimate student performance. The plans and programmes to identify and help academic strugglers and slower learners which were recommended in Chapter 2 are likely to fail if this massive incentive to rate all students as performing satisfactorily or better is left to dominate the system.

Performance comparisons between schools

Fifty-nine percent of students in OECD countries in 2009 were in schools where principals reported using assessments to compare the school's performance to that of other schools, which might mean all schools nationally or in a particular region (See Table 3.1). In Kazakhstan the comparable figure is 95% according to principals' reports. This figure is not likely to be plausible. The 10% of schools which participated in the EAAA in 2012 could validly compare their results in the 9th grade test to the results of other schools also participating in the EAAA, but, as noted above, the EAAA was new in 2012. Otherwise, in the absence of either regional and national benchmarks or standardised tests, such comparisons must be regarded as unreliable.

It is not essential to have in place means of comparing the performance of different schools, but there are indications that the Kazakhstani authorities favour this, because published analyses of the UNT and the 9th grade tests already include such comparisons. Such comparisons can only be fair and useful where they are based on the same evidence for all. To collect such evidence and make valid comparisons of the attainment of every student, it takes well designed, standard, externally assessed national tests.

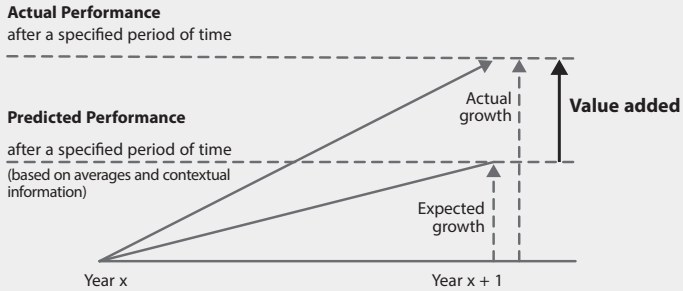
However, as is recognised in most countries, inter-school comparisons are only fair if like is compared with like. If one school has an entry test to ensure that it takes only gifted or high-achieving pupils, while another takes all those who apply regardless of ability, the pupils in the second school are very likely indeed to have lower prior attainment on average. If both schools achieve the same UNT or 9th grade results, the second school is clearly more effective, because it has helped its pupils to travel further. A number of the OECD's highly-developed member countries are working on devising "value-added" indicators which adjust for differences in prior attainment and enable schools to be compared in terms of the distance they have helped their pupils to travel. Devising good value-added indicators is very challenging and requires much more sophisticated data collection and data processing systems than Kazakhstan currently has in place, to track the performance and progress of individual pupils and to gather information on other pupil characteristics commonly associated with differences in performance. Box 3.4 illustrates how value-added indicators could work.

To produce comparisons between schools, there need to be national or nationally-compatible systems in place to collect assessment results and information on pupil characteristics from schools, generate user-friendly comparative information and disseminate this to education stakeholders. Parents should also receive this information, either privately from their children's schools or from published sources or both. The OECD suggests that Kazakhstan's first step should be to put in place the building-blocks for inter-school performance comparisons, i.e. standardised national tests at

Box 3.4. **Assessing the value-added of schools: Enhancing fairness and equity**

Value-added modelling (VAM) is a method to make more accurate and fairer assessments of schools' contributions to student learning outcomes and growth, as benchmarks can be tailored in consideration of individual school characteristics. It is used by education authorities in several OECD countries (Norway, Poland, Slovenia, the United Kingdom and the United States) to strengthen school accountability and improvement efforts.

The basic unit of accountability used in VAM is the individual school. Value-added scores can be calculated for individual students, subject, areas, grade levels, schools and other jurisdictional entities (e.g. municipalities). VAM scores are inherently relative to other schools' performance. Specifically, the score for an individual school is an estimate of the difference between the individual school's contribution to the learning of its students and the average contributions of a given group of other schools participating in VAM to the learning of their respective students. The use of data from another grouping of schools, for example, would yield different value-added scores.



Within an accountability framework, assessments of school performance usually result in actions and consequences for teachers. Similarly, assessments should also provide school staff with information on what works and how to improve, as well as the opportunities to do so. The initial phases of establishing an accountability framework that includes VAM should identify priorities and opportunities for school improvement efforts. Positive incentives that reinforce and enhance the performance of schools, staff and teachers, could be combined with further evaluations, assistance and resources for underperforming schools.

The development of value-added methods requires careful design and planning to effectively address the challenges involved as all empirically-based indicators of school performance are subject to variability and bias. The design of robust value-added methods needs thus to address various statistical, methodological and implementation issues.

Source: OECD (2012), *Guidance from PISA for the Canary Islands, Spain*, Strong Performers and Successful Reformers in Education, OECD Publishing. http://dx.doi.org/10.1787/9789264174184-en.

the end of each phase of schooling, and efficient, reliable collection of data on all pupils' attainment in these tests. The second step should be to collect more and reliable information on relevant characteristics of schools and their pupils, so that schools can be grouped in "families" of similar schools for comparison purposes. The third step should be to set a longer-term goal of developing value-added indicators and systems for collecting and processing the necessary data, so that all schools can be compared on a common basis that takes account of all relevant differences between schools and their pupils.

Monitoring standards or progress over time

In some national systems, assessments of student performance are used – alongside other indicators – to monitor whether standards are rising, falling or remaining steady from year to year. In PISA 2009, principals of 77% of participating schools across the OECD said that they used assessment results to monitor the school's progress from year to year, and the figure for Kazakhstan was 99%. The validity of such monitoring in Kazakhstan cannot be ensured on the basis of the standard public school assessment systems currently available to principals in the country. Two conditions need to be satisfied for valid and reliable monitoring of standards or progress from year to year. First, such monitoring must be based on standardised tests and secondly, a sophisticated system must be in place to ensure that a pass score or given mark is associated with the identical level of attainment from year to year, even though the test contains different questions. (If it contained the same questions, particularly if they were knowledge questions, students in later years would almost certainly do better than earlier cohorts, because they would be able to discover the questions and find out the answers beforehand.)

Peer experience and knowledge from other countries could be a valuable source of information and guidance on how to make best use of student outcomes to monitor national education standards over time, and how to empower schools to use student outcomes to monitor their own standards over time,. Examples of countries which do this are the United States, for NEAP assessments, and England for National Curriculum tests. The International Education Association (IEA) does it for successive TIMSS assessments.

Quality and relevance of instruction

Most developed countries monitor the quality and relevance of instruction across the country in two main ways: by independent school quality inspection and by looking at the lessons from assessment results.

Quality inspection and control

About seven years ago Kazakhstan instituted a school quality control system under which responsibility for inspection was decentralised, or delegated, to regional education departments. In 2011 the Ministry of Education became concerned that the decentralised system was working imperfectly. The regional officials who conducted quality inspections were not truly independent of the regional officials responsible for ensuring that every school was a good school, and it was very rare for inspectors to report that schools were performing inadequately.

A new system was then introduced. Every school has to be licensed before it can start operating, and undergo an attestation by the regional education authorities every five years. The Ministry also set up a Department of Control, and regional committees of Ministry officials became responsible for inspections, which are conducted once at least every five years; how soon each school should be re-inspected is decided following a risk assessment, and the interval between inspections may be as little as a year. The inspectors check the school's compliance with Ministry quality standards, its compliance with the law and, despite all deficiencies of the current system of assessment, are expected to check the knowledge level of the pupils. They check the condition of school buildings, whether the school has more students than its official capacity or vacant places, the state of the ICT and the qualification levels of the teachers (primary schools should have at least 20% of their teachers in the two highest qualification categories, and secondary schools – at least 30%).

In the first six months of the new system, the external inspectors found that 20-25% of schools were "non-compliant", considerably more than the 0.8% found to be non-compliant under the previous regional inspection system. The aim of the external inspectors is not to punish schools for non-compliance, but to help them to solve their problems. There is a new system of feeding back to schools the inspection results and what they need to improve. Schools are given up to six months to achieve the necessary improvement, during which time their license to operate is temporarily withdrawn. If a school cannot improve, as a last resort the Ministry may go to court and have that school shut down.

The information available for the preparation of this report does not allow for reaching firm conclusions on the current inspection and quality control system. The system is very new and there is limited evidence on how it is working. The review team understands that finding enough good staff for the quality control centres will be key to the success of the programme, and that this is not yet assured. However, the three major building blocks of a good system seem now to be in place: inspectors are independent of those being inspected, they adopt a problem-solving approach with the schools, and there is zero tolerance of school failure.

Lessons from assessment results

The second main source of information on the quality and relevance of teaching is reports on the results of national external assessments by the Ministry of Education and the National Centre for Educational Statistics and Evaluation. The review team has seen three reports on the 2012 assessments.

The first report is *The Results of the Monitoring Study of 5th and 9th Grade Student Performance Evaluation in General Secondary Schools of Kazakhstan* (MESRK, 2012b). This report's aim was to gather reliable practical data on the most important factors influencing the efficiency of school education, taking account both of student results in the tests and of questionnaires answered by school principals and staff. The tests, based on 4th and 8th grade curricula, were in maths and science. The report says that "test items were developed using international best practice approaches"; their aim was to "evaluate the students' knowledge of specific subjects as well as their ability to explain and validate their point, explain the observed phenomena, and process the information presented in the form of tables, graphs, and diagrams".

When results were analysed, as in PISA, 9th grade students were most successful in answering the test items requiring them to reproduce their knowledge and had the most difficulty with free response questions. Similarly, 5th grade students had difficulty with the mathematics test items that tested their ability to apply problem solving skills, and with understanding and applying their knowledge to the questions.

Factors school principals associated with good performance included: well-equipped school buildings in good condition; one-shift operation and avoiding over-crowded classrooms; and "high category" teachers. Principals thought the best route to improving results would be to improve their and their teachers' professional skills. A majority (69%) of principal and teacher respondents believed that the introduction of criterion-based assessment systems would improve results, and 72% said that too little curriculum time was allocated to maths.

Useful recommendations in the monitoring report, endorsed in the present report, include the following.

- Re-focus school education on developing the skills to apply knowledge in real-life situations;
- Define criteria for comprehensive evaluation of the quality of teaching in mathematics and natural sciences;
- Strengthen school teaching associations;
- Develop a new professionalism in teaching as well as in school management;

- Improve the professional skills of teaching staff through participation in workshops, lectures, educational conferences, and other innovative forms of teacher training;
- Encourage teachers to develop research and creative skills in their students.

The second report is *Analysing Results of the External Assessment of Academic Achievement of 9th-grade Students* (MESRK, 2012a). 2012 results are presented as average scores for republic/region, city/village, types and forms of schools, language of tuition and theme/subject. Among other things, this report was designed to inform teachers and parents about the quality of education, but would have been more informative, and a better guide to future education policy, if steps had been taken to assure the representativeness of the sample of schools, and if there had been analysis of the impact on the results of pupil and school characteristics. For example, the report noted that students in various schools for gifted children did particularly well, but did not point out that this is to be expected. It noted that students in the second shift of double shift schools performed worse, but did not explain from other evidence why this might be. Similarly, the report noted that in majority of regions students tended to score highly if they had a high proportion of teachers in the school designated as "high category", but there was no explanation of why in three of the regions – South Kazakhstan, Astana and Almaty – this finding does not hold. A parallel report, *Factors influencing the Quality of Knowledge of 9th-grade Students* (MESRK, 2012c), attempts to draw correlations between the results of schools in four regions and their pupils' characteristics using surveys of students, parents and teachers, but the analysis in that report fails to provide pragmatic guidance for policy purposes.

However, among the recommendations for improving 9th grade education quality in the *Analysing Results* report are several, reproduced below, which are in line with the OECD recommendations in the present report.

- Make an in-depth analysis of factors that had a negative influence on students' EAAA results;
- Increase teachers' responsibility for the academic progress of every student;
- Study and replicate the best practices of leading schools with good results;
- Ensure that teachers take an individual approach to every student;
- Create incentives for every student;
- Transform the traditional list of teaching goals into a model of student competency development;

- Make wider use of the latest teaching technologies, replicating best national and international practice;
- Eliminate test "drills" at schools;
- Develop system-wide measures to instil a culture of knowledge, critical thinking and development of students' personal competencies;
- Use school holidays for supplementary teaching;
- Do more to engage parents in the education process.

The third report is *Analysis of Unified National Testing Results 2012* (MESRK, 2012d). Towards the end of the report is a section pointing out contextual factors associated with good and not-so-good student performance. This notes that students tended to score highly if they had a high proportion of teachers in the school designated as in a high category; if their schools were in cities; if schools were providing specialised (profile) education; and if their schools were equipped with IT (provided the computers were not too old). Students tended to score low if their schools were in villages, or if the share of students attending the second shift at a double-shift school was higher, or if the schools were in low-income areas.

It is good that contextual analyses have been attempted, but by the standards of the statistical analysis undertaken in PISA, TIMSS and many OECD member countries, the analyses of the UNT are rather incomplete. There is no attempt, for example, to relate UNT results to the standards the students had reached at earlier stages, or to identify and give credit to schools which achieve good results for relatively disadvantaged pupils. Nor is there any attempt to isolate the impact of particular contextual factors (such as generous computer provision) from others typically found in the same schools, in order to establish which factors made the most and least difference.

The OECD underlines the following recommendations in the UNT analysis report.

- To strengthen teaching and other resources in rural schools;
- To improve assessment by making it criterion-based;
- To improve teacher training, particularly in the use of ICT;
- To provide students with individual support, and identify and correct learning problems at an early stage;
- To do more to communicate international best practice to teachers;
- To improve students' motivation to learn.

In conclusion, several official reports containing lessons from national assessments have drawn very similar conclusions to those drawn independently by the OECD during fieldwork. This suggests that education stakeholders in Kazakhstan are ready and willing to take the significant steps to transform education for better quality as recommended in the present report.

Recommendations

- Criteria-based assessment systems should be put in place in all primary and secondary (including upper secondary) schools in Kazakhstan. This will help to improve teaching quality and relevance to individual students, raise standards in schools and classrooms, it will permit comparisons of student performance with regional and national benchmarks, aid the identification of slow learners and academic strugglers, discourage over-marking by teachers and make reports to parents on student performance more meaningful.
- Assessment criteria should be an integral part of the revised curricula and syllabuses developed for every grade for all subjects to be taught in 12-year education. Documents describing the new curricula and syllabuses should include or attach the assessment criteria to be used at every stage.
- Assessment criteria should be defined not only for current school subjects but also for the higher-order thinking skills the government wishes students to acquire.
- Training of teachers unfamiliar with criteria-based assessment should start as soon as possible, so that all teachers in Kazakhstan have been trained to use it effectively by the time the 12-year model is introduced in all secondary schools. The NIS criteria-based assessment system can be used while curricula and syllabuses are being revised as recommended.
- It is recommended that standardised national tests are administered at the end of each phase of education, i.e. at the end of primary school, currently the 4th grade, and at the end of basic secondary school, currently the 9th grade but in future the 10th grade. Standardised tests will permit comparisons of student performance with regional and national benchmarks at these stages. There will be greater public trust in the test results if the test questions have not been seen by the students beforehand and if they are marked by teachers other than the students' regular teachers.
- When the 12-year education model is introduced and *beyindik mektep* schools set up to teach an envisaged 60% of 10th grade students

intending to go on to university, this same end-of-10th-grade standardised assessment should be used to assess whether aspiring entrants to *beindik mektep* schools meet defined minimum entry standards in key subjects such as language, maths and science. The review team recommends strongly against the alternative of introducing another UNT-type exam to allocate *beyindik mektep* places, regardless of individual students' career aspirations.

- The Ministry of Education should put in place systems for efficient, reliable collection of data on all pupils' attainment in national standardised tests. This will permit meaningful comparisons of student attainment in different schools. The government should also plan to collect more, and more reliable, information on relevant characteristics of schools and their pupils, so that schools can be grouped in "families" of similar schools for comparison purposes; and then to develop value-added indicators and systems for collecting and processing the data they require, so that all schools can be compared on a common basis that takes account of all relevant differences between schools and their pupils. The establishment of a *National Educational Database* in 2012 by the MESRK and its piloting is certainly an important step in the right direction.
- If in addition the Kazakhstan government wishes to be able to monitor national education standards over time, or wants schools to be able to monitor their own standards over time, it is suggested that advice be sought, from international experts, on how to equate the difficulty level and therefore the results of tests asking different questions in different years.
- The external assessment currently taken at the end of the 9th (in future, 10th) grade should be re-designed so that, like PISA, it tests not only knowledge but also the ability to apply knowledge and the higher-order thinking skills.
- As recommended in the 2007 OECD/World Bank report (OECD, 2007) on higher education, the UNT should be replaced by two separate external assessments.
- The first should be a national school-leaving exam which also sets the minimum standard for university entry. This exam should be designed to enable all 12th grade school school-leavers – whether leaving for work, college or university – to demonstrate more fully the knowledge and skills they have acquired in all their school subjects, including the higher-order thinking skills. For these purposes, the multiple-choice style of the present UNT is unsuitable and should be abandoned.

- The second exam should be a university entry test, developed specifically to select the best-qualified applicants for scarce university places from among those who have passed the school-leaving exam. The 2007 OECD/World Bank report (OECD, 2007) suggested that this test should be a test of scholastic aptitude rather than knowledge, like the SAT test used in the United States, so as to be equally to fair to students from different backgrounds who have had differential preparation.[6]
- These two new exams should be introduced at the time the 12th grade of schooling is introduced.
- The CT taken by college leavers should also be reformed. Candidates from colleges should be asked to present just two obligatory subjects, maths and Kazakh/Russian language, plus a selection from a wider range of optional subjects. The range should embrace not only school subjects relevant to careers but also specialisms related to career fields (e.g. Healthcare, Engineering, Agricultural Science, and Education). Other recommendations on the UNT apply equally to the CT.
- The Ministry of Education's own analytical reports on the results of 2012 national assessments include a number of other recommendations which should be implemented in order to improve the qual36ity and relevance to students of school education. These include recommendations to:
    - re-focus school education on developing the skills to apply knowledge in real-life situations, and eliminate "drilling" at schools;
    - transform the traditional list of teaching goals into a list of desired student competences;
    - develop system-wide measures to instil a culture of knowledge, critical thinking and development of students' personal competences;
    - develop a new professionalism in teaching and school management;
    - improve teachers' professional skills through innovative forms of teacher training;
    - strengthen teaching and other resources in rural schools;
    - encourage teachers to develop research and creative skills in their students;
    - increase teachers' responsibility for the academic progress of every student;
    - ensure that teachers differentiate teaching according to students' individual abilities, provide students with individual support, and identify and correct learning problems at an early stage;

- improve students' motivation to learn;
- study and replicate the best practices of leading schools with good results;
- make widespread use of the latest teaching technologies, replicating best national and international practice;
- do more to engage parents in the education process.

Notes

1. Decree of the Minister of Education and Science of the Republic of Kazakhstan No. 125 of 18 March 2008.
2. The sample examined was not representative.
3. *PISA in Focus* no. 26, available at www.oecd.org/pisa/pisainfocus/ (accessed 28 March 2013).
4. In England, for example, the National Curriculum has a number of levels and sub-levels representing knowledge and skills gained. Primary school students' performance is measured both by the sub-level attained in each subject by the end of each term or year, and by how far (i.e. how many sub-levels) they have progressed in that subject in the course of that term or year. The sub-levels translate into numbers of points, enabling teachers, schools and educational administrators to compare the attainment and progress of their students to regional and national averages, and report the results to students and their parents.
5. In PISA 2009, 73.3% of the students in the Kazakhstan sample were in 9th grade, 19.8% in higher grades and 6.8% in lower grades.
6. According to information received by the MESRK in the final stages of preparation of this report, the Ministry plans to modify the UNT in 2015 so that it comprises two parts: graduation test and university admission test.

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Chapter 4

Good policies for better teachers and school leadership in Kazakhstan

Chapter 4 provides a profile of the teaching force of Kazakhstan – education attainment, age, gender and remuneration – and compares it to other systems. It gives an analysis of recent efforts to upgrade the quality of teachers and discusses the barriers to change that the country faces, particularly in rural areas, to provide children in Kazakhstan with good quality teaching. Further, the chapter offers a description of the pre- and in-service training of teachers and efforts made to attract higher level applicants to system with comparisons to successful programmes in other countries. It also looks at the conditions of work of school principals, discusses their importance for educational change in Kazakhstan, and looks at the role of teachers in policy formulation. The chapter concludes with recommendations on improving policies for teachers and school leadership.

Introduction

There is no debate on the importance of the quality of teachers for the success of an educational system. This is acknowledged in the SPED 2011-2020, which states that "education quality is determined primarily by highly-qualified teachers". Results from student assessments such as PISA and TIMSS have shown that student performances vary generally more widely within schools than they do between schools and a large body of international research suggests that teacher- and teaching-related factors are the most important within-school factors influencing student learning (e.g. Darling-Hammond, 2000; Rivkin et al., 2005; Rockoff, 2004; Scheerens et al., 1989; Scheerens, 1993; Willms, 2000). Teachers therefore represent the most significant resource in schools and need to be a key focus in educational improvement efforts.

School leadership is equally essential for education quality and equity (OECD/Specialists Schools and Academics Trust, 2008). Principals are at the junction between classrooms, policies, local administrations and stakeholders. In this unique and challenging position they can influence the conditions and climate in which teaching and learning occur and with this – the effectiveness of schooling (OECD/Specialists Schools and Academics Trust, 2008; Scheerens and Bosker, 1997; Teddlie and Reynolds, 2000; Townsend, 2007). Principals also are the key mediators between schools and the environment in which schools operate. They are well positioned to both reach out to the "outside world" and mobilise support for the school, and to provide guidance to their schools and in particular teachers on how to respond to pressures for change and adapt to better serve the needs of their community (PricewaterhouseCoopers, 2007, OECD/Specialists Schools and Academics Trust, 2008).

This chapter discusses national policies for teachers and principals in Kazakhstan, takes note of relevant reform intentions, presents and analyses available data and information on various aspects of these policies and reforms, and assesses them against international practice.

Good policies for better teachers

Many of the challenges related to teacher policy that are faced by Kazakhstan are not unique to the country. For example, and as will be described in more detail throughout this chapter, Kazakhstan is experiencing shortages of quality teachers in certain locations (especially in rural areas) and for certain subjects (especially mathematics). A number of OECD countries are experiencing teacher shortages too (OECD, 2005; Schleicher, 2012). The teaching profession in Kazakhstan suffers from low status and prestige. In many OECD countries, teachers report feeling undervalued and there are similar concerns about the image and status of teaching (OECD, 2005). The

relative salaries of teachers in Kazakhstan are low. There is an inequitable distribution of teachers among schools, with highly effective teachers being less likely to work in disadvantaged schools, but more likely to work in schools for gifted students where additional school resources and support are available.

Addressing these issues is among the top priorities of the SPED 2011-2020 and the implementation of reforms to that end is already underway. As other countries are tackling similar issues, much can be learned from strategies that have been implemented in various contexts and OECD countries and that have been shown to be effective in building a quality teaching workforce.

In order to best inform current and future teacher policy reforms, it is imperative to draw upon available data on teachers in Kazakhstan and their work. In the following sections, this chapter provides an overview, based on the data available, of the current profile of the secondary school teacher workforce in Kazakhstan and attempts, whenever possible, to situate these data within the international context. The final section of the chapter on teachers discusses policies for attracting, developing and retaining effective teachers. Key areas of focus include initial teacher education and licensing requirements, induction and mentoring, in-service professional development, professional autonomy and teacher input in decision making, salary scheme, and status of the profession. It describes the current and planned reforms in the country and provides examples of good practice from other educational systems.

Current profile of the secondary school teacher workforce in Kazakhstan

The teacher population in Kazakhstan has been growing steadily over the past few years. According to the Ministry of Education and Science, in 2011 there were 286 370 teachers working in general education schools, representing an increase of 10 715 teachers compared to the previous year. This section presents and analyses data on the current teaching workforce in Kazakhstan, compares it to data from other countries, and briefly examines the extent of the teacher shortage in the country.

Age and gender

Gender imbalances are common to the teaching profession around the world. The phenomenon is usually attributed to the lower relative salaries compared to other professions, as well as to cultural factors (OECD 2005, 2009, 2012a). On average across OECD countries, women represent 82% of the teacher workforce in primary education, 68% in lower secondary

education and 56% in upper secondary education, although there is great variation between countries (OECD, 2012a). In Kazakhstan the gender imbalance is particularly apparent with more than eight women out of every 10 teachers in primary and secondary education on average (81%).

The age distribution of teachers in Kazakhstan indicates that the teacher workforce is somewhat younger than in the average OECD country. Kazakhstan has a larger share of its teachers aged 30 years or younger (24% in 2011) than in OECD countries on average, and a smaller proportion of teachers aged 50 years or older (21% in 2011; see Table 4.1). Nonetheless, these numbers indicate that nearly one-quarter of the teacher population is at or nearing the age of retirement and that significant efforts will need to be made to ensure that this does not result in important teacher shortages, especially in light of the expected increase in the student population (National Centre for Educational Quality Assessment – NCEQA, 2011). On average in OECD countries, 14% of teachers in primary education and 11% of teachers in secondary education are less than 30 years of age, while 30% in primary education and 35% in secondary education are over 50 years of age (OECD, 2012a).

Table 4.1. **Percentage of teachers in general secondary education schools in each age category (2010, 2011)**

Age category	2010	2011
Aged 20-30	24.0	23.9
Aged 31-40	28.6	27.7
Aged 41-50	27.9	27.4
Aged 51 and older, including of retirement age	19.5	21.0

Source: MESRK (2012a), *Региональная образовательная статистика* (*Regional education statistics*), National Centre for Educational Statistics and Assessment, Astana. Data validated by MESRK for the purposes of the OECD review.

Education level and teaching experience

More than one in ten teachers (13%) have less than three years of teaching experience and one third of the teacher workforce has less than eight years of experience (see Table 4.2).

One indicator of teacher quality is the level and quality of the initial education and training received. The educational level of secondary school teachers has been improving in terms of the overall percentage of teachers with higher education (see Table 4.3).

Table 4.2. **Percentage of teachers in general secondary education schools in each category of years of teaching experience (2005, 2010)**

Years of experience	2005	2010
8 years or less	31	32
9-20 years	40	35
20 years or more	29	33

Source: MESRK (2011), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex, Ministry of Education and Science of the Republic of Kazakhstan*, Astana. Data validated and updated by MESRK for the purposes of the OECD review.

Table 4.3. **Percentage of teachers in general secondary education schools by highest level of education completed (2007-10)**

Year	Higher education	Secondary vocational education	Incomplete higher education	General secondary education
2007	83.3	14.1	1.9	0.6
2008	85.2	12.9	1.4	0.5
2009	85.9	12.7	1.0	0.3
2010	87.0	11.9	0.8	0.3

Source: MESRK (2011), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex, Ministry of Education and Science of the Republic of Kazakhstan*, Astana. Data validated and updated by MESRK for the purposes of the OECD review.

According to the Background Report prepared for this review by the Information-Analytic Centre of the Ministry of Education and Science, since 2005 the proportion of teachers with higher education has increased by 10.5% (IAC, 2012). Although these numbers indicate improvement, data from a MESRK report on the qualitative composition of the teaching workforce in 2010-11 suggest that in 2010 there were still 13% of teachers who have not completed higher (tertiary) education (MESRK, 2010a). With 8% in the same year the proportion was somewhat lower for teachers in grades 5 to 11 (MESRK, 2011), but this is still a percentage more than two times higher than the international average of 3.4% (lower secondary school teachers who have not completed tertiary education in the 23 countries participating in the 2008 cycle of the Teaching and Learning International Survey – TALIS) (OECD, 2009, see Table 4.4, first column).

Table 4.4. **Percentage of teachers of lower secondary education (ISCED level 2) by highest level of education completed (2008)**

	Below ISCED level 5	ISCED level 5B	ISCED level 5A (Bachelor degree)	ISCED level 5A (Master degree)	ISCED level 6 (e.g. PhD)
Australia	0.3	1.0	82.8	13.7	2.2
Austria	3.1	59.3	1.3	33.6	2.6
Belgium (Fl.)	3.4	84.2	4.2	8.1	0.1
Brazil	8.6	0.2	89.3	1.8	0.1
Bulgaria	3.7	15.7	16.4	64.0	0.2
Denmark	1.9	0.2	90.3	7.5	0.0
Estonia	7.0	6.5	40.3	46.0	0.3
Hungary	0.2	0.1	71.5	27.8	0.4
Iceland	12.1	20.8	60.6	6.3	0.2
Ireland	0.6	3.4	79.4	15.9	0.8
Italy	5.3	9.4	6.9	77.4	0.9
Korea	0.3	0.3	64.7	33.9	0.7
Lithuania	4.1	13.0	47.0	35.7	0.1
Malaysia	1.0	12.1	79.4	7.5	0.0
Malta	3.7	13.3	71.9	10.7	0.4
Mexico	10.4	3.0	75.6	10.7	0.3
Norway	0.9	0.0	76.5	22.5	0.0
Poland	0.3	1.2	4.1	94.0	0.5
Portugal	0.4	4.3	84.4	10.7	0.2
Slovak Republic	2.5	0.0	0.5	96.2	0.8
Slovenia	3.7	41.9	52.9	1.4	0.1
Spain	3.5	1.6	11.4	78.8	4.7
Turkey	0.0	6.0	88.2	5.6	0.2
TALIS average	**3.4**	**12.9**	**52.1**	**30.9**	**0.7**

Note: Education categories are based on the International Standard Classification of Education (ISCED 1997). ISCED level 5A programmes are generally longer and more theoretically based, while ISCED level 5B programme are shorter and more practical and skills oriented.

Source: OECD TALIS 2008 Database.

Teachers in Kazakhstan themselves identify a lack of teacher qualifications as a barrier to effective teaching and learning. Over 1 000 teachers from 226 schools responded to a questionnaire as part of a study investigating the factors influencing students outcomes as measured by the external evaluation of 9th grade students' academic achievement (EAAA). When asked about the reasons associated with low results in student achievement, the most often cited reason was insufficient teacher qualification (see Table 4.5) (NCESA, 2012).

Table 4.5. **Percentage of teachers who reported that these factors heavily influence student achievement**

Factors	Heavily influences student achievement
Insufficient qualification of the teacher	65.9
Number of students in the class	56.8
Disadvantaged families	54.5
Socio-economic status of the student's family	53.4
Imperfection of educational programme and school books	50.0
Absence of parental care	37.5
Absence of supplementary lessons in the school	35.2
Weak material and technical resources	34.1

Source: NCESA (2012), *Factors Influencing the Quality of Knowledge of 9th Class Students*, Astana, Editorial and Publishing Service of NCESA.

The share of teachers with higher education is unevenly distributed across regions of the country, and across rural and urban areas (the proportions tend to be 2-5% lower in villages). This is of particular concern in terms of educational equity. The Mangystau region has the lowest proportion of its teachers with higher education (and this proportion has not been increasing much over the past several years), while the region of South Kazakhstan, and the cities of Astana and Almaty have the highest proportions. The region of Pavlodar has seen the highest increase (10%) in its proportion of teachers with higher education since 2007 (see Table 4.6).

The government has set a goal of increasing the proportion of teachers holding a master's degree to at least 20% by 2020 (MESRK, 2010b), but this goal is, unfortunately, limited only to specialisation (profile) schools. It remains crucial to ensure that the educational level of all teachers (i.e. in all regions, school types and in both urban and rural schools), especially that of teachers who are currently least educated, be the focus of policy attention. The review team therefore recommends that Kazakhstan set clear targets to

Table 4.6. **Percentage of teachers with higher education in each region and in villages**

				2010	
Region	2007	2008	2009	Total	In villages only
Akmola	76.3	77.2	78.9	80.0	76.8
Aktobe	80.4	81.5	82.6	82.1	78.1
Almaty	85.8	86.3	87.1	87.9	87.4
Atyrau	85.6	87.1	87.4	87.6	87.6
East Kazakhstan	83.4	84.3	85.1	85.8	82.5
Zhambyl	82.7	85.1	85.3	87.4	86.1
West Kazakhstan	79.3	80.8	82.4	83.4	80.6
Karaganda	82.7	84.2	83.5	84.7	80.0
Kostanay	76.7	79.4	82.6	83.8	80.0
Kyzylorda	86.3	88.0	88.2	88.9	87.4
Mangystau	71.9	75.5	73.1	75.0	72.9
Pavlodar	73.4	76.9	79.0	82.2	77.1
North Kazakhstan	77.3	80.1	81.6	83.0	80.6
South Kazakhstan	88.7	91.7	92.4	93.2	92.2
City of Astana	93.7	89.7	89.2	89.9	0.0
City of Almaty	88.7	93.6	93.0	93.6	0.0
Public organisations	**82.1**	**82.1**	**98.7**	**99.0**	**0.0**
NIS	0.0	0.0	0.0	98.3	0.0
Kazakhstan	83.3	85.2	85.9	87.0	84.8

Source: MESRK (2011), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana. Data validated and updated by MESRK for the purposes of the OECD review.

reduce, within a reasonable timeframe, the percentage of teachers in all grades of general secondary education who have not completed higher education. Achieving this goal will require concerted efforts on several fronts, including the incorporation of higher (tertiary) education as a minimum standard for teacher certification and the development of further incentives for attracting highly educated teachers in rural areas and in regions with shortages. It is of note that in all OECD countries, tertiary education is the minimum requirement to become a teacher at both primary and secondary levels of education.

The smaller proportion of teachers with higher education in villages is a first indication of an inequitable distribution of qualified teachers among schools. Data on distribution of teachers across the country by level of professional category[1] points to the inequality of teacher distribution even more vividly than teacher educational attainment (see Table 4.7). On average across all regions, the percentage of teachers belonging to the highest qualification category is two to three times greater in urban than in rural areas, while the percentage of teachers without a qualification category in rural areas is nearly double that in urban areas in most regions. This imbalance points to an important equity issue; it indicates that the students who most need better quality teachers are not very likely to be taught by them. For a full description of teacher categories see the section on "credentials and licensing requirements" below.

Table 4.7. **Percentage of teachers in each category in urban and rural areas**

	Urban				Rural			
Region	Highest	1st	2nd	No category	Highest	1st	2nd	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
Kostanay	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
City of Astana	28.9	26.0	25.9	19.3	-	-	-	-
City of Almaty	28.8	25.1	26.6	19.5	-	-	-	-
Kazakhstan	**22.6**	**29.6**	**27.2**	**20.6**	**10.4**	**31.4**	**31.3**	**26.9**

Source: Source: MESRK (2011), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana.

Teacher shortages

Closely related to the inequitable distribution of teachers is also the fact that Kazakhstan suffers from some teacher shortages. According to the Ministry of Education and Science, there were 1 362 secondary teacher vacancies at the beginning of the 2010/11 school year. While this represents a fairly low overall level of teacher shortage (0.5% of the total number of teachers in the system), it is most problematic in rural areas (970 unfilled vacancies) and for teachers of mathematics and Russian language in Kazakh schools (see Table 4.8). While schools in urban areas have little difficulty attracting university graduates as beginner teachers, schools in rural areas have to charge the teachers they have (up to a third of which without a category) with more than one workload.

Kazakhstan is making some efforts to attract teachers to rural areas. For example social packages that include relocation allowances, free accommodation and subsidised loans are offered to teachers taking up posts in rural areas. According to information provided by the MESRK, between 2009 and 2012 these offers attracted 18 164 university graduates. The review team visited a newly-built school in a suburban area where the great majority of teachers were young and who benefited from these allowances. Teachers interviewed at this school confirmed that these allowances were an important factor in their decision to accept a post in this particular school rather than in a school in the city. However, it should also be noted that according to the provisions of Government Resolution 1 400 teachers in classes with less than 15 students (frequent occurrence in rural areas) are entitled to only 50% of some common additional payments such as for correcting homework or managing a class (see section on compensation of teachers below).

However, the inequitable distribution of high quality teachers is not restricted to the urban/rural divide. As mentioned previously, there are important differences in the distribution of highly qualified teachers in certain regions of the country, and the review team also noticed during school visits a noticeable difference in the proportion of highly qualified teachers in schools for gifted students compared to regular schools.

Teacher shortages and more specifically the unequal distribution of high quality teachers in the system is not a challenge faced only by Kazakhstan (OECD, 2012b). However, it is highly problematic because effective teachers are particularly crucial to closing the achievement gap between low and high performing students (a high priority task for Kazakhstan as discussed in Chapter 2) and to improving the overall performance of an education system. High achieving systems such as the ones found in Finland, Canada and Korea provide good examples of countries that combine equity and high performance. In Korea, for example, ensuring the provision of quality education to all students in the system is partly done by ensuring that the best

Table 4.8. **Vacant teaching posts in public general secondary schools at the beginning of the 2010/11 school year**

Discipline	Number of vacancies	Percentage of total unfilled posts
Mathematics	227	16.7
Russian language at Kazakh schools	136	10.0
Physics	117	8.6
Chemical science	114	8.4
English language	99	7.3
Primary school	83	6.1
Physical culture	79	5.8
Music	73	5.4
Psychology	67	4.9
Russian language and literature at Russian schools	59	4.3
History	42	3.1
Kazakh language at Russian schools	36	2.6
Technology	35	2.6
Other	35	2.6
Biology	31	2.3
Principles of personal and social safety & basic military training	26	1.9
Geography	23	1.7
Fine arts and drawing	23	1.7
Computer science	16	1.2
Crafts	16	1.2
Kazakh language and literature at Kazakh schools	12	0.9
French language	7	0.5
Ecology	3	0.2
Valeology	2	0.1
German language	1	0.1
Total	**1 362**	**100**

Source: MESRK (2011), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana.

teachers teach those students who need it the most. Students from low socio-economic backgrounds are actually more likely than their better-off peers to be taught by high quality mathematics teachers. Incentives provided to attract and retain high quality teachers in high need schools include additional salary, smaller class sizes and less instructional time (OECD, 2012b).

To attract effective teachers where they are most needed, the review team recommends that the authorities in Kazakhstan develop targeted policies at multiple levels, including aligning teacher education programmes with the needs of challenging or disadvantaged schools, improving working conditions in challenging or disadvantaged schools, and ensuring adequate financial incentives to attract and retain teachers in these schools. Research suggests that financial incentives are effective in that they provide recognition for a teacher's choice to work in a challenging environment (Clotfelter et al., 2006).

Attracting, developing and retaining effective teachers

Successful education systems invest significant resources into attracting, training, developing and supporting their teacher workforce (Darling-Hammond and Lieberman, 2012; Hargreaves and Fullan, 2012; OECD 2005, 2010, 2011; Schleicher, 2011, 2012).

The status of the teaching profession influences an education system's ability to attract top candidates. A small number of teachers in the education system of Kazakhstan enjoy very high social status amongst their peers and the community. The review team had the opportunity to meet such teachers, especially in schools for gifted students. These teachers have been publicly recognised for their achievements, have received substantial financial rewards, and are well-known and well-respected. But the recognition given to these few teachers is not based on transparent and comprehensive criteria (discussions with teachers in these schools suggest that the main or only criterion used is the proportion of the teacher's students who are top performers in the UNT examination and/or win Olympiads), nor does it indicate a high status of the profession as a whole.

The status of the teaching profession is a complex concept and policies that aim at improving it and attracting good candidates should target several interconnected areas, as listed below (Ingersoll and Perda, 2007; see also the UNESCO-ILO Recommendation concerning the Status of Teachers adopted in 1966):

- Initial teacher training, credential and licensing requirements for entry (e.g. teacher competences and standards, certification, entrance examination, etc.);
- Induction and mentoring programmes for entrants;

- Professional development support, opportunities and participation;
- Professional autonomy and input in decision making;
- Compensation levels (e.g. starting salary, maximum salary, retirement plans);
- Prestige and occupational social standing.

The State Programme for Education Development (SPED) 2011-2020 acknowledges the importance of and great need for enhancing the status and prestige of the teaching profession in the country – indeed this is stated as the second aim of the programme. The SPED aims to improve the status of teachers mainly by focussing on training highly-qualified teaching staff, by increasing teacher remuneration and by building a positive image of a teacher in society. However, the only clearly-stated measure to evaluate the achievement of the stated goal to improve the status of the profession is the percentage of highly qualified teaching staff holding higher and 1st category (42% in 2010; 47% in 2015; 52% in 2020). The review team recommends that Kazakhstan takes a more comprehensive view of the factors influencing the status of the teaching profession and develop a strategy to identify and monitor key indicators based on the list above.

The remainder of this section provides an overview of the current situation in Kazakhstan for each of these key areas that affect the status of the profession and influence the country's ability to attract, develop and retain effective teachers in the system, and draws on international best practices to inform further reforms in teacher policy.

Initial teacher training, credentials and licensing requirements for entry into teaching

Initial training

The minimum requirement for teaching in pre-primary or primary education (up to grade 4) in Kazakhstan is the completion of a pedagogical qualification obtained at the vocational and technical post-secondary education (college) level (post-secondary, non-tertiary education). Teaching at the general lower secondary or general upper secondary educational levels (grades 5 to 11) requires teacher training at a higher education institution (i.e. a bachelor's degree or higher).

Students can enrol in teacher training colleges with prior completion of general lower secondary education (after grade 9) or general upper secondary education (after grade 11). The college programmes last three to four years with a strong focus on practical experience starting in the second year.[2] There is no need to pass the UNT to enter teacher training colleges. Many of the

students in pedagogical programmes in the colleges that the review team visited cited this as one of the reasons they chose to attend these institutions. There are 10 pedagogical qualifications available through teacher training colleges. Following the completion of a college programme, some students go on to complete a bachelor's degree or higher.[3] Staff from a university offering teacher preparation indicated to the review team that 20% of their students came from the teacher training colleges and that these candidates were much better prepared than the students coming from general upper secondary education.

Eighty-six of the 133 higher education institutions provide teacher qualifications. The bachelor's programmes typically last four years and focus on pedagogical specialties such as preschool education, primary education, pedagogy and psychology, professional education, social pedagogy and self-actualisation. Students must complete no less than 128 credits in these programmes, including credits in their subject specialty. Of these 128 credits, at least 20 represent an internship or practicum (i.e. practical experience). At the end of the programme, students must complete a state examination on the specialty of their studies.

Admission to higher education institutions for the bachelor's programmes is based on the results of the UNT. As mentioned in Chapter 3, the UNT has many limitations and does not assess students' depth of knowledge or their ability to apply this knowledge. It is therefore not a suitable tool to select the best candidates into teacher training programmes. The SPED envisages the introduction of a further examination ("Creative Examination") to determine the aptitude of candidates for teacher training programmes. This examination will focus on identifying the candidate's level of subject training, psychological readiness for the profession and motivation for teaching; it will also include school testing prior to graduation and an essay, and several computer-based standardised tests after graduation. Admission to master's programmes (typically one to two years) and doctoral training (typically three years) is based on the results of entry examinations and interviews.

One indication of the status of the profession is the quality of candidates who enter teacher training programmes. Unfortunately, information about the competitiveness of the programmes, whether at the college or university level, was not available for this review. For example, it is unclear how the candidates accepted in education training programmes in universities compare to candidates in other university programmes (even in terms of their results on the UNT, which is not an ideal measure of academic quality, as mentioned before). Nor is there any data on the number of applications per available place on education training programmes. However, the review team received some anecdotal evidence from stakeholders during fieldwork. According to one university, a leading secondary teacher training provider,

the quality of teacher training students tended to be lower than that of students on other programmes, owing to the profession's low status and appeal; but teacher training was a popular choice for people with UNT scores too low for other courses, given the high number of training grants available. This university's teacher trainees generally completed their courses, thanks to the grants, but many failed to go into the profession afterwards. This university's management very much agreed that UNT score should not be the only means of assessing talent and deciding who may train as a teacher; they considered it a problem that universities cannot reject applicants with UNT scores "above the line", even if they appear patently unsuitable for teaching.

Box 4.1. **Finland: Highly selective teacher education programmes**

A high-performing country where teachers enjoy very high status is Finland. Before the Reform Act in the late 1970s, training for teachers in primary and secondary schools in Finland consisted of a post-secondary, non-tertiary (college) programme of 2 or 3 years focused primarily on practical training. The Reform Act shifted teacher education from colleges to universities and the minimum requirement for all teachers was increased to a master's degree. Over time, these university-based teacher programmes were developed and became highly selective: in 2010, there were 10 applications for every one of the 660 available places in primary school preparation programmes. Candidates must successfully complete a two-stage admission process. First, candidates are screened based on their Matriculation Exam score, their secondary school record and out-of-school accomplishments. Candidates who pass this screening must then pass a written examination, be observed in a teaching-like activity in which their interaction and communication skills can be assessed, and be interviewed to assess their motivation to teach and other personality factors

Source: OECD (2010a), *PISA 2009 Results: What makes a school successful – Resources, Policies and Practices (Volume IV)*, OECD Publishing. http://dx.doi.org/10.1787/9789264091559-en.

In developing plans to modify the current basis for candidate selection and recruitment into teacher training programmes and improve the quality of these programmes, Kazakhstan should consider following, to a practicable extent, good practice like the one from Finland. The introduction of additional requirements for entering the profession should go along with accompanying measures to raise the attractiveness of teaching, for example by improving compensation levels at the beginning of the career (see Chapter 5 for data on teacher remuneration).

Credentials and licensing requirements

Kazakhstan has in place a teacher attestation system whereby teachers are categorised into one of three categories: 2nd category, 1st category, or highest category. New teachers do not have a category immediately after graduation, although under certain conditions they can apply for 2nd category attestation after one year of teaching experience.

There is no requirement for teachers to attempt to upgrade their category; however, teachers must apply to obtain a formal attestation to at least maintain their current category level at a minimum once every five years. Theoretically, if they are not successful, they can be downgraded to a lower category, although it is unclear how often this outcome occurs. In certain circumstances it is also possible to voluntarily apply for attestation for a category upgrade before the mandatory period of five years.

Table 4.9. **Qualitative composition of secondary school teachers, as % of their total number**

	Highest category		1st		2nd		No category	
Region	2009	2010	2009	2010	2009	2010	2009	2010
Akmola	13.1	13.2	29.0	29.7	30.8	31.5	27.0	25.5
Aktobe	11.5	12.0	25.9	26.5	31.6	32.1	31.0	29.4
Almaty	15.5	14.4	31.5	32.8	27.3	27.3	25.7	25.5
Atyrau	12.0	12.2	34.6	39.0	27.3	26.6	26.1	22.1
East Kazakhstan	14.0	15.2	32.1	32.7	30.2	29.0	23.8	23.1
Zhambyl	17.0	18.8	25.1	26.0	28.5	28.9	29.3	26.3
West Kazakhstan	8.9	9.7	34.5	35.8	31.9	30.8	24.7	23.6
Karaganda	15.7	17.4	32.0	33.1	28.7	27.8	23.6	21.7
Kostanay	13.3	13.7	25.6	27.5	29.6	29.1	31.5	29.8
Kyzylorda	3.6	3.2	32.6	33.8	33.1	33.1	30.7	29.9
Mangystau	8.3	9.8	29.0	30.1	30.5	29.9	32.3	30.2
Pavlodar	18.8	19.7	28.5	30.9	25.9	26.3	26.9	23.1
North Kazakhstan	14.5	14.5	31.5	31.9	27.6	28.1	26.4	25.5
South Kazakhstan	13.9	14.2	28.1	29.8	31.7	33.5	26.3	22.5
City of Astana	26.1	28.9	25.4	26.0	27.6	25.9	20.9	19.3
City of Almaty	26.5	28.8	25.3	25.1	25.5	26.6	22.8	19.5
Kazakhstan	**14.2**	**14.8**	**29.5**	**30.7**	**29.6**	**29.8**	**26.7**	**24.6**

Source: MESRK (2011), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana.

The attestation process involves an analysis of the pedagogical activity of teachers against criteria which are commensurate with their level of qualification. The attestation itself looks at proofs 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, 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). The attestation process requires the teacher to submit a portfolio containing information about their participation in further training and other pedagogical activities (e.g. development of teaching methods and curricula), as well as information about the educational achievement of their pupils (e.g. winners of Olympiads and other competitions). Those candidates who want to apply for attestation for a category update before the mandatory period of five years is over must also take an examination developed by the National Testing Centre. The examination consists of 60 multiple choice questions (20 questions on Kazakhstan laws and regulations, 20 questions on the basics of psychology and pedagogy, 20 questions on subject knowledge). To be successful on this test, the candidate must obtain a minimum score of 50% on the first two sections and 70% on the last section on subject knowledge.

The responsibility for evaluating the application depends on the qualification category the candidate is aspiring to. Applications for 2nd category are reviewed by a commission at the school level (composed of high level school staff). Applications for 1st qualification category are reviewed by a commission at local or municipal level, and the applications for highest (and sometimes also 1st category) are reviewed and decided upon at the regional level.

The criteria that guide the attestations are the "model qualification characteristics of teachers" as specified in the Order of the Minister of Education and Science No. 338 of 13 July 2009 and amended on 9 September 2011. The qualifications characteristics apply to all teachers, regardless of subject,[4] specialty or grade level and are divided into three main areas: official duties, additional knowledge required, and qualification requirements.

The section on official duties lists the main responsibilities of teachers, which include delivering the curriculum using a variety of teaching methods, promoting the development of social and individual abilities in students, preparing lesson plans, ensuring the implementation of innovative educational technologies, participating in professional development and seeking the improvement of professional qualifications, ensuring the protection of students' life and health, communicating with parents, monitoring student discipline and attendance, and ensuring the preparation and submission of required reports on

Table 4.10. **Qualification requirements for teacher attestations**[5]

	Teacher category	Educational attainment	Teachers should be able to do
Mid-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.
Specialist-level	No category	Higher teacher education	Not specified in the 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: Government Regulation No. 338 of 13 July 2009, Astana, Kazakhstan.

activities. The additional knowledge required to be a teacher includes in-depth knowledge of the constitution of the Republic of Kazakhstan and of its laws and regulation and how they apply to the education sector.

The section on qualification requirements lists the minimum educational attainment needed and what teachers in each of the teacher qualification category should be able to do (see Table 4.10).

It remains unclear how teachers are specifically assessed against these requirements other than through the multiple choice examination described above and the information they provide in their portfolio. Moreover, these requirements do not include detailed competencies and skills needed to identify quality teaching in different subjects or at different grade levels.

This is at odds with the growing number of educational systems that have articulated clear standards for what teachers should learn and be able to do as a guide for developing initial and continuing teacher training programmes and for the initial licensing and renewal of teacher certification (Darling-Hammond and Lieberman, 2012; OECD, 2013). These standards help illustrate the nuances associated with teaching at different grade levels, in different subject areas and in different contexts. Professional standards not only help raise the status of the profession, but can be used as the basis for the development of a professional accountability model. As part of this accountability model, the professional standards can represent a pillar that helps support quality assurance in an educational system through clear criteria and transparent processes. These include standards for accreditation of teacher training programmes, standards for licensing teachers for practice, standards for recognition of teacher quality, and standards for advanced teacher certification.

There are numerous examples of countries that have developed sophisticated systems of professional standards that are used as a basis for the continuing accreditation of teachers and educational institutions that provide initial and continuing development for teachers. See, for example, the three national systems described in Box 4.2.

Although there exist standards for higher education institutions in Kazakhstan, as well as qualification requirements and general standards for teacher attestations (described above), there is no integrated system linking these standards to the different components of the education system such as teacher initial training, teacher appraisal and evaluation systems, teacher continuing development and certifications for professional recognition of higher levels of teacher competence.

It is important to highlight that teachers should play a key role in the development of professional standards as this is critical to ensuring that the standards are both relevant and adopted by the profession. This can be

done by involving teachers' unions, teachers' professional organisations or associations and outstanding teachers from across the system (OECD, 2013).

The review team recommends that the authorities in Kazakhstan develop, *in close collaboration with teachers*, a coherent system linking detailed professional standards for teachers that reflect a shared understanding of what is considered to be accomplished teaching for different subjects and different levels; and also recommends that these be the basis for the development of standards for the attestation of teacher education programmes, for regular teacher evaluation and attestation processes, and for the development of formal professional development plans.

Box 4.2. **Using professional standards as a basis for accrediting teachers: systems in three countries**

United States: the national board for professional teaching standards

In the United States, the National Board for Professional Teaching Standards, an independent organisation composed mainly of classroom teachers and other experts, has led, over the past few decades, efforts to develop standards for the teaching profession. The resulting standards are performance-based and therefore clearly describe what teachers should know, be like and be able to do. Detailed standards have been developed for the different subject areas and for the different grades. The standards are used by many States as part of their teacher evaluation processes, compensations systems and career ladders.

Teachers seeking certification must complete an extensive assessment composed of two main parts: *(1)* A portfolio where teachers must demonstrate their pedagogical practice as it is shaped by the particular needs of their students and the context of their school: this typically contains student work samples, videotape of classroom practice, extensive written analyses and reflections based on these materials; and *(2)* a written essay-type assessment (i.e. not multiple-choice) comprised of a set of exercises during which teachers demonstrate their content knowledge and their pedagogical content knowledge and which includes tasks such as analysing teaching situations, evaluating curriculum materials and constructing lessons plans.

Chile: The good teacher framework

Chile has recently developed a national framework ("The Good Teacher Framework") defining standards for the teaching profession based on the well-known Danielson *Framework for Teaching* (1996, 2007). The framework contains four domains: *(1)* Preparation for teaching, *(2)* Creation of an environment favouring the learning process, *(3)* Teaching that allows the learning process of all students, and *(4)* Professional responsibilities. For each of these domains, the framework

Box 4.2. **Using professional standards as a basis for accrediting teachers: systems in three countries** *(continued)*

specifies criteria (for a total of 20 criteria) that teachers should be prepared to meet, examples of descriptors for these criteria and of the four performance levels (unsatisfactory, basic, competent, outstanding) for the descriptors, making this framework very pragmatic and concrete.

Australia: National professional standards for teachers

The new Australian standards were developed though a validation process which actively involved teachers and represent a public statement of what constitutes teacher quality. The standards articulate what teachers are expected to know and be able to do at four stages of their careers (graduate, proficient, highly accomplished and lead) and inform the preparation, evaluation, support and development of teachers and are an integral part of the teacher certification process. Teachers are initially granted "graduate" level (and provisional registration to teach) and have five years to demonstrate meeting the requirements for obtaining the "proficient" level, required for full registration. Higher levels of competence can be sought on a voluntary basis. Registrations must usually be renewed every five years.

There are seven standards divided into three domains of teaching applicable to all four stages of a teacher's career. Teachers must demonstrate competency on each standard before being granted certification for the next level of their career progression by the authorities.

Source: OECD review team.

Induction and mentoring programmes

The first years of teaching can be particularly challenging for new teachers who are still developing their skills and competencies. Well-developed induction and mentoring programmes provide important support to new teachers, enhance their effectiveness and job satisfaction and therefore reduce the likelihood that teachers will leave the profession early (OECD, 2005).

Kazakhstan appears to have put in place an effective induction system, which mostly relies on a strong mentorship programme. Moreover, several new teachers interviewed by the review team confirmed that they were assigned experienced mentors and took part in many collaborative activities such as classroom observations (up to three times per week) as part of the mentoring agreements.

According to the Ministry of Education and Science, teachers new to the school are first given a basic introduction to the school and its history and

traditions, the internal regulations, and the staff by the principal and deputy principal.

At the beginning of the school year the principal assigns a mentor to the teachers who are new to the profession. Mentors are chosen from the school's best candidates of 1st category or highest category teachers with similar specialisation to that of the new teacher.

Mentoring programmes in Kazakhstan schools are typically composed of three distinct steps which can each last up to one year. The first step (the "adaptation" step) focuses on identifying the strengths and weaknesses of the new teacher to prepare a detailed collaborative development plan, which requires the approval of the school principal. During this phase of the mentoring programme, the mentor is responsible for evaluating the new teacher's professional competence and planning professional development activities to target areas of need for the new teacher. The mentor's role is to accompany and support the new teacher in his or her new role. The mentor takes part in systematic and frequent classroom observations to provide the new teacher with feedback on his or her pedagogical practice. These frequent classroom observations were confirmed by a number of young teachers the review team met during the school visits, with some teachers reporting that these classroom observations typically occurred at least three times a week.

The new teacher and the mentor are required to work collaboratively to prepare monthly progress reports to be submitted to the school administration and which lead to revisions of the teacher's development plan when appropriate. At the end of the first step of the mentoring programme, the mentor assesses the teacher's competency based on general criteria, which include:

- Extent to which the professional preparedness of the new teacher corresponds to the qualification requirements of the post;
- Mastering of basic pedagogical techniques and knowledge of regulations;
- Mastering of practical methods of work;
- Effectiveness of professional interaction with students, parents, social partners, school administration and colleagues.

The second step of the mentoring programme (the "planning, self-motivated creative search" step) focuses on improving the new teacher's pedagogical methods and promoting conditions for teacher self-learning. The mentor's role at this stage is mainly to provide guidance to the new teacher in his or her search for pedagogical improvement.

During the third and last step of the mentoring process (the "control, evaluative and reflexive" step), the mentor's role is to promote skills of self-reflection and self-evaluation in the new teacher. The mentor also helps the new

teacher create a portfolio containing the teacher's achievements, reflections on pedagogy, feedback on the teacher's lessons, and outcomes of professional development activities. The portfolio is then reviewed by the school committee and principal. Any further steps for the continued development of the teachers are identified upon the completion of the mentoring programme.

The review team considers that the mentoring programmes as described in the Ministry documents are designed to provide new teachers with the necessary support required to face the challenge of this new profession successfully. However, there is no information available about the extent to which this programme is implemented in the different regions of the country, in both rural and urban areas, or in all subjects and grades. It is unclear whether the supply of mentors is adequate to meet the needs of new teachers throughout the country, especially given the shortage of highly qualified teachers in rural areas. Moreover, the mentoring programme is not clearly related to professional standards, as recommended in the previous section. In most countries where induction programmes are mandatory for new teachers, the successful completion of this programme is required to obtain full certification as a teacher (OECD, 2005). The review team recommends that the successful completion of the mentoring programme be clearly aligned with professional standards and be tied to the attestation system.

Continuing professional development opportunities and support

Professional development is an essential tool not only for improving the quality of the teacher workforce, but also to help retain teachers in the profession (OECD, 2005). Ongoing professional development gives teachers the opportunity to update and further develop the knowledge and skills they have acquired during their initial training and induction phase, as well as the opportunity to learn new skills that will help them face the increasingly complex demands of their job. The provision of sufficient support for ongoing professional development is particularly important in a context of reform implementation with the introduction of new curricula and the increased need to implement pedagogical changes based on new research on teaching and learning. This is the current context in Kazakhstan and there have clearly been significant efforts made to create new opportunities for in-service teacher training. The challenge that faces many countries when implementing significant changes to the provision of these development opportunities for teachers is to ensure that they become a part of a coherent framework for teacher development that is interconnected with initial teacher training and induction and rooted in clear professional standards (OECD, 2005).

According to data provided by the Department of pre-school and secondary education of the Ministry of Education and Science of the Republic of Kazakhstan, in 2012 the number of primary and secondary

school teachers who underwent in-service training was 72 508. Results from TIMSS 2011 suggest that participation rates are high in Kazakhstan compared to international averages. In both sciences and mathematics, proportions of 8th grade students whose teachers participated in professional development in the two years prior to the assessment are several percentage points above the international average (see Table 4.11).

Table 4.11. **Percentage of teachers participating in professional development, by development area**

	Area of professional development	Kazakhstan	International average
Science	Science content	76 (1.9)	55 (0.5)
	Science pedagogy/instruction	83 (1.8)	58 (0.5)
	Science curriculum	73 (2.1)	53 (0.5)
	Integrating ICT into science	90 (1.2)	49 (0.5)
	Improving students' critical thinking or inquiry skills	66 (2.6)	43 (0.5)
	Science assessment	65 (2.8)	48 (0.5)
Mathematics	Mathematics content	74 (3.4)	55 (0.5)
	Mathematics pedagogy/instruction	78 (3.4)	58 (0.6)
	Mathematics curriculum	68 (3.8)	52 (0.5)
	Integrating ICT into mathematics	85 (2.9)	48 (0.5)
	Improving students' critical thinking or inquiry skills	66 (3.9)	43 (0.6)
	Mathematics assessment	56 (3.9)	47 (0.5)

Note: Standard errors are in parentheses.

Source: TIMSS 2011 database.

The laws and regulations require teachers to regularly advance their professional skills and to participate in formal professional development at least once every 5 years. According to the Ministry of Education and Science, this professional development most often takes the form of advanced training courses that last a minimum of 72 hours and no more than 4 months (Law on Education of the Republic of Kazakhstan). The decision regarding teachers' participation in advanced training courses is taken at the school level.

Other forms of professional development that are available to teachers include "internships" and "retraining". *Internships* must be part of a teacher's individual development plan approved by the school and are used to expose teachers to best practices in an outside organisation, enterprise or agency. In some cases, *internships* can take place abroad. *Retraining* is carried out in institutions for professional development and has a more academic focus. It allows teachers to obtain a second university degree on the basis of a bachelor degree in an accelerated fashion, and is tied to increases in salary.

Professional development takes place on the basis of contracts with teacher training institutions, and follows a profiled course with duration of not less than 280 hours. Education institutions which have highly qualified staff can teach for and award a second university degree on a paid basis. The courses must be at least 1 440 hours long and lead to a second university degree.

Also of note, another professional development opportunity for (a small number of) teachers in Kazakhstan is offered by the Centre for International Programmes through the Bolashak programme. Since 2008, this programme offers professional training scholarships and internships for professionals in science and pedagogy that can be up to 12 months in duration, but not less than three months. Starting from 2012, 2 more fields – medicine and engineering have been added to the list. Teachers with a minimum of 3 years' experience are eligible to participate in the programmes, and the average admission rate is 50%. The programmes operate with partner universities that help develop the courses included in the training. The training begins with English language courses (for those teachers in need of language training), followed by pedagogical training (e.g. innovative teaching methods, modular teaching, and teaching in English). Teachers are required to return to Kazakhstan to teach for at least three years following the completion of this programme (a teacher who was teaching in a rural area is required to return to teach in the same rural area). According to information by the Kazakh Centre for International Programmes, by 2013 the number of professional training scholarships awarded in the area of science and pedagogy was 697, of which in 2013 alone 78 were for teachers. Unfortunately, the long-term survival of this programme is unclear as there is no long-term planning developed past 2016.

Finally, an ambitious and empirically-based reform for teacher continuous professional development is currently under way which aims to provide a new structure for multi-level training programmes developed in co-operation with international partners (mainly the Faculty of Education, Cambridge University) and with the Nazarbayev Intellectual Schools (NIS) Centre of Excellence. The programme is composed of three levels:

- Basic: training teachers to lead learning processes in the classroom;
- Intermediate: training teachers to lead learning processes in the school;
- Advanced: training teachers to lead learning processes of the network of schools. This level essentially trains the trainers that will deliver lower level programmes.

Each level of the programme includes three consecutive one-month periods. The first month is spent off-site and focuses on reviewing the key ideas of the programme.[6] The second month is spent at the teacher's school to practice

implementing the methods in a pedagogical setting (with online support from the training centre). The last month is spent off-site and focuses on self- and peer-reflection and assessment on the implemented changes to the teacher's pedagogical practice. At the end of the programme, teachers must put together a portfolio, make presentations, and pass a test at the NIS Centre for Pedagogical Measurements in Almaty. According to data for 2012, approximately 7% do not successfully complete the programme. Teachers who complete the basic level are awarded a 30% increase in salary. Teachers who successfully complete the intermediate level obtain a 70% increase in salary and teachers who complete the advanced level see a 100% increase in their salary.

The advanced level training is offered at the NIS Centre of Excellence. Exceptional teachers are nominated by principals for this level of training and selected by the Regional Departments of Education. The intermediate level of training is offered at the National Centre for Professional Development of Pedagogical Workers (ORLEU). The basic level of training can be completed at centres for teachers' advanced training (one per region, plus one in Almaty and one in Astana). It is still early in the phases of implementation of this programme and thus only a small number of teachers have benefited from this training. In the first half of 2012, 286 teachers obtained the advanced level to become trainers in this programme, 165 teachers received intermediate levels and 3 038 teachers completed the basic level training. The government has stated a goal for 120 000 teachers to upgrade their skills with this programme over the next 5 years.

In developing this ambitious programme on a larger scale, it will be essential to ensure an equitable distribution of teachers receiving the training, and that the programme does not only benefit teachers who are already high-performing. It is also important to set realistic expectation as to the measurable outcomes of this programme in the short and medium term. For example, using outcomes from the next cycle of international assessments such as PISA or TIMSS to assess the success of such a programme is not recommended. Before changes in pedagogical practices and approaches to learning as promoted in this training programme can be observed at a system-wide level, a critical mass of teachers championing these changes must be present at all levels of the system and in all schools, including in ungraded schools. To facilitate this change, the review team echoes a recommendation made by teachers who have participated in the programme and who noted that school administrators should also participate in this training, to learn the new approaches to teaching and create optimal conditions within schools for implementing changes accordingly.

Professional autonomy and input into decision making

Improving the status of the teaching profession involves treating teachers as professionals. That includes giving them professional discretion and

independence in how they shape student learning in their classroom and including them in educational decisions at the school and system levels.

Teacher input into decision making can occur at the school level through systems of distributed school leadership and participation in school councils or committees for example. In these instances, teachers participate with other members of the school community in the development of guidelines for the overall school programme, the internal organisation of the school, the disciplinary context, the management of the school facilities, the co-ordination of pedagogical issues, the management of student affairs, etc. This level of teacher involvement in school decision making and school leadership is important to promote the professionalisation of teaching and to increase the status of the profession.

A certain level of involvement by teachers was apparent in the schools visited by the review team, especially in schools for gifted children where teachers appear to have an important role to play in the development of school policies. The review team met with teachers who were responsible for developing curriculum material (including textbooks) for the school and teachers who reported being involved in committees responsible for the implementation of innovative pedagogical practices throughout the school. Whether these teachers were representative of the average experience of teachers throughout the system remains unclear, and there may indeed be room for improvement in this area. For example, despite collecting a predominantly positive feedback, the survey of principals included in the Analytical Report of the 5th and 9th Grade Student Performance Evaluation in General Secondary Schools of Kazakhstan (NCESA, 2012) also notes that:

> "School principals consider it necessary to strengthen the professional associations of teachers in many respects, and certain issues still need to be addressed. School teaching associations need to make a radical transition from playing a merely nominal role to implementing effective methodological support mechanisms, establishing cross-subject links and co-ordination between subject teachers, and working out collective solutions to education related issues."

Another level at which teacher input should occur is at the system level, the level where educational policies are formulated and developed. In many countries, consultative mechanisms and institutional arrangements help to promote the dialogue and engage teachers and their professional associations in the development of educational policies. These arrangements provide an opportunity for teachers, as well as other stakeholders, to participate in policy development as well as a platform for the development of profession-led standard-setting for quality assurance in initial training programmes, teacher attestation/certification and teacher evaluation.

This level of teacher involvement was unfortunately not evident during fieldwork by the review team. The role of the trade union for workers in the sphere of education and science policy making appears to be minimal, with little if any involvement in shaping the educational policy discourse in the country, and teachers are not required to be members. Another problem that impedes involvement is the highly dispersed and frequently updated base of education legislation. All laws and regulations in Kazakhstan are accessible to the public, but without guidance on what to look for and at what level (primary or secondary laws, including Presidential decrees, government decisions, regulations of the MESRK, and annexes to many of them), they mostly remain invisible to the average education professional.

Good practice examples of involving teachers in the educational discourse can be found in a number of countries, such as Ireland and Chile, described in Box 4.3.

Box 4.3. **Involving teachers in national education policy-making: examples from two countries**

Ireland: the Teaching Council

In 2006 Ireland established an autonomous, self-financing and regulatory body (the Teaching Council) with the mandate to regulate the teaching profession and promote professional standards in teaching. This body is composed of 37 representatives, the majority of whom are registered teachers, along with members from teacher education institutions, school management, parents' associations, and industry and business associations. The main functions of this body include:*

- To protect standards of entry to the profession: the Council is mandated to review and accredit programmes of teacher education, to establish procedures in relation to induction and probation and to maintain a Register of Teachers.
- To maintain and improve standards of professional practice and conduct: the Council publishes Codes of Professional Conduct for Teachers which include standards of teaching, knowledge, skill and competence. The Council ensures that the highest standards of professional conduct are maintained. The Council reviews and accredits programmes of continuing professional development.
- To establish and maintain the Register of Teachers: the Council maintains the Register of Teachers. Entry to the register is dependent on satisfying the Council's registration conditions which include teacher qualification requirements.

Box 4.3. **Involving teachers in national education policy-making: examples from two countries** *(continued)*

- To promote research and establish procedures for the exchange of information with teachers, organisations involved in education and the public: the Council commissions research and consults regularly with the partners in education and the wider education community on professional matters. Through its research bursary schemes, the Council promotes and facilitates research by registered teachers as part of their professional development.
- To advise the Minister for Education and Science on teacher supply and a range of professional matters: the Council, based on its research and consultation activities, and the extensive range of information held on the Register of Teachers, advises the Minister on teaching supply and a range of professional matters.
- To promote teaching as a profession: the Council publicly acknowledges, and aims to reinforce, the quality of teaching in Ireland. It uses a variety of methods and opportunities to ensure that high calibre entrants continue to be attracted into the profession.

Chile: teacher consultations for large-scale reforms

International experience has shown that to ensure successful reform implementation, the active involvement of teachers in policy formulation and implementation is essential (OECD, 2005; Schleicher, 2011). There are many good examples of systems that have successfully implemented large-scale reforms in close collaboration and consultations with their teachers. The reform of the teacher evaluation system in Chile offers a good case in point of how to successfully manage the dialogue and collaboration with teachers.

In Chile, as in many other countries, high stakes teacher evaluation policies have been very controversial. Attempts by the government to implement teacher evaluation systems during the 1990s failed due to opposition and objections from the Teachers' Association. In response, the Minister of Education established a technical committee composed of representatives from the Ministry, the Municipalities and the Teachers' Association to work collaboratively towards the development of a model for teacher evaluation. As part of this process, the committee developed a framework for performance standards that was approved and an agreement was reached for the progressive establishment of a new teacher evaluation system based on this framework and with clear links to rewards and development plans.

Source: OECD review team.

* More information can be found on the Teaching Council website: www.teachingcouncil.ie/publications.157.html (accessed 10 February 2013).

These international examples show the importance of not only providing teachers with the professional autonomy to manage their classroom and participate in school-level decisions, but also of involving them in educational decisions at the system level. Many of the reforms currently taking place in Kazakhstan could benefit from a greater input and engagement from those who are critical to their implementation, namely, the teachers. The review team recommends that teachers be provided with an effective platform from which they can play a central role in shaping educational policies. This should include the regular release of a compendium with all laws and education regulations, norms and standards to keep education professionals informed, and facilitate transparency, involvement, and compliance. The compendium should be widely available and distributed for free. The review team also considers that the current trade union for workers in the sphere of education does not effectively meet the goal of ensuring that teachers are at the centre of policy development and implementation.

Compensation levels

There is no doubt that teachers' relative earnings are among the key factors in attracting and retaining effective teachers in the profession. Highly skilled individuals are less likely to choose teaching as a profession or to remain in the profession for very long if the salary and benefits are much more attractive elsewhere (Borman and Dowling, 2008; OECD, 2005). Indeed, surveys of teachers who have left the profession in the United States often show that better salaries and benefits are among the top reasons factored in the decision to leave teaching – and this is especially the case for teachers with less than three years of teaching experience (Luekens et al., 2004).

The remuneration of teachers in Kazakhstan follows a system of teaching load (*stavka* system), which means that teachers are being paid per unit of workload measured in hours.[7] The standard workload of primary and secondary education teachers is 18 hours of teaching time per week of 40 hours. The state education standard[8] does not determine a minimum workload, but puts a ceiling on the maximum number of teaching hours for any level of education per week, which is 27 hours or 1.5 standard workloads. According to this system, teachers are additionally compensated for any other pedagogical or non-pedagogical task that goes beyond the core workload and teaching time, including for the grading of student notebooks.

Teacher salaries are set in accordance with the Law on Education and Government Regulation No. 1400 (GR No. 1400) of 29 December 2007,[9] which determines the pay scale and benefits of public sector employees in Kazakhstan. Their income consists of a *salary* and *compensation payments* for additional work, and could also include *ad-hoc (material and moral) rewards*.

The salary comprises a base wage multiplied by a coefficient that reflects educational attainment and position held, as well as years of service (Table 4.12).

Teachers who hold a post-secondary degree (a minimum qualification for teaching in pre-primary and primary education)[10] earn according to income category G-11. As a minimum, secondary school teachers must be holders of a university degree and are compensated according to the coefficients of income category G-9, whereas university professors and post-secondary VET teachers belong to income category G-7. Deputy school principals are classified in category G-5, and school principals – in G-4. The base wage is determined by the government and in 2011 was increased from 13 613 Kazakh Tenge (KZT)

Table 4.12. **Salaries of public employees, employees of organisations sustained by the state budget, and employees of public enterprises in Kazakhstan: Income groups, base wage and multiplication factors**

	Base wage			Multiplication coefficient	
	2000-09	2010	2011; 2012	starting salary	1 to 20+ years, biannual steps
Remuneration category	14	2	3	4	5
G-1				4.29	4.37 to 5.15
G-2				3.99	4.07 to 4.78
G-3				3.72	3.80 to 4.46
School principals (G-4)				3.41	3.54 to 4.08
Deputy principals (G-5)				3.17	3.29 to 3.80
G-6				2.98	3.11 to 3.58
University teachers; post secondary VET (G-7)				2.80	2.91 to 3.35
G-8	10 890	13 613	17 697	2.64	2.74 to 3.16
Teachers with university qualifications (G-9)				2.40	2.49 to 2.88
G-10				2.20	2.28 to 2.64
Teachers with post-secondary qualifications (G-11)				2.02	2.10 to 2.42
G-12				1.88	1.95 to 2.26
G-13				1.68	1.74 to 2.02
G-14				1.43	1.48 to 1.70

Note: See Annex 5.A1, Tables 5.A1.5-11 for a full overview of monthly salaries of teachers and principals in 2011 net of compensation payments.

Source: Law on Education, Government Regulation No. 1400 of 29 December 2007, Government Regulation No. 388 of 13 July 2009.

to KZT 17 697 per month. Table 5.A1.5 in Annex 5.A1 contains a complete scale of statutory salaries for all 5 categories.

The compensation payments are meant to indemnify teachers and other education staff for additional work that is not considered to be part of their core tasks, for work carried out in difficult conditions, and for additional qualifications. Annex 4 of Government Regulation No. 1400 contains a rich and very detailed list of such activities, some of which would belong to the set of standard responsibilities of a teacher in an OECD country, i.e. correcting of homework. Teachers (and in some cases – principals) would receive compensation payments for managing a class,[11] correcting homework, being in charge of a lab, temporary fulfilment of additional duties (e.g. teaching in two subjects), work in difficult conditions, in-depth teaching of a subject (profile education), work in rural areas, and for work in regions exposed to higher radiation risk.[12]

Some of the compensation items are not related to tasks or working conditions, but to qualifications or professional skills. Those compensations are considerably higher, thus providing strong monetary incentives for teachers who are keen (and able) to develop professionally.

The attainment of an academic degree for example brings about a raise of one or two minimum monthly wages (GR No. 1400). Also, successful completion of the new generation of professional training developed by the network of Nazarbayev Intellectual Schools leads to an increase of 30% to 100% of the net monthly salary (that is, the salary for the respective service category and tenure without compensation payments). Last but not least, every five years (or less under certain conditions),[13] teachers can undergo an attestation procedure[14] for obtaining a (higher) qualification category, which, if granted, is generously rewarded as well (Table 4.13). Table 5.A1.6 in Annex 5.A1 contains an overview of compensation payments and their respective beneficiaries.

According to the Law on Education, teachers have the right to receive *ad-hoc rewards* for "successful teaching" in the form of state awards, honours, premiums and individual scholarships (Art. 51 LOE). Examples of successful teaching include the winning of students' and teachers' competitions,

Table 4.13. **Additional bonuses for qualification categories**

	% of base wage	
	G-11	G-9
Higher category	90%	100%
First category	45%	50%
Second category	30%	30%

Source: Government Regulation No. 1400 of 29 December 2007.

i.e. Olympiads. The awarding of these and the decision on what is successful teaching is on case by case basis and is left largely at the discretion of principals. It also depends on the availability of left-over funds in the school budget (GR No. 1400). Only two teacher achievements are listed in detail – holders of the title "best university professor" or "best pedagogue" – are entitled to generous one time premiums. In 2012 the funds were allocated from the republican budget for 48 pedagogues in general education schools, and for 16 VET teachers (UNICEF, 2012).

Box 4.4. **Additional payments for teachers in OECD countries**

In addition to basic pay scales, school systems in OECD countries increasingly use schemes that offer additional payments or other rewards for teachers. These may take the form of financial remuneration and/or reduction in the number of teaching hours. Together with the starting salary, these payments may influence a person's decision to enter or remain in the teaching profession. Additional payments early in a career may include family allowances and bonuses for working in certain locations, and higher initial salaries for higher-than-minimum teaching qualifications.

Additional payments are most often awarded for particular responsibilities or working conditions, such as teaching in more disadvantaged schools, particularly those located in very poor neighbourhoods or those with a large proportion of students whose language is not the language of instruction. These schools often have difficulty attracting teachers and are more likely to have less-experienced teachers. These additional payments are provided annually in about half of the OECD countries. Eleven countries also offer additional payments, usually on an annual basis, for teachers who teach in certain fields in which there are teacher shortages. Additional payments based on teachers' qualifications, training and performance are also common. The most common types of payments are for an initial education qualification and/or a level of teacher certification and training that is higher than the minimum requirement. Three-quarters of the countries make these payments available, with about 60% of all countries offering both types of payments. Twenty-two OECD countries offer additional payments for the successful completion of professional development activities. In 16 of these countries, these payments help to determine the base salary, but in Korea they are only offered on an incidental basis. Two-thirds of the 19 countries that offer an additional payment to reward outstanding teaching do so as incidental payments; 13 countries offer these payments as annual additions to teachers' salaries. In 16 of the 19 countries that offer this performance incentive, the decision to award the additional payments can be made at the school level.

Source: OECD (2012a), *Education at a Glance 2012: OECD Indicators*, OECD Publishing. http://dx.doi.org/10.1787/eag-2012-en.

The multitude and diversity of compensation payments makes it impossible to reliably determine the typical package of bonus compensations of mid-career teachers in Kazakhstan and their actual salary. This is common to countries that apply the *stavka* system, where the actual income would depend on the number of workload units and the additional and could be considerably different (mostly higher) than the statutory[15] salary. In this way the actual income can vary greatly from teacher to teacher (especially between younger and senior teachers), between teachers in urban and rural schools, and even between teachers with the same qualifications and tenure.

A recent (2011) 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 and notes that in the Republic of Moldova, for example, the average total pay for a mid-career teacher with a higher education degree is 1.7 higher than the average base salary, and in Kyrgyzstan it is 2.7 times higher (UNICEF, 2011). A mid-career secondary school teacher in Kazakhstan could earn 4 times more than the base salary for his tenure by teaching the maximum average number of hours per week, and by taking on a reasonable number of additional tasks such as class management, grading of homework, engaging in extracurricular activities and so on.

More important than determining the actual salary are the consequences of the *stavka* system on the working conditions of teachers. The UNICEF report notes that in countries where the *stavka* system is in use, low teacher salaries and low statutory workload can render the teaching profession a part-time job, which in turn encourages teachers to look for alternative sources of income or to take on additional workload (up to the maximum permissible number of hours) or compensation-related tasks (UNICEF, 2011). In Kazakhstan the system disadvantages teachers in urban schools where oversupply of staff is more common. It is not favourable particularly to the young teachers among them who are often not given the choice of taking on higher workloads (since these are reserved for the more senior teachers), and might end up teaching less than one standard workload which in turn lowers their income and limits the attractiveness of their job. Last but not least, neither the standard workload hours, nor the list of supplementary tasks in GR 1400 envisage or reward time spent on pedagogical preparation. Those teachers who work more than the standard workload and up to the maximum number of hours per week (mostly those in rural schools) would hardly have time for preparation of their classes.

The next chapter in this report provides a detailed overview and analysis of income levels of teachers in national and international comparison.

Prestige and occupational social standing

An indication of the status of the teaching profession is the prestige and occupational standing enjoyed by teachers. However, measuring the prestige and occupational standing of teachers is no straightforward task. It is commonly reported that Finland, one of the highest performing countries in PISA, has managed to raise the social status of its teachers to a level where there are few occupations with higher status, including medicine and law (OECD, 2010a; Schleicher, 2012). Save for a few teachers in Kazakhstan who enjoy very high social status among their peer group and within the community, teachers as a whole do not enjoy the level of prestige that teachers in Finland generally enjoy. This is not unique to Kazakhstan and many countries have developed strategies to help increase the social status of teachers (OECD, 2005).

According to the State Programme for Education Development 2011-2020, a number of initiatives are pursued or planned to help enhance the prestige of teachers in Kazakhstan. These include "Teacher of the Year" and other competitions, joint projects with mass media and forums of teachers-innovators.

Research indicates that those with close ties with schools tend to have more positive images of teaching. For example, parents with school-aged children tend to have a more positive image of the teaching profession than other adults. This suggests that building stronger links between schools and the community can help enhance the status of the profession. Box 4.5 provides examples of initiatives that have been developed in some OECD countries facing similar challenges.

Box 4.5. **Initiatives in four countries to develop stronger links between schools and the community**

Austria

In Austria, there are extensive communications (including websites) from schools and provincial education authorities about school operations and educational "success stories"; campaigns by teachers' unions to better inform people about why teaching is important and what it really involves; and public recognition from the federal authorities for outstanding schools and teachers through the "education Oscars" programme.

Germany

The Land of Brandenburg in Germany has been proactive in taking measures to improve public appreciation of schools and the image of teachers. These include: public ceremonies when new teachers are appointed and experienced teachers

Box 4.5. **Initiatives in four countries to develop stronger links between schools and the community** *(continued)*

retire; the award of a prestigious public prize to projects in schools and in the field of social education; sponsored trips for teachers to educational fairs held in other *Länder*; and the public presentation of 50 projects from schools, chosen by competition, during the annual festivities of Brandenburg Day. These projects are selected to showcase student initiative and creative and socially engaged teachers, and the winning schools are awarded substantial prizes.

Slovak Republic

In the *Slovak Republic*, the establishment of an annual "Teacher Day" as a teacher holiday in honour of the anniversary of Comenius' birth has provided a high-profile way to showcase teaching and to express public appreciation for teachers' work.

Sweden

In *Sweden* the *Attractiv Skola* (Attractive Schools) project, a joint venture of education authorities, teacher unions and the principals' professional association, is encouraging local authorities to form stronger links between schools, universities and the business community. Local authorities apply to join the project whose aims include improving community awareness of school programmes, job exchanges between schools and businesses, developing networking skills among schools and teachers, and improving the appeal of schools as places of work.

Source: OECD review team.

Good policies for better school leadership

The growing importance of school leadership

School leaders do not work in static educational environments. Countries seek to improve the quality and equity of education, which often involves giving greater autonomy to education institutions in exchange for stronger accountability and compliance with quality standards. The roles and responsibilities of school leaders across the OECD expand and intensify in line with these changes (OECD/Specialists Schools and Academies Trust, 2008). Many of the world's best-performing education systems have already moved from bureaucratic "command and control" environments towards school systems in which the people "at the frontline" have much more control of the way resources are used, people are deployed, the work is organised and gets done (OECD, 2010a). School principals and teachers thereby end up having discretion over resource allocations, and are encouraged to work together to identify good practice and build a learning community to support each other in improving the quality of their work.

Kazakhstan is witnessing similar developments. The leadership of the country aims at transforming it into one of the top 30 most competitive economies in the world by 2050. Education and training are among the policy areas declared to be of decisive importance in achieving this goal and the SPED 2011-2020 (SPED) sets out an impressive list of reforms to modernise and equip the sector for its important role (see Chapter 1 for an overview). The majority of reform intentions target the schools and aim at changing much of what can be considered to be their traditional way of functioning in terms of teaching methods, accountability arrangements, rewards and incentives mechanisms, financing, and in some cases even institutional set-up.[16]

This is a task that requires time and good and steady management of change. The effectiveness of changes will depend not only on the compliance of schools with new policies, but on the way educational institutions respond to incentives (and directives) for improvement (Elmore, 2008). The institutional responses can be influenced by different factors that are often related to the ability and quality of school leadership. Just like their peers in OECD countries, school principals in Kazakhstan can be (and should be) the managers of change in their schools and are thus of paramount importance for the success of

Box 4.6. **Improvements and realities of schools**

"The default culture in most schools is one in which practice is atomised, school organisation reinforces this atomisation by minimising occasions for collective work on common problems, so the school lacks the basic organisational capacity to use any kind of external knowledge or skill to improve practice. These schools exist in a myriad of contexts with a myriad of specific conditions – language groups, income groups, community cohesion and mobility, etc. As schools begin to develop toward a higher degree of internal accountability, their success depends increasingly on their capacity to identify and respond to specific problems in their context. Usually this occurs through deliberate work on the development of internal processes and structures that can, in turn, be used to develop common norms and expectations for instructional practice and student learning. Schools don't improve by following a set of rules; they improve by engaging in practices that lead them to be successful with specific students in a specific context. Hence, sustained improvement depends on the development of diagnostic capacity and on the development of norms of flexibility in practice. (School) leaders in these settings succeed to the degree that they engage in more or less continuous learning, and model that learning for others in the organisation."

Source: Elmore, F.R. (2008), "Leadership as the practice of improvement" in OECD/Specialists Schools and Academies Trust (2008), *Improving School Leadership, Volume 2: Case Studies on System Leadership*, OECD Publishing, p. 47: observations in (US) schools exposed to accountability or improvement pressures. http://dx.doi.org/10.1787/9789264039551-en.

education reform. The earlier the stage of change, the more important the role a good principal can play (OECD/Specialists Schools and Academies Trust, 2008).

The significance of school leadership for the reform endeavour in Kazakhstan is reinforced by the aims of the reform agenda itself. Only one reform objective – "improvement of education management" through corporate governance principles – explicitly targets schools leaders, but the novelty of at least further 12 SPED secondary school objectives is likely to have an impact on their portfolio (Table 4.14) and on stakeholders' and authorities' expectations. The implications of per capita funding reforms for the role and responsibilities of principals will be discussed in Chapter 5, which also notes the danger of charging unprepared professionals with the burden of complex financial and performance accountabilities. Similar warnings could be "issued" for other, high impact reform aims marked in Table 4.14: the transition to

Table 4.14. **Potential impact of selected SPED 2020 objectives on the work of principals in Kazakhstan**

SPED Objectives 2020	Potential for impact	SPED Objectives 2020	Potential for impact
1 Development of new mechanisms of education financing	●	12 Solution of ungraded schools problem	●
2 Training highly qualified staff for education sector (pre-service training);	-	13 Inclusive education	●
3 Increasing support and incentives for teachers	●	14 VET modernisation	●
4 Improvement of education management	●	15 Professional training for key sectors	
5 Development of public-private partnership systems	●	16 Increase VET attractiveness	●
6 Improving education development monitoring system and education statistics	●	17 Undergraduate and postgraduate education for education staff	-
7 Creation of conditions for automation of education process	●	18 Integration into European higher education space (Bologna);	-
8 Enlarging the network of preschool organisations	-	19 Integration of education, science and industry; stimulating technology transfer	-
9 Updating the content of preschool education	-	20 Creation of conditions for life-long education	●
10 Staff training for preschool education organisations	-	21 Patriotic education, active citizenship, social responsibility	●
11 Transition to 12-year education model and updating educational content	●	22 Training of highly qualified scientific and scientific-pedagogical staff	-

Source: MESRK (2010b), *State Programme for Education Development of the Republic of Kazakhstan 2011-2020*, Presidential Decree No. 1118 of 7 December 2010, Ministry of Education and Science of the Republic of Kazakhstan, Astana.

12 years of schooling which will go along with changes in the status (and hence organisation) of numerous schools; the planned improvements and rationalisation of the network of ungraded schools which might lead to school mergers which in turn will increase the importance of schools that will not be closed; the measures that aim at modernising VET schools and making them more attractive, which could entail stronger exposure to the private sector and will grant the schools with autonomy to generate revenue.

Many SPED 2020 objectives imply a new, higher level of school autonomy which in turn requires experience and skills that are, by and large, new to Kazakhstani school leaders (See also MESRK, 2010b.)

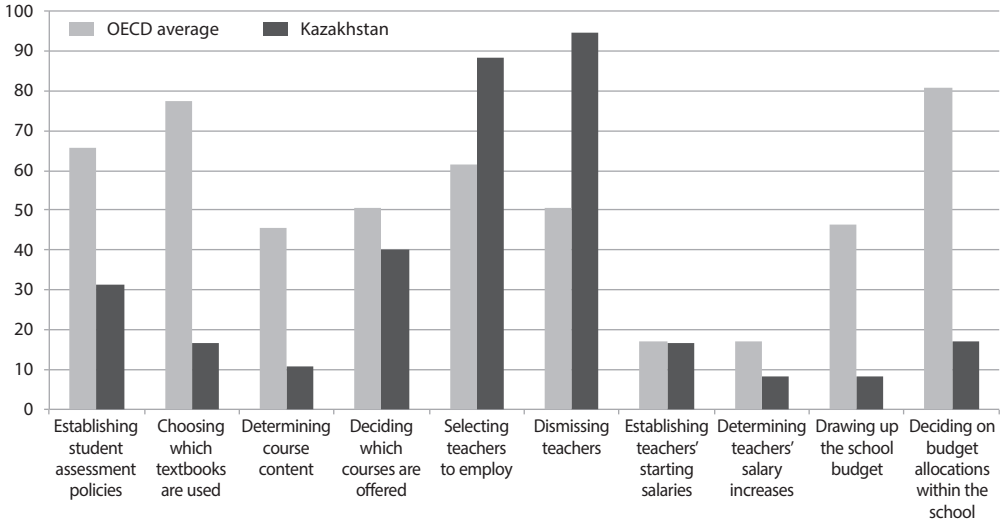
PISA provides some contextual information on the perceptions of principals of schools participating in the assessment about the degree of autonomy they have: to set assessment policies, select textbooks and determine course content, hire and fire teachers, formulate and execute the school budget etc. In 2009 PISA asked them to report whether the teachers, the principal, the school's governing board, the regional or local education authorities or the national education authority had considerable responsibility for:

- Allocating resources to schools (appointing and dismissing teachers, establishing teachers' starting salaries and salary raises, formulating school budgets and allocating them within the school).
- The curriculum and instructional assessment within the school (establishing student-assessment policies, choosing textbooks, determining which courses are offered and the content of those courses) (OECD, 2010b).

Figure 4.1 shows that in 2009 principals in Kazakhstan felt they had less independence in taking decisions than their peers in the OECD on average. In all but two of the areas of decision-making covered by PISA the autonomy of school leaders in Kazakhstan is more limited, sometimes considerably more limited than in OECD countries. Kazakh schools whose principals reported to take decisions pertaining to teaching content and materials (selection of textbooks and course content), and/or to the school budget (formulation and execution), are particularly rare – the share of Kazakh students attending such schools is 80% lower than the share of students in schools with a comparably high level of autonomy in OECD countries, on average. In Kazakhstan only 31% of the students assessed by PISA attended schools in which principals or teachers have the exclusive prerogative to determine assessment policies and to manage financial incentives for teachers, against 66% in OECD countries on average. The only management areas in which Kazakh school leaders have a high degree of autonomy is hiring and especially firing of teachers (40% and 90% higher share of students attending such schools than in the OECD on average), followed by an equal degree of autonomy as in an average OECD country to set the level of starting salaries of teachers.

Figure 4.1. **The autonomy of school principals, OECD and Kazakhstan (2009)**

Percentage of students in schools whose principals reported that only "principals and/or teachers" have a considerable responsibility for the following:



Source: OECD PISA 2009 Database.

The expectations towards school leaders in Kazakhstan are high and in line with OECD and other international trends. In fact, the professionalisation of the profession of school principals might be one of the most promising areas to invest in when it comes to the future of education reforms in the country. The authorities could start by ensuring that the best people possible are recruited for the job, and by raising the capacity of those already in the profession to manage and lead in a new setting. The next sub-section discusses the recruitment of principals, their professional development, and the monetary incentives in place to stimulate their work.

Making good principals even better

Selecting the best candidates

A well designed recruitment procedure for principals relies on a set of criteria to ensure that only the best candidates get the job. These include eligibility criteria, that is – a list of minimum requirements that candidates should meet in order to be considered, and selection criteria which allow recruitment panels to make the best choice from a pool of eligible candidates (Pont, Nusche and Moorman, 2008).

Across the 19 OECD countries that participated in the OECD Improving School Leadership project the single most important eligibility criterion is teaching qualifications. Except for England, Portugal, Sweden and Norway, candidates must also have had experience as teachers (Pont, Nusche and Moorman, 2008). In Kazakhstan the eligibility criteria are set out in Ministerial Regulation No. 388 and include higher education degree and not less than 5 years of pedagogical experience.

Box 4.7. **Sector outsiders as principals?**

Opinions are split among OECD countries as to whether school leaders should be allowed to come from sectors other than education and/or without prior teaching experience. Those in favour argue that pedagogical competences alone are not sufficient to meet heightened management demand in areas such as financing, administration and human resources. Others are convinced that school leadership is mainly about pedagogy and that recruitment from outside the education sector has no future.

"In the Netherlands, a great deal of attention has been directed to recruiting school leaders from sectors other than education, especially for primary schools. One example is *bazen van buiten*, a training programme for leaders from the business sector to become primary school leaders. These newly trained leaders have no qualifications in education; they focus entirely on management and leadership. According to the Dutch Country Background Report, initial evaluations showed positive results and considered this initiative as very promising. In the first round of the programme, 13 participants completed the training and became school leaders. Those involved in this project appreciated the fresh views brought into schools by the new leaders from outside education" (OECD, 2008a, p. 163).

Sweden is another example of a country where it is possible to employ school leaders with non-teaching backgrounds, although it happens only occasionally: in 2005, around 3% of the school leaders did not have a teaching background. These included school psychologists, military officers and former managers of companies.

Source: Pont, B., D. Nusche and H. Moorman (2008), *Improving School Leadership, Volume 1: Policy and Practice*, OECD Publishing. http://dx.doi.org/10.1787/9789264044715-en.

Once eligibility is determined, a second step is to determine *selection criteria* for future principals. Such criteria are important in order to ensure that, from the pool of candidates who qualify as eligible, only those who possess characteristics essential for the job of a principal are selected. In OECD countries, selection criteria mainly include a certain level of seniority as a teacher, but more recently there has been a shift in focus to the actual skills and competences of candidates (Pont, Nusche and Moorman, 2008).

At present the selection of principals in Kazakhstan is based not on proven practical skills and competences, but on knowledge requirements. Candidates are not expected to demonstrate any particular skill or competency beyond the minimum teaching experience required for eligibility. Instead, they have to prove knowledge of a series of legislative acts – the Constitution of the Republic of Kazakhstan, the Law on Education, the Law on Fighting Corruption, the State Education Standards etc. all of which of little relevance to the practice of managing and leading a school. Candidates must also be familiar with the "basics of pedagogy and psychology", the recent "achievements in the area of pedagogical science and practice", the basics of management, etc. Regulation 388 does not give any further detail on what constitutes achievement in pedagogical science and practice, what are the basics of management, or how the knowledge of candidates in these areas is verified.

In the absence of practical, skill-based selection criteria of relevance for school leadership, teaching experience and qualifications (the more senior-the better) become a decisive factor in recruiting the Kazakhstani school leaders of tomorrow. According to a survey carried out in 2012 in 96 schools across Kazakhstan, 80% of the principals had highest teaching category, which means at least 15 years of teaching. Their tenure as principals was considerably shorter: 82% had 1 to 10 years of service or less (MESRK, 2012b), which suggests that they were already senior teachers before having been appointed.

According to the 2008 OECD report *Improving School Leadership*, most OECD countries have recognised the inadequacy of seniority as a major selection criterion. Among the most frequently used selection criteria now are *management and/or leadership experience* (in Austria, Denmark, Ireland, Israel, Northern Ireland, Portugal and Spain), *additional academic or other qualifications* (in Austria, Ireland, Northern Ireland, Portugal and Spain), *interpersonal and personal skills* (in Austria, Denmark, Ireland and Northern Ireland), *vision/values for school leadership* (Austria, Denmark Ireland and Israel) and the *quality of work proposals for the school* (in Austria, Denmark, Ireland and Israel).

Box 4.8. **Professionalising recruitment procedures in Austria**

Recent policy measures in Austria have led to more competence oriented selection criteria, such as assessment centres and analyses of potential. These procedures are partly contracted out to private firms whose involvement has helped to raise the standards in the selection of school leaders. This change has helped to motivate teachers for principalship who previously did not believe they would be recruited. One of the reported drawbacks is that hiring firms or buying recruitment software can make the recruitment process quite costly.

Source: Schratz and Petzold (2007) in Pont, Nusche and Moorman (2008), *Improving School Leadership, Volume 1: Policy and Practice*, OECD Publishing. http://dx.doi.org/10.1787/9789264044715-en.

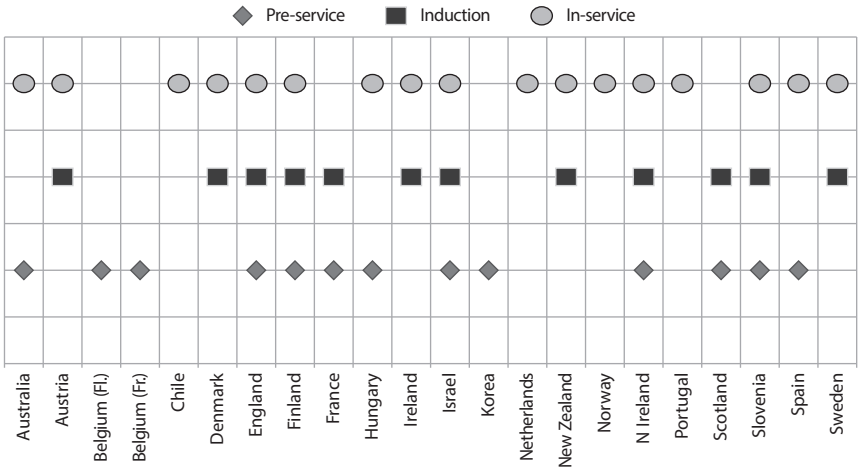
The OECD recommends the authorities of Kazakhstan to consider following the example of OECD countries in defining a comprehensive, pragmatic set of criteria for selecting their school leaders. There is rich country experience to refer to which can provide useful orientation in this endeavour.

Professional development

In 2008, the OECD Improving School Leadership activity noted how the role of school leadership in the OECD area is evolving, following the evolution of expectations towards education. The final report also notes that principals need support to keep up with change and make the best of it for the benefit of their schools (Pont, Nusche and Moorman, 2008). Professional development (in-service training) for school leaders is widespread across OECD countries (Figure 4.2) and usually aims at upgrading the skills of principals in light of these changes (Pont, Nusche and Moorman, 2008), or at compensating for the absence of initial training.

The education environment in Kazakhstan is changing rapidly[17] and even principals hired some 5-10 years ago are working in a very different context today than they did at the beginning of their careers. The best way to help those who are already in the profession to adjust and take on their new role is to provide them with good in-service training and couple it with adequate incentives for improvement.

Figure 4.2. **Leadership development approached across OECD countries (2007)**



Source: Pont, Nusche and Moorman (2008), *Improving School Leadership, Volume 1: Policy and Practice*, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264044715-en.

The education management component of the SPED 2020 envisages advanced training for managers of educational institutions on the basis of courses that are already being provided by the Republican Institute for Advancing the Qualifications of Managers and Pedagogical Workers in the Education System of the Republic of Kazakhstan and its regional branches. The areas covered include:

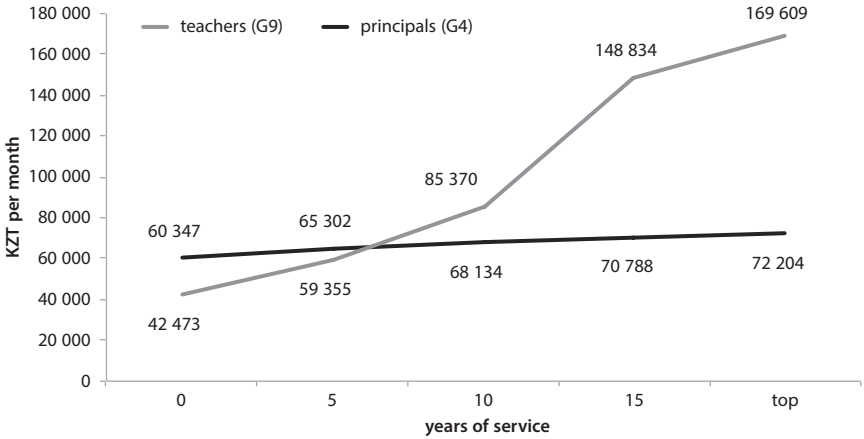
- Theory and methodology of education management;
- State of education in the Republic of Kazakhstan;
- Education management techniques;
- Theory and methodology of school management;
- Current socio-cultural aspects of school management.

The Monitoring Study of the National Centre for Educational Statistics and Assessment (MESRK, 2012b) notes that the principals who attended the training considered the content to be of relevance for their work, but complained about the limited possibilities it offered for exchange with peers on their experiences as school leaders. In contrast, many of the programmes in OECD countries are carried out on a part-time basis and run for more than one year, which allows principals to use them as a place for professional discussions and joint reflection (Pont, Nusche and Moorman, 2008).

In 2013, the training capacities were set to accommodate 2 740 principals and deputy principals. In 2012 the total number of education professionals of all levels (pre-primary, secondary and VET) who attended management courses was 19 161 (of which 16 036 from secondary education).[18] The fact that the in-service training for principals is not obligatory must limit its impact on the quality of school leadership in the country. A further discouragement is the absence of monetary and non-monetary incentives for professional development. The remuneration category of principals is high (G4 – see Table 4.12), which ensures that their starting salary is one of the highest in the education system. The principals' possibilities to benefit from the system of compensation payments and rewards, however, are very limited (see Table 5.A1.6 in Annex 5.A1 for a full overview of compensation payments). Unlike teachers and pedagogical workers, principals do not have qualification categories and are not rewarded for having advanced their leadership and managerial skills. In practice, the salary of mid-career teachers (10 to 15 years of experience with first or highest category, one standard workload) is around 63% higher than that of principals with the same tenure. At the top of the pay-scale this difference amounts to 131% (Figure 4.3).

In order to improve their income through compensation payments, principals have to teach and/or take on additional tasks which would normally be reserved for teachers or pedagogical workers, such as managing

Figure 4.3. **Salary progression: teachers and principals in Kazakhstan (2011)**



Notes: 1. All teacher salaries are for one standard workload (18 hours).

2. Figures include compensation payment for additional category: 5 years of service – second category, 10 years of service – first category, 15 years of service and top of the salary scale – highest category.

Source: Government Regulation No. 1400 of 29 December 2007; OECD review team calculations. See Annex 4.A1 and Annex 5.A1, Tables 5.A1.5-11 for details on wages in the education sector.

the boarding section of a school, managing a class, co-ordination of extracurricular activities, dealing with classes with children with special educational needs, etc. The principals in all of the public schools visited by the OECD review team confirmed that teaching and taking on tasks not directly related to their work as school leaders is in fact a common practice. The practice of "borrowing" financial incentives that are in the first place designed for the teaching profession holds a mixed message. On one hand it keeps principals connected to the classroom reality of their schools and strengthens their standing and credibility *vis-à-vis* the teaching collective. On the other hand, it takes up time and attention that they would otherwise be investing in the management and leadership of the school.

All of the above is no substitute for a proper and adequate system of incentives and rewards for principals. The authorities in Kazakhstan should consider developing and introducing such system as soon as possible, to go along with a carefully developed, mandatory in-service training. A primary focus of such training, at least until 2020, should be the autonomous management of education institutions in a system that applies per capita formulas for resource allocation.

Conclusions and recommendations

This chapter has provided a general overview of teacher and school leadership policy in Kazakhstan based on data provided by the Ministry of Education and Science, along with comparative data from the OECD, World Bank and UNESCO Institute for Statistics. It also drew on information gathered during the site visits where the review team met with a number of teachers, school leaders and other individuals involved in education in Kazakhstan and on information on international good practices.

Recommendations regarding policies for better teachers

The main policy areas examined for this chapter were chosen for their known impact on attracting, developing and retaining effective teachers. These key areas of focus included initial teacher education and licensing requirements, induction and mentoring, in-service professional development, professional autonomy and teacher input in decision making, compensation levels and status of the profession. This selection of main themes is by no means meant to suggest that other areas of teacher policy are not important, but was necessary given the limitations in time and information available.

Regarding teachers, this chapter makes the following recommendations, with the main goal of providing Kazakhstan with key actions that, based on knowledge from international best practices, should result in raising the quality of the teaching workforce in the country.

- Kazakhstan is recommended to set clear targets and take steps to reduce the percentage of teachers in all grades of general secondary education who have not completed higher education.
- To attract effective teachers where they are most needed, Kazakhstan is recommended to develop targeted policies at multiple levels, including aligning teacher education programmes with the needs of challenging or disadvantaged schools, improving working conditions in challenging or disadvantaged schools, and ensuring adequate financial incentives to attract and retain teachers in these schools.
- It is recommended that Kazakhstan take a more comprehensive view of the factors influencing the status of the teaching profession and develops a strategy to identify and monitor key indicators.
- In developing plans to modify the current basis for candidate selection and recruitment into teacher training programmes, Kazakhstan is recommended to consider adopting as much as practicable of Finland's good practice.

- It is recommended that Kazakhstan develops, in close collaboration with teachers, a coherent system linking detailed professional standards for teachers that reflect a shared understanding of what is considered to be accomplished teaching for different subjects and different levels; and also that these professional standards should be the basis for the development of standards for the attestation of teacher education programmes, for regular teacher evaluation and attestation processes, and for the development of formal professional development plans.
- Similarly, successful completion of the mentoring programme should be clearly aligned with professional standards and be tied to the attestation system.
- The new teacher in-service training programme developed by Cambridge University and the Nazarbayev Intellectual Schools (NIS) Centre of Excellence should be available on a larger scale. Before changes in pedagogical practices and approaches to learning as promoted in this training programme can be observed at a system-wide level, a critical mass of teachers championing these changes must be present at all levels of the system and in all schools, including in ungraded schools.
- It will be essential to ensure an equitable distribution of teachers receiving the training, and that the programme does not only benefit teachers who are already high-performing. It is also desirable to extend the programme to school administrators, to enable them to learn the new approaches to teaching and create optimal conditions within schools for implementing change.
- The review team recommends that teachers be provided with an effective platform from which they can play a central role in shaping educational policies, as the current trade union for workers in the sphere of education does not effectively meet the goal of ensuring that teachers are at the centre of policy development and implementation.

The significance of reliable evidence

Educational management, policy making and education reform need all to be rooted in and driven by a reliable knowledge base. For example, developing better national and regional information (which ideally can be compared to available international data) on teachers is essential to gaining a better understanding of the underlying issues and problems currently facing the system. This information can also reinforce public accountability by allowing judgements to be made about the teaching and learning in schools.

A useful framework for the development of indicators to inform teacher policy has been used to inform international data collection efforts at the OECD (OECD, 2005 – see Annex 4.A2). Specifically, the OECD Teaching and Learning International Survey (TALIS) aims to fill data gaps on teachers and teaching and provides comparable self-report data on key indicators on teacher characteristics, initial teacher training, professional development, teacher evaluation systems, teacher beliefs and pedagogical practices, job satisfaction and teacher self-efficacy, as well as school-level contextual information including school resources, school climate and school leadership. The next implementation of TALIS will be in 2018, with preparatory work beginning in 2014. For system-level data, the OECD Indicators on Education Systems (INES) and its annual publication Education at a Glance offers a large number of basic indicators of educational systems, including indicators on teachers.

- Kazakhstan should consider aligning national data collection efforts with international indicators such as these to facilitate international comparisons.

Recommendations regarding policies for better school leadership

Expectations of school leaders in Kazakhstan are high. They are the prime managers of change at school level. The authorities should therefore ensure that the best people possible are recruited for the job, and that sufficient investment is made in raising the capacity of those already in the profession.

- The OECD recommends the Kazakh authorities to consider following the example of OECD countries in defining a comprehensive and relevant set of criteria for selecting their school leaders.
- The best way to help those principals who are already in the profession to adjust and take on their new role is to provide them with good in-service training and couple it with adequate monetary and non-monetary incentives for improvement. The potential of the NIS Centres of Excellence could be mobilised for the development of such in-service training. A primary focus of such training, at least until 2020, should be the autonomous management of education institutions in a system that applies per capita formulas for resource allocation.
- Kazakhstan should also develop and introduce a system of rewards and incentives for principals that would match the stages and elements of the new and mandatory in-service training.

Notes

1. As described in more detail in the next section of this chapter, teachers in Kazakhstan are required to undergo an attestation process at least every five years. This process results in awarding teachers one of three qualification "category" levels: 2nd category, 1st category, and the highest category.
2. No detailed information on the curriculum or the exact proportion of the college programmes devoted to practical training was available for this review.
3. No data on the proportion of students who go on to complete higher education was available for this report.
4. In addition to the qualification requirements in Table 4.10, teachers of science, music, singing, drawing, technology, physical education, special subjects of specialised educational institutions, and teachers of subjects of the variable part of the Basic Curriculum (Valeology [new field of knowledge in medical sciences that means "Healthy Way of Life"], self-knowledge, applied economics, ecology, and others) are required to have education in their relevant specialty.
5. The categories in this table do not apply to teachers of science, music, singing, drawing, technology, physical education, special subjects of specialised educational institutions, and teachers of subjects in the variable part of the Basic Curriculum (Valeology [new field of knowledge in medical sciences that means "Healthy Way of Life"], self-knowledge, applied economics, ecology, and others (Order No. 338 of 19 July 2009).
6. In each level, there are seven modules for the programme: teaching critical thinking skills; assessment; e-learning; use of ICT in teaching; teaching of gifted students; teaching according to age; management and leadership.
7. The teaching load system (*stavka* system in Russian) is common for almost all countries in Central Asia, the Caucasus and Eastern Europe.
8. Act No. 367 of 9 July 2010 of the Ministry of Education and Science of Kazakhstan.
9. "On the system of remuneration of public employees, employees of organisations sustained by the state budget, and employees of public institutions", amended on 2 November 2012.
10. MERSK Regulation No. 338 of 2009.
11. Reserved only for teachers.
12. Radiation represents a serious environmental threat in Kazakhstan, especially in the Semipalatinsk region in the North East, which was frequently used as a nuclear testing site in Soviet times. Almost 500 nuclear weapons were detonated there since the 1950s, 116 of which were above ground and commonly took place without alerting or evacuating the local population. Nuclear testing was halted

in 1990, but typical after the effects such as radiation poisoning, birth defects, anaemia and leukaemia, are still prevalent in the area.

13. Except in the beginning of their careers, a teacher can request an attestation for attaining a higher qualification category even before the end of a five-year period. The requirements for an advanced attestation are very detailed and are listed in Regulation No. 16 of 22 January 2010 of the Minister of Education and Science of the Republic of Kazakhstan.

14. Attestation of pedagogical workers is a procedure carried out to determine the correspondence of qualifications of pedagogical workers with the respective qualification requirements; qualification category reflects the requirements at a certain qualification level that correspond to the complexity of tasks for that level (Regulation No. 16 of 22 January 2010 of the Minister of Education and Science of the Republic of Kazakhstan).

15. Statutory salaries refer to scheduled salaries according to official pay scales (OECD, 2012a).

16. E.g. the transformation of VET schools and lyceums into colleges.

17. The Background Report for this review for example provides an analysis of changes in the regulatory framework of education in Kazakhstan since the 90s, illustrating their fast pace and wide scope (IAC, 2012).

18. Information provided to the OECD review team by the National Centre for Professional Development of Pedagogical Workers (ORLEU) and the Republican Institute for Advancing the Qualifications of Managers and Pedagogical Workers in the Education System of the Republic of Kazakhstan.

Annex 4.A1

Salary progression of teachers and principals, Kazakhstan (2011)

Table 4.A1.1. **Salary progression of school teachers and principals in Kazakhstan (2011)**

Teachers					
Years	Base wage	category (% of base wage)	degree (min wage)	NIS (%)	Total
0	42 473	0	0	0	42 473
5	45 658	30	0	0	59 355
10	47 428	50	0	30	85 370
15	49 198	100	15 999	70	148 834
top	50 967	100	31 998	70	169 609
Principals					
Years	base wage	category (% of base wage)	degree (min wage)	NIS	Total
0	60 347	0	0	0	60 347
5	65 302	0	0	0	65 302
10	68 134	0	0	0	68 134
15	70 788	0	0	0	70 788
top	72 204	0	0	0	72 204

Notes: 1. All teacher salaries are for one standard workload (18 hours).

2. Figures include compensation payment for additional category: column 2: second, column 3: first, columns 4 and 5: highest.

3. Figures in column 5 include compensation payments for qualifications (highest category, graduate degree, NIS training second level), but not for additional workload or special working conditions.

Sources: Government Regulation No. 1257 of 24 December 2008 (for base wage in 2009), Government Regulation No. 244 of 30 March 2010 (for base wage in 2010), Government Regulation No. 150 of 17 February 2011 (for base wage in 2011) and Government Regulation No. 1400 of 2 July 2013.

Annex 4.A2

Evidence-driven approach to reform and management of teacher policies: An example

The following outlines an example of an indicator framework for informing teacher policy. To be most useful, information on these indicators should be available at a regional level and for different types of schools and teachers.

Table 4.A2.1. **Indicator Framework for Informing Teacher Policy**

THE TEACHING PROFESSION AND THE TEACHING WORKFORCE		
Area	**Type of information**	**Aspects**
General views on teaching profession	General public attitudes	Public perception on the teaching profession
	Teachers' attitudes	Teachers' views on their profession Teachers' morale, enthusiasm and commitment Major sources of job satisfaction and dissatisfaction
Size of the teaching workforce		Absolute size and relative to total labour force Resources on teachers relative to total investment in schools
Profile of the teaching workforce	Demographic profile	Age, gender Cultural background/ethnicity
	Credentials	Certification status, academic qualifications Proportion of qualified teachers in subject taught Years of experience
	Teaching status	Full-time/part-time

THE TEACHING PROFESSION AND THE TEACHING WORKFORCE		
Area	**Type of information**	**Aspects**
Flows in and out of the teaching profession	Entrants into initial teacher education	Number and characteristics of entrants
	Graduates from initial teacher education	Progression and completion rates in initial teacher education Destination of recent teacher education graduates Early career experiences of new teachers
	Entrants into teaching and outcomes of recruitment process	Number and origins of newly appointed teachers Characteristics of entrants, including academic credentials Number of applicants relative to teaching vacancies Number of vacancies that remained unfilled or are "difficult to fill" Methods used to cover vacancies which are difficult to fill Distribution of teacher resources across schools
	Teachers leaving profession/moving to another post	Turnover and attrition rates Destinations of teachers who leave their teaching position Destinations of teachers who leave the teaching profession Reasons for leaving the teaching profession
	Re-entrants into teaching	Number and characteristics of re-entrants
	Retirees	Legal and actual retirement age Schemes for working beyond retirement age
	Recruitment in foreign countries	Number and background of teachers hired from abroad

PREPARATION AND DEVELOPMENT OF TEACHERS		
Area	**Type of information**	**Aspects**
Initial teacher education	Entrance into initial teacher education	Entrance requirements
	Structure of programmes	Diversity of routes Organisation of programmes (e.g. consecutive or concurrent, flexibility of provision); duration Content and emphasis (subject-matter knowledge, pedagogical preparation, practical school experience) Links and partnerships with schools
	Structure of alternative programmes of initial teacher education	Setting (e.g. traditional institutions, school-based, distance learning); organisation of programmes; duration
	Accreditation and evaluation of initial teacher education programmes	Institutions granting accreditations, criteria for accreditation Credentials and background of teacher educators Evaluation of programmes
	Outcomes of initial teacher education programmes	Profile of graduates' competencies; graduation requirements
	Incentives to undertake initial teacher education	Financial and other incentives

PREPARATION AND DEVELOPMENT OF TEACHERS		
Area	**Type of information**	**Aspects**
Certification of teachers		Requirements to obtain a teaching license Recertification programmes for practicing teachers
Professional development	Participation and choice of programmes	Minimum legal requirement for teachers Participation levels Identification of needs and priorities for professional development
	Providers	Types of institutions providing prof. dev. Activities Accreditation and evaluation of providers
	Professional development activities	Content and emphasis; organisation; duration School-based provision Links to promotion and recertification Research opportunities for teachers Programmes for those returning to teaching profession
	Financing of professional development	Sharing of costs; school budget for professional development

DEMAND FOR TEACHERS		
Area	**Type of information**	**Aspects**
Demand for teachers	Student population	Age structure of the school-age population Age school participation rates; in-grade retention rates Starting and ending age of compulsory education Geographical distribution of student population
	Organisation of schooling	Average class size; student-teacher ratio; teaching load Required instruction time for students Availability of support staff in schools Use of technology and distance learning; curriculum structure

CAREER OPPORTUNITIES AND INCENTIVES		
Area	**Type of information**	**Aspects**
Career opportunities	Career structure	Salary scales (e.g. number, structure, length)
	Promotion	Opportunity for promotion as a teacher; basis for promotion Differentiation: opportunity for new roles and responsibilities
Monetary incentives	While teaching	Salary levels, allowances and criteria Bonuses (e.g. signing, retention); subsidies (e.g. housing, childcare)
	Retirement	Pension benefits

CAREER OPPORTUNITIES AND INCENTIVES		
Area	**Type of information**	**Aspects**
Non-monetary incentives	Flexibility of profession	Part-time work; flexibility of schedule; flexibility to take leave
	Leave benefits	Vacation time; sabbatical periods Opportunity to work outside school for limited time
	Other	teaching awards; opportunity for in-service training

STRUCTURE OF THE TEACHER LABOUR MARKET		
Area	**Type of information**	**Aspects**
Labour market institutions	Contractual elements	Employment status of teachers; types of contract Probationary period; basis for renewal or termination of contract
	Level of centralisation of bargaining	Existence of collective agreements Existence of individual-level rewards
	Degree of unionisation	
Recruitment procedures and selection criteria	Recruitment procedures	Eligibility criteria to apply Recruitment responsibility, procedures and selection criteria
	Recruitment in foreign countries	Mechanisms and incentives to recruit teachers from abroad
Mobility	Mobility within teacher labour market	Barriers to mobility (e.g. recognition of teaching qualifications and work experience within the country) Incentives (e.g. transportation subsidies; compensation for high cost of living)
	Mobility between teacher labour market and other sectors of activity	Programmes for side-entrants to teaching Programmes for teachers to work in industry
Short-term replacement of teachers		Mechanism used to replace teachers for short periods of time

SCHOOL PROCESSES		
Area	**Type of information**	**Aspects**
Induction to teaching	Participation	Existence of mandatory induction programmes Elements (e.g. coaching, reduced workload, discussion groups, further training); duration Collaboration with teacher education institutions
	Provision of support	Persons responsible for providing support, their training and compensations

SCHOOL PROCESSES		
Area	**Type of information**	**Aspects**
Organisation of work	Definition of tasks and responsibilities	Existence of job profile for teachers; teacher time use
	Differentiation of roles in school	Existence and conditions of non-classroom-teaching roles Team teaching
Working conditions	Workload	Teaching hours; class size; number of classes Tasks other than teaching Facilities and instructional materials
	Availability of support staff	
School decision making	Areas of school autonomy	Personnel selection, working conditions and development
	School management	Structure, appointment procedure and duration
Teacher professional autonomy		Areas of teacher decision making and responsibilities
Teacher evaluation and accountability	Existence	Existence of formal mandatory schemes; periodicity
	Context	Individual teacher evaluation; school evaluation
	Evaluators	Persons responsible for evaluation
	Methodology	Criteria for evaluation; tools used
	Responses to evaluation results	Link to rewards and professional development Processes for ineffective teachers

Source: OECD (2005), *Teachers Matter: Attracting, Developing and Retaining Effective Teachers*, OECD Publishing (Appendix 2). http://dx.doi.org/10.1787/9789264018044-en.

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Chapter 5

Education expenditure and financing mechanisms in Kazakhstan

Chapter 5 provides an overview of the macroeconomic context in which financing for education in Kazakhstan takes place, discusses current and historic expenditure on education in the country and benchmarks it against other countries, and analyses resource allocations for education reform vs. need for resources in the public school network. The chapter further discusses the current financing mechanisms and the plans of the State authorities to introduce per capita funding to remedy their shortcomings. It provides recommendations on adjusting expenditure levels, the pace and focus of reform plans and spending priorities. Last but not least, it consolidates large number of data and information on expenditure from various national sources into a single source of evidence on the current state of play.

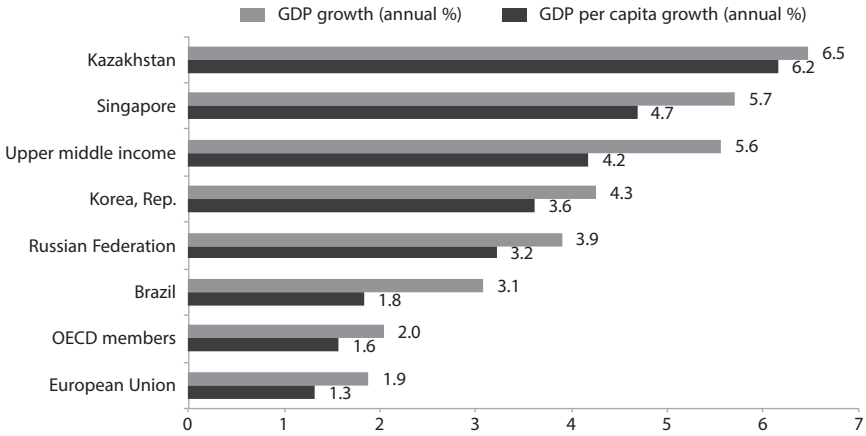
The dual purpose of the chapter

The preparatory phase for this review revealed that evidence on education expenditure is dispersed, in some instances lacking coherence between sources, and that reliable analysis of expenditure patterns – both in historic perspective and against international benchmarks – is largely missing. Therefore the chapter on education expenditure and financing mechanisms is as much about consolidating data and information into a coherent source of evidence and offering an interpretation as it is about recommending policy improvements. The OECD review team hopes that the results of this endeavour will be useful – in the domain of policy making, but also for further analytical work on education financing in Kazakhstan. The recommendations are summarised at the end of the chapter, the summary and analysis of data is presented in the next sections.

The fiscal and macroeconomic context in Kazakhstan

The young economy of Kazakhstan has been growing steadily for well over a decade. Fuelled by the thirst of world markets for its leading exports – oil, gas, metals and grain – and following a first wave of successful reforms after independence, national output has been increasing by 6.5% on average annually since 1996, closely followed by an average of 6.2% increase in GDP per capita. These are rates of growth which actually surpass traditional examples of fast-paced economic development such as Singapore, Korea or Brazil (Figure 5.1) and are the 17th highest in the world for the period 1996-2011 in terms of GDP

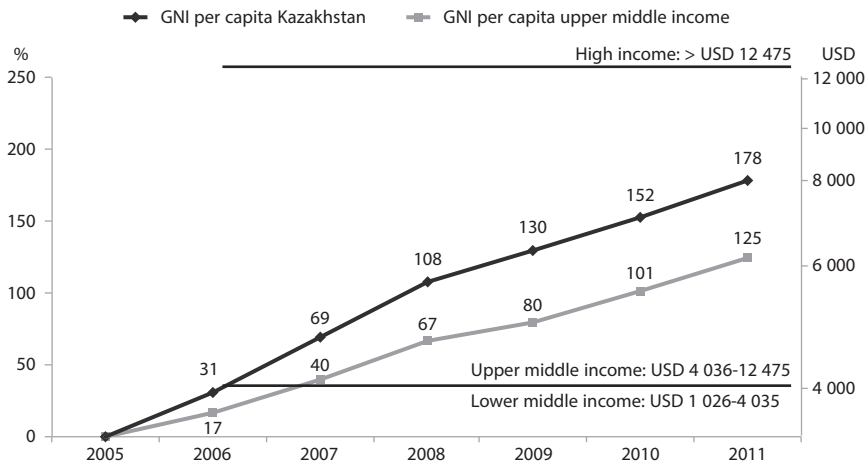
Figure 5.1. **GDP and GDP per capita growth (annual %), Kazakhstan and selected countries and regions (1996-2011)**



Source: World Bank, World Development Indicators.

growth, and 10th highest in the world in terms of GDP per capita growth[1] (World Bank, World Development Indicators [WDI]). In 2006, Kazakhstan was classified as an upper middle income country and in 2011 its real per capita income reached USD 11 568[2] (WDI). This is well above the average for Central Asia (USD 6 964)[3] and for the upper middle income group of countries (USD 9 235),[4] and above GDP per capita in countries which are now recording higher average growth rates, such as China, Turkmenistan, Uzbekistan or Tajikistan (WDI). If its GDP growth persists, Kazakhstan is likely to qualify as high income economy in the foreseeable future (Figure 5.2).

Figure 5.2. **GNI per capita trends 2005-11 (2005 = base year), Kazakhstan and upper middle income group of countries**

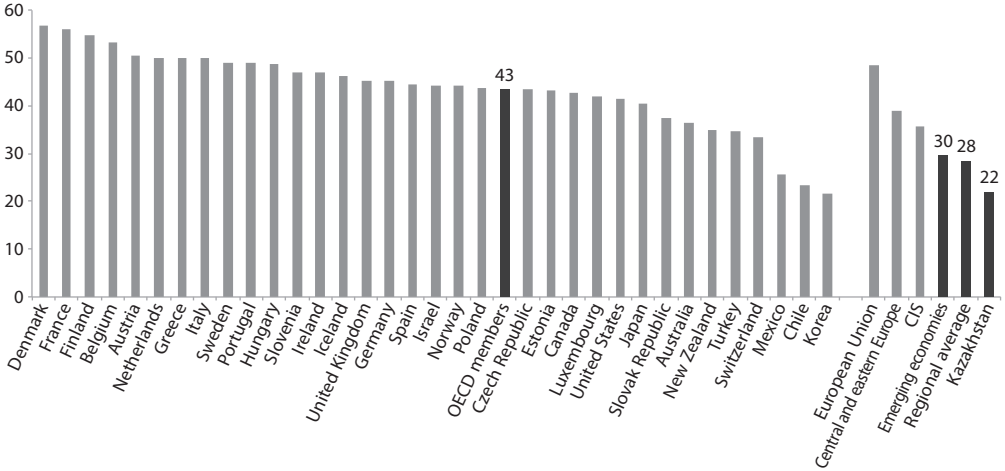


Source: World Bank, World Development Indicators.

Over the past few years the sustained GDP growth fed a remarkable increase in public expenditure. In 2011 the total public budget amounted to USD PPP 23.1 billion (current prices), an increase of 56% compared to 2005 (World Bank, WDI). This represents, however, a relatively modest share of national income. In 2011, general government total expenditure equalled only 22% of GDP, below relative government spending in economies with comparable per capita income (emerging economies: 30%), historical legacy (Central Asian region: 28%), and also the average for OECD countries (43%) (Figure 5.3).

Differences in relative government spending between countries are quite common and can be considerable (OECD, 2011). Rather than being an indication of how efficient the public sector is or a sign of commitment to the public good, they highlight different approaches to delivering public goods

Figure 5.3. **General government total expenditure as proportion of GDP, Kazakhstan, OECD and selected world regions (2011)**



Note: Data for Poland from 2010.

Source: International Monetary Fund, World Economic Outlook Database (October 2012).

and services and to providing social protection. A conclusion on whether a government spends a lot or not would depend on the national context, on factors such as economic growth and balance of expenditures and revenues, and also on how well spending is aligned with policies and needs in the public sector.

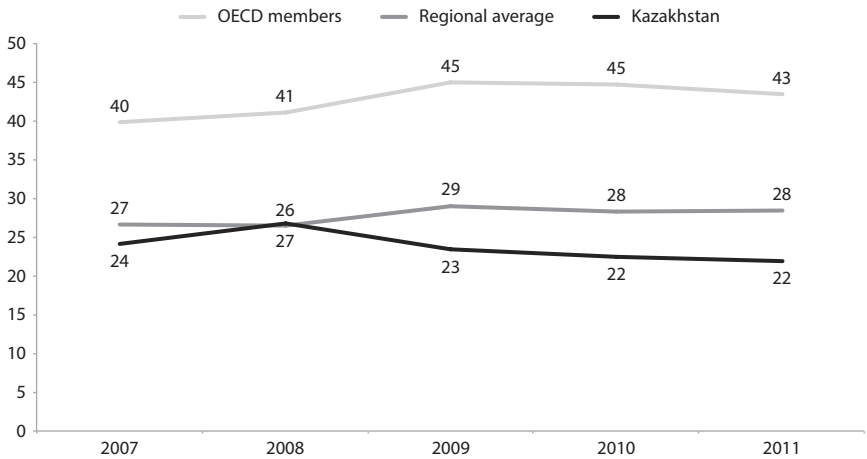
Box 5.1. **The impact of crisis on government expenditure in OECD countries**

Governments spend money to provide goods and services and redistribute income. Like government revenues, government expenditures reflect historical and current political decisions but are also highly sensitive to economic developments. Since 2000, the size of government spending increased in the majority of OECD member countries by an average of 4.3 percentage points of GDP, but most of this increase occurred since the start of the financial and economic crisis. Only part of this increase reflects declining GDP; part also reflects increased government expenditures precipitated by the need to ensure the stability of the financial system and to stimulate the economy in response to the crisis.

Source: OECD (2011), *Government at a Glance 2011*, OECD Publishing. http://dx.doi.org/10.1787/gov_glance-2011-en.

The allocation of rather cautious proportions of the ballooning GDP to the public budget has been a tendency in Kazakhstan for some time now (Figure 5.4). Total government expenditure as a share of GDP has been on the decline since a peak of 27% in 2008 and by 2011 had fallen down to 22%. Over the same period OECD members were spending between 41% and 45% of their GDP on public budgets, and the Central Asian region too was spending on average a higher proportion of its GDP than Kazakhstan. In fact, by keeping relative government spending at a low level, the authorities *de facto* rely solely on GDP growth to finance necessary increases in public expenditure.

Figure 5.4. **Trends in general government total expenditure as proportion of GDP, Kazakhstan, OECD and regional average (2007-11)**



Note: Data for Poland from 2010.

Source: International Monetary Fund, World Economic Outlook Database (October 2012).

GDP growth is an unreliable ally, especially in an economy which depends on the volatile reality of world commodity markets. Also, as Kazakhstan approaches the lower frontier of the high income group, in the longer term its patterns of GDP change are likely to become less spectacular, with macroeconomic indicators that gradually start to resemble those of wealthier economies – lower GDP growth, more moderate levels of inflation, higher per capita national wealth. The question of whether there is readiness to adjust expenditure patterns and allocate a higher share of GDP to meet all commitments will be increasingly important.

The Government of Kazakhstan has already demonstrated competence and decisiveness in handling large scale exogenous shocks to the economy such as the crisis of 2007/2008, when it swiftly put together a comprehensive

anti-crisis programme worth about USD 12 billion (10% to 11% of annual GDP) – mainly in support of the banking sector, but also of unfinished housing projects, SMEs and farms (Barisitz et al., 2010). There is no reason to think that the authorities will handle future macroeconomic challenges in a less effective fashion. It is, however, less clear how fiscal policies will respond to endogenous, slower, less obvious developments like a gradual slow-down in growth or, most importantly, inherent need for additional resources in various sectors. To support the authorities in detecting and reacting to resource need in the education sector, the two main questions considered in this chapter are:

- Are the resources allocated to education sufficient?
- Are the resources allocated to education spent where they are needed?

The focus of analysis of education expenditure

Secondary education policy in Kazakhstan is pursuing a twofold aim. On the one hand it seeks to promote fundamental changes in teaching and learning by identifying, adjusting and implementing innovative solutions from the best of education systems around the world, and by developing solutions of its own (MESRK, 2011a). On the other, it de facto focuses on much needed improvements in the regular, day-to-day work of schools and staff in an education system that still bears the deep imprint of a long and strong Soviet tradition, with all its advantages (i.e. strong academic focus and emphasis on the promotion of excellence) and disadvantages (i.e. overloaded curricula and outdated teaching methods). The success of educational reform – the declared centrepiece of education policy in Kazakhstan – will depend on various factors. A major one among them is the extent to which the authorities strike a healthy balance between innovations and routine, that is between investment in reforms and in addressing the current needs of ordinary schools. Change is essential for better education, but an underfunded school network will have a limited capacity to absorb new ideas and deliver according to new quality standards.

The expenditure analysis in this report is carried out against the background of these two complementary goals and, as noted in the introductory section of the report, draws on comparisons with a selection of benchmark countries whose economic and/or reform trajectories were deemed relevant to Kazakhstan, or which were named as points of reference by the authorities of Kazakhstan in the negotiations which led to this OECD review. The benchmark group of countries includes:

- All countries from the Central Asian region, including the Russian Federation;
- A selection of resource rich OECD member economies (Australia, Canada and Norway);

- A selection of countries which registered noteworthy improvements in learning outcomes as measured by the PISA survey (Chile, Poland and Portugal);
- Countries with rates of economic growth comparable to Kazakhstan's (Brazil, China and Singapore)

Wherever available or calculable, the benchmark sample lists average values also for the group of upper middle income countries to which Kazakhstan currently belongs, for the OECD and for the European Union.

Last but not least, it should be borne in mind that the scars left by the economic crisis of 2008 were still healing in the period covered by this expenditure analysis (2005-2011/2012). Kazakhstan was among the countries hit hardest, mainly due to the particularly high dependence of banking in Kazakhstan on external finance (Barisitz et al., 2010). The timely and strong response by the authorities helped alleviate longer term damage, but it also had side effects such as massive devaluation of the local currency of up to 20% against the US dollar and 40% against the Euro in 2009 (ibid.), and even stronger dependency on oil prices for rehabilitating the economy and rebuilding confidence in the aftermath of the crisis. Consequently, fiscal planning over the next few years is likely to depend on macroeconomic factors to a larger extent than before 2008.

How much does Kazakhstan invest in public education?

The proportion of GDP and of the overall public expenditure budget invested in education could be interpreted as a proxy for the priority a country accords to the sector when allocating resources. This proportion can also be affected by more technical factors such as the size of the school-age population in a country, enrolment rates, teachers' salaries, or organisation of the school system (OECD, 2012a). In the case of some resource-rich economies the proportion can also be influenced by wealth: commodity based economies with high per capita income (e.g. the United Arab Emirates) tend to spend less in relative terms since even a low share of national wealth results in above average commitment in nominal terms.

Kazakhstan is a resource-rich but not (yet) high income economy. The share of GDP it commits to public education is nevertheless well below international and regional averages. In 2009 this share amounted to 3.1% of GDP, and in 2011 it was 3.6%. The average proportion of GDP that OECD countries devoted to their public education institutions in 2009 was considerably higher (5.4%). Denmark, Iceland, Israel, Korea, New Zealand and the United States spent over 7%, whereas only 7 of the 37 countries for which data are available spent less than 5%, namely the Czech Republic,

Hungary, India, Indonesia, Italy, the Slovak Republic and South Africa (OECD, 2012a). It is striking to note how low spending on tertiary education in Kazakhstan is by international comparison – less than half a percentage point of GDP, compared to 1.1% for the OECD, 0.7% for the region, and 1% of GDP on average for the upper middle income group. Only Tajikistan spends a similarly low proportion of its economic output on its universities. This is in stark contrast to the expectations of both authorities and households in Kazakhstan from the tertiary sector.

Table 5.1. **Total public expenditure on education per level as share of GDP, Kazakhstan (2009, 2011) and benchmark countries (2009)**

		Public expenditure[1] on education as a percentage of GDP			
		Pre-primary education	Primary, secondary and post-secondary non-tertiary education	Tertiary education	All levels of education combined
	Notes	(1)	(2)	(3)	(4)
Kazakhstan	9	0.2	2.3	0.4	3.1
Kazakhstan national data latest	*7, 8*	*0.3*	*2.1*	*0.3*	*3.6*
Region					
Kyrgyz republic	4	0.5	3.6	0.9	**5.8**
Russian Federation	2	0.7	2.3	1.2	**4.7**
Tajikistan	4	0.2	3.1	0.4	**4.0**
Turkmenistan		m	m	m	**m**
Uzbekistan		m	m	m	**m**
Regional average		0.4	2.8	0.7	**4.4**
Income group average	6, 10	0.4	3.1	1.0	**4.6**
Resource rich OECD					
Australia		0.1	3.6	0.7	**4.5**
Canada	2, 3	x(2)	3.2	1.5	**4.8**
Norway		0.3	4.2	1.3	**6.1**
PISA performers selection					
Finland		0.4	4.1	1.8	**6.3**
Korea		0.1	3.6	0.7	**4.9**
PISA improvers selection					
Chile	4	0.6	2.9	0.8	**4.3**
Poland		0.5	3.5	1.1	**5.0**
Portugal		0.4	4.0	1.0	**5.5**

Table 5.1. **Total public expenditure on education per level as share of GDP, Kazakhstan (2009, 2011) and benchmark countries (2009)** *(continued)*

		Public expenditure[1] on education as a percentage of GDP			
		Pre-primary education	Primary, secondary and post-secondary non-tertiary education	Tertiary education	All levels of education combined
	Notes	(1)	(2)	(3)	(4)
OECD average		0.5	3.7	1.1	**5.4**
EU21 average		0.5	3.7	1.2	**5.5**
Economic growth selection					
Brazil		0.4	4.3	0.8	**5.5**
China		m	m	m	**m**
Singapore	5	m	m	m	**3.3**

Notes: 1. Public expenditure presented in this table includes public subsidies to households for living costs (scholarships and grants to students/households and students loans), which are not spent on educational institutions. Public expenditure for the "region" group includes government spending on educational institutions (both public and private), education administration as well as subsidies for private entities (students/households and other private entities).

2. Year of reference 2008 instead of 2009.
3. Some levels of education are included with others.
4. Year of reference 2010 instead of 2009.
5. Year of reference 2012 instead of 2009.
6. Averages for upper middle income countries for which there is data. Data from 2009 or latest available year within the 2008-10 period. See Annex 5.A1, Table 5.A1.2 for details on countries included and years of reference.
7. Including VET, but excluding spending not allocated by level of education (0.9% of GDP).
8. Year of reference 2011.
9. Data from national sources on spending as share of GDP in 2009 differs by a great margin from the one provided in the World Bank World Development Indicators Database (4.1% of GDP national, 3.1% of GDP international). To ensure comparability, the table resorts to the WDI database for all countries, except where noted.
10. Excluding post-secondary non-tertiary education.

Sources: OECD (2012a), *Education at a Glance 2012: OECD Indicators*, OECD Publishing, http://dx.doi.org/10.1787/eag-2012-en. Region and Kazakhstan: World Bank, World Development Indicators Database and UNESCO Institute for Statistics – World Education Indicators Programme. Economic growth selection: World Bank, World Development Indicators Database, except Brazil (OECD). National source of data on Kazakhstan: IAC (Information-Analytic Centre) (2012), *Secondary Education System in the Republic of Kazakhstan: Today and Tomorrow*, background report prepared for the 2013 OECD Review of Policies for Secondary Education in Kazakhstan, Information-Analytic Centre, Astana, and National Statistical Agency. See Annex 5.A, Table 5.A1.2 for more details on data for Kazakhstan in column 4.

According to data from the World Bank WDI database, relative spending on education in previous years was similarly low, at 4% in 1995, 3.3% in 2000, and 2.3% in 2005. In all OECD member and partner countries with comparable data except France and Israel, expenditure as a percentage of GDP increased over the 2000-05 period. The increase was above one percentage point in Brazil (from 3.5% to 5.5%), Denmark (from 6.6% to 7.9%), Ireland (from 4.4% to 6.3%), Korea (from 6.1% to 8.0%), Mexico (from 5.0% to 6.2%), the Netherlands (from 5.1% to 6.2%), Norway (from 5.1% to 6.2%), the Russian Federation (from 2.9% to 5.5%) and the United Kingdom (from 4.9% to 6.0%) (OECD, 2012a).

Table 5.2. **Expenditure per student and level of education in USD PPP, Kazakhstan (2009, 2011) and benchmark countries (2009)**

	Notes	Pre-primary education (3 years and older)	Primary and secondary education on average	Post-secondary non-tertiary	All tertiary education excluding R&D activities	All levels of education on average
		(1)	(2)	(3)	(4)	(5)
Kazakhstan	3, 8	1 062	1 619	m	1 156	1 340
Kazakhstan national data latest	6, 7	*1 461*	*1 583*	*971*	*1 081*	*1 841*
Region						
Kyrgyz Republic	2, 3	711	331	m	388	470
Russian Federation	1, 3	4 511	4 466	x(3)	3 642	4 684
Tajikistan	2	450	234	m	271	267
Turkmenistan		M	m	m	m	m
Uzbekistan		M	m	m	m	m
Regional median	3	886	975	x(3)	772	905
Income group average	4, 8	2 369	2 851	m	2 720	2 647
Resource rich OECD						
Australia		8 493	9 232	7 445	9 867	8 759
Canada	1, 5	x(2)	8 629	m	15 126	11 878
Norway		6 696	12 858	x(3)	11 290	10 281
PISA performers selection						
Finland		5 553	8 157	x(3)	10 085	7 932
Korea		6 047	8 028	a	8 096	7 390

Table 5.2. **Expenditure per student and level of education in USD PPP, Kazakhstan (2009, 2011) and benchmark countries (2009)** *(continued)*

	Notes	Pre-primary education (3 years and older)	Primary and secondary education on average	Post-secondary non-tertiary	All tertiary education excluding R&D activities	All levels of education on average
		(1)	(2)	(3)	(4)	(5)
PISA improvers selection						
Chile	2	3 885	2 937	a	6 390	4 404
Poland	5	5 610	5 164	7 865	6 502	6 285
Portugal	5	5 661	7 236	m	5 504	
OECD average		6 670	8 516	4 958	9 341	7 371
EU21 average		6 807	8 638	6 399	8 332	7 544
Economic growth selection						
Brazil	5	1 696	2 320	a	11 107	5 041
China		m	m	m	m	m
Singapore		m	m	m	m	m

Notes: In equivalent USD converted using PPPs for GDP and, where relevant, in USD PPP (current international dollars) adjusted for inflation (2009), by level of education, based on full-time equivalents (OECD countries). Figures for the "region and "income group" countries represent public expenditure. Public expenditure includes government spending on educational institutions (both public and private), education administration as well as subsidies for private entities (students/households and other private entities). Data for non-OECD countries (except Brazil and Russian Federation) may not be based on full-time equivalents.

Data for the "region and "income group" countries represents public expenditure. Public expenditure includes government spending on educational institutions (both public and private), education administration as well as subsidies for private entities (students/households and other private entities). Data for non-OECD countries (except Brazil and Russian Federation) may not be based on full-time equivalents. **1.** Year of reference 2008 instead of 2009. **2.** Year of reference 2010 instead of 2009 **3.** Excluding expenditure not allocated by level of education (30% of overall education expenditure) **4.** Year of reference 2009 or latest available year between 2008-10 for countries for which there is data. **5.** Public institutions only (for Canada, in tertiary education only). **6.** Data in column 1 includes children 1 year and older. **7.** Year of reference 2011. **8.** Excluding post-secondary non-tertiary education. **9.** Data in column 4 includes private providers.

Source: OECD (2012a), *Education at a Glance 2012: OECD Indicators*, OECD Publishing, http://dx.doi.org/10.1787/eag-2012-en. OECD non-members: World Bank, World Development Indicators and UNESCO Institute for Statistics – World Education Indicators Programme. National source of data on Kazakhstan: Ministry of Education and National Statistical Agency. See Annex 5.A1, Table 5.A1.3 for more details.

The low share of national output invested in education in Kazakhstan translates also into a rather modest amount of resources per student. Table 5.2 shows levels of education expenditure per student and level of education in USD, converted using purchasing power parities and where necessary,[5] adjusted for inflation to account for differences in price levels between countries and price fluctuations over time.

In 2009 Kazakhstan invested the most in its primary and secondary students (USD PPP 1 619), followed by students in universities (USD PPP 1 156) and by children in pre-school education (USD PPP 1 062). Judging by data from national sources, in 2011 the authorities were still allocating the most to students in primary and secondary education. Nominal per student expenditure in 2011 increased to USD PPP 1 583 in primary and secondary and to USD PPP 1 461 in pre-primary education, but decreased slightly to USD 1 081 at tertiary level. Average per student expenditure for all levels increased from USD PPP 1 340 in 2009 (WDI data) to USD PPP 1 841 in 2011. For any given level of education, these amounts are above the regional average for 2009 but below average per student expenditure in upper middle income countries, in the Russian Federation, the OECD and Brazil.

It would be wrong to interpret this data as a sign of low commitment to human capital development. It is rather an indication that national education in Kazakhstan is (still) relatively inexpensive compared to education in other countries and the OECD. In 2009 cumulative per student cost in primary and secondary education was merely 1.6 times higher than GDP per capita, which is more than two times less than average per student expense in other upper middle income countries and on average in OECD members (Figure 5.5). The next-cheapest education services in proportion to per capita wealth are being offered in Brazil (2.2 times higher) and in the Russian Federation (2.5 times).

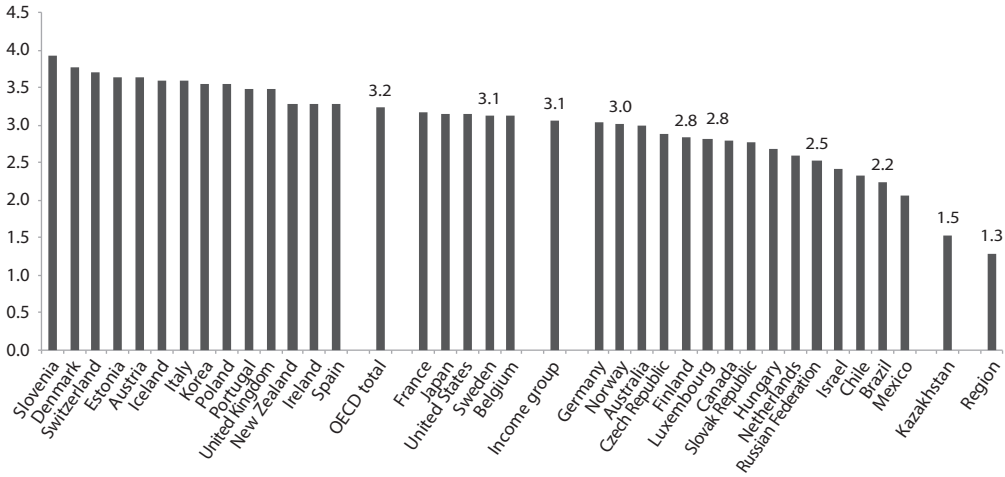
Expenditure trends and priorities: between reforms and routines

Investing in educational change

The Kazakh state authorities are well aware of the below average levels of education spending in their country and of the need for additional efforts on the resource front. In fact, due to GDP growth and favourable budget allocations and despite the crisis, education has witnessed a remarkable phase of heightened investment since 2004/2005. Calculations based on data from national sources reveal that by 2009, after accounting for shrinking student numbers, per student expenditure in primary and secondary education has grown almost 3.5 times (Table 5.3).

Even after adjusting for inflation, the rate of increase (66%) remains higher than in any OECD country, and also higher than in most countries (except Brazil) included in the benchmark group. The average increase in

Figure 5.5. **Ratio of cumulative expenditure per student over the theoretical duration of primary and secondary studies to GDP per capita, Kazakhstan, OECD and benchmark countries (2009)**



Notes: In equivalent USD converted using PPPs for GDP and, where relevant, in USD PPP (current international dollars) adjusted for inflation (2009). Data for the "region and "income group" countries represents public expenditure. Public expenditure includes government spending on educational institutions (both public and private), education administration as well as subsidies for private entities (students/households and other private entities). Data for non-OECD countries (except Brazil and Russian Federation) may not be based on full-time equivalents. Canada: year of reference 2008. Chile: Year of reference 2010. Slovenia, Switzerland, Italy, Poland, Portugal, Ireland, Hungary, Russian Federation and Brazil: public institutions only. Kazakhstan: Year of reference 2011, national data.

Sources: OECD (2012a), *Education at a Glance 2012: OECD Indicators*, OECD Publishing, http://dx.doi.org/10.1787/eag-2012-en. OECD non-members: World Bank, World Development Indicators and UNESCO Institute for Statistics – World Education Indicators Programme. National source of data on Kazakhstan: Ministry of Education and Science of Kazakhstan – attachments on education financing provided in the course of preparing responses to questions in the review framework and Statistical Annex to MESRK (2011b), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana (all data from this source used in the chapter was validated by the MESRK for the purposes of the review). Source for conversion factors and deflators: World Bank, World Development Indicators (see Annex 5.A1, Table 5.A1.3 and Table 5.A1.4 for more detail).

expenditure per student in real tearms in OECD countries was 15% for the same period, 54% on average in the Central Asian region (including the Russian Federation) and 44% on average in countries belonging to the upper middle income group. Of the OECD benchmark countries, the highest net increase is recorded in Poland (39%), followed by Korea (36%).

Table 5.3. **Change in expenditure per student by educational institutions for all services at primary, secondary and post-secondary non-tertiary levels of education, Kazakhstan, OECD and benchmark countries (1995, 2000, 2005, 2009)**

	Notes	Primary, secondary and post-secondary non-tertiary education								
		Change in expenditure (2005=100)			Change in the number of students (2005=100)			Change in expenditure per student (2005=100)		
		1995	2000	2009	1995	2000	2009	1995	2000	2009
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Kazakhstan current prices	6, 7	m	48	**293**	104	110	**84**	m	43	**349**
Kazakhstan adjusted for inflation	6, 7	m	73	**140**	104	110	**84**	m	66	**166**
Regional average	6, 9	66	60	**147**	100	97	**93**	72	61	**154**
Income group sample	6, 8, 9	m	m	**136**	m	m	**92**	m	m	**144**
Resource rich OECD										
Australia		63	82	**127**	87	93	**100**	73	89	**127**
Canada	1, 2	91	86	**113**	m	99	**99**	m	87	**115**
Norway	4	85	89	**114**	84	95	**102**	101	95	**112**
PISA performers										
Finland		72	81	**108**	88	95	**100**	81	85	**108**
Korea		m	69	**130**	110	102	**96**	m	68	**136**
PISA improvers										
Chile	3	m	m	**118**	m	m	**94**	m	m	**124**
Poland	5	63	89	**118**	121	110	**85**	52	81	**139**
Portugal	5	74	98	**109**	113	109	**103**	66	90	**106**
OECD average		75	85	**112**	102	101	**98**	74	85	**115**
EU21 average		74	85	**110**	105	103	**97**	69	83	**115**
Economic growth group										
Brazil	4, 5	58	66	**156**	84	98	**94**	69	67	**166**

Table 5.3. **Change in expenditure per student by educational institutions for all services at primary, secondary and post-secondary non-tertiary levels of education, Kazakhstan, OECD and benchmark countries (1995, 2000, 2005, 2009)** *(continued)*

Notes: Index of change between 1995, 2000, 2005 and 2009 (GDP deflator 2005 = 100, constant prices).

1. Some levels of education are included with others.
2. Year of reference 2008 instead of 2009.
3. Year of reference 2010 instead of 2009.
4. Public expenditure only.
5. Public institutions only.
6. Excluding post-secondary non-tertiary education. Public institutions and expenditure only.
7. Years of reference 1995, 2000, 2004 (= 100), 2009.
8. Average for countries for which there is data.
9. Data for all levels of education combined (public expenditure and institutions), except Russian Federation (primary and secondary education).

Sources: OECD (2012a), *Education at a Glance 2012: OECD Indicators*, OECD Publishing, http://dx.doi.org/10.1787/eag-2012-en. OECD non-members except Russian Federation (columns 1-3, 5-9) and Brazil: World Bank, World Development Indicators and UNESCO Institute for Statistics – World Education Indicators Programme. For Kazakhstan: Background report (IAC [Information-Analytic Centre] [2012], *Secondary Education System in the Republic of Kazakhstan: Today and Tomorrow*, background report prepared for the 2013 OECD Review of Policies for Secondary Education in Kazakhstan, Information-Analytic Centre, Astana); MESRK (2011), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana.

Analysis of available data suggests that neither wages nor demographic developments are dominant factors behind the spending boom. In this period the average salary of teachers with minimum qualifications was raised by 65% in nominal terms, while their numbers increased only marginally, by 6.4%. There were no changes in the statutory teaching and instruction time and the mix of qualifications in the teaching workforce (proportions of teachers with highest, first, second category qualifications and without category) as a potential driver of cost also remained roughly the same (MESRK, 2011b). By 2009 the student population had decreased by 15.9%, the number of ungraded schools had fallen by only 4.5%, and average class size in secondary education had remained relatively constant (5% decrease between 2005 and 2011, as shown in Table 5.4. What then drove the increase of recent years?

According to expenditure data provided by the authorities of Kazakhstan, in 2009 a third (32%) of the budget was not allocated by any particular level of education. In 2011 this share dropped to 24% in 2011, but this was still

2.6 times as high as in Singapore (UNESCO UIS), 5 times as high as in Korea and well above the OECD average (2%) for the same year (OECD, 2012a).

Table 5.4. **Change in the number of teachers and students, in average teacher wages, and in the share of ungraded schools 2004/05 and 2011**

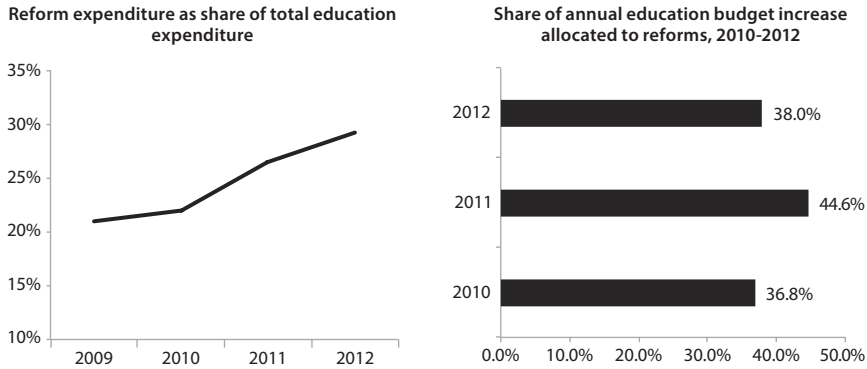
	Notes	2004	2009
		(1)	(2)
Annual teacher salary, current LCU (average primary and secondary education)	1	195 726	322 944
Change			***65.0%***
Number of teachers in primary and secondary education	2	286 345	304 775
Change			***6.4%***
Number of students, primary and secondary		2 962 100	2 491 100
Change			***-15.9%***
Average class size secondary	2	20.15	19.15
Change			***-5.0%***
Number of ungraded schools	2	4 283	4 089
Change			***-4.5%***

Notes: 1. Average wage for a teacher with 15 years experience and minimum qualifications.
2. Years of reference: 2005 and 2010.

Sources: Statistical annex to the MESRK report on the state of education in Kazakhstan (MESRK [2011b], *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana). Data on number of teachers: UNESCO UIS Database. For details on salaries see Annex 5.A1, Tables 5.A1.5-11.

Unlike other countries from the benchmark group, Kazakhstan has no students that cannot be allocated by level of education. Could it be that the high proportion of resources not allocated by education level is an indication of *expenditure on overall reform goals*, that is to say – goals benefiting the education system of Kazakhstan as a whole? A reconstruction of resource allocations is partially possible only for the period 2010-12, but it indeed suggests that the education reform strategy was dominating the policy and funding decisions. Reforms in this period claimed 40% of the increase in education expenditure on average (45% in 2011) and accounted for a growing proportion of the overall education budget: 22% in 2010, 27% in 2011, and 29% in 2012.

Figure 5.6. **Reform expenditure as share of total education expenditure (2009-12) and share of annual education budget increase allocated to reforms (2010-12)**



Note: Data for 2012 relies on IMF projections for GDP.

Source: MESRK (2012a), *Strategic Plan of the Ministry of Education and Science of the Republic of Kazakhstan for 2011-2015*, Ministry of Education and Science of the Republic of Kazakhstan, Astana; IMF World Economic Outlook; Attachments on education financing provided in the course of preparing responses to questions in the review framework; statistical annex to the MESRK report on the state of education in Kazakhstan (MESRK [2011b], *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana). World Bank, World Development Indicators Database for GDP data 2009-11. Calculations: OECD review team.

The OECD distinguishes between two types of education expenditure – current and capital expenditure (OECD, 2012a). The indicators on current expenditure take account of spending on school resources used *each year* to operate schools and address their current needs. These include, for instance, the compensation of teachers and other staff, maintenance of school buildings, students' meals or the rental of school facilities. The choice of items classified under capital expenditure can vary across countries but it always refers to spending on assets that last *longer than one year*, thus benefiting the education system in the longer term. These would commonly be tangible assets, such as school buildings and their construction, renovation or major repairs. Capital expenditure could, however, be directed also towards the creation of intangible assets[6] with a longer term value such as new teaching methods, new generation of textbooks, the promotion of education research, the mobilisation of expertise for curriculum reform, the introduction of new funding methods or an additional year of schooling. Spending on education which is clearly marked as investment in longer term

educational change (education reforms) fits the above description and could be considered as capital expenditure too.

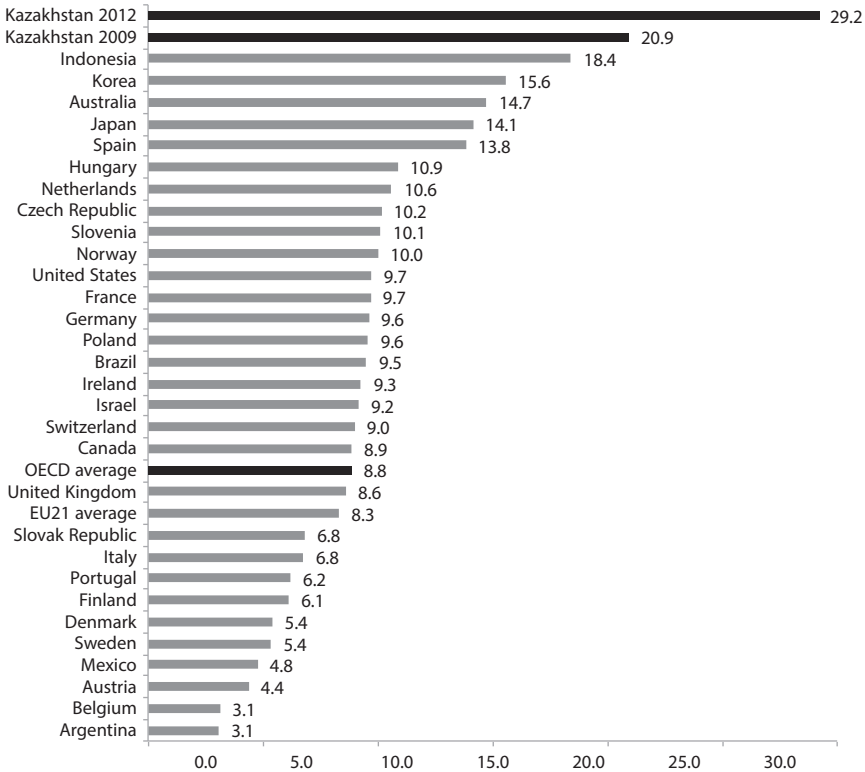
In recent years the weight of this group of expenditure items in the education budget of Kazakhstan surpassed by far capital expenditure allocations in OECD and benchmark countries for which there is data (Figure 5.7). In 2012 the share invested in longer-term educational assets in Kazakhstan was around twice as big as the shares in Korea and Australia, and three times bigger than in OECD members on average. In comparison, in OECD countries more than 90% of total expenditure on education is devoted to short term expenses (that is, to current expenditure). Current expenditure amounts to more than 79% of total expenditure at each level of education in every country, except for tertiary education in Indonesia and Saudi Arabia. The share varies from 80% (Australia) to 98% (Portugal) in primary education; from 85% (Norway) to 98% (Austria) in secondary education; and from 70% (Saudi Arabia) to almost 100% (Iceland) in tertiary education (OECD, 2012a).

Certainly, the scope of the term "capital expenditure" may vary considerably across countries. Country comparisons like those in Figure 5.7 should therefore be drawn with caution and without an aim to identify or illustrate cases of good or bad practice. What should matter most in such analysis is *what assets* are created through capital (longer term) investment, and *at what cost.*

The focus of capital education expenditure in Kazakhstan

To achieve the goals of its national education reform, Kazakhstan appears to be investing in a promising mix of educational assets (Figure 5.8 A-G and Annex 5.A1, Table 5.A1.12 and Table 5.A1.13 for a breakdown of expenditure items). The Strategic Plan of the Ministry of Education and Science contains 52 budget programmes and an implementation timeline, and sets the annual cost of each programme from 2009 to 2014.[7] The programmes focus on the creation of long term and medium term assets to the benefit of different levels of education (or combinations thereof). The long term assets comprise infrastructure and mechanisms to stimulate innovation and modernisation of education and research, for example commercialisation of research outcomes, methodological innovation, support for piloting per capita funding, etc. The money for medium term goals is earmarked for fostering excellence in regular classes through education and training for gifted children, for prizes and scholarships and for higher level professional training of teachers, but also for items not directly related to classroom learning such as compensation for guardians of orphaned children, fight against drug abuse, and active citizenship education.

Figure 5.7. **Education expenditure by resource category – capital expenditure as share of total expenditure, Kazakhstan (2009, 2012) and selected OECD and benchmark countries (2009)**



Notes: **1.** Canada: Year of reference 2008. **2.** Slovak Republic, Canada, Japan: some levels of education are included with others. **3.** Mexico, Portugal, Italy, Switzerland, Ireland, Brazil, Poland, Hungary, Spain and Indonesia: Public institutions only (For Italy, except in tertiary education). **4.** Indonesia: year of reference 2010. **5.** Kazakhstan: Includes pre-school education.

Sources: OECD (2012b), *OECD Investment Policy Reviews: Kazakhstan 2012*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264121812-en. Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme).National source of data for Kazakhstan: MESRK (2011b), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana, and MESRK (2012a), *Strategic Plan of the Ministry of Education and Science of the Republic of Kazakhstan for 2011-2015*, Ministry of Education and Science of the Republic of Kazakhstan, Astana; IAC (Information-Analytic Centre) (2012), *Secondary Education System in the Republic of Kazakhstan: Today and Tomorrow*, background report prepared for the 2013 OECD Review of Policies for Secondary Education in Kazakhstan, Information-Analytic Centre, Astana. See Annex 5.A1, Table 5.A1.12 and Table 5.A1.13 for further details.

Figure 5.8. **A-D Allocation of resources for long and mid-term reform goals by type of expenditure (2009-14)**

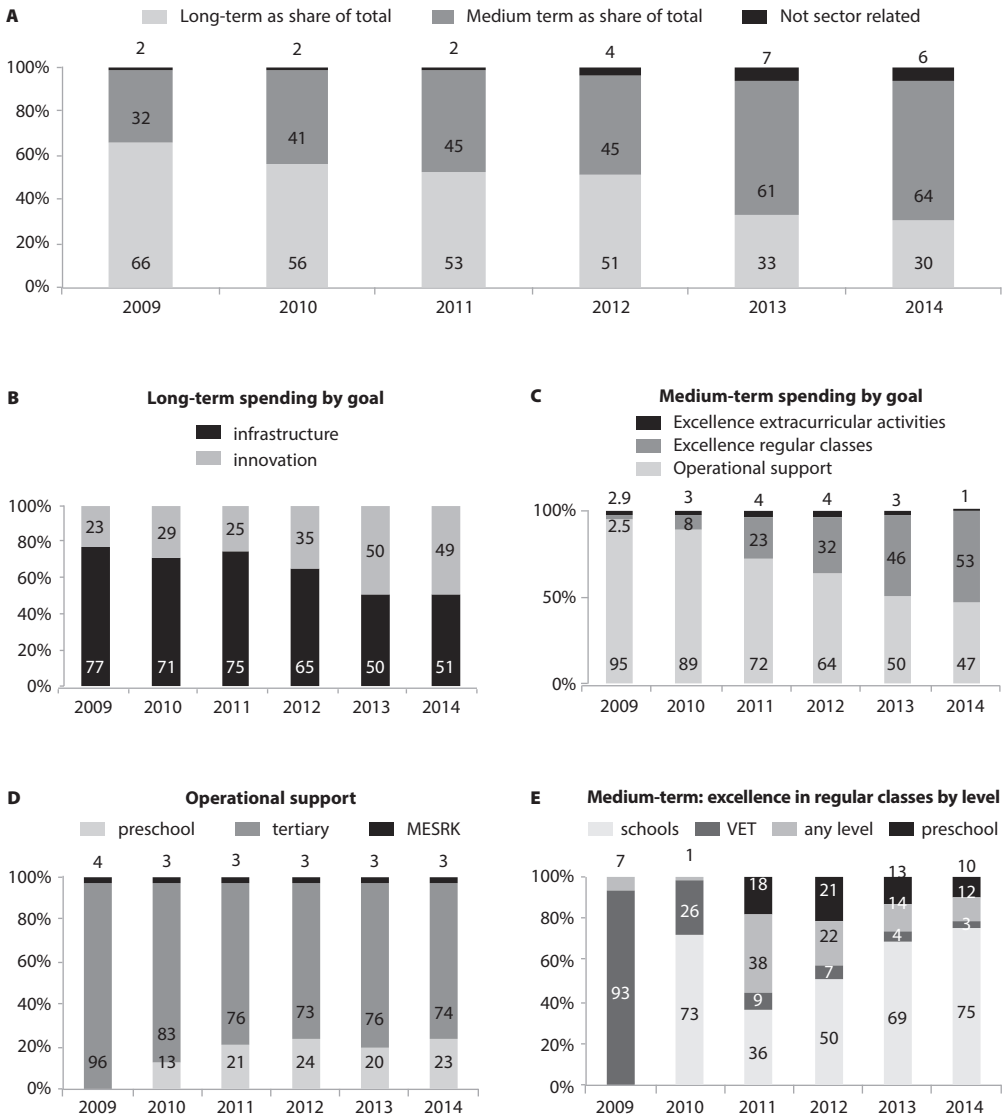
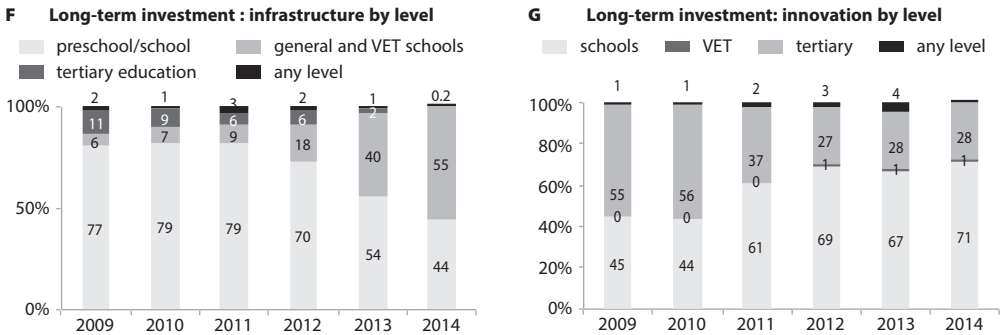


Figure 5.8. **A-D Allocation of resources for long and mid-term reform goals by type of expenditure (2009-14)** *(continued)*



Source: MESRK (2012a), *Strategic Plan of the Ministry of Education and Science of the Republic of Kazakhstan for 2011-2015*, Ministry of Education and Science of the Republic of Kazakhstan, Astana and OECD review team calculations.

Few programmes target the system as a whole or channel funds for operational support to tertiary education institutions, to the Ministry of Education and Science, or to the regions for the expanding network of pre-schools (Figure 5.8-D). The average share of the reform package devoted to operational expenditure in 2009-14 is 32%. Operational support will, however, be gradually balanced out with activities aimed at fostering excellence throughout the school network (Figure 5.8-C).

In the 5-year period until 2014, infrastructure investment will benefit mostly the spreading network of pre-school institutions and, starting with 2013, increasingly also general and VET schools (Figure 5.8-F). The schools will be the main beneficiaries also of long term investment in innovation, followed by higher education institutions (Figure 5.8-G). The general school network is top priority also for medium term investment in excellence, which by 2014 will amount to 75% of all programmes sharing this goal. Excellence efforts seem to be considerably less focused on the VET sector (Figure 5.8-E). As far as the relative importance of the different types of programmes over time is concerned, the authorities plan to reduce long-term investment programmes to 30% of all programmes by 2014 (Figure 5.8-A), and let infrastructure priorities give way increasingly to long term spending on innovation (Figure 5.8-B).

Considering the high number of schools in need of capital investment (see Table 5.5), the pace of the shift from infrastructure to innovation appears to be too optimistic and quick. It is recommended to keep long-term infrastructure improvement as top priority until the share of schools in need of overhaul or general repair is down to a more acceptable level, say 5% in any given region.

Table 5.5. **School buildings in emergency condition or requiring overhaul per region in Kazakhstan (2010)**

	School buildings in emergency condition or requiring overhaul (%)
Atyrau	48.5
Kyzylorda	47.8
South Kazakhstan	38.8
City of Almaty	38.7
Zhambyl	37.1
Almaty	31.8
North Kazakhstan	27.2
West Kazakhstan	26.2
Akmola	22.7
Mangystau	22.5
Pavlodar	22.1
City of Astana	21.2
East Kazakhstan	19.3
Aktobe	16.3
Karaganda	15.2
Kostanay	4.9

Source: MESRK (2012a), *Strategic Plan of the Ministry of Education and Science of the Republic of Kazakhstan for 2011-2015*, Ministry of Education and Science of the Republic of Kazakhstan, Astana.

Decisions about infrastructure investment should thereby be based on evidence and foresight and prioritised according to need. This can be done with the help of an appropriate legal framework, needs asssement strategy and tools, e.g. for regular data collection on how well school infrastructure and planning corresponds to national standards (see Box 5.2)

The bias of resource allocations towards the implementation of education reforms is a sign of exceptional commitment to change on behalf of the State authorities – without doubt, an important prerequisite for the better education of future generations of young people in the country. As noted in the beginning of this section, addressing the present-day need for resources in the education system is an equally important factor for the success of the improvement effort. Article 62 of the Law "On Education" stipulates that the annual provision of resources (current expenditure) in line with the

Box 5.2. **Sound management of infrastructure investment**

Good management of capital investment would start with a clear statement of current infrastructure needs and with a strategy for how these needs can be assessed, prioritised, properly costed and monitored. To establish need, countries normally look at demographic forecasts, regulatory standards and requirements of the education system (e.g. students should not be further away than x km from the school), condition of schools (age, size, date of renewal) and safety, health and security issues. Future infrastructure needs must also be considered such as development and maintenance of VET and preschool facilities, ICTs and importantly demographic trends. There is also a need to invest in local capacity building to develop, implement and monitor/sustain such a programme.

A "school map" should form the basis for deciding where to locate schools (when and where to build new schools or expand existing ones), their size etc. The school map will comprise an asset register which will indicate: *(i)* where all the schools are, how many buildings each school has, how old they are, type of school (pre-primary, primary, etc) and number of pupils in the school and *(ii)* whether the schools are complying with the regulatory standards. The issue of controlling cost is thereby critical and a tight control can ensures that clients are able to sort out what they want from what they really need (a good practice example from Scotland can be accessed at http://content.yudu.com/A1uy14/SchoolsDevHandbook/resources/index.htm?referrerUrl (accessed 30 May 2013). Another example of good practice, from the province of Alberta, Canada, is given in Annex 5.A2). See also Iktas (2010).

Source: Hannah von Ahlefeld in: UNESCO and OECD Centre for Effective Learning Environments (2012), "Planning and management of educational infrastructure", in *Guidelines for Capacity Development in Education Policy Planning and Resource Management*, UNESCO, Paris, http://unesdoc.unesco.org/images/0022/002202/220274e.pdf (accessed 26 June 2013).

priority given to education is an obligation of the State *vis-à-vis* the sector. Expenditure levels should thereby be sufficient to allow for the maintenance of education institutions and the performance of their functions in line with the requirements set in the state education standards.

A closer look at data on current expenditure reveals an almost routine mismatch between resource allocations and demand for resources in schools across the country. The reasons seem to be known shortcomings in expenditure allocation mechanisms, inefficiencies in the school network, but also resource shortages at the local level. The next section discusses the issue in some detail and illustrates the magnitude of the problem in terms of resource shortages in key areas of school operations such as learning conditions and staff remuneration that almost certainly impact on the quality of learning and – if not addressed – will jeopardise education reform.

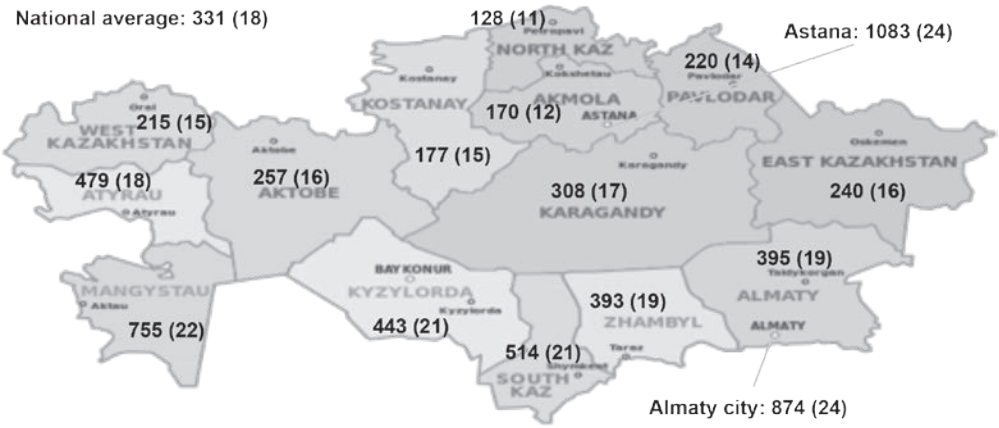
Investing in day-to-day school operations: the schools

Cost characteristics of the school network

The school network of Kazakhstan consists of predominantly rural and ungraded schools, often widely dispersed across huge geographical areas and sometimes with student populations of just a few students per school. Class size and student-teacher ratios tend to be very low by international standards, especially in the more sparsely populated northern half of the country (national average in 2010: 9 students per teacher; OECD average in 2009: 14 students per teacher in secondary education). Over 70% of the schools in 12 of the 14 regions of Kazakhstan are located in rural areas, and in 7 regions the share of ungraded schools is well over 60% (Figure 5.9 and Table 5.6).

While in the North geographical and demographic realities are pushing up the per-unit cost of education, the Southern half of the country is experiencing a youth population boom and bottlenecks related to school infrastructure. The 120 schools of Mangistau region for example are expected to cater for the needs of 90 500 thousand students, which is on average 755 students per school. Almaty city (875 students per school), South Kazakhstan (514) or

Figure 5.9. **Average student populations per full time secondary school and average class size across regions of Kazakhstan, general secondary education (2010)**



Note: This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Source: MESRK (2011b), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana, and OECD review team calculations.

Kyzylorda (443) are better off, but in these regions an average of 40% of the school buildings are in emergency condition or require overhaul. Classes in the South are bigger than elsewhere in the country, and teacher-student ratios, while still very generous in comparison with other countries, are higher as well. Seventy-seven percent of the student population across all regions requires transportation to school. In a country with the 11th lowest population density[8] and the second lowest road density[9] in the world this must be a challenging and costly task.

In sum, the republican and local authorities in Kazakhstan are catering for a school network which is diverse and widespread, but also in need. The financing system in place to meet this need consists of the republican budget, the local budgets of regions, and other (private) sources (Law "On Education", Article 61). According to the Budget Law of 2008, "local budget" is an

Table 5.6. **Characteristics of the secondary school network in Kazakhstan by region, with potential impact on expenditure (2010)**

	Share of rural schools (%)	Share of ungraded schools (%)	Average class size	Teacher-student ratio	Buildings in emergency condition or requiring overhaul, share of total	Students receiving free hot meal, share of total	Students covered by transportation services, share of total
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
Mangistau	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: MESRK (2011b), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana, and OECD review team calculations.

umbrella term for the budgets of regions, cities of republican significance, the capital, and municipalities and cities of municipal significance (Budget Law of the Republic of Kazakhstan, Article 6).

The Law On Education also lists the sources of education financing, namely the public budgets, income from services in accordance with relevant legislation, loans by financial institutions, and donations (including sponsorships, charities, grants, etc.). The budgetary principles that apply are clear-cut: effectiveness and efficiency; priority; transparency; liability; independence of and differentiation between budget levels.

Resource demand and current expenditure

In 2003 Kazakhstan embarked on a far-reaching decentralisation reform which brought about a partial delegation of state functions and budget responsibilities, including for provision of education, to local authorities in the regions (*oblasts*), municipalities (*rayons*), towns and villages. At present, the republican (central) budget meets the expenses of a limited number of educational institutions of republican significance, covers the implementation of republican education programmes including of those aiming at education system development, and provides for sector subsidies in the framework of targeted financial transfers to the regions. In 2011, republican funding amounted to 28.6% of total education expenditure (Table 5.7) and by 2011 it was predominantly devoted to the reform effort (Table 5.8). The biggest share of the financial burden (71% in 2011) rests with the local authorities, which in 2011 earmarked around 30% of their annual revenue to education, to cover current expenditure items such as wages, maintenance and communal expenses of schools.

Per student expenditure in Kazakhstan varies greatly from region to region – from KZT 111 551 per year in Almaty city which is 39% below the national average of KZT 181 749, to over KZT 273 424 per student and year in Northern Kazakhstan, which is 50% above the national average (Figure 5.10).

Table 5.7. **Distribution of financial burden for education, republican and local tiers of government, 2009-11 (millions KZT)**

	2009	share	2010	share	2011	share
	1	2	3	4	5	6
Republican budget	231 255	29.5%	236 393	27.3%	310 709	28.6%
Municipal budgets	553 425	70.5%	629 717	72.7%	774 699	71.4%
Total	784 680		866 110		1 085 408	

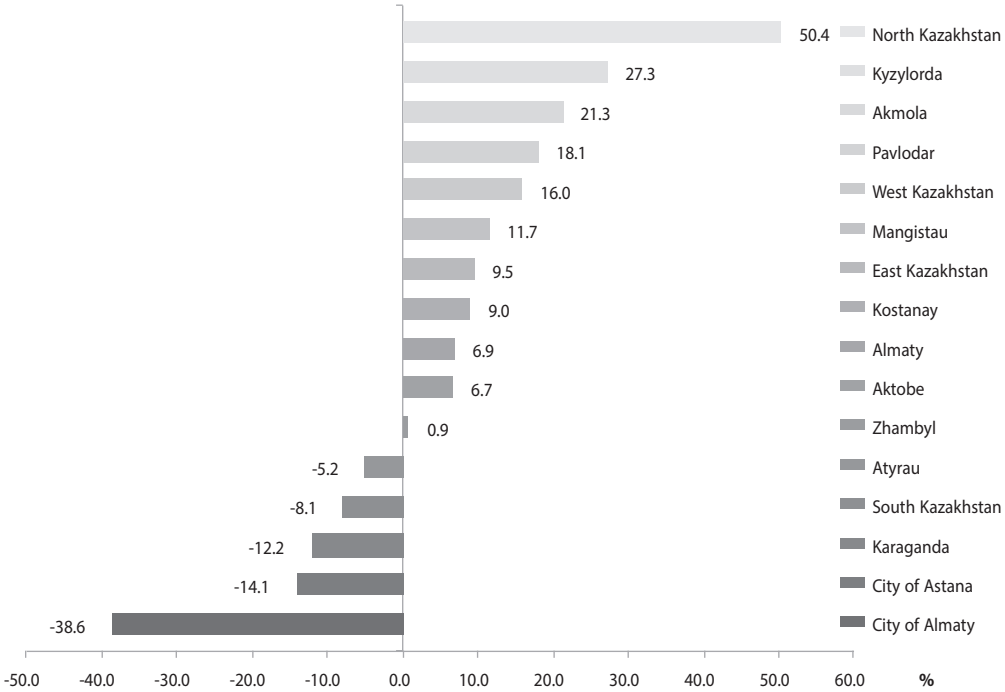
Source: Ministry of Finance, Statistical bulletin No. 157 of January 2012.

Table 5.8. **Allocations from the republican budget for the education reform strategy, 2009-11 (millions KZT)**

	2009	share	2010	share	2011	share
	1	2	3	4	5	6
Republican budget	231 255		236 393		310 709	
of which allocations for the reform strategy	*156 114*	*67.5%*	*174 879*	*74.0%*	*265 405*	*85.4%*

Sources: Ministry of Finance, Statistical bulletin No. 157 of January 2012; MESRK (2012a), *Strategic Plan of the Ministry of Education and Science of the Republic of Kazakhstan for 2011-2015*, Ministry of Education and Science of the Republic of Kazakhstan, Astana (data on reform strategy allocations).

Figure 5.10. **Variance in per student expenditure across regions in Kazakhstan, local budgets (2011)**



Source: MESRK (2011b), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana; Ministry of Finance; National Statistical Agency; OECD review team calculations.

One would expect these large variations to be a reflection of school realities "on the ground", so that levels of per student expenditure in regions with similar school network characteristics (and needs) would be comparable and that, in turn, the differences in per student spending between regions would be explainable by major cost factors such as the ones listed in Table 5.5. This, however, is not the case. North Kazakhstan and Akmola for example are regions with a similar share of rural and ungraded schools and with comparable average class sizes, teacher student ratios and student transportation coverage, but their per student expenditure differs by almost 2.5 times (Figure 5.10). The regions of Almaty and Zhambyl have very similar school networks too, except for the proportion of students covered by transportation services (48% in Almaty, 80% in Zhambyl). Despite the considerably bigger number of students benefiting from transportation in Zhambyl, per student expenditure there is, surprisingly, more than 7 times lower than in Almaty region. Differences exist even between the two biggest cities Almaty and Astana, both of which have no rural and almost no ungraded schools and feature the same average class size and comparable student per school ratios (Figure 5.10).

Overall, factors related to the school set-up and operation that commonly influence expenditure, are not particularly strong predictors of the amount of resources regions invest in education. The share of ungraded schools per region has the strongest influence and explains around 55% of the variation

Table 5.9. **Cost factors and per student expenditure, Kazakhstan (2010/11)**

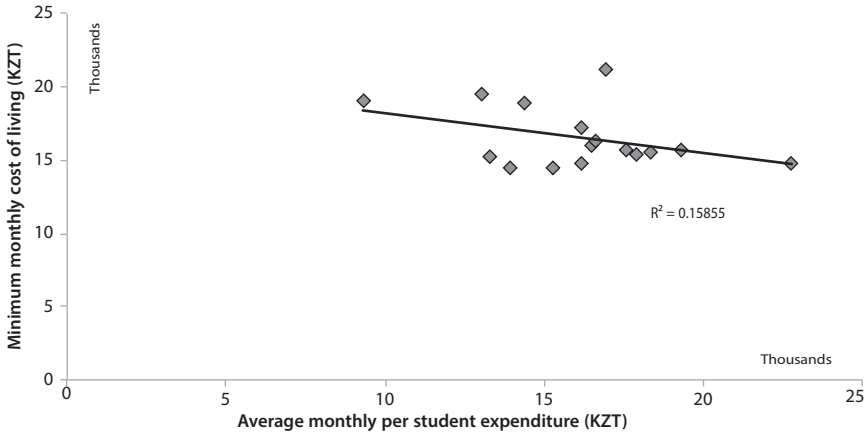
Values from a simple linear regression (r2)	Annual per student expenditure, current LCU	Education expenditure (% of local budget)
	1	2
Share of rural schools	0.51	0.72
Share of ungraded schools	0.55	0.42
Average class size	0.50	0.26
Student teacher ratio	0.39	0.51
Share of buildings in emergency condition or requiring overhaul	0.02	0.00
Share of students receiving free hot meal	0.43	0.07
Share of students covered by a free transportation service	0.33	0.24

Sources: Ministry of Finance; MESRK (2011b), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana; National Statistical Agency and OECD Review team calculations. See Annex 5.A1, Table 5.A1.14 for more detail on the selection of factors.

in per student expenditure (Table 5.9). The second most important factor is the share of rural schools, followed by average class size. The intensity of infrastructure need across regions has almost no influence on education expenditure levels (0.02), and the significance of transportation and meals in determining levels of spending is surprisingly low as well (0.33 and 0.43 respectively). All of this suggests that resource allocations for education at the regional level follow a pattern which is not really captured or explainable by the indicators listed in Table 5.6 and that the allocations are, to a considerable extent, detached from the school needs which these indicators stand for.

The cost of living between regions too has only marginal influence on per student expenditure (Figure 5.11). The minimum cost of living in North Kazakhstan is KZT 14 777 which is the third lowest in the country (after Zhambyl and South Kazakhstan), but its average per student expenditure is the highest of all regions. East Kazakhstan and Mangystau are spending comparable amounts per student (KZT 16 590 and KZT 16 910 per month respectively), but the minimum cost of living in Mangystau (KZT 21 273) is almost 30% higher than in East Kazakhstan (16 402). The weakness of the link between regional prices and cost per student is confirmed also by a UNICEF study of 175 general secondary schools across Kazakhstan that

Figure 5.11. **Cost of living and per student expenditure (all levels) across Kazakhstan, 2011**



Note: Each dot represents the intersection of values for minimum cost of living and average per student expenditure in a given region.

Source: MESRK (2011b), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana; Ministry of Finance; National Statistical Agency; OECD review team calculations.

was carried out in 2010 for the MESRK (UNICEF, 2012). The study revealed differences in per capita spending not only between regions, but also between municipalities within regions and between schools of the same type and size within the same district. Those schools with higher than average cost per student had smaller classes, operated in one shift, and some of them had better learning equipment and more teachers with higher qualifications.

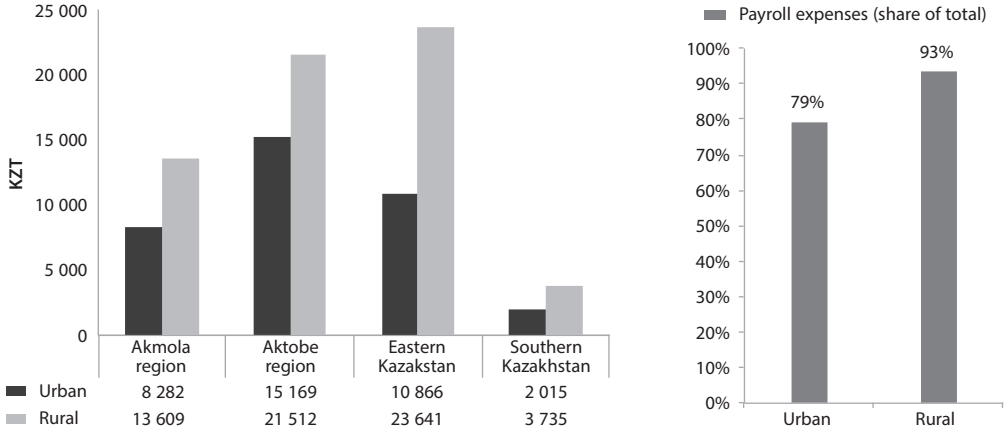
What is the real impact of the differences in per student expenditure on the schools? Or to be more precise – what current expenditure items, that is – what school needs, if any, are typically affected by the allocation mismatch?

On average, 85% of a typical school budget is spent on wages, 8% on "instruction related expenses", 5% on communal expenses, and 1% on expenses from the General Secondary Education Fund (materials and support for students at risk) (UNICEF, 2012). Departures from these average values are very common and can be considerable. The budget classifications for the instruction related expenses refer to spending on meals, medication, other goods, communications, transportation, rent, other services, business travel in the country, execution of court decisions, and other current expenditure.

The state guarantees the wages of staff working in public education. Teachers with equal qualifications, tenure, place of employment (urban or rural)[10] and number of teaching hours per week cannot earn less than the guaranteed wage rate for their category and experience, as determined in Government Regulation No. 1400 of 27 December 2007. Since the payroll has top allocation priority in the school budget and firing of teachers on economic grounds is not common practice, resource deficits translate into teacher and capacity shortages (in the densely populated regions), or are routinely worked off at the expense of non-wage items, mostly those in the category "instruction related expenses". Figure 5.12 illustrates the magnitude of differences in the availability of funding for instructional expenses in 728 schools in four regions, surveyed by UNICEF in the course of the 2012 study on piloting a per capita funding model (UNICEF, 2012).

The figure shows that instruction related cost is addressed very differently in the four regions and that it varies according to the location of the school (urban or rural area). In general, spending per student in rural schools is (considerably) higher than in urban schools, but there are large differences between regions. The rural schools of Southern Kazakhstan for example have to perform to the same educational standards as the rural schools of Eastern Kazakhstan, but with six times less resources per student for the same expenditure items. Similarly, teachers and students in the urban schools of the Akmola region have to be almost two times more efficient than their peers from the urban areas of the Aktobe region.

Figure 5.12. **Instruction related per student expenditure in the regions of Akmola, Aktobe, Eastern and South Kazakhstan and average share of payroll expenses in rural and urban school budgets, 2011**



Note: Instruction-related expenditure is current expenditure for items other than compensation of staff, but it excludes communal expenses.

Sources: UNICEF (2012), *Разработка методики подушевого финансирования организаций общего среднего образования и пилотная апробация предложенной модели* (Developing and piloting the methodology for a per capita financing scheme in general secondary education in Kazakhstan and piloting the proposed model), UNICEF, Astana; SFK (Soros Fund Kazakhstan) (2012), *Подушевое финансирование: за и против, аналитический отчет (Per capita funding: pro and contra)*, Soros Fund Kazakhstan, Almaty.

Higher per student expenditure does not necessarily mean, that rural schools in Kazakhstan are more advantaged financially. In fact, data for Kazakhstan from PISA 2009 suggests that schools with a weaker socio-economic profile are more disadvantaged in terms of resources (see Chapter 2). Rural schools, for example, would normally be confronted with higher operational costs, e.g. due to outdated, sub-standard infrastructure, and with demand for capital investment. The UNICEF study notes the high number of adapted school buildings in the regions covered (35%), the lack of water supply infrastructure in 37% of them, the absence of canteens in 20%, of sports facilities in 26%, and the need to operate in shifts to accommodate large student numbers (in particular in South Kazakhstan). A recent study by the National Center for Educational Statistics and Evaluation carried out in some 96 schools across all regions of Kazakhstan draws a similar picture. In 39% of the schools surveyed, the principals pointed out the presence of severe infrastructural shortcomings (MESRK, 2012b). A 2012 report on per capita funding by the Soros Fund

Kazakhstan went deeper and recorded instances of what seems to be common practice among principals – trade-offs between important expenditure items to meet imminent school needs (Box 5.3).

Box 5.3. **Trade-offs and school resources**

In 2010, some schools for example did not receive funding for budget items No. 132 – *Acquisition of medicine and other medical supplies*, No. 139 – *Acquisition of other goods*, and No. 159 – *Other operating expenses*. School principals remarked that the lack of funding for particular items in a given year is commonly caused by the need to obtain funding for other, more important priorities. Increases in the overall budget for the school are not possible due to lack of resources, and the only way to deal with the situation is to forgo some items for the sake of financing others.

In almost all schools covered by the survey (both rural and urban) there was no funding for budget item No. 151 – *Travel within the country*. The lack of resources for this item suggests that those teachers who wish to attend professional development courses, seminars or conferences have to either pay for the travel from their own pocket, or not travel at all. In 2011, only one urban school received funding for budget item No. 431 – *General repairs*, but according to the responses of principals, this school was rather in need of maintenance than repair. Six of the schools surveyed were in need of general overhaul and one of them – a rural school – was in an emergency condition. The principals interviewed in the survey also noted that it is extremely difficult (especially for rural schools) to receive funding for general repairs. They also said that the number of schools in need of general repair is high while the funds are limited, and that the resources allocated for budget item No. 149 – *Miscellaneous expenses* which are commonly used for the most urgent repairs, are modest.

Source: SFK (Soros Fund Kazakhstan) (2012), *Подушевое финансирование: за и против, аналитический отчет (Per capita funding: pro and contra)*, Soros Fund Kazakhstan, Almaty, p. 22-23.

Figure 5.12 also suggests that in rural and ungraded schools the payroll captures a much higher share of the budget than in urban schools. The availability of means for maintenance and methodological support *de facto* depends on the location of the school – the lower its administrative significance, the bigger the relative weight of the payroll. Ungraded schools and primary schools in rural areas are particularly affected in this sense. On average, 99.6% of their budget would be captured by salaries (SFK, 2012).

The relative importance of wages in the school budget does not necessarily mean that teachers' income is adequate. The next section ties in with the discussion of salary mechanisms in Chapter 4 and explores the question of how adequate compensation of teachers in Kazakhstan is.

Investing in the day-to-day school operation: the teachers

How much do teachers in Kazakhstan earn by national and international comparison?

The teacher salary system of Kazakhstan and its complex bonus and qualification scheme were discussed in the preceding chapter. Other countries too tend to have complex but not necessarily comparable schemes of additional payments for their teachers. In order to draw fair and reliable comparisons of teachers' income between countries, the OECD takes stock of income levels at only three points in the teaching career – in the beginning, at mid-level (15 years of experience), and at senior level (top of the salary scale) – and (with very few exceptions) takes into consideration only wages of teachers with minimum qualifications, except when it comes to maximum salaries. The maximum salaries included in the comparison charts of this chapter and its annexes refer to top-of-the-scale salary of a full-time classroom teacher with the *maximum qualifications* recognised from the point of view of compensation. Starting salaries on the other hand refer

Box 5.4. **Actual teachers' salaries**

Statutory salaries as reported by most of the countries included in OECD's Education at a Glance must be distinguished from … teachers' actual salaries, which are influenced by factors such as the age structure and levels of experience of the teaching force, the prevalence of bonuses and allowances in the compensation system, and the frequency of part-time work.

Data on actual salaries is available for 16 OECD countries. In Chile, Hungary, Israel (pre-primary and secondary levels), Norway (primary and lower secondary levels) and Poland (pre-primary, primary and lower secondary levels), average salaries, including bonuses and allowances, are at least 20% higher than statutory salaries for teachers with 15 years of experience. In contrast, in the Czech Republic, Italy, Luxembourg (pre-primary and primary levels), The Netherlands (lower and upper secondary levels) and Scotland, average salaries of teachers aged 25-64 are at least 5% lower than statutory salaries for teachers with 15 years of experience.

Source: OECD (2012a), *Education at a Glance 2012: OECD Indicators*, OECD Publishing. http://dx.doi.org/10.1787/eag-2012-en.

to the average gross salary per year for a full-time teacher with the *minimum training* necessary to be fully qualified at the beginning of the teaching career. Salaries after 15 years of experience also refer to the annual salary of a full-time classroom teacher with the *minimum training* necessary to be fully qualified, plus 15 years of experience (OECD, 2012a).

To gain a better understanding of how teachers' earnings compare to those of other comparable professionals, the OECD uses the earnings of other similarly-educated professionals as a comparison group. Since a tertiary education is the minimum requirement to be a teacher in all OECD countries, teachers' salaries are compared to those of 25- to 65-year-old full-time, full-year workers with a tertiary education (OECD, 2012a). Table 5.10 shows that in Kazakhstan in 2011 the statutory teachers' salary in primary education and after 15 years of teaching was 75% lower than the income of workers with comparable academic credentials; in secondary education it was 70% lower. The average remuneration of primary education teachers in OECD countries is only 18% lower than the earnings for 25-64 year-olds with tertiary education,

Table 5.10. **Statutory salaries of teachers with 15 years of experience relative to earnings for full-time, full-year workers with tertiary education, OECD (2009) and Kazakhstan (2011)**

	Ratio of salary to earnings for full-time, full-year workers with tertiary education aged 25-64		
	Primary education	Lower secondary education	Upper secondary education
	(17)	(18)	(19)
OECD average 2009 (statutory)	**-18%**	**-15%**	**-10%**
EU21 average	**-19%**	**-15%**	**-10%**
Kazakhstan 2011 (statutory)	-75%	-70%	-70%
Kazakhstan 2011 maximum	11%	34%	34%

Note: Basis for calculation are annual statutory teachers' salaries in public institutions at starting salary, after 15 years of experience and at the top of the scale, by level of education, in equivalent USD converted using PPPs for private consumption. Maxium salaries (Kazakhstan) include compensation payment for 1st teacher category (50% of the base wage in secondary, and 45% of the base wage in primary education), base wage for a maxium teaching workload of 27 hours, and average compensation payments for: class responsibility, grading of homework, responsibility for specialised classrooms, evening classes, management of the boarding section of the school, chairing of methodological, subject matter or other commissions, and profile (in-depth) subject teaching. See Annex 5.A1, Table 5.A1.6 and Table 5.A1.9 for details.

Sources: Government Regulation 1400 (salaries); National Statistical Agency (average salary of workers with tertiary education). See Annex 5.A1, Table 5.A1.9 for more details.

15% lower for teachers at the lower secondary level, and 10% lower for those teaching at the upper secondary level. The low relative income in primary education in Kazakhstan may be explained in part because in practice, a tertiary education is not the minimum requirement to be a primary teacher – as can be seen in Table 4.3 in Chapter 4, 13% of teachers in Kazakhstan in 2010 had not completed tertiary education. Relative income levels remain, however, very low even for teachers in secondary education, all of whom are required to have a university degree.

The salaries used for these calculations did not take into consideration compensation payments and additional teaching load allowances and bonuses which, as discussed in Chapter 4, can represent an important addition to teachers' salaries in the country. To demonstrate the difference in income that additional workload and payments could generate, Table 5.10 also features a simulation of income for teachers who have the maximum permissible teaching load, and receive compensation payments for a selection of additional tasks as listed in Government Regulation 1400 (See Annex 5.A1, Table 5.A1.6 for detail on the selection). Relative to the earnings of workers with tertiary education, the income of such teachers is dramatically different than of those with only statutory pay. In 2011, teachers who had a chance to benefit from maximum additional workload in primary education earned 11% more than the average salary of university graduates in other professions, and in secondary education their salary was 34% above that average.

The simulation bears an important message. It demonstrates the magnitude of potential disadvantage in income for teachers whose tenure and/or working environment does not permit for taking on additional work, for example for teachers in urban schools where oversupply of university graduates is reported to be quite common. It also shows that in places where additional work would be available, for example in rural schools, better salaries for the most part come as a reward for higher quantity, but not necessarily higher quality of work. To help increase the status of the profession, attract good candidates to teaching, and to ensure that also smaller schools and schools in rural areas can benefit from good and motivated teachers who have sufficient time to prepare their classes, it is essential to offer statutory and in particular starting salaries that are attractive compared to the salaries of professions with similar educational level requirements. This probably requires a major overhaul of the salary scale system to increase the base salary (the salary for one teaching load) while curbing the generosity and diversity of compensation payments for additional tasks.

Salary increases emerge as a topic also when the nominal earnings of teachers in Kazakhstan are compared to those of their peers in OECD countries. In 2011 the annual statutory salary of mid-career teachers was USD PPP 4 056 in primary education and USD PPP 4 819 in secondary

schools. Teachers with comparable tenure in OECD countries earned USD PPP 37 603 in primary education, and USD PPP 40 292 in secondary education (2010). Teachers in Kazakhstan also have low earnings in relative terms. In 2011 the annual wage of primary school teachers with 15 years of experience was 1.2 times average GDP per capita in OECD countries. In the Slovak Republic – the OECD country which spends the least in relative terms of all OECD members – the average annual wage of mid-career primary teachers was 63% of average per capita income. In Kazakhstan, the annual wage of such primary teachers was just 29% of average per capita income. Remuneration in secondary education is somewhat higher than in primary, but at 0.34 times GDP per capita, is still (in percentage terms) around one quarter of the OECD average (Table 5.11).

Table 5.11. **Mid-career teacher salaries in USD PPP and in proportion to GDP per capita, Kazakhstan (2011) and OECD countries (2010)**

		Primary education		Secondary education	
	Notes	Salary after 15 years of experience/ minimum training, USD PPP	Salary after 15 years of experience in proportion to GDP per capita	Salary after 15 years of experience/ minimum training, USD PPP	Salary after 15 years of experience in proportion to GDP per capita
		(3)		(5)	
Turkey		24 761	1.98	25 411	2.03
Germany		55 771	1.61	64 340	1.85
Korea	1	46 338	1.83	46 232	1.83
Mexico		18 621	1.41	23 854	1.81
Portugal		37 542	1.69	37 542	1.69
Spain		42 846	1.49	48 317	1.67
Canada		54 978	1.54	55 084	1.54
Netherlands		50 621	1.27	61 704	1.54
New Zealand		41 009	1.49	42 589	1.54
Chile		23 411	1.49	24 116	1.53
Denmark		50 253	1.41	54 255	1.52
Ireland		53 677	1.51	53 677	1.51
Japan		44 788	1.49	44 788	1.49
Slovenia		32 436	1.30	32 436	1.30
OECD average		**37 603**	**1.23**	**40 292**	**1.30**
Luxembourg		95 043	1.20	101 775	1.29
Finland		37 455	1.15	41 630	1.28

Table 5.11. **Mid-career teacher salaries in USD PPP and in proportion to GDP per capita, Kazakhstan (2011) and OECD countries (2010)** *(continued)*

		Primary education		Secondary education	
	Notes	Salary after 15 years of experience/ minimum training, USD PPP	Salary after 15 years of experience in proportion to GDP per capita	Salary after 15 years of experience/ minimum training, USD PPP	Salary after 15 years of experience in proportion to GDP per capita
		(3)		(5)	
Australia		47 445	1.23	47 445	1.23
Greece		32 387	1.23	32 387	1.23
Italy		32 658	1.09	36 083	1.20
Austria		40 818	1.06	44 802	1.16
France		32 733	1.00	35 701	1.10
Poland		15 186	0.85	18 546	1.04
United States	2	45 226	0.99	46 748	1.02
Sweden	1, 2	33 374	0.91	35 455	0.97
Israel		25 181	1.07	22 028	0.94
Czech Republic	1	19 949	0.87	20 833	0.91
Iceland		27 930	0.84	28 016	0.84
Hungary	2	13 228	0.73	14 422	0.80
Estonia		12 576	0.74	12 576	0.74
Norway		35 991	0.70	37 404	0.72
Slovak Republic		12 688	0.63	12 693	0.63
Kazakhstan (2010)		4 056	0.29	4 819	0.34
Kazakhstan (simulation)		**17 444**	**1.23**	**18 436**	**1.30**

Notes: Annual statutory teachers' salaries in public institutions after 15 years of experience/minimum training, by level of education, in equivalent USD converted using PPPs for private consumption, and in proportion to GDP per capita. **1.** Actual base salaries. **2.** Salaries after 11 years of experience.

Sources: For OECD countries: OECD (2012a). For Kazakhstan: World Bank, World Development Indicators Database (GDP related indicators), Government Regulation 1400 (salary calculations). See Annex 5.A1, Tables 5.A1.5; 5.A1.7; and 5.A1.10 for details.

In countries with higher per capita wealth, modest relative allocations might translate into higher spending. Norway spends the second lowest share of per capita income of all OECD countries, but its teachers earn around the OECD average in nominal terms. As the last row of Table 5.11 shows, if Kazakhstan were to pay its mid-career teachers a share of national per capita

income that is comparable to the OECD average (1.23 times of 2010 per capita GDP), teachers' salaries would increase from USD PPP 4 056 to 17 444 in primary schools and from USD PPP 4 819 to 18 436 in secondary schools. This would give the mid-career teachers in Kazakhstan higher earnings than their peers in Estonia, the Slovak Republic, Hungary and Poland, but a little less than teachers earn in the Czech Republic, Mexico, Turkey and Chile.

How much do teachers in Kazakhstan earn today compared to previous years, and how much could they earn?

Trends

The statutory salary of all staff working in education in Kazakhstan increased by 25% in 2009 by another 25% in 2010, and by 30% in 2011 irrespective of income category (Table 5.12). Remuneration for all categories of teachers has more than doubled between 2005 and 2011 (103%), while the difference between income categories, as well as the ratio of statutory salary at the top of the scale to the starting salary has remained constant since 2004. As Table 5.12 shows, in the hierarchy of education earnings school principals (G4) are at the top, followed by deputy principals (G5), university professors and post-secondary VET teachers (G7), teachers with university qualifications who will usually be secondary school teachers (G9) and finally teachers with college qualifications, usually primary school teachers (G11). The 2011 starting salary of a school principal (G4) is 68.8% higher than the starting salary of a college-qualified primary teacher (as discussed in Chapter 4, with tenure this ratio can change considerably to the benefit of teachers). For both university-qualified (secondary) and college-qualified (primary) teachers, the salary at the top of the scale is 20% higher than the starting salary.

In the same period (2005 to 2011), average salary in Kazakhstan has increased by a total of 155% or one and a half times more than wages in the education sector. In 2011 the average income of school principals was 21% below the average income in the country, the salaries of university professors were 35% lower and those of teachers, even after counting in supplements for higher and highest qualification categories, were 16% (secondary education) and 26% (primary education or college degree) lower than the national average (Table 5.13).

In Kazakhstan it takes 21 years to reach the top of the salary scale, compared to 24 years in an average OECD country. The difference between base salary and top-salary (net of bonus and compensation payments) is 1.2, which is significantly smaller than the OECD average of 1.63. This means that teachers in Kazakhstan can expect to reach the top of their salary scale three years earlier than on average in OECD countries, but they can expect

Table 5.12. **Teacher salaries in current local currency units (LCU), 2000-11, net of compensation payments and bonuses**

	Starting salary				14 to 17 years of service				20+ years of service			
	2005-2008	2009	2010	2011	2005-2008	2009	2010	2011	2005-2008	2009	2010	2011
Public employment category	(2)	(3)	(4)	(5)	(7)	(8)	(9)	(10)	(12)	(13)	(14)	(15)
Coefficient	3.41	3.41	3.41	3.41	4.00	4.00	4.00	4.00	4.08	4.08	4.08	4.08
Base wage	8 712	10 890	13 613	17 697	8 712	10 890	13 613	17 697	8 712	10 890	13 613	17 697
Increase in % from preceding period	0%	25%	25%	30%	0%	25%	25%	30%	0%	25%	25%	30%
School principals (G-4)	**29 707.92**	**37 134.90**	**46 420.33**	**60 346.77**	**34 848.00**	**43 560.00**	**54 452.00**	**70 788.00**	**35 544.96**	**44 431.20**	**55 541.04**	**72 203.76**
Coefficient	3.17	3.17	3.17	3.17	3.72	3.72	3.72	3.72	3.80	3.80	3.80	3.80
Base wage	8 712	10 890	13 613	17 697	8 712	10 890	13 613	17 697	8 712	10 890	13 613	17 697
Increase in % from preceding period	0%	25%	25%	30%	0%	25%	25%	30%	0%	25%	25%	30%
Deputy principals (G-5)	**27 617.04**	**34 521.30**	**43 153.21**	**56 099.49**	**32 408.64**	**40 510.80**	**50 640.36**	**65 832.84**	**33 105.60**	**41 382.00**	**51 729.40**	**67 248.60**
Coefficient	2.80	2.80	2.80	2.80	3.29	3.29	3.29	3.29	3.35	3.35	3.35	3.35
Base wage	8 712	10 890	13 613	17 697	8 712	10 890	13 613	17 697	8 712	10 890	13 613	17 697
Increase in % from preceding period	0%	25%	25%	30%	0%	25%	25%	30%	0%	25%	25%	30%
University teachers; post secondary VET (G-7)	**24 393.60**	**30 492.00**	**38 116.40**	**49 551.60**	**28 662.48**	**35 828.10**	**44 786.77**	**58 223.13**	**29 185.20**	**36 481.50**	**45 603.55**	**59 284.95**
Coefficient	2.40	2.40	2.40	2.40	2.78	2.78	2.78	2.78	2.88	2.88	2.88	2.88
Base wage	8 712	10 890	13 613	17 697	8 712	10 890	13 613	17 697	8 712	10 890	13 613	17 697
Increase in % from preceding period	0%	25%	25%	30%	0%	25%	25%	30%	0%	25%	25%	30%
Teachers with university qualifications (G-9)	**20 908.80**	**26 136.00**	**32 671.20**	**42 472.80**	**24 219.36**	**30 274.20**	**37 844.14**	**49 197.66**	**25 090.56**	**31 363.20**	**39 205.44**	**50 967.36**

Table 5.12. **Teacher salaries in current local currency units (LCU), 2000-11, net of compensation payments and bonuses** *(continued)*

	Starting salary				14 to 17 years of service				20+ years of service			
	2005-2008	2009	2010	2011	2005-2008	2009	2010	2011	2005-2008	2009	2010	2011
Public employment category	(2)	(3)	(4)	(5)	(7)	(8)	(9)	(10)	(12)	(13)	(14)	(15)
Coefficient	2.02	2.02	2.02	2.02	2.34	2.34	2.34	2.34	2.42	2.42	2.42	2.42
Base wage	8 712	10 890	13 613	17 697	8 712	10 890	13 613	17 697	8 712	10 890	13 613	17 697
Increase in % from preceding period	0%	25%	25%	30%	0%	25%	25%	30%	0%	25%	25%	30%
Teachers with college qualifications (G-11)	**17 598.24**	**21 997.80**	**27 498.26**	**35 747.94**	**20 386.08**	**25 482.60**	**31 854.42**	**41 410.98**	**21 083.04**	**26 353.80**	**32 943.46**	**42 826.74**

Note: The coefficient reflects educational attainment and position held, as well as years of service. See Table 4.12 and Annex 5.A1, Table 5.A1.5 for an overview.

Sources: World Bank Development Indicators Database (GDP related indicators), Government Regulation No. 150 of 17 February 2011 (for base wage in 2011) and Government Regulation No. 1400 of 2 July 2013; National Statistical Agency (average national income); OECD review team calculations.

the increase in their statutory[11] salary to be only 20% (for minimum training and the same qualification level) compared to at least 60% on average in OECD countries.

Table 5.13. **Statutory salaries in education relative to average national income, 2011**

	starting	mid-career	20+	average
School principals (G-4)	-30%	-18%	-16%	-21%
Deputy principals (G-5)	-35%	-24%	-22%	-27%
University teachers; post secondary VET (G-7)	-43%	-32%	-31%	-35%
Teachers with university qualifications (G-9)	-51%	-14%	18%	-16%
Teachers with college qualifications (G-11)	-59%	-30%	12%	-26%

Note: Difference in statutory salaries in education to average national income (2011) with compensation payments for teaching category: 1st category for mid-career teachers and highest category for teachers with more than 20 years of experience.

Sources: Government Regulation No. 150 of 17 February 2011 (for base wage in 2011) and Government Regulation No. 1400 of 2 July 2013, National Statistical Agency (for average national income).

During the site visits for this review, the OECD team was repeatedly told by administrators and teachers alike about considerable improvements in teacher salaries over the past few years. The figures presented in the preceding tables confirm that, while there have indeed been improvements, they fall short of bringing about a radical change in income levels for education professionals in Kazakhstan. The State Programme for Education Development 2011-2020 recognises the problem and has therefore committed to bringing the average teacher pay to levels comparable with the private sector by 2015.

As previously noted, teachers can augment their income by teaching more than one load and by taking advantage of the possibilities offered by a variety of compensation payments, as discussed in Chapter 4. What is unclear (and presumably not possible to establish with certainty) is how many of the teachers in the country make use of these possibilities, and what prevents other teachers from doing so. While the recipients of some types of compensation payments could be identified (for example those receiving payments in connection with school type and location), it is very difficult to determine the prevalence of payments for additional tasks. Undoubtedly,

there is considerable disparity in income between those who can benefit from the possibilities and those who cannot, which creates inequalities between professionals in the system.

Rewards for excellence and qualifications

Additional in-service training and qualifications represent another potential source of salary increases for teachers in Kazakhstan. The compensation payments envisaged for rewarding professional development and skill are very generous and can bring about very large differences between the earnings of teachers with the lowest qualifications beginning their careers and senior teachers at the top of the pay-scale with maximum qualifications (Tables 5.14 and 5.15)

Table 5.14. **Compensation payments for additional qualifications of teachers, Kazakhstan**

Type of compensation	Description	Average compensation as % of the base wage	Beneficiaries
Additional qualifications	Academic degree: candidate of science	1 minimum wage (national)	T; PW
	Academic degree: PhD	2 minimum wages (national)	T; PW
	Qualification category G9: highest	100%	T
	Qualification category G9:first	50%	T
	Qualification category G9: second	30%	T
	Qualification category G11: highest	90%	T
	Qualification category G11:first	45%	T
	Qualification category G11: second	30%	T
	NIS training attestation: level 3 (basic)	30.0%	T
	NIS training attestation: 2 level (main)	70.0%	T
	NIS training attestation: 1 level (higher)	100.0%	T

Notes: 1. **T** (Teachers); **PW** (Pedagogical Workers);

2. Compensations can differ by 5% by level of education and subject; Figures in column 2 represent averages.

3. Compensation for NIS training is calculated in percentage of the salary, not of the base wage.

Source: Government Regulation 1400. See Annex 5.A1, Table 5.A1.6 for an overview of compensation payments.

Table 5.15. **Annual statutory teachers' salaries in public institutions at starting level with minimum training and at the top of the scale with maximum qualifications, by level of education, Kazakhstan, OECD and EU (2010)**

	Primary education			Secondary education		
	Starting salary/ minimum training (USD PPP)	Top of scale salary/ maximum qualifications (USD PPP)	Ratio	Starting salary/ minimum training (USD PPP)	Top of scale salary/ maximum qualifications (USD PPP)	Ratio
	(1)	(2)	(3)	(4)	(5)	(6)
Kazakhstan (2010)	3 502	10 907	3.11	4 160	17 554	4.22
Kazakhstan (2011)	3 872	12 060	3.11	4 600	18 370	3.99
OECD average	28 523	48 436	1.70	30 350	52 417	1.73
EU average	28 948	46 964	1.62	30 774	51 748	1.68

Notes: 1. Figures in equivalent USD converted using PPPs for private consumption.

2. Data for secondary education based on averages for lower and upper secondary level.

3. For Kazakhstan, the top of the scale/maximum qualification includes compensation for highest teacher category possible for the respective qualifications level (college or university degree), post-graduate degree (PhD) in the case of secondary school teachers (2 minimum monthly wages), and second NIS (Nazarbayev Intellectual Schools) professional level (70% of the base wage). The calculations do not include compensation payments for additional tasks or for working conditions.

Source: OECD (2012a), *Education at a Glance 2012: OECD Indicators*, OECD Publishing, http://dx.doi.org/10.1787/eag-2012-en; Kazakhstan: Government Regulation 1400. See Annex 5.A1, Tables G and H for details.

For example, teachers in Kazakhstan can earn significant additional remuneration by increasing their level of qualification and by completing the levels of professional development offered through the NIS Centre of Excellence. Those who complete the basic level of the NIS professional development programme earn an additional 30% of their base salary, those who complete the intermediate level earn an additional 70% of their base salary and the few teachers who successfully complete the advanced level earn an additional 100% of their base salary. Also, teachers who receive attestations for higher qualifications receive between 30 and 100% additional remuneration (see Table 2.12). Moreover, teachers who complete higher levels of education, such as a doctorate degree, can earn the equivalent of additional 2 minimum wages.

Consequently, in 2011 primary education teachers in Kazakhstan with the maximum qualifications and at the top of their salary scale could earn more than three times what teachers with minimum training earned as a starting salary (Table 5.15). The difference was even bigger for teachers with university degree in secondary education (4.2 times). This difference is much greater than the average in OECD countries where a teacher in lower secondary education with maximum qualifications at the top of the salary scale earns 74% more than the teacher with a starting salary. It is also greater than the difference in OECD member economies that traditionally have very steep teacher salary scales like Mexico (3.3 times difference), Korea (2.8 times), Israel (2.7 in primary and 2.5 in secondary education) and France (2 times in primary and 2.5 times in secondary education).

It is important to consider that not all teachers reach the top of the scale. In some countries, such as Italy for example, fewer than 5% of teachers are at the top of the salary scale (OECD, 2012a). Unfortunately, there is no data available on the proportion of teachers in Kazakhstan who are at the top (or the bottom) of the salary scale. Nonetheless, teachers in Kazakhstan who pursue additional training and seek greater levels of qualifications can expect substantial financial rewards.

The concept of indexing salaries to increased qualifications (and better performance) is good as it encourages teachers to seek further development; however, these opportunities should be provided for all teachers rather than only for the teachers considered to be top-performing. It is unrealistic to demand of all teachers to be top achievers. Those with less experience or more limited record of excellence should be equally stimulated and rewarded for their motivation to develop and learn from the example of those selected few who have the highest qualifications, the greatest experience, and/or the most innovative and successful approach to teaching. The currently strong bias of remuneration arrangements towards rewarding excellence and high level qualifications goes hand in hand with insufficient attention to "regular" teachers who are in the majority, which in turn limits the attractiveness of the profession to newcomers and reduces the motivation of staff to contribute to the fullest extent possible. All teachers without exception should be provided with incentives to be productive and creative members of a strong and good collective.

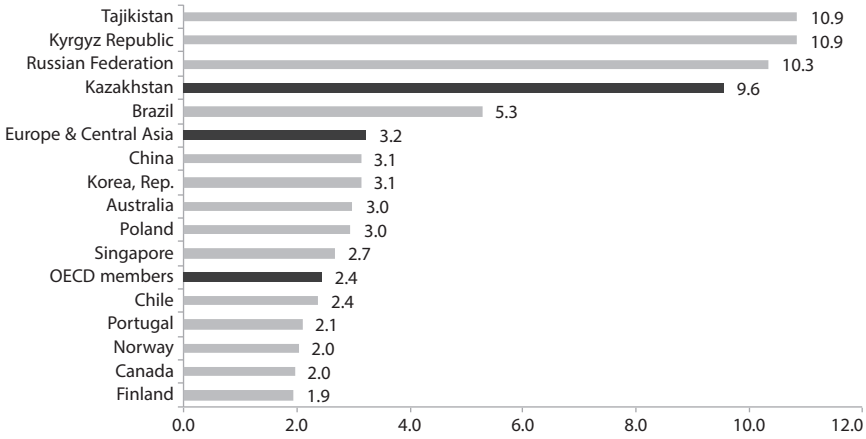
Linking increases in salary and other financial awards to greater qualifications and good performance is most effective at attracting and retaining teachers when *(1)* all teachers are provided with the opportunities to improve their qualifications and skills *and are good enough and motivated to do so* and *(2)* rewards for good performance are delivered according to clear and transparent criteria that are linked to a framework of professional standards that define the agreed-upon characteristics of outstanding teacher quality. The strategy currently in place in Kazakhstan is commendable in that it links

increases in salary to the completion of the NIS professional development levels, however this professional development programme is not available to all teachers (especially the higher levels of the programme) and participation in other forms of professional development that are more widely available are not necessarily linked to increases in salaries. Moreover, the practice of rewarding teachers with financial bonuses seems to be mainly based on narrow criteria such as teacher's pupils achievement in the UNT or their performances at Olympiads – meaning that in practice they are available mainly to teachers of gifted or advantaged pupils. The review team recommends that financial bonuses for outstanding performance be linked to a more comprehensive set of criteria for assessing teacher performance that are linked to professional standards. Further, the review team recommends that all teachers be given equal opportunities to reap the financial benefits associated with participation in professional development (see chapter 4).

The impact of economic realities on the income of teachers

All teachers in Kazakhstan, high and regular earners alike, are affected by a particular negative feature of Kazakhstan's economy – high inflation. Its average rate in Kazakhstan between 2005 and 2011 was 9.6% (Figure 5.13), which is the 24th highest for this period of all countries in the world for which there is data. Some authoritative sources such as the Asian Development Bank consider inflation levels in the region, including in Kazakhstan, to be still "manageable" (ADB, 2012). Others point out that the question of how much inflation is "too much" does not have a clear answer and that in fact low positive inflation could stimulate growth (Barnes, 2010).

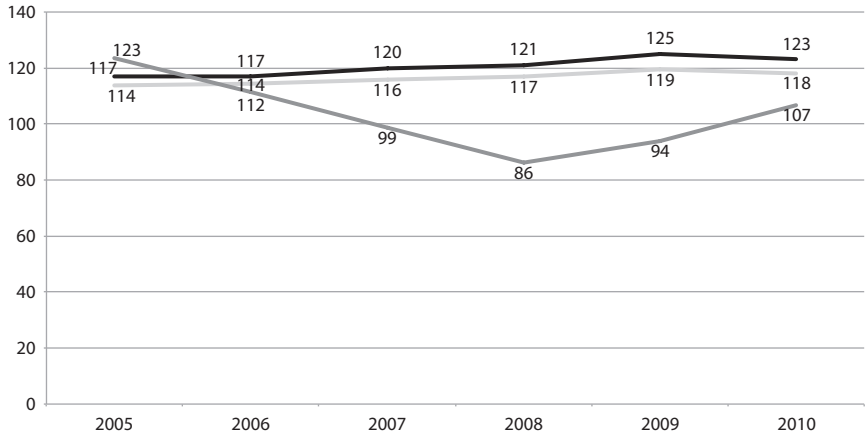
Figure 5.13. **Average annual inflation rate (consumer prices) in Kazakhstan and selected countries and regions for the period 2005-11**



Source: World Bank, World Development Indicators Database.

Whatever the right answer might be, inflation in Kazakhstan is high enough to significantly diminish the real value of resources invested in education, most notably those allocated to wages for teachers. The nominal increases in expenditure until 2009 were not sufficient to offset the negative effect of inflation on the purchasing power of teacher salaries (Figure 5.14) and only in the past few years the salary increases for teachers have started to keep pace with inflation levels in the country.

Figure 5.14. **Income trends after adjustment for inflation, secondary education teachers in Kazakhstan, OECD and EU from 2005 to 2010, constant price levels (2000 = 100; 2004 = 100 for Kazakhstan)**



Source: For OECD countries: OECD (2012a). For Kazakhstan: Government Regulation 1400 (salaries); World Bank, World Development Indicators and DataMarket (deflators for inflation adjustments). See Annex 5.A1, Table 5.A1.11 for details.

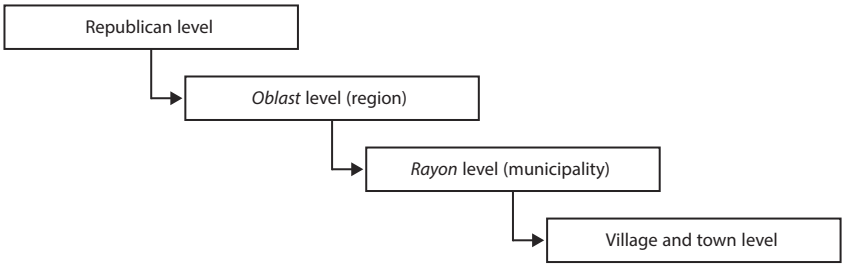
Between 2005 and 2009 the purchasing power of teachers' salaries in Kazakhstan has been declining steadily. In 2006 the statutory wage of a mid-career teacher could buy 11% fewer goods than in 2005, 24% fewer in 2007, and 37% fewer in 2008. By 2010 the purchasing power of teachers' salaries has increased to 7% above the 2004 level, but was still 416% lower in real terms than in the year 2005. In contrast, between 2000 and 2010, teachers' salaries increased in real terms in most OECD and EU countries. In Denmark, Estonia, Ireland, Portugal and Scotland, the increase at all levels of education was by at least 20%. In the Czech Republic (primary and lower secondary levels) and in Turkey, salaries doubled over the past decade. The only two OECD countries where teachers' salaries decreased in real terms by more than 5 % were France and Japan (OECD, 2012a). This situation is of course not unique to pedagogical workers.

Improving resource allocation mechanisms – solutions and challenges

The persistent failure to ensure a balanced, equitable supply of resources to all schools irrespective of their status, type or location merits closer inspection, but it would be premature to interpret it as a sign of intentional discrimination. Rather, it suggests the presence of dysfunctional allocation mechanisms, the negative side effects of which appear to be amplified by historically and geographically determined inefficiencies in the school network and by demographic developments.

Despite major progress and numerous changes since 2003, the decentralisation reform in Kazakhstan is not yet fully completed and relations between authorities at different levels still reflect historical, political, geographic and other factors (Norris et al., 2000; Bhuiyan, 2010). The Law on Local Public Administration of 2001 defines the expenditure assignments of the different tiers of government but, regional governments traditionally enjoy a high degree of discretion over their subordinate local governments.

Figure 5.16. **Decentralised governance structure, Kazakhstan**



Ambivalences in the *de facto* distribution of responsibilities for sub-national infrastructure expenditures are common so that, when confronted with a lack of adequate resource allocations or revenues, sub-national governments might find it easier to cut capital and maintenance expenditures rather than to sacrifice commitments to other, more sensitive expenditure items (Norris et al., 2000). In fact, the flow of transfers from the central to the local level is not always predictable and could shift from one year to another year independently of local resource deficits, thus limiting the ability of sub-national governments to budget and plan (Bhuiyan, 2010).

Worth mentioning is also the rigidity of expenditure norms and regulations (all of which are defined at the republican level) and the inflexible way in which funding flows are earmarked for either wages or non-wage expenses. All of this limits the autonomy of sub-national governments and education authorities to adjust allocations in accordance with local needs and budget

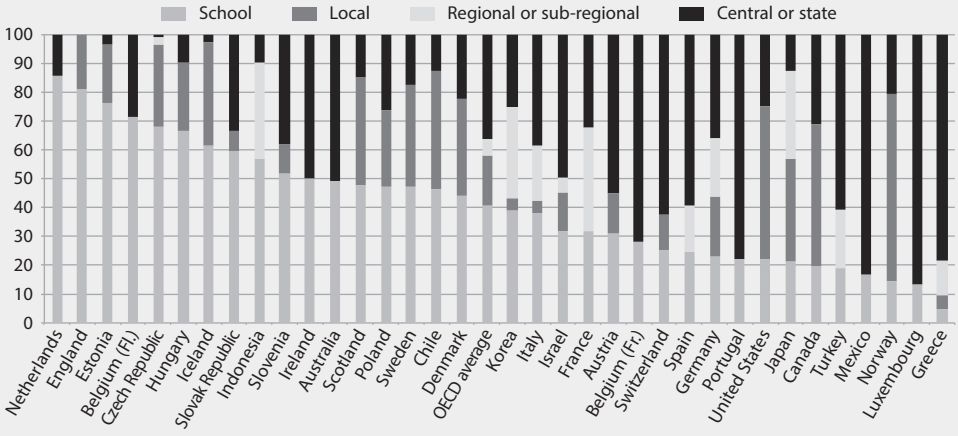
possibilities. A good illustration of the practical consequences is the proportion of local spending on education in rural areas allocated to salaries. Furthermore, the expenditure norms for some of the costs are outdated or inadequate, for example the actual costs of heating, water and electricity in schools are higher than the prices assumed in the norms and depend on factors currently

Box 5.5. **Who makes key decisions in the education systems of OECD countries?**

The division of responsibility among national, regional and local authorities, and schools is a much-debated topic in education policy. Since the early 1980s, a key aim of education reform has been to place more decision-making authority at lower levels of the education system. At the same time, many countries have strengthened the influence of central authorities in setting standards, curricula and assessments. For example, a loosening of "process" and financial regulations has often been accompanied by an increase in the central level control of outputs.

Decisions about diverse aspects of lower secondary education are most commonly made at the school level in a majority of countries. While in most countries decisions on the organisation of instruction are predominantly taken at the school level, decisions related to personnel management, planning and structures, and resources are more likely to be made at higher levels of authority, although countries vary widely in this regard. Since 2003, there has been a pattern of fewer decisions taken at the school level in countries with available data.

Percentage of decisions taken at each level of government in lower secondary education



Source: OECD (2012a), *Education at a Glance 2012: OECD Indicators*, OECD Publishing, p. 500. http://dx.doi.org/10.1787/eag-2012-en.

unaccounted for (UNICEF, 2012). For all other, non salary-related items in the school budget, expenditure norms and standards are missing. Budgeting for such items is still largely input-based and relies on historical values for proxies such as number of classes and teacher employed, indexed each year on the basis of values from the previous year. At present, chronically underfunded schools remain underfunded (UNICEF, 2012), except if they find a legally sound justification to request more funding than in previous years. This, as illustrated in the examples of Box 5.3, is rarely possible.

In search for remedies – the per capita funding reform

Kazakhstan made a previous attempt to introduce per capita financing in 1999, but limitations with the education and budget laws prevented the reform from taking off. The legislative framework has evolved substantially since then and now allows many of the problems that could not be tackled 15 years ago to be addressed. Today, the improvement of the system of education financing is one of the main goals of the State Programme for Education Development 2011-2020, and the authorities have committed to the development of new financing mechanisms to that end.

At the core of the new reform is an aspiration to introduce an output-based funding model to raise efficiency, improve the equity of access to quality education across the country, and provide principals and local education authorities with incentives to deliver better education outcomes. To achieve this, school funding will be made dependent on the number of students enrolled per school and adjusted according to a selection of additional factors to account for differences in schools and regions. All of this will be bundled up in a per capita funding (PCF) formula which should also work to the benefit of schools that operate under more challenging conditions such as smaller number of students, higher maintenance costs, remote location etc. In Kazakhstan the PCF formula is being developed by the Ministry of Education and Science with the support of UNICEF. The Open Society Foundation is involved in analytical work on the topic as well.

The implementation plan envisages a development phase in 2011-12 (also for VET schools), followed by piloting in general education in five regions[12] and in the VET schools in two regions. By 2015, PCF should be implemented in all pre-primary, primary and secondary education institutions in Kazakhstan, except in the ungraded schools (MESRK, 2012b). At the time of preparation of this report the piloting in general education had already begun, but evaluation results were not yet available. Four aspects of introducing PCF nevertheless deserve closer attention – the cost implications of the reform, its impact on teachers and principals, the exclusion of the ungraded schools, and the timing of implementation.

Cost implications

When successful, reforms of education financing lead to better distribution and use of resources. As a side effect of such reforms (but also as a precondition for their success), the authorities gain a more realistic picture of the real cost of equitable and efficient operation of the school network (Sondergaard and Murthi, 2012).

In Kazakhstan, the implementation of solutions to the problem with resource allocations is likely to turn the spotlight on the question of availability of resources, even more than is already the case. First, a properly functioning financing mechanism will uncover many more instances of unmet demand for funding in schools across the country than this report touched upon. Second, the PCF reform envisages the introduction of additional expenditure items into school budgets, most notably a supplement for supporting inclusive education (30% of the overall financing norm), of additional grants for rewarding school achievement (20% of the respective local education budget), and the creation of a fund for stimulating teacher achievement (25% on top of the respective school budget). The PCF will, of course, also have to address the regular expenses of schools: for compliance with the state educational standards, for maintenance and infrastructure, for capital expenditure, and general education expenses. According to projections made for the selection of schools in the four regions included in the UNICEF report already quoted here (UNICEF, 2012), the additional expenses for inclusive education and school achievement in these schools alone would amount to KZT 9.4 billion, which is 25% of the total sum these regions spent on education in 2011.

These details suggest that there is a good chance that the cost of implementing the PCF reform will outstrip current education expenditure levels. Some of the cost might be covered by efficiency gains generated in the course of improvements. In fact, the PCF implementation envisages monitoring of this particular aspect of the reform. It is nevertheless very important to undertake a comprehensive assessment of the financial implications of the PCF in order to determine where the additional resources will come from and to ensure their longer term commitment. What needs to be considered is not the financing to support schools in implementing the PCF reform (the authorities have already taken this into consideration in the plans for PCF implementation), but the aggregate additional demand for resources in the system once a PCF is in place.

At present, education stands out as the costliest of all sectors under local responsibility and claims on average 30% of the public budgets (Table 5.16), which drastically limits the leeway of local authorities for increases. Most regions already devote well over a third of their annual budget to their education institutions (South Kazakhstan, Zhambyl, Kyzylorda spend between 39% and 41%). Only the wealthier parts of the country (Astana, Almaty and Atyrau region) spend less than half of this (Atyrau 18%, Almaty 17%, and Astana 10%).

Table 5.16. **Average expenditure on education and other sectors, local budgets, 2011**

Item	Average local expenditures per sector (% of total)	Region/city	Education expenditure (% of local budget)
1	2	3	4
Education	30.1	South Kazakhstan	41.0
Housing	15.0	Zhambyl	39.9
Health	13.9	Kyzylorda	39.5
Transport and communications	8.4	Pavlodar	38.2
Culture, sports, tourism and information	5.5	North Kazakhstan	37.5
Environment and agriculture	5.2	West Kazakhstan	37.5
Transfers	4.9	Almaty	37.3
Exctraction industries, heating and energy	4.1	Kostanay	33.8
Social protection	3.7	East Kazakhstan	33.6
Public security and executive sectors	3.3	Aktobe	33.2
General public services	3.0	Akmola	32.6
Others	1.6	Karaganda	31.8
Industry, architecture, city planning	0.7	Mangistau	30.3
Defence	0.5	Atyrau	18.2
Debt	0.0	City of Almaty	16.6
		City of Astana	10.4

Sources: Ministry of Finance, Statistical bulletin No. 157 of January 2012, and OECD review team calculations.

At the republican level the picture is not very different. The financing of the commendable but ambitious and costly reform plans from the central budget (Figure 5.6) is ensured through strong political will and despite low relative levels of government spending (Figures 2.3 and 2.4). To sustain their commitment to educational change, the national authorities persistently allocate the lion's share of the public budget to education: 38% in 2009; 34% in 2011. Education accounts for 13% of total public spending on average in OECD countries, and for more than 19% in Chile, Mexico and New Zealand (OECD, 2012b). The high level of financial commitment to this single sector in Kazakhstan is likely to prove unsustainable as education competes for resources with other priority areas. An even more important consequence of this situation is that also at the central level there may be little leeway for further noteworthy increases – at least not without further reallocations at the expense of other sectors. The need to invest more in education therefore implies a need to increase overall public expenditure levels.

To avoid some of the problems of the past, it is paramount to have clarity about the resource implications; realistic agreements between institutions and levels of governance about who is paying for what; and to ensure that these agreements are respected. As far as the PCF reform is concerned, the creation of a dedicated institution in charge of PCF monitoring and implementation could serve this purpose, especially if aided by the establishment of a committee with representation of all sides involved to steer the scaling up of the pilot. Such a committee would also serve as a feedback channel for concerns from the regions, their schools and local authorities. Measures like these will help to strengthen ownership and to ensure that problems are detected in time.

Teacher salaries

Previous sections have already discussed the low statutory wages, especially in the beginning of the teaching career, and the shortcomings of the *stavka* salary system as sources of concern, mainly because of their potential to disadvantage certain groups of teachers (young teachers and teachers in rural and ungraded schools). The positive effects of better starting and mid-career statutory wages were discussed as well.

The PCF reform features a prominent component on teacher remuneration, but it does not address any of these concerns. The aggregate demand for remuneration funding per school will be determined by a formula which takes into consideration the number of teachers in the school, their qualifications and working conditions, and how many standard units of teaching load they teach. The main purpose of the formula is to allow for the cost of the payroll to be counted in the school budget in accordance with the pay-scale currently in force. A new element is that the formula also features a (variable) supplement for stimulating achievement and excellence, to be awarded to teachers at the discretion of principals according to criteria that are still to be defined.

The changes will thus provide schools with an additional financial stimulus for teachers to perform and develop professionally, but will not have an impact on their statutory salaries. This is a mixed message. On the one hand, it means that the reform will not lower the actual income of staff already employed in the system, which is good. On the other hand, it misses the chance offered by the radical overhaul of financing mechanisms to improve entry level and mid-career salaries, for example by giving principals more flexibility to use achievement funds to reward "regular" teachers – teachers who might not always train Olympiad winners but who demonstrate talent or innovation potential irrespective of tenure or formal qualifications, or who simply deliver the solid results every education system counts on. There is no one better positioned to identify such people than the schools themselves, preferably within an agreed national framework of teaching standards.

Expectations and school leadership

The PCF reform will vest a number of new responsibilities in the schools and their leadership. The monitoring of PCF implementation envisages the introduction of composite efficiency indicators which take into consideration both school achievement (UNT, success rate at competitions and Olympiads, international surveys, etc.) and resources used (in comparison with other schools with similar rates of success and operating in similar environment). Those institutions that can achieve more with less will be rewarded with a bigger share of the school achievement grants. Those who fall behind will be given additional financial support, provided they prepare a school development plan which is good enough to win a competition for funds. Also, the schools will be responsible for the awarding of excellence rewards to their teachers.

All of this and more, especially the responsibility for efficient and responsible use of resources, is a level of autonomy which the schools have never had, do not yet have, and are not accustomed to. The ones who will bear the biggest part of the new burden are the principals. As discussed in Chapter 4 of this report, they are at the same time the only category of education professionals which has been left out of the plans for professionalisation of the education sector and failed to benefit from compensation payments or *ad-hoc* rewards for their role as school leaders. In fact, without proper support the principals might become the weakest link in the implementation of the PCF reform, as they are left unprepared for the key role they are meant to play. The OECD review team finds that there is an urgent need for comprehensive professional training for principals before the PCF pilot is scaled up nationwide – either as part of a bigger plan for professionalisation of school leadership in the country or as a stand-alone project. School and local administrators and accountants should be able to benefit from similar training.

The ungraded schools

The ungraded schools will not be included in the per capita reform. This decision was taken in order to avoid the risk of underfunding this type of schools due to the small number of students enrolled in them. The concern of the authorities is understandable, but excluding more than half of the pre-university education institutions in the country from the reform is the second best solution. A better alternative would be to adjust the per capita funding formula by incorporating a coefficient for ungraded schools which would protect them from becoming the losers of the reform.

Timing

Last but not least, in view of the points mentioned so far the plan of implementing the PCF reform by 2015 might be too optimistic, especially if the implementation would, as suggested here, include the ungraded schools. Building the capacity for financial autonomy in education institutions takes time. In some countries which are now given as examples of success, PCF implementation took up to 20 years[13] (SFK, 2012). The two reports frequently cited here – of UNICEF (UNICEF, 2012) and of Soros Fund Kazakhstan (SKF, 2012) provide a very useful selection of case studies of countries which have ventured into reforming their mechanisms of financing education. The gradual introduction of PCF should also be accompanied by strengthening the system of assessing learning outcomes, so as to ensure reliable monitoring of PCF impact, and also by improvements in the reliability of information provided by schools and regional departments. In Kazakhstan much remains to be done with respect to all of these tasks. The OECD review team therefore suggests that the authorities revise the roadmap of PCF implementation and allow more time for a good education financing reform to become even better.

Recommendations

The two main questions that guided the analysis in this chapter were:

- Are the resources allocated to education sufficient?
- Are the resources allocated to education spent where they are needed?

Kazakhstan invests a considerable share of its education budget in the creation of long-term assets (education infrastructure and capacity for systemic innovation), but current expenditure levels are insufficient to address the needs of the school network. Furthermore, the allocation mechanisms still in place at the time of preparation of this report were failing to direct education resources where they are needed. The plan of the authorities to address this issue as a matter of urgency is very timely, but its implications require careful consideration. Below is a summary of the recommendations for follow-up on key aspects of these findings.

The fiscal and macroeconomic context

The State authorities have demonstrated decisiveness in handling exogenous economic shocks by increasing spending. The OECD review team considers that it is time for the authorities to open a discussion on responses also to less obvious but equally urgent needs for resources, most notably to those that emerge in the course of daily operations in the education sector. The analysis presented in this report argues in favour of purposeful increases in education expenditure to address these needs.

An adequate response to the hidden hunger for resources in education in Kazakhstan will require more financial means than can be ensured through reallocation of resources between sectors or through GDP growth alone. As a consequence of modest allocations of national income to the public sector in general and of an ambitious but costly education reform agenda, education is already claiming 34% (2011) of the public budget. In order to be sustainable, an increase in spending on education should go along with an overall increase in the level of public expenditure.

Aggregate expenditure on education

Overall spending on education in Kazakhstan is below regional and international averages. This impacts some areas of education more than others.

It is striking to note the very low share of resources devoted to tertiary education institutions despite their declared importance for developing the human capital of Kazakhstan. The balance of expenditure between levels of education should be brought more in line with the expectations towards these levels, most notably towards the universities which are also responsible for teacher training and innovation in education.

The authorities would also be well advised to consider whether the share of the overall education budget that is being allocated for reforms is proportionate to the resources "left over" for current and not reform-related expenditure items (salaries, repairs, transportation, etc.). Underfunding the school network will result in a limited absorption capacity for new ideas and for educational change. The extent to which the school network is underfunded will be revealed once the per capita funding model is introduced. In line with the overall direction of recommendations in this chapter, the OECD therefore suggests that the authorities develop a plan for gradual adjustment (increase) in current expenditure and a fair distribution of financial burden across levels of governance, rather than to simply reallocate resources that are currently earmarked for longer-term education improvement. Advance planning will be of decisive importance.

The focus of longer-term investment in education

The reform agenda is a major factor behind the education investment boom of recent years. It is commendable that the improvement plans are corroborated with funding to such an extent. However, the authorities envisage a gradual shift of long term investment from infrastructure to capacity for systemic innovation. Having in mind the considerable number of schools that still require capital investment, the pace of the shift (until 2015) appears to be too optimistic and too quick. It is recommended to keep infrastructure improvement as top priority until the share of schools in

need of overhaul or general repair is reduced to more acceptable levels, for example 5% in any given region and until distant learning connectivity of ungraded and rural schools is fully ensured.

Spending on schools

The secondary school network of Kazakhstan is diverse and underfunded. The persistent failure to ensure a balanced, equitable supply of resources to all schools according to their needs is due to dysfunctional allocation mechanisms, the negative side effects of which appear to be amplified by historically and geographically determined inefficiencies in the school network and by demographic developments. The OECD review team fully supports the plan of the education authorities to address this problem with urgency by migrating to a system of per capita funding. The recommendations concerning the per capita funding project can be found at the end of this section.

Spending on teachers

The system of teacher salaries in Kazakhstan has the potential to disadvantage teachers whose working environment does not permit additional work and, therefore, better income. In places where additional work would be available, for example in rural schools, better salaries come as a reward for higher quantity, but not necessarily higher quality of work.

The salary system also envisages rewards for additional in-service training and qualifications, but the availability of these opportunities is strongly biased towards rewarding excellence and teachers considered to be top-performing. The attention given to "regular" teachers who, as in any other education system, are the majority is insufficient which, in turn, limits the attractiveness of the profession to newcomers and reduces the motivation of staff to contribute to the fullest extent possible.

All teachers without exception should be provided with incentives to be productive and creative members of a strong and good collective. This is an essential part of a bigger task: to increase the status of the profession, help attract good candidates to teaching, and ensure that also smaller schools and schools in rural areas can benefit from good and motivated teachers who have sufficient time to prepare their classes. The review team recommends that the authorities ensure that:

- The statutory and in particular the starting salaries be made attractive compared to the salaries of professions with similar educational level requirements. This will help increase the status of the teaching profession and to help attract top candidates.

- Financial bonuses for good quality teaching are linked to a more comprehensive set of criteria for assessing teacher performance that are linked to professional standards.
- All teachers are given equal opportunities to reap the financial benefits associated with participation in professional development.
- Until inflation stabilises at its recent levels, indexation of the wages of teachers should be undertaken on a regular basis to remedy its effects.

All of these measures are "boiling down" to the introduction of meaningful, quality-oriented mechanisms for an increase in teacher remuneration, which in Kazakhstan at present is way below any international benchmark. Such increases will more than likely require an overhaul of the current salary scale system along the lines suggested below:

- Bundling a set of core tasks into statutory salaries that are more adequate and fair.
- Reducing the number of compensation payments for additional work in favour of providing for more quality-related incentives (rewards) to younger and mid-career teachers.
- Setting a fairer, more realistic number of teaching hours and determining a standard distribution of hours (and tasks) beyond classroom teaching. This should make sure that teachers have time to devote to improving the quality of their work in class (e.g. preparation of classes, exchange with fellow teachers, professional development, involvement in school management) and that they are compensated for it as part of their statutory salary package.

Countries tend to address these issues in different ways and what constitutes good international practice is not always clear cut. The debate on good teacher policies and working conditions is, however, gaining momentum across the OECD, fuelled by surveys such as the Teaching and Learning International Survey (TALIS). Kazakhstan could greatly benefit from joining these efforts and the international debate as an equal partner as soon as possible.

Better resource allocation mechanisms (per capita funding)

The improvement of the system of education financing is one of the main goals of the State Programme of Education Development for 2011-2020, and the authorities have committed to the development of new financing mechanisms to that end. At the core of the new reform is an aspiration to introduce an output-based funding model, and its implementation is on its way.

The successful implementation of the PCF reform means setting up a well-functioning resource allocation mechanism that will likely reveal the actual cost of running the education system. There is a fair chance that this cost will outstrip current education expenditure levels. It is therefore very important to undertake a comprehensive assessment of the financial implications of applying PCF nationwide. The evidence collected in this way should be used to determine the amount of additional resources and where they will come from, to embed the increases in the wider context of public expenditure policies to ensure their longer term commitment, and work on building a consensus on the distribution of financial burden across levels of governance.

The OECD review team endorses the recommendation of the UNICEF report on per capita funding in education in Kazakhstan (UNICEF, 2012) for the creation of a dedicated institution in charge of PCF monitoring and implementation that could serve these purposes. It is also suggested to establish a committee with representation of all sides involved or affected by the per capita funding reform. The committee would steer the scaling up of the pilot nationally and serve as a feedback channel for concerns from the regions, their schools and local authorities. Measures like these will help to strengthen ownership and to ensure that problems are detected on time.

The per capita funding reform will provide schools with an additional financial stimulus for teachers to perform and develop professionally, but will not have an impact on their statutory salaries. The imminent radical overhaul of financing mechanisms through the reform should be used as an opportunity to initiate long overdue improvements in the scheme of teacher remuneration. For example, the envisaged increase in autonomy for school principals could also include more flexibility to use achievement funds for rewarding "regular" teachers – teachers who might not always train Olympiad winners but who demonstrate talent or innovation potential irrespective of tenure or formal qualifications, or who simply deliver the solid results every education system counts on. There is no one better positioned to identify such people than the schools themselves.

In fact, the per capita funding model will vest more responsibility in the school leadership than ever before, but without proper support the principals might become the weakest link in the implementation of the PCF reform, as they are left unprepared for the key role they are meant to play, thereby jeopardising its success. The OECD review team identifies an urgent need for comprehensive professional training for principals before the PCF pilot is scaled up nationwide – either as part of a larger plan for professionalisation of school leadership in the country or as a stand-alone project. School and local administrators and accountants should be able to benefit from similar training.

Last but not least, the timing of the plan to implement the PCF reform by 2015 is over optimistic. The OECD review team suggests that the authorities revise the roadmap of PCF implementation to allow for more time for a good education financing reform to become even better. More time would also be needed should the authorities decide to follow the OECD recommendation to *not* exclude the ungraded schools from the reform. To protect these schools from becoming the losers of the reform, the per capita funding formula should be adjusted by incorporating coefficients for ungraded schools.

Notes

1. Countries for which there is data.
2. Adjusted for purchasing power parity, constant 2005 international dollars.
3. Idem.
4. Idem.
5. Latest data for Kazakhstan (2011) is adjusted for inflation.
6. International Accounting Standards Board standard 38 defines an intangible asset as: "an identifiable non-monetary asset without physical substance. The Financial Accounting Standards Board Accounting Standard Codification 350 defines an intangible asset as an asset, other than a financial asset, that lacks physical substance.
7. It should be kept in mind that the Strategic plan does not provide details on the execution of the reform budget since 2009.
8. Six people per square kilometre of land area in 2010 (World Bank Database).
9. Three and a half kilometres of road per hundred square kilometres of land area in 2010 (World Bank Database).
10. Annex 19 to Government Regulation No 1400 of 29 December 2007 envisages a supplement of at least 25% of the base salary for teachers in rural schools.
11. Statutory salaries refer to scheduled salaries according to official pay scales.
12. Akmola, Eastern Kazakhstan, Mangistau, Pavlodar and Southern Kazakhstan.
13. The implementation of per capita funding in the State of Victoria, Australia, took 20 years but is considered to be an example of success.

Annex 5.A1

Additional data on education expenditure used in the report

Table 5.A1.1. **Public expenditure on education as share of GDP per level of education, upper middle income countries for which there is data (2009 or latest available year)**

Country level data		
(1) Public expenditure on education as share of GDP		
Country name	latest available year	2009
Algeria	2008	4.3
Angola	2006	2.9
Argentina		6.0
Azerbaijan		3.2
Belarus		4.5
Bulgaria		4.6
Chile		4.2
Colombia		4.7
Cuba		13.1
Iran, Islamic Rep.		4.7
Jamaica		6.0
Kazakhstan		3.1
Latvia		5.6
Lebanon		1.8
Lithuania		5.7
Mauritius		3.2
Mexico		5.3

Average for group	
(2) Public expenditure as share of total government expenditure	
14.1	
(3) Educational expenditure in pre-primary as % of total educational expenditure	As share of GDP
9.1	**0.4**
(4) Educational expenditure in primary as % of total educational expenditure	As share of GDP
31.1	**1.4**
(5) Educational expenditure in secondary as % of total educational expenditure	As share of GDP
35.6	**1.6**

Table 5.A1.1. **Public expenditure on education as share of GDP per level of education, upper middle income countries for which there is data (2009 or latest available year)** *(continued)*

Country level data				
(1) Public expenditure on education as share of GDP			Average for group	
Country name	latest available year	2009		
Panama	2008	3.8		
Peru		3.0	(6) Educational expenditure in tertiary as % of total educational expenditure	As share of GDP
Romania		4.3	**21.3**	**1.0**
Russian Federation	2008	4.1		
Serbia		5.0		
Thailand		4.1		
Uruguay	2006	2.9	(7) Educational expenditure in post secondary as % of total educational expenditure	As share of GDP
Venezuela, RB	2007	3.6	**m**	**m**

Sources: 1-2: World Bank Development Indicators; 3-6: UNESCO Institute for Statistics (World Education Indicators Programme).

Table 5.A1.2. **Spending on education in Kazakhstan as share of GDP, 2010-12 (national data)**

	GDP, current prices KZT million		
	2010	2011	2012
GDP	21 815 517	27 571 889	30 346 958

Annual public expenditure on education for the past five years KZT million				
2008	2009	2010	2011	2012
641 060	746 477	797 414	1 000 285	1 311 993

As share of GDP		
2010	2011	2012
3.7%	3.6%	4.3%

Source: National Agency for Statistics; IAC (Information-Analytic Centre) (2012), *Secondary Education System in the Republic of Kazakhstan: Today and Tomorrow*, background report prepared for the 2013 OECD Review of Policies for Secondary Education in Kazakhstan, Information-Analytic Centre, Astana.

Table 5.A1.3. **Expenditure per level of education in current and constant LCU and in USD PPP, Kazakhstan (2011)**

Expenditure per level of education	2011	Average annual expenditure (2011)	
GDP (current LCU)	27 571 889 000 000	Education expenditure per student in current LCU. Average all levels	240 983
Education expenditure in % of GDP. Total	3.6	Education expenditure per student in current LCU. Preschool	191 242
Education expenditure in % of GDP. Preschool	0.3	Education expenditure per student in current LCU. School	207 180
Education expenditure in % of GDP. School	1.8	Education expenditure per student in current LCU. VET and post-secondary	127 018
Education expenditure in % of GDP. VET and post-secondary	0.3	Education expenditure per student in current LCU. Tertiary	141 501
Education expenditure in % of GDP. Tertiary	0.3		
Education expenditure in % of GDP. Not allocated	0.9	**GDP deflator 2009/2011**	**0.71**
Proportion of expenditure on educational institutions. Preschool	9.4	Education expenditure per student in constant LCU. Average all levels	171 464
Proportion of expenditure on educational institutions. School	51.0	Education expenditure per student in constant LCU. Preschool	136 072
Proportion of expenditure on educational institutions. VET and post-secondary	7.2	Education expenditure per student in constant LCU. School	147 413
Proportion of expenditure on educational institutions. Tertiary	8.9	Education expenditure per student in constant LCU. VET and post-secondary	90 375
Proportion of expenditure on educational institutions. Not allocated	23.5	Education expenditure per student in constant LCU. Tertiary	100 681
Expenditure per level, current LCU. Total	1 000 285 000 000	**PPP conversion factor 2009**	**93.1**
Expenditure per level, current LCU. Preschool	93 590 000 000		
Expenditure per level, current LCU. School	509 962 000 000	Education expenditure per student in USD PPP. Average all levels	1 841
Expenditure per level, current LCU. VET and post-secondary	72 466 000 000	Education expenditure per student in USD PPP. Preschool	1 461
Expenditure per level, current LCU. Tertiary	89 076 000 000	Education expenditure per student in USD PPP. School	1 583
Expenditure per level, current LCU. Not allocated	235 191 000 000	Education expenditure per student in USD PPP. VET and post-secondary	971
		Education expenditure per student in USD PPP. Tertiary	1 081

Table 5.A1.3. **Expenditure per level of education in current and constant LCU and in USD PPP, Kazakhstan (2011)** *(continued)*

Expenditure per level of education	2011
Student enrolment. Total	4 150 846
School enrolment. Preschool	489 380
School enrolment. School	2 461 440
School enrolment. VET including post secondary	570 519
School enrolment. Tertiary	629 507

Average annual expenditure (2011)	
Cumulative expenditure per student, primary and secondary education, USD PPP (11 years)	17 415

Note: School = primary and secondary (lower and upper) education.

Sources: IAC (Information-Analytic Centre) (2012), *Secondary Education System in the Republic of Kazakhstan: Today and Tomorrow*, background report prepared for the 2013 OECD Review of Policies for Secondary Education in Kazakhstan, Information-Analytic Centre, Astana; MESRK (2011b), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana. Source for conversion factors and deflators: World Bank, World Development Indicators.

Table 5.A1.4. **Ratio of cumulative expenditure per student over the theoretical duration of primary and secondary studies to GDP per capita (2009)**

		Average theoretical duration of primary and secondary studies (in years)	Cumulative expenditure per student over the theoretical duration of primary and secondary studies (USD PPP)	GDP per capita (USD PPP)	Ratio of cumulative expenditure per student over the theoretical duration or primary and secondary studies, to GDP per capita
		(1)	(2)	(3)	(4)
OECD					
Australia		13.0	119 217	39 971	3.0
Austria		12.0	141 036	38 834	3.6
Belgium		12.0	114 695	36 698	3.1
Canada	1	12.0	107 959	38 522	2.8
Chile	2	12.0	35 240	15 107	2.3
Czech Republic		13.0	74 048	25 614	2.9
Denmark		13.0	144 299	38 299	3.8
Estonia		12.0	71 901	19 789	3.6
Finland		12.0	101 437	35 848	2.8
France		12.0	106 739	33 724	3.2

Table 5.A1.4. **Ratio of cumulative expenditure per student over the theoretical duration of primary and secondary studies to GDP per capita (2009)** *(continued)*

		Average theoretical duration of primary and secondary studies (in years)	Cumulative expenditure per student over the theoretical duration of primary and secondary studies (USD PPP)	GDP per capita (USD PPP)	Ratio of cumulative expenditure per student over the theoretical duration or primary and secondary studies, to GDP per capita
		(1)	(2)	(3)	(4)
Germany		13.0	109 118	36 048	3.0
Greece		12.0	m	29 381	m
Hungary	3	12.0	54 088	20 154	2.7
Iceland		14.0	131 758	36 718	3.6
Ireland	3	13.5	130 790	39 750	3.3
Israel		12.0	66 265	27 454	2.4
Italy	3	13.0	116 219	32 397	3.6
Japan		12.0	101 910	32 324	3.2
Korea		12.0	96 455	27 171	3.5
Luxembourg		13.0	234 343	82 972	2.8
Mexico		12.0	29 756	14 397	2.1
Netherlands		11.0	106 559	41 089	2.6
New Zealand		13.0	96 100	29 204	3.3
Norway		13.0	165 297	54 708	3.0
Poland	3	13.0	67 065	18 910	3.5
Portugal	3	12.0	86 961	24 935	3.5
Slovak Republic		13.0	62 446	22 620	2.8
Slovenia	3	12.0	106 701	27 150	3.9
Spain		12.0	105 338	32 146	3.3
Sweden		12.0	116 339	37 192	3.1
Switzerland	3	12.5	165 329	44 773	3.7
Turkey		11.0	m	14 442	m
United Kingdom		12.5	119 616	34 483	3.5
United States		12.0	142 013	45 087	3.1
					m
OECD total		12.4	107 095	33 174	3.2

Table 5.A1.4. **Ratio of cumulative expenditure per student over the theoretical duration of primary and secondary studies to GDP per capita (2009)** *(continued)*

		Average theoretical duration of primary and secondary studies (in years)	Cumulative expenditure per student over the theoretical duration of primary and secondary studies (USD PPP)	GDP per capita (USD PPP)	Ratio of cumulative expenditure per student over the theoretical duration or primary and secondary studies, to GDP per capita
		(1)	(2)	(3)	(4)
OECD non-members					
Kazakhstan	4	11.0	17 415	11 350	1.5
Brazil	3	11.0	25 003	11 155	2.2
Russian Federation	3	11.0	47 580	18 882	2.5
Region		11.0	9 671	7 478	1.3
Income group		12.0	28 420	9 297	3.1

Notes: Data in equivalent USD converted using PPPs for GDP and, where relevant, in USD PPP (current international dollars) adjusted for inflation (2009), by level of education. Data for "region and "income group" countries represents public expenditure. Public expenditure includes government spending on educational institutions (both public and private), education administration as well as subsidies for private entities (students/households and other privates entities). Data for non-OECD countries (except Brazil and Russian Federation) may not be based on full-time equivalents.

1. Year of reference 2008.

2. Year of reference 2010.

3. Public institutions only.

4. National data. Year of reference 2011

Source: OECD (2012a), *Education at a Glance 2012: OECD Indicators*, OECD Publishing, http://dx.doi.org/10.1787/eag-2012-en. OECD non-members: World Bank Development Indicators and UNESCO Institute for Statistics – World Education Indicators Programme. National source of data on Kazakhstan: Attachments on education financing provided in the course of preparing responses to questions in the review framework; Statistical annex to MESRK (2011b), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)*, Ministry of Education and Science of the Republic of Kazakhstan, Astana. Source for conversion factors and deflators: World Bank, World Development Indicators.

Table 5.A1.5. **Salaries of public employees in Kazakhstan: income groups, base wage and multiplication factors**

2004												
	Salary base	Multiplication coefficient										
Remuneration category	2004	Starting salary	1 to 20+ years	2 to 3	3 to 5	5 to 7	7 to 9	9 to 11	11 to 14	14 to 17	17 to 20	20+
	(1)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
G-1	6 600	4.29	4.37 to 5.15	4.46	4.55	4.65	4.76	4.85	4.94	5.03	5.10	5.15
G-2		3.99	4.07 to 4.78	4.15	4.24	4.33	4.42	4.51	4.59	4.68	4.73	4.78
G-3		3.72	3.80 to 4.46	3.87	3.95	4.04	4.12	4.21	4.29	4.37	4.42	4.46
School principals (G-4)		3.41	3.54 to 4.08	3.54	3.61	3.69	3.77	3.85	3.93	4.00	4.04	4.08
Deputy principals (G-5)		3.17	3.29 to 3.80	3.29	3.37	3.43	3.51	3.59	3.65	3.72	3.76	3.80
G-6		2.98	3.11 to 3.58	3.11	3.17	3.24	3.30	3.37	3.43	3.50	3.54	3.58
University teachers; post-secondary VET (G-7)		2.80	2.91 to 3.35	2.91	2.98	3.03	3.11	3.16	3.22	3.29	3.33	3.35
G-8		2.64	2.74 to 3.16	2.74	2.81	2.86	2.93	2.99	3.04	3.09	3.13	3.16
Teachers with university qualifications (G-9)		2.40	2.49 to 2.88	2.49	2.53	2.58	2.63	2.68	2.73	2.78	2.83	2.88
G-10		2.20	2.28 to 2.64	2.28	2.32	2.37	2.41	2.45	2.50	2.55	2.59	2.64
Teachers with post-secondary qualifications (G-11)		2.02	2.10 to 2.42	2.10	2.13	2.17	2.21	2.25	2.29	2.34	2.38	2.42
G-12		1.88	1.95 to 2.26	1.95	1.99	2.02	2.06	2.10	2.14	2.18	2.22	2.26
G-13		1.68	1.74 to 2.02	1.74	1.77	1.81	1.84	1.87	1.91	1.94	1.98	2.02
G-14		1.43	1.48 to 1.70	1.48	1.51	1.55	1.59	1.61	1.64	1.68	1.69	1.70

Table 5.A1.5. **Salaries of public employees in Kazakhstan: income groups, base wage and multiplication factors** *(continued)*

	2005-08											
	Salary base	Multiplication coefficient										
Remuneration category	2005-2008	Starting salary	1 to 20+ years	2 to 3	3 to 5	5 to 7	7 to 9	9 to 11	11 to 14	14 to 17	17 to 20	20+
	(1)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
G-1	8 712	4.29	4.37 to 5.15	4.46	4.55	4.65	4.76	4.85	4.94	5.03	5.10	5.15
G-2		3.99	4.07 to 4.78	4.15	4.24	4.33	4.42	4.51	4.59	4.68	4.73	4.78
G-3		3.72	3.80 to 4.46	3.87	3.95	4.04	4.12	4.21	4.29	4.37	4.42	4.46
School principals (G-4)		3.41	3.54 to 4.08	3.54	3.61	3.69	3.77	3.85	3.93	4.00	4.04	4.08
Deputy principals (G-5)		3.17	3.29 to 3.80	3.29	3.37	3.43	3.51	3.59	3.65	3.72	3.76	3.80
G-6		2.98	3.11 to 3.58	3.11	3.17	3.24	3.30	3.37	3.43	3.50	3.54	3.58
University teachers; post-secondary VET (G-7)		2.80	2.91 to 3.35	2.91	2.98	3.03	3.11	3.16	3.22	3.29	3.33	3.35
G-8		2.64	2.74 to 3.16	2.74	2.81	2.86	2.93	2.99	3.04	3.09	3.13	3.16
Teachers with university qualifications (G-9)		2.40	2.49 to 2.88	2.49	2.53	2.58	2.63	2.68	2.73	2.78	2.83	2.88
G-10		2.20	2.28 to 2.64	2.28	2.32	2.37	2.41	2.45	2.50	2.55	2.59	2.64
Teachers with post-secondary qualifications (G-11)		2.02	2.10 to 2.42	2.10	2.13	2.17	2.21	2.25	2.29	2.34	2.38	2.42
G-12		1.88	1.95 to 2.26	1.95	1.99	2.02	2.06	2.10	2.14	2.18	2.22	2.26
G-13		1.68	1.74 to 2.02	1.74	1.77	1.81	1.84	1.87	1.91	1.94	1.98	2.02
G-14		1.43	1.48 to 1.70	1.48	1.51	1.55	1.59	1.61	1.64	1.68	1.69	1.70

Table 5.A1.5. **Salaries of public employees in Kazakhstan: income groups, base wage and multiplication factors** *(continued)*

Overview 2009-11														
	Salary base					Multiplication coefficient								
Remuneration category	2009	2010	2011; 2012	Starting salary	1 to 20+ years	2 to 3	3 to 5	5 to 7	7 to 9	9 to 11	11 to 14	14 to 17	17 to 20	20+
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
G-1				4.29	4.37 to 5.15	4.46	4.55	4.65	4.76	4.85	4.94	5.03	5.10	5.15
G-2				3.99	4.07 to 4.78	4.15	4.24	4.33	4.42	4.51	4.59	4.68	4.73	4.78
G-3				3.72	3.80 to 4.46	3.87	3.95	4.04	4.12	4.21	4.29	4.37	4.42	4.46
School principals (G-4)				3.41	3.54 to 4.08	3.54	3.61	3.69	3.77	3.85	3.93	4.00	4.04	4.08
Deputy principals (G-5)				3.17	3.29 to 3.80	3.29	3.37	3.43	3.51	3.59	3.65	3.72	3.76	3.80
G-6				2.98	3.11 to 3.58	3.11	3.17	3.24	3.30	3.37	3.43	3.50	3.54	3.58
University teachers; post-secondary VET (G-7)				2.80	2.91 to 3.35	2.91	2.98	3.03	3.11	3.16	3.22	3.29	3.33	3.35
G-8	10 890	13 613	17 697	2.64	2.74 to 3.16	2.74	2.81	2.86	2.93	2.99	3.04	3.09	3.13	3.16
Teachers with university qualifications (G-9)				2.40	2.49 to 2.88	2.49	2.53	2.58	2.63	2.68	2.73	2.78	2.83	2.88
G-10				2.20	2.28 to 2.64	2.28	2.32	2.37	2.41	2.45	2.50	2.55	2.59	2.64
Teachers with post-secondary qualifications (G-11)				2.02	2.10 to 2.42	2.10	2.13	2.17	2.21	2.25	2.29	2.34	2.38	2.42
G-12				1.88	1.95 to 2.26	1.95	1.99	2.02	2.06	2.10	2.14	2.18	2.22	2.26
G-13				1.68	1.74 to 2.02	1.74	1.77	1.81	1.84	1.87	1.91	1.94	1.98	2.02
G-14				1.43	1.48 to 1.70	1.48	1.51	1.55	1.59	1.61	1.64	1.68	1.69	1.70

Table 5.A1.5. **Salaries of public employees in Kazakhstan: income groups, base wage and multiplication factors** *(continued)*

		Salaries public employment in current LCU, 2004										
Remuneration category	Salary base	Starting salary	1 to 2	2 to 3	3 to 5	5 to 7	7 to 9	9 to 11	11 to 14	14 to 17	17 to 20	20+
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		3.41	3.47	3.54	3.61	3.69	3.77	3.85	3.93	4.00	4.04	4.08
		6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600
School principals (G-4)		22 506.00	22 902.00	23 364.00	23 826.00	24 354.00	24 882.00	25 410.00	25 938.00	26 400.00	26 664.00	26 928.00
		3.17	3.22	3.29	3.37	3.43	3.51	3.59	3.65	3.72	3.76	3.80
		6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600
Deputy principals (G-5)		20 922.00	21 252.00	21 714.00	22 242.00	22 638.00	23 166.00	23 694.00	24 090.00	24 552.00	24 816.00	25 080.00
		2.80	2.85	2.91	2.98	3.03	3.11	3.16	3.22	3.29	3.33	3.35
		6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600
University teachers; post-secondary VET (G-7)	6 600	18 480.00	18 810.00	19 206.00	19 668.00	19 998.00	20 526.00	20 856.00	21 252.00	21 714.00	21 978.00	22 110.00
		2.40	2.44	2.49	2.53	2.58	2.63	2.68	2.73	2.78	2.83	2.88
		6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600
Teachers with university qualifications (G-9)		15 840.00	16 104.00	16 434.00	16 698.00	17 028.00	17 358.00	17 688.00	18 018.00	18 348.00	18 678.00	19 008.00
		2.02	2.06	2.10	2.13	2.17	2.21	2.25	2.29	2.34	2.38	2.42
		6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600	6 600
Teachers with post-secondary qualifications (G-11)		13 332.00	13 596.00	13 860.00	14 058.00	14 322.00	14 586.00	14 850.00	15 114.00	15 444.00	15 708.00	15 972.00

Table 5.A1.5. **Salaries of public employees in Kazakhstan: income groups, base wage and multiplication factors** *(continued)*

		Salaries public employment in current LCU, 2005-08										
Remuneration category	Salary base	Starting salary	1 to 2	2 to 3	3 to 5	5 to 7	7 to 9	9 to 11	11 to 14	14 to 17	17 to 20	20+
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		3.41	3.47	3.54	3.61	3.69	3.77	3.85	3.93	4.00	4.04	4.08
		8 712	8 712	8 712	8 712	8 712	8 712	8 712	8 712	8 712	10 890	8 712
School principals (G-4)		**29 707.92**	**30 230.64**	**30 840.48**	**31 450.32**	**32 147.28**	**32 844.24**	**33 541.20**	**34 238.16**	**34 848.00**	**43 995.60**	**35 544.96**
		3.17	3.22	3.29	3.37	3.43	3.51	3.59	3.65	3.72	3.76	3.80
		8 712	8 712	8 712	8 712	8 712	8 712	8 712	8 712	8 712	10 890	8 712
Deputy principals (G-5)		**27 617.04**	**28 052.64**	**28 662.48**	**29 359.44**	**29 882.16**	**30 579.12**	**31 276.08**	**31 798.80**	**32 408.64**	**40 946.40**	**33 105.60**
		2.80	2.85	2.91	2.98	3.03	3.11	3.16	3.22	3.29	3.33	3.35
		8 712	8 712	8 712	8 712	8 712	8 712	8 712	8 712	8 712	10 890	8 712
University teachers; post secondary VET (G-7)	8 712	**24 393.60**	**24 829.20**	**25 351.92**	**25 961.76**	**26 397.36**	**27 094.32**	**27 529.92**	**28 052.64**	**28 662.48**	**36 263.70**	**29 185.20**
		2.40	2.44	2.49	2.53	2.58	2.63	2.68	2.73	2.78	2.83	2.88
		8 712	8 712	8 712	8 712	8 712	8 712	8 712	8 712	8 712	10 890	8 712
Teachers with university qualifications (G-9)		**20 908.80**	**21 257.28**	**21 692.88**	**22 041.36**	**22 476.96**	**22 912.56**	**23 348.16**	**23 783.76**	**24 219.36**	**30 818.70**	**25 090.56**
		2.02	2.06	2.10	2.13	2.17	2.21	2.25	2.29	2.34	2.38	2.42
		8 712	8 712	8 712	8 712	8 712	8 712	8 712	8 712	8 712	10 890	8 712
Teachers with post-secondary qualifications (G-11)		**17 598.24**	**17 946.72**	**18 295.20**	**18 556.56**	**18 905.04**	**19 253.52**	**19 602.00**	**19 950.48**	**20 386.08**	**25 918.20**	**21 083.04**

Table 5.A1.5. **Salaries of public employees in Kazakhstan: income groups, base wage and multiplication factors** *(continued)*

		Salaries public employment in current LCU, 2009										
Remuneration category	Salary base	Starting salary	1 to 2	2 to 3	3 to 5	5 to 7	7 to 9	9 to 11	11 to 14	14 to 17	17 to 20	20+
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		3.41	3.47	3.54	3.61	3.69	3.77	3.85	3.93	4.00	4.04	4.08
		10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890
School principals (G-4)		**37 134.90**	**37 788.30**	**38 550.60**	**39 312.90**	**40 184.10**	**41 055.30**	**41 926.50**	**42 797.70**	**43 560.00**	**43 995.60**	**44 431.20**
		3.17	3.22	3.29	3.37	3.43	3.51	3.59	3.65	3.72	3.76	3.80
		10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890
Deputy principals (G-5)		**34 521.30**	**35 065.80**	**35 828.10**	**36 699.30**	**37 352.70**	**38 223.90**	**39 095.10**	**39 748.50**	**40 510.80**	**40 946.40**	**41 382.00**
		2.80	2.85	2.91	2.98	3.03	3.11	3.16	3.22	3.29	3.33	3.35
		10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890
University teachers; post-secondary VET (G-7)	10 890	**30 492.00**	**31 036.50**	**31 689.90**	**32 452.20**	**32 996.70**	**33 867.90**	**34 412.40**	**35 065.80**	**35 828.10**	**36 263.70**	**36 481.50**
		2.40	2.44	2.49	2.53	2.58	2.63	2.68	2.73	2.78	2.83	2.88
		10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890
Teachers with university qualifications (G-9)		**26 136.00**	**26 571.60**	**27 116.10**	**27 551.70**	**28 096.20**	**28 640.70**	**29 185.20**	**29 729.70**	**30 274.20**	**30 818.70**	**31 363.20**
		2.02	2.06	2.10	2.13	2.17	2.21	2.25	2.29	2.34	2.38	2.42
		10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890	10 890
Teachers with post-secondary qualifications (G-11)		**21 997.80**	**22 433.40**	**22 869.00**	**23 195.70**	**23 631.30**	**24 066.90**	**24 502.50**	**24 938.10**	**25 482.60**	**25 918.20**	**26 353.80**

Table 5.A1.5. **Salaries of public employees in Kazakhstan: income groups, base wage and multiplication factors** *(continued)*

		Salaries public employment in current LCU, 2010										
Remuneration category	Salary base	Starting salary	1 to 2	2 to 3	3 to 5	5 to 7	7 to 9	9 to 11	11 to 14	14 to 17	17 to 20	20+
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		3.41	3.47	3.54	3.61	3.69	3.77	3.85	3.93	4.00	4.04	4.08
		13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613
School principals (G-4)		46 420.33	47 237.11	48 190.02	49 142.93	50 231.97	51 321.01	52 410.05	53 499.09	54 452.00	54 996.52	55 541.04
		3.17	3.22	3.29	3.37	3.43	3.51	3.59	3.65	3.72	3.76	3.80
		13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613
Deputy principals (G-5)		43 153.21	43 833.86	44 786.77	45 875.81	46 692.59	47 781.63	48 870.67	49 687.45	50 640.36	51 184.88	51 729.40
		2.80	2.85	2.91	2.98	3.03	3.11	3.16	3.22	3.29	3.33	3.35
		13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613
University teachers; post-secondary VET (G-7)	13 613	38 116.40	38 797.05	39 613.83	40 566.74	41 247.39	42 336.43	43 017.08	43 833.86	44 786.77	45 331.29	45 603.55
		2.40	2.44	2.49	2.53	2.58	2.63	2.68	2.73	2.78	2.83	2.88
		13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613
Teachers with university qualifications (G-9)		32 671.20	33 215.72	33 896.37	34 440.89	35 121.54	35 802.19	36 482.84	37 163.49	37 844.14	38 524.79	39 205.44
		2.02	2.06	2.10	2.13	2.17	2.21	2.25	2.29	2.34	2.38	2.42
		13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613	13 613
Teachers with post-secondary qualifications (G-11)		27 498.26	28 042.78	28 587.30	28 995.69	29 540.21	30 084.73	30 629.25	31 173.77	31 854.42	32 398.94	32 943.46

Table 5.A1.5. **Salaries of public employees in Kazakhstan: income groups, base wage and multiplication factors** *(continued)*

		Monthly salaries public employees, net of compensation payments, current LCU, 2011										
Remuneration category	Salary base	Starting salary	1 to 2	2 to 3	3 to 5	5 to 7	7 to 9	9 to 11	11 to 14	14 to 17	17 to 20	20+
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
coefficient		3.41	3.47	3.54	3.61	3.69	3.77	3.85	3.93	4.00	4.04	4.08
base wage		17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697
School principals (G-4)		60 346.77	61 408.59	62 647.38	63 886.17	65 301.93	66 717.69	68 133.45	69 549.21	70 788.00	71 495.88	72 203.76
coefficient		3.17	3.22	3.29	3.37	3.43	3.51	3.59	3.65	3.72	3.76	3.80
base wage		17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697
Deputy principals (G-5)		56 099.49	56 984.34	58 223.13	59 638.89	60 700.71	62 116.47	63 532.23	64 594.05	65 832.84	66 540.72	67 248.60
coefficient		2.80	2.85	2.91	2.98	3.03	3.11	3.16	3.22	3.29	3.33	3.35
base wage		17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697
University teachers; post-secondary VET (G-7)	17 697	49 551.60	50 436.45	51 498.27	52 737.06	53 621.91	55 037.67	55 922.52	56 984.34	58 223.13	58 931.01	59 284.95
coefficient		2.40	2.44	2.49	2.53	2.58	2.63	2.68	2.73	2.78	2.83	2.88
base wage		17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697
Teachers with university qualifications (G-9)		42 472.80	43 180.68	44 065.53	44 773.41	45 658.26	46 543.11	47 427.96	48 312.81	49 197.66	50 082.51	50 967.36
coefficient		2.02	2.06	2.10	2.13	2.17	2.21	2.25	2.29	2.34	2.38	2.42
base wage		17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697	17 697
Teachers with post-secondary qualifications (G-11)		35 747.94	36 455.82	37 163.70	37 694.61	38 402.49	39 110.37	39 818.25	40 526.13	41 410.98	42 118.86	42 826.74

Sources: Government Regulation No. 74 of 23 January 2004 and Government Regulation No. 41 of 11 January 2002; Government Regulation No. 409 of 29 April 2005; Government Regulation No. 1257 of 24 December 2008 (for base wage in 2009), Government Regulation No. 244 of 30 March 2010 (for base wage in 2010), Government Regulation No. 150 of 17 February 2011 (for base wage in 2011) and Government Regulation No. 1400 of 2 July 2013.

Table 5.A1.6. **Overview of compensation payments for education professionals in pre-university education, Kazakhstan**

Type of compensation	Notes	Description	Average (1) compensation in % of the base wage	Beneficiaries	chosen for stavka illustration (marked with x)
Additional tasks		Responsibility for a class	27.5%	T	x
		Grading of exams and homework	22.5%	T	x
	2	Responsibility for specialised classrooms (2)	25.0%	T	x
		Evening classes	30.0%	T	x
		Evening classes	20.0%	P	
		School or class management	20.0%	PW	
		Arts school management without a principal's position	20.0%	PW	
		Management of the teaching process in art schools	20.0%	PW	
		Librarian work	30.0%	T	x
		Librarian work with textbooks	20.0%	L	
	3	Management of the boarding section of the school	25.0%	P	
		Extracurricular activities about healthy living	45.0%	PW	
		Extracurricular act. about healthy living in b.schools and orphanages	60.0%	PW	
		Responsibility for ICT maintenance (compensation per computer)	3.5%	T; PW	
		Chairing of methodical, subject matter and other commissions	25.0%	T	x
		Co-ordination of school open days	20.0%	P	
	4	Work in specialised institutions	25.0%	PW	

Table 5.A1.6. **Overview of compensation payments for education professionals in pre-university education, Kazakhstan** *(continued)*

Type of compensation	Notes	Description	Average (1) compensation in % of the base wage	Beneficiaries	chosen for stavka illustration (marked with x)
Working conditions, including in-depth subject teaching		Military boarding schools	25.0%	PW	
		Schools with min. 2 classes with childern with special needs	30.0%	P	
		Work with children with special educational and medical needs	30.0%	All	
		Institutions for children with deviant behaviour	30.0%	All	
		Work in closed special educational instituions	30.0%	All	
		Work with orphans	30.0%	All	
		Work with desinfectants	34.0%	APW	
		Olympiad schools (sports)	40.0%	P	
		Teaching in the profile subjects	40.0%	T	x
		Teaching Russian language in rural areas	25.0%	T	
		Teaching Russian language in VET schools in rural areas	25.0%	T	
		Teaching Arabic, Chinese and Persian language	25.0%	T	
		Teaching Kazakh in schools with different language of instruction	25.0%	T	
		Teaching the profile subject in experimental and profile schools	20.0%	T	
Additional qualifications		Academic degree: candidate of science	1 minimum wage (national)	T; PW	
		Academic degree: PhD	2 minimum wages (national)	T; PW	
		Qualification category G9: highest	100%	T	

Table 5.A1.6. **Overview of compensation payments for education professionals in pre-university education, Kazakhstan** *(continued)*

Type of compensation	Notes	Description	Average (1) compensation in % of the base wage	Beneficiaries	chosen for stavka illustration (marked with x)
Additional qualifications *(continued)*		Qualification category G9: first	50%	T	x
		Qualification category G9: second	30%	T	
		Qualification category G11: highest	90%	T	
		Qualification category G11: first	45%	T	x
		Qualification category G11: second	30%	T	
	5	NIS training: level 3 (basic)	30.0%	T	
	5	NIS training: 2 level (main)	70.0%	T	
	5	NIS training: 1 level (higher)	100.0%	T	

Legend: **T**: Teachers. **P**: Principals. **PW**: Pedagogical Workers. **L**: Librarians. **APW**: Assist. Pedagogical Workers. **All**: All education staff

Notes: 1. Average compensation in percentage of the base wage. Compensation can differ by 5% by level of education and subject.

2. These are labs, classrooms for technical and professional subjects, etc.

3. In cases when this position is not envisaged.

4. Includes boarding schools, orphanages, correctional institutions, schools for children with special needs, etc.

5. Compensation is calculated in percentage of the salary, not of the base wage.

Source: Government Regulation 1400, Annex 4.

Table 5.A1.7. **Wages of education professionals: currency conversions and inflation adjustments**

2004	National data						WDI		Calculation					WDI		Calculation					Calculation				
Kazakhstan	Monthly salary in current LCU						GDP deflator		Salaries in constant LCU (2010)					PPP conversion factor 2010		Salaries in equivalent USD converted using PPPs for private consumption, 2010					Annual salaries in equivalent USD converted using PPPs for private consumption, 2010				
	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Average salary, minimum qualifications	Salary top of the scale, maximum qualifications (1)	Year	Value	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum qualifications	GDP	Private consumption	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Preschool and primary education	13 332	14 850	15 444	15 972	14 900	30 347	2010/2004	2.51	33 400	37 203	38 691	40 014	76 027	110.53	94.24	354	395	411	425	807	4 253	4 737	4 927	5 095	9 681
Secondary education	15 840	17 688	18 348	19 008	17 721	51 216	2010/2005	2.51	39 683	44 313	45 967	47 620	128 310	110.53	94.24	421	470	488	505	1 362	5 053	5 643	5 853	6 064	16 339
Principals	22 506	25 410	26 400	26 928	25 311	m	2010/2006	2.51	56 384	63 659	66 139	67 462	0	110.53	94.24	598	676	702	716	0	7 180	8 106	8 422	8 590	m

Table 5.A1.7. **Wages of education professionals: currency conversions and inflation adjustments** *(continued)*

2005	National data						WDI		Calculation					WDI		Calculation					Calculation				
Kazakhstan	Monthly salary in current LCU						GDP deflator		Salaries in constant LCU (2010)					PPP conversion factor 2010		Salaries in equivalent USD converted using PPPs for private consumption, 2010					Annual salaries in equivalent USD converted using PPPs for private consumption, 2010				
	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Average salary, minimum qualifications	Salary top of the scale, maximum qualifications (1)	Year	Value	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum qualifications	GDP	Private consumption	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Preschool and primary education	17 598	19 602	20 386	21 083	19 667	40 058	2010/2005	2.13	37 403	41 661	43 328	44 809	85 137	110.53	94.24	397	442	460	475	903	4 763	5 305	5 517	5 706	10 841
Secondary education	20 909	23 348	24 219	25 091	23 392	66 381	2010/2005	2.13	44 439	49 623	51 475	53 327	141 084	110.53	94.24	472	527	546	566	1 497	5 659	6 319	6 555	6 790	17 965
Principals	29 708	33 541	34 848	35 545	33 411	m	2010/2005	2.13	63 140	71 287	74 065	75 546	m	110.53	94.24	670	756	786	802	m	8 040	9 077	9 431	9 620	m

Table 5.A1.7. **Wages of education professionals: currency conversions and inflation adjustments** *(continued)*

2006	National data						WDI		Calculation					WDI		Calculation					Calculation				
Kazakhstan	Monthly salary in current LCU						GDP deflator		Salaries in constant LCU (2010)					PPP conversion factor 2010		Salaries in equivalent USD converted using PPPs for private consumption, 2010					Annual salaries in equivalent USD converted using PPPs for private consumption, 2010				
	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Average salary, minimum qualifications	Salary top of the scale, maximum qualifications (1)	Year	Value	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum qualifications	GDP	Private consumption	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Preschool and primary education	17 598	19 602	20 386	21 083	19 667	62 593	2010/2006	1.75	30 771	34 275	35 646	36 864	109 445	110.53	94.24	327	364	378	391	1 161	3 918	4 364	4 539	4 694	13 936
Secondary education	20 909	23 348	24 219	25 091	23 392	78 411	2010/2006	1.75	36 560	40 825	42 348	43 872	137 104	110.53	94.24	388	433	449	466	1 455	4 655	5 198	5 392	5 586	17 458
Principals	29 708	33 541	34 848	35 545	33 411	m	2010/2006	1.75	51 945	58 648	60 933	62 151	m	110.53	94.24	551	622	647	660	m	6 615	7 468	7 759	7 914	m

Table 5.A1.7. **Wages of education professionals: currency conversions and inflation adjustments** *(continued)*

2007	National Data						WDI		Calculation					WDI		Calculation					Calculation				
Kazakhstan	Monthly salary in current LCU						GDP deflator		Salaries in constant LCU (2010)					PPP conversion factor 2010		Salaries in equivalent USD converted using PPPs for private consumption, 2010					Annual salaries in equivalent USD converted using PPPs for private consumption, 2010				
	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Average salary, minimum qualifications	Salary top of the scale, maximum qualifications	Year	Value	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum qualifications	GDP	Private consumption	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Preschool and primary education	17 598	19 602	20 386	21 083	19 667	85 653	2010/2007	1.51	26 635	29 668	30 855	31 910	129 638	110.53	94.24	283	315	327	339	1 376	3 392	3 778	3 929	4 063	16 508
Secondary education	20 909	23 348	24 219	25 091	23 392	137 853	2010/2007	1.51	31 646	35 338	36 657	37 975	208 643	110.53	94.24	336	375	389	403	2 214	4 030	4 500	4 668	4 836	26 568
Principals	29 708	33 541	34 848	35 545	33 411	m	2010/2007	1.51	44 964	50 765	52 743	53 798	m	110.53	94.24	477	539	560	571	m	5 725	6 464	6 716	6 850	m

Table 5.A1.7. **Wages of education professionals: currency conversions and inflation adjustments** *(continued)*

2008	National data						WDI		Calculation					WDI		Calculation					Calculation				
Kazakhstan	Monthly salary in current LCU						GDP deflator		Salaries in constant LCU (2010)					PPP conversion factor 2010		Salaries in equivalent USD converted using PPPs for private consumption, 2010					Annual salaries in equivalent USD converted using PPPs for private consumption, 2010				
	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Average salary, minimum qualifications	Salary top of the scale, maximum qualifications (1)	Year	Value	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum qualifications	GDP	Private consumption	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Preschool and primary education	17 598	19 602	20 386	21 083	19 667	85 653	2010/2008	1.25	22 024	24 532	25 513	26 385	107 195	110.53	94.24	234	260	271	280	1 137	2 804	3 124	3 249	3 360	13 650
Secondary education	20 909	23 348	24 219	25 091	23 392	137 853	2010/2008	1.25	26 167	29 220	30 311	31 401	172 523	110.53	94.24	278	310	322	333	1 831	3 332	3 721	3 860	3 998	21 968
Principals	29 708	33 541	34 848	35 545	33 411	m	2010/2008	1.25	37 179	41 977	43 612	44 485	m	110.53	94.24	395	445	463	472	m	4 734	5 345	5 553	5 664	m

Table 5.A1.7. **Wages of education professionals: currency conversions and inflation adjustments** *(continued)*

2009	National data						WDI		Calculation					WDI		Calculation					Calculation				
Kazakhstan	Monthly salary in current LCU						GDP deflator		Salaries in constant LCU (2010)					PPP conversion factor 2010		Salaries in equivalent USD converted using PPPs for private consumption, 2010					Annual salaries in equivalent USD converted using PPPs for private consumption, 2010				
	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Average salary, minimum qualifications	Salary top of the scale, maximum qualifications (1)	Year	Value	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum qualifications	GDP	Private consumption	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Preschool and primary education	21 998	24 503	25 483	26 354	24 584	68 520	2010/2009	1.20	26 297	29 291	30 462	31 504	81 910	110.53	94.24	279	311	323	334	869	3 349	3 730	3 879	4 012	10 430
Secondary education	26 136	29 185	30 274	31 363	29 240	111 868	2010/2009	1.20	31 244	34 889	36 190	37 492	133 729	110.53	94.24	332	370	384	398	1 419	3 978	4 443	4 608	4 774	17 029
Principals	37 135	41 927	43 560	44 431	41 763	m	2010/2009	1.20	44 392	50 120	52 073	53 114	m	110.53	94.24	471	532	553	564	m	5 653	6 382	6 631	6 763	m

Table 5.A1.7. **Wages of education professionals: currency conversions and inflation adjustments** *(continued)*

2010	National data						WDI		Calculation					Calculation					
Kazakhstan	Monthly salary in current LCU						PPP conversion factor 2010		Salaries in equivalent USD converted using PPPs for private consumption					Annual salaries in equivalent USD converted using PPPs for private consumption, 2010					
	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Average salary, minimum qualifications	Salary top of the scale, maximum qualifications (1)	GDP	Private consumption	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum qualifications	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum qualifications	Average annual salary, including bonuses and allowances
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Preschool and primary education	27 498	30 629	31 854	32 943	30 731	85 653	110.53	94.24	292	325	338	350	909	3 502	3 900	4 056	4 195	10 907	5 312
Secondary education	32 671	36 483	37 844	39 205	36 551	135 759	110.53	94.24	347	387	402	416	1 441	4 160	4 646	4 819	4 992	17 287	7 181
Principals	46 420	52 410	54 452	55 541	52 206	m	110.53	94.24	493	556	578	589	m	5 911	6 674	6 934	7 072	m	m

Table 5.A1.7. **Wages of education professionals: currency conversions and inflation adjustments** *(continued)*

2011	National data						WDI		Calculation					WDI		Calculation					Calculation					
Kazakhstan	Monthly salary in current LCU						GDP deflator		Salaries in constant LCU (2010)					PPP conversion factor 2010		Salaries in equivalent USD converted using PPPs for private consumption, 2010					Annual salaries in equivalent USD converted using PPPs for private consumption, 2010					
	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Average salary, minimum qualifications	Salary top of the scale, maximum qualifications (1)	Year	Value	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum qualifications	GDP	Private consumption	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum	Starting salary, minimum qualifications	Salary after 10 years, minimum qualifications	Salary after 15 years, minimum qualifications	Salary top of the scale, minimum qualifications	Salary top of the scale, maximum	Average annual salary, including bonuses and allowances
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
Preschool and primary education	35 748	39 818	41 411	42 827	39 951	111 350	2010/2011	0.85	30 406	33 868	35 223	36 427	94 710	110.53	94.24	323	359	374	387	1 005	3 872	4 313	4 485	4 638	12 060	5 874
Secondary education	42 473	47 428	49 198	50 967	47 516	169 610	2010/2011	0.85	36 126	40 341	41 846	43 351	144 264	110.53	94.24	383	428	444	460	1 531	4 600	5 137	5 328	5 520	18 370	7 791
Principals	60 347	68 133	70 788	72 204	67 868	m	2010/2011	0.85	51 329	57 952	60 210	61 414	m	110.53	94.24	545	615	639	652	m	6 536	7 379	7 667	7 820	m	m

See Notes and Sources for this table on next page.

Table 5.A1.7. **Wages of education professionals: currency conversions and inflation adjustments** *(continued)*

Note: 1. Includes compensation for highest teacher category of the respective qualifications level, post-graduate degree in the case of secondary school teachers (2 minimum monthly wages), and after 2007 second NIS (Nazarbayev Intellectual Schools) professional level (70% of base level salary). Excludes compensation payments for working conditions and additional work.

Sources: Government Regulation No. 1257 of 24 December 2008 (for base wage in 2009), Government Regulation No. 244 of 30 March 2010 (for base wage in 2010), Government Regulation No. 150 of 17 February 2011 (for base wage in 2011) and Government Regulation No. 1400 of 2 July 2013; World Bank, World Development Indicators.

Table 5.A1.8. **Maximum monthly salary simulations, teachers in primary and secondary education (KZT)**

Maximum salary simulation for teachers in secondary education: standard workload, maximum compensation for additional qualifications (see Table 5.A1.6)

Basic wage 2011, maximum coefficient	50 967.36	**Basic wage 2005, maximum coefficient**	25 090.56
70% NIS	35 677.15		
(PhD premium = Minimum wage (2010/11) x 2	31 998.00	(PhD premium = Minimum wage (2005) x 2	16 200.00
compensation for highest category	50 967.36	highest category	25 090.56
TOTAL	**169 609.87**	TOTAL	**66 381.12**

Basic wage 2010, maximum coefficient	39 205.44	**Basic wage 2004, maximum coefficient**	19 008.00
70% NIS	27 443.81		
(PhD premium = Minimum wage (2010/11) x 2	29 904.00	(PhD premium = Minimum wage (2004) x 2	13 200.00
compensation for highest category	39 205.44	highest category	19 008.00
TOTAL	**135 758.69**	TOTAL	**51 216.00**

Basic wage 2009, maximum coefficient	31 363.20
70% NIS	21 954.24
(PhD premium = Minimum wage (2009) x 2	27 187.00
compensation for highest category	31 363.20
TOTAL	**111 867.64**

Table 5.A1.8. **Maximum monthly salary simulations, teachers in primary and secondary education (KZT)** *(continued)*

Maximum salary simulation for teachers in primary education: standard workload, maximum compensation for additional qualifications (see Table 5.A1.6)

Basic wage 2011, maximum coefficient	42 826.74	**Basic wage 2005, maximum coefficient**	21 083.04
70% NIS	29 978.72		
(PhD premium = Minimum wage (2010/11) x 2	n	(PhD premium = Minimum wage (2005) x 2	n
compensation for highest category	38 544.07	highest category	18 974.74
TOTAL	**111 349.52**	TOTAL	**40 057.78**

Basic wage 2010, maximum coefficient	32 943.46	**Basic wage 2004, maximum coefficient**	15 972.00
70% NIS	23 060.42		
(PhD premium = Minimum wage (2010/11) x 2	n	(PhD premium = Minimum wage (2004) x 2	n
compensation for highest category	29 649.11	highest category	14 374.80
TOTAL	**52 709.54**	TOTAL	**30 346.80**

Basic wage 2009, maximum coefficient	26 353.80
70% NIS	18 447.66
(PhD premium = Minimum wage (2009) x 2	n
compensation for highest category	23 718.42
TOTAL	**68 519.88**

Table 5.A1.9. **Ratios of statutory and maximum salaries of mid-career teachers (15 years of experience) to earnings for full-time, full-year workers with tertiary education in Kazakhstan (2010, 2011)**

Maximum salary simulation for mid-career teachers in secondary education (maximum workload and number of compensation payments) (2010, 2011)			
Description	Average (1) compensation in % of the base wage	2011	2010
Base salary per month – mid career, sec. education (G9)		49 197.66	37 844.14
Maximum number of workload units (stavka)	50.0%	24 598.83	18 922.07
Responsibility for a class	27.5%	13 529.36	10 407.14
Grading of exams and homework	22.5%	11 069.47	8 514.93
Responsibility for specialised classrooms (2)	25.0%	12 299.42	9 461.04
Evening classes	30.0%	14 759.30	11 353.24
Librarian work	30.0%	14 759.30	11 353.24
Chairing of methodical and other commissions	25.0%	12 299.42	9 461.04
Teaching in the profile subjects	40.0%	19 679.06	15 137.66
First qualification category	50%	24 598.83	18 922.07
TOTAL	300.0%	196 790.64	151 376.56
Average income of workers with tertiary education		165 762	140 707
Ratio of teachers' income to income of workers with tertiary education		1.19	1.08

Maximum salary simulation for mid-career teachers in primary education (maximum workload and number of compensation payments) (2010, 2011)			
Description	Average (1) compensation in % of the base wage	2011	2010
Base salary per month – mid career, sec. education (G11)		41 410.98	31 854.42
Maximum number of workload units (stavka)	50.0%	20 705.49	15 927.21
Responsibility for a class	27.5%	11 388.02	8 759.97
Grading of exams and homework	22.5%	9 317.47	7 167.24
Responsibility for specialised classrooms (2)	25.0%	10 352.75	7 963.61
Evening classes	30.0%	12 423.29	9 556.33
Librarian work	30.0%	12 423.29	9 556.33
Chairing of methodical and other commissions	25.0%	10 352.75	7 963.61
Teaching in the profile subjects	40.0%	16 564.39	12 741.77

Table 5.A1.9. **Ratios of statutory and maximum salaries of mid-career teachers (15 years of experience) to earnings for full-time, full-year workers with tertiary education in Kazakhstan (2010, 2011)** *(continued)*

Maximum salary simulation for mid-career teachers in secondary education (maximum workload and number of compensation payments) (2010, 2011)			
Description	Average (1) compensation in % of the base wage	2011	2010
First qualification category	45%	18 634.94	14 334.49
TOTAL	295.0%	163 573.37	125 824.96
Average income of workers with tertiary education		165 762	140 707
Ratio of teachers' income to income of workers with tertiary education		0.99	0.89

Statutory salary simulation for mid-career teachers in primary and secondary education, minimum qualifications (2010, 2011)		
	2010	2011
Average monthly salary worker with tertiary education	140 707	165 762
Average monthly teacher salary, primary education, minimum qualifications	31 854	41 411
Ratio to salary of worker with tertiary education	0.23	0.25
Average monthly teacher salary, secondary education, minimum qualifications	37 844	49 198
Ratio to salary of worker with tertiary education	0.27	0.30

Notes: Calculations for average salaries of workers with tertiary education in 2011 are based on data for the first three quarters of 2011. For the sake of tenure calculations, all secondary teachers are assumed to be G9 income category (university graduates), all primary teacher are assumed to be G11 income category (college graduates). 1) Compensation can differ by 5% by level of education and subject. See Table 5.A1.6 for an overview of compensation payments chosen for this simulation.

Sources: Government Regulation 1400 (salaries); National Statistical Agency (average salary of workers with tertiary education)

Table 5.A1.10. **Annual statutory teachers' salaries in public institutions at starting salary, after 10 and 15 years of experience and at the top of the scale, by level of education, in equivalent USD converted using PPPs for private consumption, Kazakhstan, OECD and European Union (2010)**

	Pre-primary education				Primary education			
	Starting salary/ minimum training	Salary after 10 years of experience/ minimum training	Salary after 15 years of experience/ minimum training	Salary at top of scale/ minimum training	Starting salary/ minimum training	Salary after 10 years of experience/ minimum training	Salary after 15 years of experience/ minimum training	Salary at top of scale/ minimum training
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OECD average	27 541	33 649	35 630	43 048	28 523	34 968	37 603	45 100
EU21 average	27 960	34 127	37 004	43 602	28 948	34 477	38 280	44 907
Kazakhstan 2010	3 502	3 900	4 056	4 195	3 502	3 900	4 056	4 195
Kazakhstan 2011	3 872	4 313	4 485	4 638	3 872	4 313	4 485	4 638

	Lower secondary education				Upper secondary education			
	Starting salary/ minimum training	Salary after 10 years of experience/ minimum training	Salary after 15 years of experience/ minimum training	Salary at top of scale/ minimum training	Starting salary/ minimum training	Salary after 10 years of experience/ minimum training	Salary after 15 years of experience/ minimum training	Salary at top of scale/ minimum training
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
OECD average	29 801	36 683	39 401	47 721	30 899	38 190	41 182	49 721
EU21 average	30 202	36 134	40 211	47 287	31 346	37 482	42 470	50 139
Kazakhstan 2010	4 160	4 646	4 819	4 992	4 160	4 646	4 819	4 992
Kazakhstan 2011	4 600	5 137	5 328	5 520	4 600	5 137	5 328	5 520

Source: OECD (2012a), *Education at a Glance 2012: OECD Indicators*, OECD Publishing, http://dx.doi.org/10.1787/eag-2012-en; Kazakhstan: Government Regulation No. 150 of 17 February 2011 (for base wage in 2011) and Government Regulation No. 1400 of 2 July 2013.

Table 5.A1.11. **Inflation adjustment of statutory teachers' salaries in Kazakhstan after 15 years of experience with minimum qualifications**

Kazakhstan	National source	WDI; DataMarket				National source	WDI; DataMarket			
	Pre- and primary level current LCU	**Private Consumption Deflator**		Primary level constant LCU (2000=100)	Change	Secondary level current LCU	**Private Consumption Deflator**		Secondary level constant LCU (2000 = 100)	Change
		year	**value**				year	**value**		
	(1)	(3)	**(14)**	(15)	(16)	(10)	(11)	**(14)**	(15)	(16)
2004	15 444	2004/2004	**1.00**	15 444	100	18 348	2000/2000	**1.00**	18 348	100
2005	20 386	2004/2005	**0.93**	19 059	123	24 219	2000/2005	**0.93**	22 643	123
2006	20 386	2004/2006	**0.85**	17 228	112	24 219	2000/2006	**0.85**	20 467	112
2007	20 386	2004/2007	**0.75**	15 241	99	24 219	2000/2007	**0.75**	18 107	99
2008	20 386	2004/2008	**0.65**	13 294	86	24 219	2000/2008	**0.65**	15 794	86
2009	25 483	2004/2009	**0.57**	14 515	94	30 274	2000/2009	**0.57**	17 244	94
2010	31 854	2004/2010	**0.52**	16 500	107	37 844	2000/2010	**0.52**	19 603	107

Sources: Government Regulation No. 150 of 17 February 2011 (for base wage in 2011) and Government Regulation No. 1400 of 2 July 2013; World Bank WDI; DataMarket (private consumption deflator).

Table 5.A1.12. **Long- and mid-term reform goals (2009-14) – coding of expenditure items and priorities**

No.	Budget programme	Type	Targeted level of education
005	Construction and reconstruction of buildings of education and science.	I	T
012	Target transfers on development to regional budgets, budgets of the cities of Astana and Almaty on construction and reconstruction of objects of education and to the regional budget of the Almaty area and budget of the city of Almaty for seismic strengthening of education buildings.	I	K; S
031	Target current remitments to regional budgets, budgets of the cities of Astana and Almaty for realisation of the State programme of the development of education in the Republic of Kazakhstan for 2011-20.	I	S
035	Capital expenses of the organisations of education.	I	A
036	Capital expenses of the Ministry of Education and Science of the Republic of Kazakhstan.	I	A
045	Target transfers on development to regional budgets, budgets of the cities of Astana and Almaty on upgrading and reequipping of training-production workshops, laboratories of organisations of vocational education.	I	VET

Table 5.A1.12. **Long- and mid-term reform goals (2009-14) – coding of expenditure items and priorities** *(continued)*

No.	Budget programme	Type	Targeted level of education
046	Target transfers from the republican budget to regional budgets, budgets of the cities of Astana and Almaty on procurement of an educational equipment for professional development of a pedagogical personnel.	I	S
052	Implementation of the e-learning system in organisations of the secondary and vocational education.	I	S; VET
061	Increase in the authorised capital of the JSC «Holding «Kasypkor.	I	VET
075	Target current transfers to the city budget of Astana on withdrawal of the land lots under the construction of a hostel of the Eurasian National University named after L.Gumilev for the branch of the Moscow State University named after Lomonosov and Nazarbayev Intellectual schools.	I	T
060	Target investments on the development of the JSEC "Nazarbayev Intellectual schools.	I; II	K; S
004	Development of networks of an innovative system on the project of commercialisation of scientific researches.	II	S
007	Applied scientific researches.	II	A
008	Methodological support of the system of education.	II	S
023	Professional development and retraining of personnel of the state organisations of education.	II	S
027	Target current transfers to regional budgets, budgets of the cities of Astana and Almaty on approbation of financing per capita in high school.	II	S
028	Training of specialists in higher educational institutions abroad within the «Bolashak» programme.	II	T
033	Assessment of the level of knowledge of the Kazakh language of citizens of the Republic of Kazakhstan and carrying out an external assessment of a quality of education.	II	S
047	Establishment of the JSC "Information-analytical centre" under the Ministry of Education and Science of the Republic of Kazakhstan.	II	A
055	Scientific and(or) scientific-engineering activity.	II	S; RD
057	Services on support of an activity of the JSC "Holding "Kasypkor.	II	VET
074	Modernisation of a technical and professional education.	II	A
001	Development and implementation of a state policy in the sphere of education and science.	III	A
011	Target current transfers to regional budgets, budgets of the cities of Astana and Almaty on implementation of the state educational order in the preschool organisations of education.	III	K
020	Training of specialists with the higher, post-graduate education and provision of a social support for students.	III	T

Table 5.A1.12. **Long- and mid-term reform goals (2009-14) – coding of expenditure items and priorities** *(continued)*

No.	Budget programme	Type	Targeted level of education
002	Training of specialists in organisations of vocational, after-secondary education and providing a social support for students.	IV	VET
009	Education and training of gifted children.	IV	S
014	State prizes and scholarships.	IV	A
053	Target current transfers to regional budgets, budgets of the cities of Astana and Almaty on increase in the amount of surcharge for a qualifying category to teachers of schools and tutors of the preschool organisations of education.	IV	K
054	Target current transfers to regional budgets, budgets of the cities of Astana and Almaty on arrangement of a surcharge for the organisation of an industrial training to masters of an industrial training of the organisations of technical and professional education.	IV	VET
062	Target current transfers to regional budgets, budgets of the cities of Astana and Almaty on increase in salary to the teachers, who have taken professional development on training programmes of the JSEC Nazarbayev intellectual schools.	IV	S
064	Services in training specialists with the higher and postgraduate education and organisations of the activity in the JSEC Nazarbayev University.	IV	A
010	Carrying out the republican school Olympiads, competitions, out-of-school events of the republican importance.	IV;V	S
019	Health improvement, rehabilitation and recreation organisation for children.	V	K; S
040	Organisation of events on the youth policy and patriotic education of citizens.	V	S
044	Target transfers of monthly payments to regional budgets, budgets of the cities of Astana and Almaty on monthly payment of money to guardians (tutors) for keeping orphan children and children left without a potential care.	V	S
049	Moral and spiritual youth development.	V	A
050	Payment of services of an attorney (agent) for the return of educational loans.	V	A
104	Fight against drug addiction and narcobusiness.	V	A
063	Payment of premiums on deposits to the educational accumulation.	noned	noned
065	Fee to the Operator of the State educational accumulative system.	noned	noned
006	Ensuring an availability of the scientific, scientific and technical, and scientific and pedagogical information.	noned	RD
017	Training of specialists in culture and art.	noned	noned
051	Establishment of the JSC «National Center of the state science-engineering expertise.	noned	RD

Table 5.A1.12. **Long- and mid-term reform goals (2009-14) – coding of expenditure items and priorities** *(continued)*

No.	Budget programme	Type	Targeted level of education
018	Provision of the initial training of pilots.	noned	T
120	Grant based financing of scientific researches.	noned	RD
130	Base financing of subjects of scientific and (or) scientific and technical activity.	noned	RD
003	Provision of an access to the scientific-historical values.	noned	noned
015	Capital expenses of the state organisations in the sphere of a science provision and support.	noned	RD
024	Monitoring of the seismological information.	noned	noned

Legend: **I**: Long-term: infrastructure; **II**: Long-term: innovation and reform; **III**: Medium-term: improvement day-to-day operation; **IV**. Medium term: excellence in regular classes; **V**. Medium term: improvement and excellence through extracurricular activities.

A: All levels; **K**: Pre-school; **S**: School (primary and general secondary education); **VET**: Vocational Education and Training; **PS**: Post-secondary education; **T**: Tertiary education; **noned**: expenses not directly related to education processes; **RD**: Research and Development.

Sources: MESRK (2012a), *Strategic Plan of the Ministry of Education and Science of the Republic of Kazakhstan for 2011-2015*, Ministry of Education and Science of the Republic of Kazakhstan, Astana. Coding: OECD review team.

Table 5.A1.13. **Allocation of resources for long and mid-term reform goals by type of expenditure (2009-14): Calculation of allocations per category (thousands of KZT)**

Budget programme	2009	Share of total	2010	Share of total	2011	Share of total	2012	Share of total	2013	Share of total	2014	Share of total
Sub-total cat I and II	**102 501 209.8**	**65.7**	**98 663 096.4**	**56.4**	**140 193 944.0**	**52.8**	**196 850 612.0**	**51.3**	**120 601 007.0**	**32.7**	**121 845 711.0**	**30.1**
of which cat I	79 360 005.5	77.4	69 648 176.2	70.6	105 028 154.0	74.9	127 483 756.0	64.8	60 497 385.0	50.2	62 353 152.0	51.2
of which cat II	23 141 204.3	22.6	29 014 920.2	29.4	35 165 790.0	25.1	69 366 856.0	35.2	60 103 622.0	49.8	59 492 559.0	48.8
of which cat I K and S	61 217 396.8	59.7	55 026 599.0	55.8	83 051 298.0	59.2	89 030 425.0	45.2	32 417 846.0	26.9	27 551 045.0	22.6
of which cat I S	4 749 035.0	4.6	4 872 670.0	4.9	6 990 063.0	5.0	4 049 451.0	2.1	4 392 193.0	3.6	4 392 193.0	3.6
of which cat I VET	-	-	-	-	1 224 000.0	0.9	2 425 000.0	1.2	600 000.0	0.5	600 000.0	0.5
of which cat I S and VET	-	-	-	-	1 247 100.0	0.9	15 939 656.0	8.1	19 363 295.0	16.1	29 559 535.0	24.3
of which cat I T	11 656 362.9	11.4	8 693 950.0	8.8	8 052 467.0	5.7	12 038 236.0	6.1	2 931 468.0	2.4	-	-
of which cat I A	1 737 210.8	1.7	1 054 957.2	1.1	4 463 226.0	3.2	4 000 988.0	2.0	792 583.0	0.7	250 379.0	0.2
of which cat II S	10 338 590.3	10.1	12 735 827.3	12.9	21 534 505.0	15.4	48 167 260.0	24.5	40 190 823.0	33.3	42 513 194.0	34.9
of which cat II VET	-	-	-	-	-	-	450 545.0	0.2	400 164.0	0.3	400 430.0	0.3
of which cat II T	12 683 892.0	12.4	16 131 968.0	16.4	13 023 470.0	9.3	18 935 019.0	9.6	16 932 722.0	14.0	16 428 444.0	13.5
of which cat II A	118 722.0	0.1	147 124.9	0.1	607 815.0	0.4	1 814 032.0	0.9	2 579 913.0	2.1	150 491.0	0.1
Sub-total cat III-V	**50 529 747.3**	**32.4**	**72 399 161.1**	**41.4**	**119 622 466.0**	**45.1**	**172 102 013.0**	**44.9**	**224 018 661.0**	**60.7**	**258 656 933.0**	**64.0**
of which cat III regular	47 820 854.1	94.6	64 469 100.5	89.0	86 699 146.0	72.5	109 894 874.0	63.9	112 659 696.0	50.3	120 795 923.0	46.7
of which cat IV	1 274 331.5	2.5	5 969 220.8	8.2	27 901 432.0	23.3	55 748 520.0	32.4	104 071 120.0	46.5	135 835 472.0	52.5
of which cat V	1 434 561.7	2.8	1 960 839.8	2.7	5 021 888.0	4.2	6 458 619.0	3.8	7 287 845.0	3.3	2 025 538.0	0.8
total IV and V		5.4		11.0		27.5		36.1		49.7		53.3
cat III regular K	-	-	8 549 489.0	11.8	18 046 694.0	15.1	25 902 416.0	15.1	22 712 921.0	10.1	27 808 816.0	10.8
cat III regular T	45 967 901.3	91.0	53 698 785.4	74.2	66 120 770.0	55.3	80 231 947.0	46.6	86 044 049.0	38.4	88 928 719.0	34.4
cat III regular A (MESRK)	1 852 952.8	3.7	2 220 826.1	3.1	2 531 682.0	2.1	3 760 511.0	2.2	3 902 726.0	1.7	4 058 388.0	1.6

Table 5.A1.13. **Allocation of resources for long and mid-term reform goals by type of expenditure (2009-14): Calculation of allocations per category (thousands of KZT)** *(continued)*

Budget programme	2009	Share of total	2010	Share of total	2011	Share of total	2012	Share of total	2013	Share of total	2014	Share of total
cat IV K	-	-	-	-	4 947 975.0	4.1	11 453 346.0	6.7	13 048 968.0	5.8	13 048 968.0	5.0
cat IV S	2 269.0	0.0	4 359 106.3	6.0	10 016 343.0	8.4	28 093 232.0	16.3	72 206 648.0	32.2	101 916 068.0	39.4
cat IV VET	1 182 777.6	2.3	1 533 305.6	2.1	2 372 530.0	2.0	3 727 966.0	2.2	3 985 206.0	1.8	4 211 061.0	1.6
cat IV A	89 284.9	0.2	76 808.9	0.1	10 564 584.0	8.8	12 473 976.0	7.2	14 830 298.0	6.6	16 659 375.0	6.4
cat V K and S	293 849.7	0.6	348 696.8	0.5	394 028.0	0.3	425 488.0	0.2	430 362.0	0.2	437 331.0	0.2
cat V S	1 071 637.0	2.1	1 544 730.0	2.1	4 513 276.0	3.8	5 808 347.0	3.4	6 639 373.0	3.0	1 367 098.0	0.5
cat V A	69 075.0	0.1	67 413.0	0.1	114 584.0	0.1	224 784.0	0.1	218 110.0	0.1	221 109.0	0.1
Not education-related	3 082 716.8	2.0	3 816 408.5	2.2	5 588 430.0	2.1	14 773 903.0	3.9	24 167 320.0	6.6	23 955 283.0	5.9
Total: reforms	**156 113 673.9**		**174 878 666.0**		**265 404 840.0**		**383 726 528.0**		**368 786 988.0**		**404 457 927.0**	
Total: overall education budget	746 477 000.0						1 311 993 000.0					
Long/mid-term investment as share of the overall education budget	**20.91**						**29.25**					

Legend: **I**: Long-term: infrastructure; **II**: Long-term: innovation and reform; **III**: Medium-term: improvement day-to-day operation; **IV**: Medium term: excellence in regular classes; **V**: Medium term: improvement and excellence through extracurricular activities

A: All levels; **K**: Pre-school; **S**: School (primary and general secondary education); **VET**: Vocational Education and Training; **PS**: Post-secondary education; **T**: Tertiary education; **noned**: expenses not directly related to education processes; **RD**: Research and Development

Sources: MESRK (2012a), *Strategic Plan of the Ministry of Education and Science of the Republic of Kazakhstan for 2011-2015*, Ministry of Education and Science of the Republic of Kazakhstan, Astana; IAC (Information-Analytic Centre) (2012), *Secondary Education System in the Republic of Kazakhstan: Today and Tomorrow*, background report prepared for the 2013 OECD Review of Policies for Secondary Education in Kazakhstan, Information-Analytic Centre, Astana; OECD review team calculations.

Table 5.A1.14. **Indicators used for the linear regression in Table 5.9: Cost factors and per student expenditure (2010/11)**

	Annual per student expenditure, current LCU	Annual per student expenditure, deviations from national average	Minimum cost of living, monthly	Education expenditure (% of local budget)	Rural schools (% of total)	Ungraded schools (% of total)	Average class size	Teacher: student ratio	% of buildings in emergency condition or requiring overhaul	% of students receiving free hot meal	% of students covered by transportation service
	1	2	3	4	5	6	7	8	9	10	11
Republic of Kazakhstan	**181 749**	**0**									
City of Almaty	111 551	-38.6	19 112	16.6	0.0	0.0	24.4	13.3	38.7	59	0.0
City of Astana	156 090	-14.1	19 630	10.4	0.0	2.3	24.4	15.2	21.2	69	0.0
Karaganda	159 651	-12.2	15 301	31.8	62.8	57.9	17.2	9.3	15.2	61	100.0
South Kazakhstan	166 973	-8.1	14 513	41.0	81.3	26.3	21.4	9.8	38.8	7	42.1
Atyrau	172 227	-5.2	18 883	18.2	70.9	26.1	18.3	9.4	48.5	12	87.8
Zhambyl	183 326	0.9	14 512	39.9	82.4	45.3	18.9	8.6	37.1	46	79.4
Aktobe	193 953	6.7	14 761	33.2	81.7	66.7	16.3	8.4	16.3	63	78.6
Almaty	194 325	6.9	17 347	37.3	87.8	44.6	18.8	9.0	31.8	11	48.2
Kostanay	198 072	9.0	16 025	33.8	86.3	13.6	15.1	6.1	4.9	41	40.5
East Kazakhstan	199 078	9.5	16 402	33.6	78.5	66.2	16.0	8.3	19.3	40	86.8
Mangystau	202 924	11.7	21 273	30.3	56.7	14.7	21.9	12.6	22.5	39	94.9
West Kazakhstan	210 851	16.0	15 718	37.5	86.5	71.8	14.9	7.6	26.2	86	68.1
Pavlodar	214 723	18.1	15 430	38.2	79.3	73.4	13.9	7.7	22.1	38	99.6
Akmola	220 491	21.3	15 640	32.6	85.3	80.0	12.4	7.7	22.7	30	98.3
Kyzylorda	231 370	27.3	15 750	39.5	81.0	75.9	21.2	9.9	47.8	25	56.2
North Kazakhstan	273 424	50.4	14 777	37.5	90.7	86.2	11.2	6.7	27.2	34	92.2

Sources: Ministry of Finance, Statistical bulletin No. 157 of January 2012 (columns 1, 4); MESRK, 2011b (columns 5-11); National Statistical Agency (Column 3).

Annex 5.A2

Planning and managing capital investment in education in Alberta, Canada

This annex describes the mechanisms for prioritisation of school capital investment and for monitoring and assessing school facility condition in the province of Alberta, Canada, and gives detail on how capital investment is being reported on. The information was provided by the Capital Planning Sector of the Alberta Education Department for the purposes of the OECD review of secondary education in Kazakhstan.

Monitoring and assessment of school facility condition

- The Alberta government conducts regular facility condition evaluations on its school buildings. The results of those evaluations are posted at www.infrastructure.alberta.ca/636.htm (accessed 30 May 2013).
- A Facility Condition Index (FCI) is used as a basis for determining the condition rating of each facility. The FCI is the ratio of the cost to correct current and future (five year) physical condition deficiencies, relative to current facility replacement value. An FCI score for each school is determined through facility condition evaluations conducted over a five-year cycle, with one-fifth of all Alberta's public school buildings being evaluated each year.
- The measure rates the condition of buildings and is therefore a measure of how well building infrastructure is being maintained. The percentages are calculated by taking the square metres of facilities in good, fair, or poor condition (defined by FCI) and dividing each by the total area of all buildings.

Condition	Facility Condition Index	CPI definition
Good	less than 15%	Adequate for intended use and expected to provide continued service life with average maintenance.
Fair	equal to or greater than 15% and equal to or less than 40%	Aging components are nearing the end of their life cycle and require additional expenditures for renewal or refurbishing.
Poor	greater than 40%	Upgrading is required to comply with minimum codes* or standards and deterioration has reached the point where major repairs or replacement are necessary.

* Current minimum codes and standards are defined by the Alberta Building Code, which is revised periodically. Older buildings are "grandfathered" and required to comply with the standards applicable at the time they were constructed, and not the current standards.

Prioritisation of School Capital Projects

- Each year, every Alberta school board is required to submit a three-year capital plan that outlines its requests for the construction of new and replacement schools and for the modernisation of existing schools. These are submitted to the Alberta government for consideration of funding.
- Government staff meets with each school board to discuss the priorities submitted in their capital plans. Staff reviews all submissions and identify the highest province-wide priorities for new, replacement and modernisation projects. They prioritise the projects by first respecting the priority order identified by the school boards and then considering the following criteria:
  - **Health and safety** – Potential impact on health and safety of occupants by not proceeding with the project (e.g. replacement or essential modernisation to correct unsafe conditions or prevent a major building failure).
  - **Building condition –** Facility condition index scores
  - **Utilisation rates** – Utilisation of existing facilities.
  - **Enrolment projections** – Trends and subsequent school board plans for the accommodation of students.

- **Education programme delivery** – Capacity to support current educational programming requirements and alignment with the direction the board has described in the Three-Year Capital Plan.
- **Additional information** – (e.g. Studies, regional plans, value management sessions, school board plans for the accommodation of students, the board's three-year education plan).

- Information regarding the Department of Education's project prioritisation process is publicly available in the School Capital Manual at www.education.alberta.ca/media/6652857/schoolcapitalmanualjan2012.pdf (accessed 30 May 2013).
- The Department of Education then prepares a submission for the provincial Capital Planning Prioritisation Process. All government projects (roads, hospitals, schools, post-secondary) are evaluated and prioritised using a Project Rating System focused on:
  - **Programme delivery impact** – Importance of the project to achieving Ministry programme delivery requirements.
  - **Infrastructure performance** – Recognition of infrastructure that is generally in greater need of attention due to poor functionality or poor physical condition; or that high utilisation results in the need to adjust programme delivery capacity.
  - **External impacts –** Economic, Social and Environmental
  - **Budget impacts –** The contributions to the project from external groups and the operational savings that will be realised.
- A Project Prioritisation Rating Template is used to assign ratings to the various projects submitted by all government departments, including Education.

Property Disposal Incentives Scheme

- Alberta does not have an explicit Property Disposal Incentives Scheme. However, section 10 of the *Disposition of Property Regulation* does provide that the proceeds from the sale of school board property are retained by the school board to use on its other projects (although a portion of these proceeds will have their use directed by the Minister of Education).
- The *Disposition of Property Regulation* can be accessed at www.qp.alberta.ca/1266.cfm?page=2010_181.cfm&leg_type=Regs&isbn-cln=9780779752874 (accessed 30 May 2013).

- The cost of maintaining surplus property can be an incentive to disposing of it. Since funding for maintenance and operation of facilities is based partly on the number of students, it is more cost effective for school boards to retain only as much space as they need.

Leasing parts of the school

- Alberta regulation provides authority for school boards to lease out space that they own (see section 8 of the *Disposition of Property Regulation* at this link: www.qp.alberta.ca/documents/Regs/2010_181.pdf, accessed 14 June 2013).
- Many school boards do this with unused sections of underutilised schools or with schools that they have closed, or even in active school space that they lease out during non-school hours. The revenue from these leases is retained by the school boards.
- Some school boards also have Joint Use Agreements with the municipality where their schools are located, and these agreements may provide for community groups to lease school space for a nominal fee based on recovering incremental costs (e.g. custodial, utilities, security, etc).

Reporting of capital expenditures

- Alberta Education's budget for 2013 (including capital and operating) can be found at www.finance.alberta.ca/publications/budget/budget2013/education.pdf (accessed 14 June 2013).
- The final page of the business plan summarises the actual expenditures for 2011/12 and the expected final expenditures for 2012/13 as well as the budget for 2013/14.
- A listing of our specific school capital projects underway is available at http://education.alberta.ca/department/ipr/capitalplanning/newschools2013.aspx (accessed 14 June 2013).

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Chapter 6

Vocational education and training in Kazakhstan

Chapter 6 presents the VET system of Kazakhstan – its mandate, set-up and governance, and outlines some of the challenges the sector is facing, such as low prestige of VET education, low quality of student intake, limited relevance of study content, and lack of highly trained teachers. The chapter provides an overview of planned reforms for VET and discusses the comprehensive role assigned to the new holding company "Kasipkor" in kick-starting wide-reaching modernisation and innovation in VET in Kazakhstan, including the establishment of close partnerships with the private sector.

The aims and purposes of vocational education and training in Kazakhstan

This chapter discusses Vocational Education and Training (VET) as defined in Box 6.1, focussing on initial VET below tertiary level. In Kazakhstan, this type of education and training is more commonly known as Technical and Professional Education (TPE). However, VET is the term most often used in international discussions.

According to Article 17 of the Law on Education, VET (TPE) is an integral part of the secondary education system of the Republic of Kazakhstan. According to the Ministry of Education and Science of the Republic of Kazakhstan it aims at preparing qualified technical and service specialists. It has three main functions:

1. Qualification: provide the population with the skills needed to foster economic prosperity and social stability;
2. Employment: help the population to find a job suited to their preferences and responsive to societal needs;
3. Integration: help individuals to insert successfully in the society (Ouzoun, 2010).

Box 6.1. **Defining vocational education and training**

Vocational education and training (VET) includes education and training programmes designed for, and typically leading to, a particular job or type of job. In the United States the usual term for vocational education and training is career and technical education (CTE). Also, VET programmes can be seen at both upper secondary and tertiary levels.

VET normally involves practical training as well as the learning of relevant theory. It is distinct from academic education, for example in mathematics, even though that academic education may be relevant to a very wide range of jobs.

Education and training for some high level professions such as medicine and law meet this definition, though are not normally described as VET, and will not be addressed in this chapter.

Initial VET includes programmes mainly designed for and used by young people at the beginning of their careers, often before they enter the labour market. Initial VET includes many upper secondary school and tertiary programmes.

Continuing VET is understood as all other sorts of VET, including training of employees and training provided specifically for those who have lost their jobs.

Source: OECD (2010), *Learning for Jobs, OECD Reviews of Vocational Education and Training,* OECD Publishing, Paris.

The State Programme for Education Development of the Republic of Kazakhstan (SPED) 2011-2020 (MESRK, 2010a) stated the aims of VET in Kazakhstan as: the modernisation of the system of technical and vocational education in accordance with the demands of society, industrial-innovative development of the economy, and integration into the global educational space.

Outline of the VET system

In Kazakhstan, students wishing to enter VET go to VET institutions, which are separate from secondary schools. They may leave general secondary schools for these institutions either at the end of lower secondary schooling (currently after 9th grade) or at the end of upper secondary schooling (currently after 11th grade).

Until 2012, two main types of institutions provided VET to school-leavers: colleges and vocational lyceums. Both types of institutions enabled students to obtain a professional diploma in different specialties, training middle management specialists and skilled workers in more than 150 professions and 15 fields. The colleges, formerly known as *Technikums,* tended to focus on training specialists mainly for industry, building, transport and agriculture. The vocational lyceums tended to train specialists outside the industrial sphere, for example for primary teacher training or health professions, but also in the field of art, theatre or dance.

Since 2012, both these types of VET institutions have been called colleges. The Law on Education now stipulates in Article 1 that:

- "College" refers to an educational institution implementing education programmes of technical and vocational education, whether during upper secondary or post-secondary education.
- "Lyceum" refers to an educational institution implementing lower and upper secondary education programmes providing extended and advanced education in science and mathematics.
- "Vocational school" refers to an educational institution implementing lower secondary, upper secondary and/or post-secondary education programmes, including technical and vocational education programmes, in the field of culture and art.

The rest of this chapter will use the pre-2012 names for VET institutions – vocational lyceums and colleges respectively – when presenting historical information compiled on that basis, but will use the term "colleges" to refer to all VET institutions when discussing the situation at the time of the OECD team's fieldwork in November 2012, or in the present or future.

On 1 January 2011, there were 894 VET institutions in Kazakhstan, 17% more than in 2005; 509 were public and 385 private. There were 603 831 students studying at those institutions, of which 249 066 students were studying at private VET institutions. Between them, these institutions offered 185 specialties and 495 qualifications (MESRK, 2010b).

Technical and vocational curricula in Kazakhstan fall into one of the following three categories:

- *Training of the most in-demand technical and service professionals.* This type of curriculum includes compulsory subjects required for mastering general and major disciplines as well as on-the-job training for developing professional skills. The students obtain a professional qualification.
- *Training of middle-ranking professionals.* This type of curriculum includes integrated technical and vocational training as well as training modules corresponding to the first and second years of higher education curricula. Based on the results of intermediate certification exams following each year of study, students obtain a professional qualification (rank, class or category). After completing the whole training course and passing final certification exams, students obtain a middle-ranking professional qualification
- *Training for complex professions and teaching practical skills* required to perform professional tasks in all economic sectors involving high technology. This type of curriculum includes general subjects, humanities, economics, general professional disciplines, and on-the-job training for developing and reinforcing professional skills. The students obtain a higher professional qualification.

Programmes in the first two categories – which are much more common than the third – typically last two or three years, whereas Bachelor's degree courses at universities typically last four years.

Graduates from VET institutions have much better and clearer pathways from college to university in 2013 than they did in 2007, when the OECD and World Bank published the review of Higher Education in Kazakhstan. However – partly because of the nature of the Complex Test, as discussed in Chapter 3 – it is still not as easy to make this transition as many students expect.

As also noted in earlier chapters, the VET institutions have an extremely important role in the Kazakhstan's education system. The country's industry and economy desperately needs the skilled and qualified labour that the VET institutions exist to provide. The World Economic Forum's Global Competitiveness Report 2012-13 recorded that, according to the employers

who participated in the Executive Survey, the biggest problem in doing business in Kazakhstan is the inadequately educated workforce. Table 6.1 presents data from World Bank Enterprise Surveys that tells a similar story. Across OECD countries, on average, 14.4% of firms identify an inadequately educated workforce as a major constraint on doing business in their country. The world average is 27.1%. In Kazakhstan, however, the figure is 50.5%, nearly twice the world average and between three and four times the OECD average. Kazakhstan has this high figure even though the country has a lower proportion of unskilled workers than the OECD and world averages, while the percentage of firms offering formal training is around the OECD average, significantly higher than the world average.

The figures in Table 6.1 indicate to the review team that the country's main problem is not so much that workers lack skills, but, rather, that the skills they possess when they emerge from the education system are not the skills best suited to meeting employers' needs. Review team interviews with stakeholders in Kazakhstan – particularly representatives of employers and business groups – confirm this. When asked what lay behind employers' complaints of an inadequately educated workforce in international surveys, all those interviewed agreed that employers are not complaining about lack of quality at any level of the education system, but rather about the serious lack of supply of trained manpower – people with professional, technical and higher technician skills, ready and willing to take up the jobs they have to offer.

Table 6.1. **Indicators of workforce education and training by firm size in Kazakhstan 2009 (average values)**

Size of the firm	Percentage of firms offering formal training	Proportion of unskilled workers (out of all production workers) (%)*	Percentage of firms identifying an inadequately educated workforce as a major constraint
World	35.4	32.3	27.1
OECD average	41.1	23.2	14.4
Eastern Europe and Central Asia	33.9	24.6	30.7
Kazakhstan	**40.9**	**21.9**	**50.5**
Small (5-19)	29.0	15.5	41.3
Medium (20-99)	44.2	23.8	56.8
Large (100+)	50.5	27.6	57.9

*This indicator is computed using data from manufacturing firms only.

Source: Review team calculations based on data from Enterprise Surveys (www.enterprisesurveys.org, accessed 13 March 2013), The World Bank.

Students at VET institutions

In 2011, according to the Background Report, the total number of students who completed their 9th grade studies successfully was 252 300, compared to 275 100 in 2010 and 284 600 in 2009 (IAC, 2012). Some 156 200, or 61.9%, of those 9th grade graduates were promoted to the 10th grade in general secondary schools, while 38.1% enrolled in technical or vocational education organisations. However, the numbers of 9th grade graduates entering technical and vocational institutions that year was higher than the numbers coming directly from the 9th grade, because some graduates from earlier years re-entered the system. Of all the students entering upper secondary education in 2011, 58% went into general education and 42% went into technical/vocational education.

In 2011, the number of 11th grade graduates was 161 574, compared to 141 256 in 2010 and 132 085 in 2009 (increasing in both years, unlike the 9th graders). Of the 11th grade graduates entering post-secondary education institutions in 2011 – who were slightly more numerous than the 11th grade graduates from general secondary schools that year because some from earlier years re-entered the system – 44.6% went into technical and vocational institutions, 55.4% into higher education institutions (IAC, 2012).

The National Report on the Status and State of Education in Kazakhstan (National Report) (MESRK, 2011a) records that the total number of new entrants to VET institutions in 2011 was 217 096 (compared to 216 860 in 2010). Some 123 000 of these new entrants were paying their own tuition fees, while just over 94 000 students had government support. Public institutions received 126 281 of these new entrants (compared to 126 604 in 2010), private institutions received 90 815 students (compared to 90 256 in 2010). In 2011 the regions of South Kazakhstan, Karaganda and East Kazakhstan had the highest rates of enrolment in public VET institutions, whereas the city of Almaty had the highest enrolment rate into private VET institutions.

Table 6.2 gives a full regional breakdown of the 2010 entrants. In this year the system was still split between colleges and lyceums, but as the table shows, the professional lyceums enrolled just 22% of all VET students. In the majority of regions, all the professional lyceums were publicly run; the exceptions, with a small number of private places in each case, were Almaty region and the regions of East Kazakhstan, Zhambyl, Karaganda, Kyzylorda, North Kazakhstan and South Kazakhstan. In the colleges which hosted the remaining 78% of students, overall 53% of places were in privately-run establishments, but the percentage varied considerably between regions.

Which students enter VET? The European Training Foundation (ETF), in a report published in 2010 under the Torino Process (Ouzoun, 2010), records that traditionally in Kazakhstan, VET was seen as a channel for young people who

Table 6.2. **Enrolment in VET (TPE) institutions in Kazakhstan, 2010**

	Admission			Including					
	VET			Colleges			Professional lyceums		
Region	Total	Public	Private	Total	Public	Private	Total	Public	Private
Akmola	9 318	6 205	3 113	6 253	3 140	3 113	3 065	3 065	0
Aktobe	12 651	7 767	4 884	10 181	5 297	4 884	2 470	2 470	0
Almaty	14 480	9 064	5 416	10 189	5 249	4 940	4 291	3 815	476
Atyrau	6 738	4 472	2 266	4 758	2 492	2 266	1 980	1 980	0
East Kazakhstan	18 508	11 807	6 701	13 579	7 223	6 356	4 929	4 584	345
Zhambyl	14 656	7 523	7 133	12 308	5 197	7 111	2 348	2 326	22
West Kazakhstan	10 120	5 434	4 686	7 018	2 332	4 686	3 102	3 102	0
Karaganda	21 796	13 372	8 424	17 341	9 043	8 298	4 455	4 329	126
Kostanay	11 887	8 856	3 031	8 450	5 419	3 031	3 437	3 437	0
Kyzylorda	9 215	4 786	4 429	7 080	2 726	4 354	2 135	2 060	75
Mangystau	9 164	5 845	3 319	8 244	4 925	3 319	920	920	0
Pavlodar	10 918	7 173	3 745	8 151	4 406	3 745	2 767	2 767	0
North Kazakhstan	6 700	5 200	1 500	4 700	3 310	1 390	2 000	1 890	110
South Kazakhstan	23 173	13 454	9 719	17 944	8 315	9 629	5 229	5 139	90
Almaty city	23 635	8 715	14 920	20 381	5 461	14 920	3 254	3 254	0
Astana city	11 339	4 369	6 970	10 058	3 088	6 970	1 281	1 281	0
Republican	2 562	2 562	0	2 012	2 012	0	550	550	0
Total	**216 860**	**126 604**	**90 256**	**168 647**	**79 635**	**89 012**	**48 213**	**46 969**	**1 244**

Source: MESRK (2011a), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana.

had not completed compulsory education, who were unsuccessful in general or higher education or who had dropped out. And it was taken for granted that any student identified as gifted would study at university rather than college.

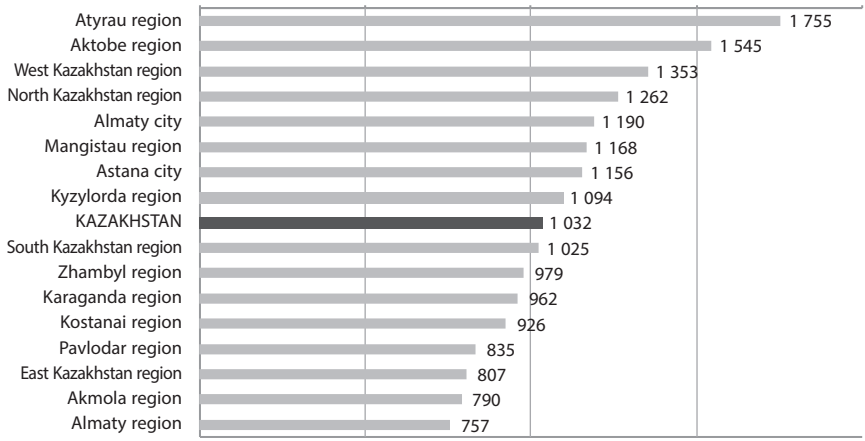
The present review team hoped to determine whether, and if so to what extent, the ability profile of students on VET programmes differs from the ability profile of students who progress to university, but was not able to obtain much information on the personal characteristics of the students entering VET in Kazakhstan. In many countries of the world it is generally true that the more able students pursue academic studies, the less able pursue VET; but this is less likely to be the case, or happens to a lesser degree, in countries where governments have succeeded in boosting the status and prestige of vocational study options (Germany is a good example), and countering the perception among students and families that VET is primarily for students unable to succeed academically. In Kazakhstan, the team noted that VET programmes are easier to access, requiring only a school graduation certificate rather than a UNT pass. And many of the students the team talked to in colleges said that they were there either because they had failed to get a university place, or with the intention of getting to university once their VET programme finished. On the other hand, employer representatives emphasised that in many fields, VET graduates now have better employment prospects and can earn higher salaries than university graduates in Kazakhstan. And the principal of one school visited, which had significant numbers of students leaving after 9th grade to go to college, detected no difference in ability between those going to college and those staying on with a view to university. He said that everything depended on parents' views of the best future for their children, and that some very able students now chose college, knowing that they would get scholarships to study there.

Regional differences in VET resources

There are regional differences in the resources allocated to students, as shown by Figures 6.1-6.4. For example, in 2009, on average, there were 1 032 students per college at national level, but regional averages ranged from 1 755 in the region of Atyrau to 757 in Almaty region (Figure 6.1). In the same year there was an overall average of 377 students per lyceum, but regional averages ranged from 754 in Almaty city to 243 in the region of North Kazakhstan (Figure 6.2).

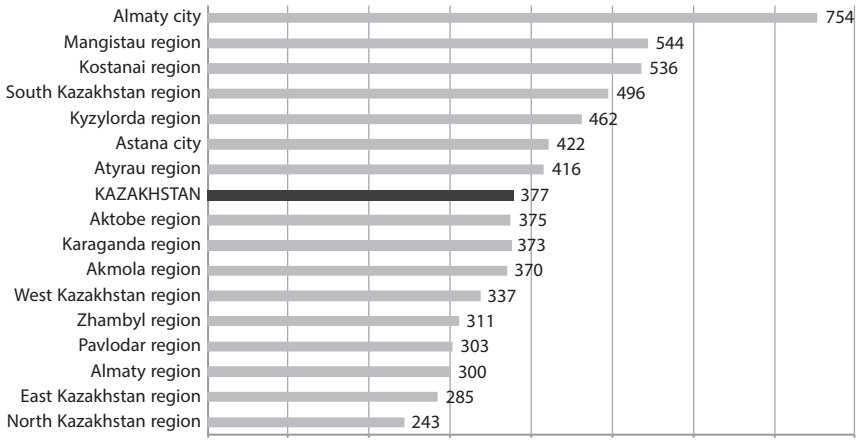
There are similar, but slightly less extreme, regional differences in the number of students per teacher. In colleges (Figure 6.3), the national average was 15 students per teacher in 2009, but regions ranged from 13 students per teacher in Zhambyl to 24 students per teacher in Atyrau. In lyceums (Figure 6.4), where the national average was 16 students per teacher, regions ranged from just 12 students per teacher in Zhambyl to 25 students per teacher in Kostanay.

Figure 6.1. **Students per college, 2009**



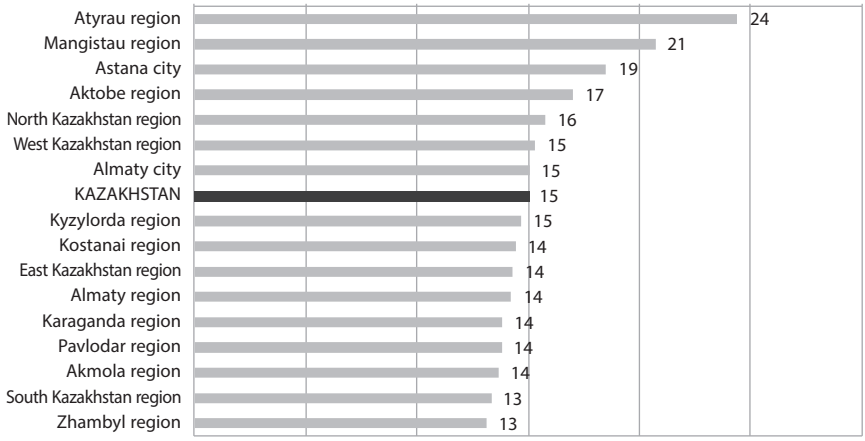
Source: Review team calculations based on data from the National Agency of Statistics of the Republic of Kazakhstan.

Figure 6.2. **Students per lyceum, 2009**



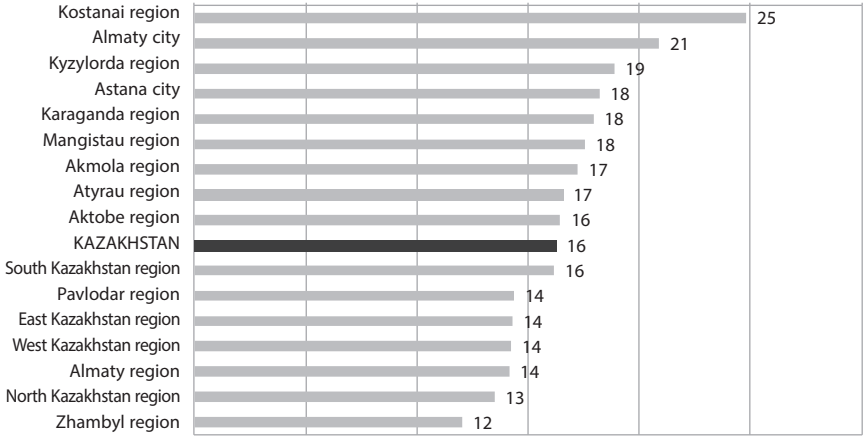
Source: Review team calculations based on data from the National Agency of Statistics of the Republic of Kazakhstan.

Figure 6.3. **Students per teacher in colleges, 2009**



Source: Review team calculations based on data from the Agency of Statistics of the Republic of Kazakhstan.

Figure 6.4. **Students per teacher in lyceums, 2009**



Source: Review team calculations based on data from the Agency of Statistics of the Republic of Kazakhstan.

Four regions stand out as having above-average ratios for students per institution and students per teacher in all Figures (6.1-4). These are the burgeoning oil regions of Atyrau and Mangystau and the cities of Astana and Almaty. The students in these regions may not however be receiving inferior education, if these regions are making better use of resources or have better VET teachers.

Table 6.3 shows the numbers of students graduating from VET institutions in 2010. Though the graduates are evidently not from the same cohort as those shown entering VET in Table 6.1, comparison of the two tables gives a broad impression of the efficiency of the VET system in enabling students to complete their programmes. For example, 216 860 students entered the

Table 6.3. **Number of graduates from VET institutions, 2010**

	Number of graduates			Including					
	Total	TVE		Colleges			Professional Lyceums		
Region		Public	Private	Total	Public	Private	Total	Public	Private
Akmola	7 980	4 870	3 110	5 380	2 270	3 110	2 600	2 600	0
Aktobe	11 644	7 092	4 552	9 433	4 881	4 552	2 211	2 211	0
Almaty	12 448	7 544	4 904	8 617	4 229	4 388	3 831	3 315	516
Atyrau	6 779	4 083	2 696	5 076	2 380	2 696	1 703	1 703	0
East Kazakhstan	16 012	10 075	5 937	11 583	6 035	5 548	4 429	4 040	389
Zhambyl	11 875	7 100	4 775	9 398	4 679	4 719	2 477	2 421	56
West Kazakhstan	8 080	4 875	3 205	5 167	1 962	3 205	2 913	2 913	0
Karaganda	17 190	10 497	6 693	12 548	5 977	6 571	4 642	4 520	122
Kostanay	9 934	7 287	2 647	7 074	4 427	2 647	2 860	2 860	0
Kyzylorda	7 828	4 554	3 274	5 615	2 464	3 151	2 213	2 090	123
Mangystau	6 608	4 168	2 440	5 779	3 339	2 440	829	829	0
Pavlodar	11 026	7 902	3 124	7 669	4 545	3 124	3 357	3 357	0
North Kazakhstan	6 020	4 625	1 395	3 682	2 430	1 252	2 338	2 195	143
South Kazakhstan	23 621	13 143	10 478	18 691	8 265	10 426	4 930	4 878	52
Almaty city	22 724	7 465	15 259	20 277	5 018	15 259	2 447	2 447	0
Astana city	8 504	3 179	5 325	7 659	2 334	5 325	845	845	0
Republican	2 963	2 963	0	2 163	2 163		800	800	0
Total	191 236	111 422	79 814	145 811	67 398	78 413	45 425	44 024	1 401

Source: MESRK (2011a), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana.

colleges in 2010 and 191 236 graduated. The latest drop-out figure available on the MESRK's website indicates that in 2008, 14.3% of trainees left their programmes early because of poor learning achievement, misconduct or inability to pay tuition fees. The review team does not consider this to be a high wastage level, by comparison with other countries.

In 2011, according to the National Report, the number of graduates from the VET system was 182 533, compared to 191 236 in 2010. Table 6.4 shows the breakdown of 2011 graduates by occupational field (MESRK, 2011a).

Table 6.4. **Graduates from VET institutions by occupational field, 2011**

Field	Graduates in 2011 (% of total)
Industry	18.6
Building	5.9
Communication	1.7
Transport	9.0
Agriculture	8.6
Economy	19.8
Health care	10.2
Physical culture and sport	0.3
Arts and culture	1.3
Law	4.5
Education	15.9
Other	4.3

Sources: MESRK (2011a), *National Report on the Status and State of Development of Education of the Republic of Kazakhstan (concise version)* and *Statistical Annex*, Ministry of Education and Science of the Republic of Kazakhstan, Astana; NSA.

The Ministry of Education feels that there is some mismatch between the occupations the highest numbers of students choose to pursue at college – as indicated by Table 6.4 – and the occupations in greatest labour market demand. For example, there are perceived to be too many economic students and too few agriculture students for the country's needs. However, 20.3% of all VET graduates went into further academic study in 2010, according to MESRK statistics. During fieldwork, the OECD review team received the impression that a much higher proportion of college students than this has aspirations to go on to university. It may be, therefore, that many VET

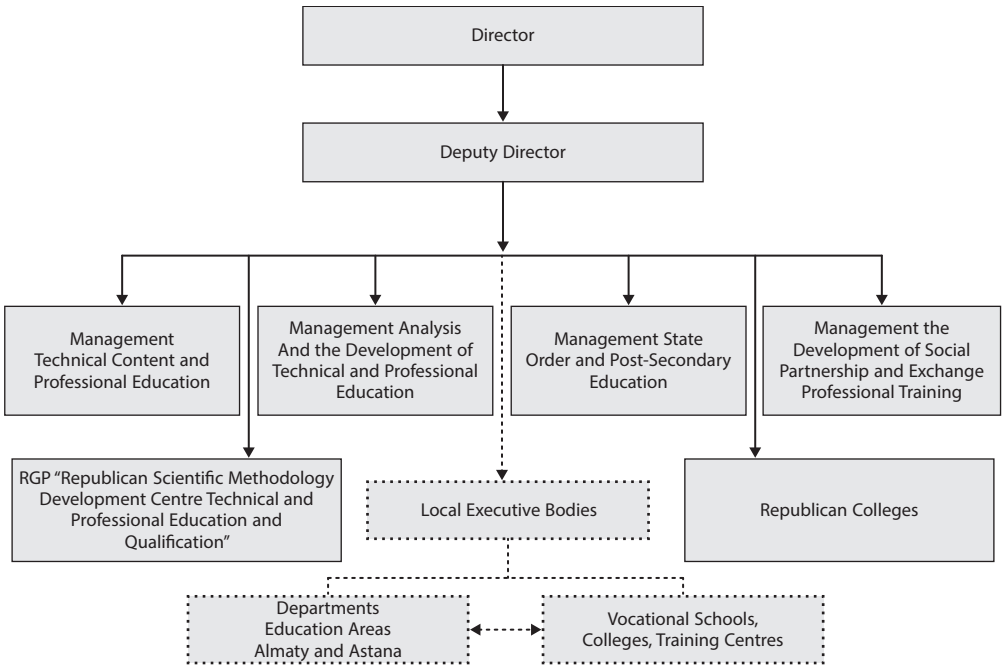
students choosing their field of study are less interested in making themselves employable than in the "fit" with the discipline they hope to pursue at university subsequently.

The National Statistics Agency has published figures for 2009/10 showing the proportions of men and women among college students in each occupational field. Higher proportions of male students were found in transport and communication (71% of all students), industry and construction (63%) and agriculture and forestry (60%). Higher proportions of women were found in public health (83%), education (67%), art and culture (63%) and economics (52%).

Governance of the VET system

For VET as for school education, the Ministry of Education (MESRK) is the central executive body. Figure 6.5 shows the structure of the MESRK's Department of Technical and Professional Education.

Figure 6.5. **Structure of the department of technical and professional education in the Ministry of Education and Science**



Source: MESRK.

Publicly-run VET institutions (colleges and until 2012 professional lyceums) are supervised by and accountable to the regional departments of education, with regional education management bodies set the budget and enrolment targets. Since 2012 when virtually all VET institutions became colleges, the state-funded institutions have been re-constituted as state-owned municipal enterprises, expected to generate at least some of their own income. The team understands that there is only one college now fully funded by the state (through the budget of its region, the City of Astana): this is the Professional and Technical College of Astana, set up as a state-owned public institution specifically to provide for orphans and therefore without opportunity to generate income.

VET institutions are licensed and accredited by regional departments of the Committee of Control in the sphere of education and science of the MESRK[1] and are fully responsible for hiring and dismissing their own staff. Their programmes and curricula are required to conform to the State Compulsory Standards for technical and vocational education and educational programmes devised by the MESRK.

Teaching staff

Providing students with practical professional skills requires a special body of teachers and trainers, who have the necessary pedagogic and practical skills themselves and have up-to-date knowledge of employer requirements in their occupational sector.

According to MESRK data, relatively few VET teachers and trainers in Kazakhstan have highest qualification category: in 2010, just 23.7% of the total, only 4% more than in 2004. The Government of Kazakhstan has however been making great efforts to boost in-service training for VET teachers, in collaboration with employers.

The quality and relevance of VET instruction

VET institutions are covered by the same quality control inspection and control regime as applies to schools. This regime has already been described in Chapter 3. It operates under the auspices of the Committee of Control in the sphere of education and science of the MESRK, with its regional departments responsible for inspections. Institutions have to undergo an attestation every 5 years[2] and during the attestation, specialists undertake various checks, including compliance with Ministry quality standards, and performance in relation to approved indicators. However this system is relatively new and evaluation tools for VET institutions are not yet fully developed.

Various quality indicators are monitored to judge institutional performance within the VET system. These include the percentage of an institution's graduates granted diploma with honours, the percentage of an institution's graduates who achieved a grade higher than the specified minimum, and share of VET graduates assessed for level of professional preparedness. The percentages in different regions are published and compared on an annual basis in the National Report on the Status and State of Education in Kazakhstan.

The first two indicators just mentioned depend on how students are assessed by a range of different in-house assessors, so cannot be regarded as independent assessment. However, the third indicator – share assessed for professional preparedness – does involve independent assessment as part of Kazakhstan's *System of Independent Assessment of the Qualification of VET Graduates Involving Employers*. It assesses the professional knowledge of graduates and is carried out by the MESRK's *Republican Scientific and Methodological Centre for Development of VET and Acquisition of Qualifications* with the participation of employers. Those students who successfully pass exams assessing their professional knowledge are granted a certificate of qualification in their specialty. Some 122 600 people graduating in 150 specialties underwent this independent assessment in 2011. The SPED 2011-2020 states future targets for the percentage of VET graduates who pass their independent assessments (carried out jointly with employers) at the first try: 60% in 2015 and 80% in 2020.

The truest indicator of quality and relevance of VET is of course the proportion of VET graduates who find employment on leaving college. In Kazakhstan that proportion has been declining slightly in recent years. In 2011 the proportion was 60.3%, compared with 61.4% in 2010 and 63.7% in 2008. The statistics do not indicate whether the employment gained was in the profession in which the students had trained, but in the circumstances of the Kazakhstan labour market, this seems highly likely. Of the 39.7% of 2011 VET graduates who did not find employment, 20.4% continued their education at higher education institutions, 1.6% continued studying at colleges, 3.4% of graduates were drafted into the Military and 0.9% left the country, leaving 13.4% whose destination is unaccounted for.

Other labour market indicators confirm that, on average, investment in VET is helpful to employment prospects. Table 6.5 shows employment rates for people with different levels of education. It is worth noting that employment rates for people with vocational education, whether primary or secondary, are not far behind the rates for people with higher education; significantly better than the rates for people who completed upper secondary academic education but went no further; very significantly above the rates for those who entered higher education but failed to complete it; and more than six times the rates for people with primary education only.

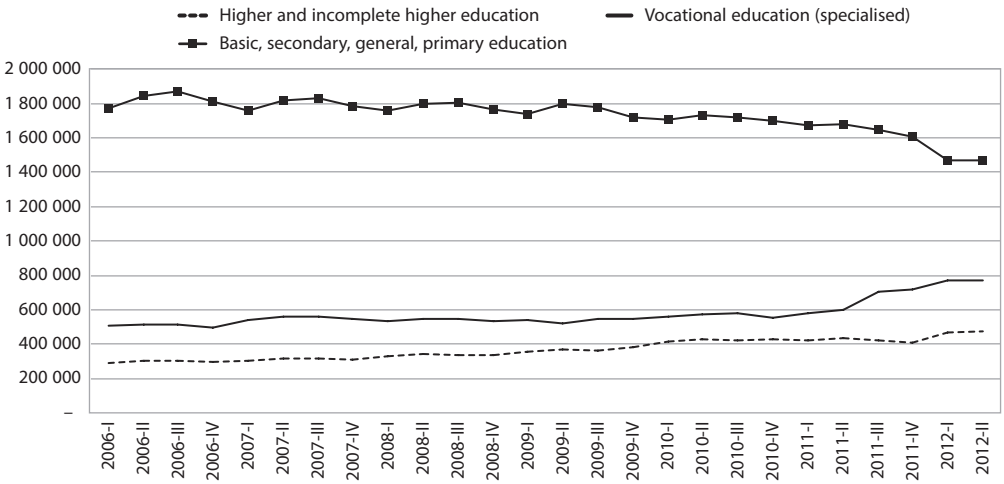
Table 6.5. **Employment rates (15+) by education level**

	2005	2006	2007	2008	2009
Total	63.8	64.3	65.3	66.4	66.1
Higher education	82.7	82.4	83.3	84.1	83.4
Incomplete higher	45.7	46.8	46.4	45.6	42.0
Secondary vocational	76.7	76.2	77.2	79.0	77.6
Primary vocational	76.7	77	75.4	74.0	77.4
Upper secondary	62.9	63	63.9	65.3	63.8
Lower secondary	28.6	28.7	28.4	26.8	27.8
Primary	11.9	11.4	11.1	13.1	12.0

Source: NSA (State Agency for Statistics of the Republic of Kazakhstan) (2010), *Economic activity of Kazakhstan population 2005-2009,* NSA, Astana.

It is also worth noting (Figure 6.6) that the proportion of self-employed people with vocational education has increased in Kazakhstan since 2006. The same applies to self-employed people with higher and incomplete higher education. In contrast, the proportions of self-employed people with other levels of education have decreased over recent years.

Figure 6.6. **Self-employed population by level of education 2006-12**



Note: Data are given in the context of extended population size following the results of population census 2009.

Source: Review team calculations based on data from the National Agency of Statistics of the Republic of Kazakhstan.

Recent assessments by other international institutions

The most recent published review of VET in Kazakhstan by a major international organisation was by the European Training Foundation (Ouzoun, 2010). The ETF had convened focus groups made up of Kazakhstan VET policymakers and stakeholders, including representatives from government, education and business. According to the ETF review report these representative groups recognised that, despite the efforts being made to develop VET in the country, a number of problems faced the VET sector. These problems included:

- An imbalance between demand for and supply of VET-trained workers, leading to a shortage of qualified workers which was an obstacle to business development;
- A lack of formal strategies, channels and a legal and regulatory framework to enable the public vocational education system and business to co-operate in VET planning and delivery;
- Monopolistic approaches to the provision of VET, when it was better for the state and business to work together to provide this;
- Strict regulation of state education standards, which limited the ability of schools and colleges to respond rapidly to the changing needs of the labour market;
- The overly academic and abstract content of VET curricula, coupled with outdated education technologies, materials and methodologies that allow only rote learning;
- The lack, among VET staff, of pedagogic competences and of awareness of the potential role of VET in strengthening and modernising the Kazakhstan economy;
- The low prestige and attractiveness of VET, notwithstanding recent increases in the overall numbers of VET students;
- Inadequate, or inefficiently distributed, information on employment and vocational options to help young people choose their futures according to the needs of the labour market;
- Young people being directed into scientific general education programmes in universities, when the national economy needed them to enter VET programmes. At the time when they had the option of transfer to VET institutions, secondary school students were often guided into choices determined more by their level of achievement than their vocational aptitude and interests;

- Limited access to technical and vocational education for those young people who wished to enter it, because the number of VET institutions available in the country was insufficient and their regional distribution imperfect;
- Lack of transitional arrangements and pathways between general and vocational education at secondary, upper secondary and tertiary level;
- The low salaries, prestige and social standing of VET teachers and trainers in Kazakhstan, which made it hard to attract good candidates and improve the quality of the instruction process in VET institutions. Morale among teachers was low, the teacher workforce was ageing and there was a steady outflow of skilled teachers to companies in the private sector;
- Government spending per student which had been far lower than for other levels of education (particularly if from regional rather than national budgets), resulting in deterioration of material and technical equipment and insufficient practical training opportunities for students, and aggravating the VET teacher issues just mentioned;
- Non-transparent, unpredictable and cumbersome bureaucratic procedures which hampered the achievement of long-term objectives and led to inflexibility in managing educational processes and inefficient use of resources.

Having identified these problems in the VET system, the ETF suggested ways of resolving them, mostly by strengthening reform plans already in the pipeline, or utilising financial support and expertise from international organisations, including the European Union and the World Bank. Many of these reforms have now been implemented or are envisaged, as the next two sections indicate.

Recent reforms of the VET system

Between 2005 and 2012, the system of technical and vocational training was restructured, which resulted in the following changes.

- The List of Occupations and Disciplines for Technical and Vocational Post-Secondary Education was revised, with the involvement of employers and professional associations. This process has involved developing and updating 65 mandatory national standards for VET occupations, 65 integrated educational curricula for qualifications, and 720 competence-based model training curricula. The approbation of 465 reading and methodological materials in 45 subjects commenced

in 2011 (MESRK, 2011b). The new standards include requirements for new credit and module education systems. The aim of the reform programme is update all VET standards. Priority has been given to vocational standards for the oil and gas, agriculture, tourism and engineering industries.

- The system of independent assessment for qualification of VET graduates involving employers (described above) has been introduced.
- In April 2010, the "Business Road Map 2020" Programme was adopted. This was intended to keep the existing and create new employment, and also to secure the sustainable and balanced growth of local entrepreneurship in the secondary sectors of the economy.
- The government acknowledged that the existing infrastructure and equipment of the VET system needed enhancement if it was to provide high-quality and attractive training for young people. Therefore efforts continue to upgrade college infrastructure and to raise the status of VET.
- New education technologies are being introduced in VET institutions. 18 institutions are already participating in a three-year period of experimentation with innovations such as the introduction of distance learning technology and credit-based learning, integrated learning, dual system of training, etc.
- The development of education programmes is set up on a modular basis. This allows students to acquire a more diversified and rich set of qualifications, which in turn is expected to improve their employability. The OECD review team was presented with examples in the fields of "machine building" and "services".
- A new entity, the Kasipkor holding company, was set up with the goal of leading the development of "high-quality, high-level and high-prestige technical education meeting international standards", and "to pioneer new approaches to VET provision which can in due course be extended to all colleges, including stronger relationships with business".[3] According to the 10-year Development Strategy of the Kasipkor "Holding", its main objectives are: to modernise the structure and content of vocational education and training in Kazakhstan, to develop new educational programmes, to attract strategic international partners, to prepare teachers for the VET system, and to build world-class colleges in the cities of Astana and Almaty. The programmes developed by Kasipkor will be piloted in education institutions in each region, and the Kasipkor model is already being implemented on regional level. In 2013 a Kasipkor centre was established in Atyrau and in 2015 further centres will

be established in Ust-Kamenogorsk, Ekibastuz and Shymkent. The Kasipkor curricula are developed in conjunction with leading employers in Kazakhstan such as Kazenergy and with international partners such as GIZ (Gesellschaft für technische Zusammenarbeit) from Germany, SAIT (Southern Alberta Institute of Technology) from Canada, TAFE (Technical and Further Education) from Australia and Pearson (Great Britain). The personnel of these companies is involved in the delivery of the training programmes.

- A National Qualifications Framework was agreed, on the same lines as the European Qualifications Framework. Kazakhstan qualifications now need to be mapped onto this new framework.
- The Government of Kazakhstan has declared its commitment to emulating, as far as possible, the German system of dual education, in which VET is delivered partly in colleges and partly on employers' premises. The team was advised during fieldwork, however, that – outside the oil and gas industry and major national companies – employer training is still at an early stage of development in Kazakhstan. Small and medium-sized enterprises, in general, regard the costs of doing their own training as prohibitive.
- To increase engagement with the social partners and help the VET system to identify the real needs of the local labour market, the Kazakh government established a new national VET Development and Personnel Training Council with participation by business associations and employers. The role of the Council is to try out partnership mechanisms. 16 regional and 14 sectoral councils were also created to deal with issues related to the training of human resources on sectoral and regional levels.
- Local governments are developing different ways of supporting workplace learning. According to MESRK data for 2012 provided to the OECD review team, 500 VET institutions have councils of trustees that assist students in finding internship positions and employment opportunities. Such efforts have resulted in more than 22 167 agreements between local authorities, educational institutions and employers, and the provision of 170 300 places for workplace learning.

Future reform plans

Increasing the quantity, standards and relevance of VET programmes

- The SPED 2011-2020 aims to increase the percentage of young people aged 14-24 studying at VET organisations to 20% in 2015 and 23% in 2020. In 2011, the figure was 18%, having returned to just above its 2009 level after a drop in 2010 (MESRK, 2011a).

- The SPED also aims to increase *(i)* the proportion of publicly-funded VET graduates in work in their first year after graduation, to 78% in 2015, 80% in 2020; *(ii)* the proportion of colleges which have passed national institutional accreditation, to 10% in 2015, 30% in 2020. The SPED also states all the following objectives:
  - To ensure that the content of VET programmes accords with the requirements of industrial-innovative economic development, the government will ensure that all programmes are aligned to professional standards which in turn are developed on the basis of sectoral qualifications frameworks, that the forecasting of labour market demands is improved, and that VET provision is consistent with the results of that forecasting.
  - State Standards for VET programmes will be regularly updated. Model curricula on special subjects as well as educational literature and educational-methodological complexes will be developed. More modular programmes will be available, and a databank of modular programmes will be created.
  - To develop students' practical skills, the percentage of curriculum time spent on vocational practice will be increased to 40%. More partnerships will be forged with employers to make this possible.
  - VET programmes and instruction will be made more competence-based and make more use of new educational technologies. Their scientific and methodological basis will be improved, on the basis of best international practice and research results: information on these will be made available in centres and libraries countrywide.
  - The quality of apprenticeships and other high-level VET programmes will be ensured by implementing an independent system to certify specialist qualifications (MESRK, 2010a).

Developing VET infrastructure

- Places in VET colleges will be made more accessible to more students, by the construction of new educational facilities and dormitories.[4] There are/will be four new interregional centres for development and requalification of pedagogical staff: in Atyrau (already opened, providing 700 places for training for the oil and gas sector), Ekibastuze (for the fuel and energy sector), Shymkent (for the processing industry sector) and Ust-Kamenogorsk (for the mechanical engineering sector).
- By 2015 more than 70% of public VET colleges will be refitted with modern teaching equipment and new information technology (MESRK, 2010a). The funds for renewal and re-equipment of

educational institutions will come from local and national budgets, employers and borrowings from international organisations.

- VET colleges will have formal contracts with major enterprises, including national holdings and companies, transnational enterprises and foreign investors. These partners will provide industrial placement and internships and ensure that teachers and trainers keep up to date with industry requirements. They may co-locate training facilities and provide additional funds.

Enhancing the status and prestige of VET

- Career guidance centres will be established in VET institutions.
- National competitions of professional excellence will be organised for VET students and teachers. Gifted students will be identified and given financial support.
- A database of certified VET graduates will be created, and linked with labour market vacancies to help graduates find jobs in their profession.
- Through co-operation between the national, regional and sectoral boards for development of VET, the business and professional community will be allowed to actively participate in the development of VET in Kazakhstan. This will be achieved through contracts between the education institution, the student and the enterprise.

Provisional conclusions

This chapter differs from previous chapters in ending with provisional conclusions, rather than recommendations. For logistical and timing reasons, the OECD team that visited Kazakhstan in November 2012 to undertake the fieldwork for the present review could not include a VET specialist. It has now been agreed that there will be a separate and fuller OECD review of VET, starting in 2013. That full review will be able to collect more data and evidence, bring more VET expertise to bear and reach firmer and more specific conclusions.

The views of the present review team on Kazakhstan's future reform plans are given below. But first, the team wishes to congratulate the government for two major reforms already achieved: the adoption of a National Qualifications Framework (though its full value will not be realised until all Kazakhstan qualifications are mapped onto the Framework, and qualifications at the same NQF level but in different fields are accorded equal

status) and the system of independent assessment for qualification of VET graduates, which involves employers in certifying qualifications.

The future VET reform plans in the SPED 2011-2020 are strategic plans. The review team is impressed that these strategic plans address so many of the problems identified in the ETF study. This indicates a commendable and determined effort by the Government of Kazakhstan to take all action necessary to ensure that VET ceases to be the least-regarded part of the education system, and can finally make its proper contribution to business efficiency and to the national economy.

However, good strategic plans are only the first of many steps towards change. If they are to have the desired result, good strategic plans must be followed up by effective implementation. For implementation to be effective, the following conditions need to be satisfied. Strategic plans must be translated into operational plans, showing exactly what needs to be done, in what order, by whom and in co-operation with whom, to achieve each necessary or desirable change. The OECD review team is aware that the MESRK is developing operational plans on an annual basis, but it is also important to raise the awareness of stakeholders with a part to play in it about its contents and to secure their consent. This goes for change leaders, co-operators, people whose agreement or advice is needed, or people whose opposition could prevent the change from happening or working as intended. The best way to secure this consent is of course to bring all relevant stakeholders on board at the earliest possible stage, when operational plans are being formulated. Effective operational plans also make provision for contingencies, so that if something goes wrong, or does not happen as planned, it can be achieved in another way.

Many of the planned reforms depend on changing the attitudes and behaviour of a wide group of stakeholders – students, parents, college or school teachers and principals, business executives, heads of small and medium-sized enterprises. Because it is not feasible to obtain consent from all these stakeholders individually, operational planning also needs to address incentives. Some stakeholders will only change their attitudes and behaviour if given positive incentives to do so, or if the disincentives discouraging them from changing are removed. A very important question, which planners often fail to consider, is whether counter-incentives or disincentives are being exerted by another part of the system where priorities are different. To take a very simple example, raising the salaries of VET teachers is unlikely to stem the outflow of the best teachers to companies, if companies with employees in the occupation concerned are raising their salaries even more.

Implementation may also be complicated by the interdependence between different reforms. To take a very simple example, the ETF report (Ouzoun, 2010) mentioned that many employers prefer to train their workers in their own

centres rather than co-operating with and taking trainees from the VET colleges. It seems likely that employers' preferences will change only when all the colleges have been refitted with modern teaching, industrial and technological equipment and new information technology, which is planned to be completed by 2015. It remains to be seen to what extent this will have an impact on the employability of graduates and the perceptions of employers about the relevance of the graduates' education. In any case, refitting requires investment, and the government's reform plans rely at least partly on getting the investment funds from employers who use the colleges to train their employees.

The present review team cannot anticipate all the possible risks and contingencies that may arise and impede the smooth implementation of the government's VET reform plans, but the team has identified some serious dangers, discussed below. All these dangers come from within the education system itself, so it is within the government's power to avoid them. Many of them arise because policies for secondary schools and policies for VET have possibly been developed on separate tracks, often with insufficient co-ordination between responsible departments and officials.

Enhancing the attractiveness, status and prestige of VET to students is, clearly, a key aim. If the VET system cannot attract more, and more talented, students in future, none of the government's economic aims for VET will be realised. Increasing the quality, standards and relevance of VET programmes, developing VET infrastructure, improving factual information about the labour market and VET options, all these are necessary but not sufficient conditions for enhancing the attractiveness of VET in the minds of students. What VET policymakers need to bear continually in mind is that, however attractive VET may be or become, students will not choose it if academic studies are perceived as more attractive.

A number of disincentives to choosing VET are being addressed in reform plans (lack of knowledge about the good careers and salaries available to VET graduates; poor, out-of-date college facilities; poorly-trained and, until few years ago, underpaid VET teachers (starting from 2011 the monthly remuneration of VET teachers has been increased by 1 base wage); outdated and over-theoretical curricula; insufficient links with business etc.). The review team has identified other disincentives, which can and should be removed.

First, though pathways from college to university have improved since ETF reported in 2010, college graduates applying via the Complex Test are far less likely to be successful than upper secondary graduates applying via the UNT. Chapter 3 on Assessment has explained why this is, and suggested modifying university entry procedures to give VET graduates more equal chances.

Second, student choices are made in secondary schools, generally in or before 9th grade. Schools and teachers have every incentive (as well, no doubt,

as a natural inclination) to steer all students with a reasonable level of ability towards further academic studies, particularly where the school has upper secondary as well as lower secondary pupils; school performance is presently assessed, and teacher performance assessed and rewarded, on the basis of UNT scores. The attention given to gifted children in Kazakhstan also means that those identified as the most able are gathered together in schools so intensively academic that no teacher there would consider VET a respectable option for any pupil (other than one absolutely determined, perhaps for family reasons, to pursue it). Current reform plans do not include any measures to address this issue. Proposals to establish "Best in Profession" competitions and career guidance centres at VET institutions are "too little, too late". What is needed is to ensure that students receive independent, objective careers information and advice which gives a fair and balanced picture of the respective merits of VET and academic pathways, while still in lower secondary school. Chapter 2 makes a recommendation to provide this, both to students and to their very influential parents. Chapters 2, 4 and 5 both contain recommendations to amend school teachers' pay and conditions so as to reward teachers successful with the academic strugglers rather than the gifted. The review team fears however that even these measures may be insufficient to ensure a level playing field for students' decisions between VET and academic pathways, or to persuade secondary school teachers to regard VET studies as a possible option for a gifted student.

Thirdly, the status of VET relative to upper secondary schooling may suffer as Kazakhstan converts to a 12-year education model, depending on the way that this is done. Chapter 2 has already identified the risk areas. It is not clear how decisions will be made on which students go to *beyindik mektep* schools and which go to college after 10th grade. Will these decisions depend largely on student choice and a threshold assessment, as the review team recommends, or will graduation to *beyindik mektep* studies depend on passing a UNT-type test of academic knowledge? If the latter, the impression that college is for people not clever enough to go to university will be reinforced and attempts to secure parity of esteem for professional and technical training will be set back. Also, technology is to be one of the three *Beyindik Mektep* study fields. Will these schools offer technology as a subject for purely academic study (a puzzling concept), or will they compete directly with colleges in trying to offer a high quality, high challenge technology studies programme relevant to the needs of future employers but designed to appeal to even the most able of *Beyindik Mektep* students? In Chapter 2 the review team recommends either setting up *beyindik mektep* technology schools separate from maths/science and humanities schools – making them, in effect, a new type of "college" – or combining upper secondary schools offering technology studies with existing colleges.

Incentives and disincentives are also relevant to implementation of plans to increase the quantity, standards and relevance of VET programmes. The SPED lists a number of worthy measures under this heading, including developing and updating State Standards and model curricula, making VET programmes and instruction more competence-based with more practical elements, and ensuring that programmes are aligned with national and sectoral qualifications frameworks. The SPED envisages more active involvement of business and professional organisations in programme development and programme delivery, through participation in national and sectoral boards and through the contracts made between individual employers and VET institutions. However, it appears that these contracts will be primarily for industrial placements and internships and teacher training, rather than for the delivery of initial VET programmes tailored to specific company requirements or international standards.

There are reasons for concern that the VET system in Kazakhstan right after the reform could still face some of the problems identified in the ETF review. During fieldwork the OECD had interesting discussions with the management of Kasipkor. As already mentioned, Kasipkor is the holding company set up to lead the development of high-quality, high-level and high-prestige technical education meeting international standards; run world-class colleges set up in the major cities of Kazakhstan to train students using curricula developed in conjunction with leading employers and international organisations active in the VET field; and pioneer new approaches to VET provision which can in due course be extended to all colleges, including stronger relationships with business.

Kasipkor colleges will be different from others. They will have the freedom to develop and deliver their own programmes and incorporate the best of international practices, whereas other VET institutions are obliged to strictly follow the standard programmes developed by the MESRK. Kasipkor will pay their instructors at average industry wage rates, allow some to work part-time and teach part-time, and attract as teachers practitioners from various industrial sectors. Their training programmes, at Foundation, Certificate and Diploma levels, are prepared in conjunction with industry partners, e.g. KazEnergy, the oil and gas employers' association. Each college will comprise 6 profile schools, whereas the regional centres will offer specialised training in a particular industry. Each college will feature a standing "Industry Council" to develop programmes and keep them updated in accordance with the needs of employers.

Kasipkor's perspective on solving the problems facing VET in the public-private college network include: offering more higher-level training; working with industry partners; re-organising the network to have fewer, larger colleges, like the Netherlands and Singapore; improving VET teacher training and recruitment arrangements; and investing major time and effort in awakening industry partners to the advantages of working with colleges (Kasipkor's experience was that major time and effort was needed).

The OECD considers that revisions and updates to the State Standards should by all means aim at providing VET institutions with the autonomy and flexibility to tailor programmes to meet the specific needs of local employers. During fieldwork the review team visited one college (a Kasipkor partner college) running an oil and gas industry programme in partnership with a major employer. The employer supplied some of the equipment the students trained on, and employed a high percentage of the students when they graduated; as a result, places on the programme were highly sought-after and able students were attracted. It is not clear whether and if yes, to what extent such "local initiative" courses will be consistent with the new State Standards. Nor is it clear how individual employers can influence the content of programmes at their local college, except by participating on their sectoral board when the State Standard applicable to all colleges in the country is revised or updated. But if employers and colleges are prevented by the rigidity of State Standards from co-operating to adapt courses to their mutual advantage, where is the incentive for employers to work with their local college on programme development and delivery of initial VET? The success of the important task of Kasipkor to extend to all colleges the new approaches to VET it has pioneered, including stronger relationships with businesses and institutions nationally and internationally, will largely depend on the extent to which other colleges will continue to operate under regulations that inhibit them from adopting these new approaches.

The OECD review team will be asking the team conducting the full VET review to assess these concerns in more detail and, if it considers the concerns well-founded, to recommend ways of addressing them.

Notes

1. Government Regulation No. 778 of 7 July 2011.
2. Government Regulation No. 1270 of 24 December 2007.
3. Official information provided to the OECD review team by Kasipkor.
4. In 2011 the capacity of dormitories was increased by 340 places.

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Chapter 7

Recommendations of the OECD review of secondary education in Kazakhstan

The last chapter of this report contains a summary of recommendations and suggestions for follow-up in the areas covered by the OECD review: quality and equity of education, assessment and evaluation practices, policies for teachers and principals and expenditure and financing mechanisms. In view of the forthcoming OECD review of vocational education and training (VET) in the Republic of Kazakhstan, this chapter does not contain recommendations on VET.

The following sections draw together the recommendations in the report. The OECD review team is aware that in the time between the submission of the final draft of this report and its publication, some of these recommendations might have already been included in official strategic planning documents and that their implementation might have commenced. The review team suggests the authorities to nevertheless validate the recommendations in consultation with stakeholders, departments and institutions concerned before designing and implementing follow-up action.

Recommendations for a follow-up

Equity and effectiveness of schooling (Chapter 2)

Equal educational opportunities

- The Government of Kazakhstan should declare its commitment to the principle that all students in Kazakhstan, whatever their background, are capable of achieving high standards and need to do so; and should make it a top national priority to tackle the long tail of educational under-achievement revealed in PISA. This will involve developing plans and programmes to ensure that students at risk of under-achievement are identified early, and that schools and teachers take effective steps to get them back on track. Under-achievers in less favoured schools deserve (and need) good teachers and good-quality resources as well, and the authorities should ensure that they can get them.
- Plans and programmes to identify and help academic strugglers and slower learners should specifically aim to tackle under-achievement and equalise outcomes for the following groups of students in secondary school: students in small schools and rural locations; lower-attaining boys; students in Kazakh-language schools; students in lower-attaining regions; and students from less socio-economically advantaged families.
- In the interests of students in small schools and rural locations (including ungraded schools), it is also recommended that the government consider setting minimum school size and teacher quality standards, at least for secondary schools; allow small communities to have a school only if those standards are met; and if not, provides students with free, convenient transport to schools elsewhere and with distant learning opportunities.
- As children with special needs and disabilities continue to suffer from severely unequal opportunities, it is recommended that the government's plans to make inclusive education a reality should be re-visited and made more effective and ambitious.

Effectiveness of teaching and learning

- The Government of Kazakhstan should undertake a full review and revision of the current secondary school curriculum, which has not proved effective. It has not delivered high performance, enabled all students to achieve a minimum level of functional literacy and numeracy or fostered higher-order thinking skills.
- Problems to be addressed in the present curriculum include: the overload of academic subjects; suppression after 7th grade of other subjects important for the development of imagination, creativity and collaborative skills; the over-emphasis on theory rather than practical application, which among other disadvantages makes the curriculum difficult for academic strugglers to access and engage with; and (by international standards) the high proportion of teaching time devoted to science – not paying off in results – and low proportion devoted to maths.
- To help reduce unproductive overload on students and teachers, it is recommended that Kazakhstan consider moving to a 5-day school week. To avoid the learning loss inevitable during Kazakhstan's current three-month summer holiday, it is recommended that the school calendar be adjusted to incorporate terms and holidays of more even length.
- Objectives when the curriculum is revised should include: enabling secondary, particularly upper secondary, students to study a more limited range of subjects and aspects of subjects, so that they may study them in greater depth; giving students within each school more choice of which subjects they study; giving schools more flexibility to adjust the balance between theoretical and practical elements within subjects; and referring specifically in curriculum documents to the higher-order thinking skills the government wishes teachers to teach and students to acquire.
- Better teaching aids and resources should be developed, and teachers trained to use them more imaginatively, for two purposes: to assist the development of higher-order thinking skills, and to cater for those students who struggle to learn with current textbooks and teaching methods.
- A national curriculum should be developed for the 12th grade that will equip Kazakh school-leavers with subject knowledge and skills comparable to those of 18-year-old school leavers in high-performing OECD countries.

- To help ensure that students pursue the learning opportunities most relevant to their future careers – particularly if or when they have greater choice in the subjects they study – it is recommended that the career information and guidance available in the secondary schools of Kazakhstan be improved, including by the government promulgating a national minimum standard. As parents play such an important role in decisions on their children's career choice it would be desirable to provide career guidance to parents as well as students.

Planned organisational changes

- Kazakhstan should purpose-build a 12-year education model which keeps good features of the present system, avoids perpetuating its weaknesses, and motivates students to acquire the skills that will best serve the country in future.
- The review team endorses government plans to create new, or newly-designated, upper secondary schools or classes for the 11th and 12th grades, known as *beyindik mektep* or "subject-oriented instruction" schools, for the 60% of 10th grade leavers likely to go on to university.
- To minimise risk that student choices of pathway will be unduly influenced by the perceived status of different institutions and to give the new technology subject field the importance it deserves, the government is recommended to consider setting up technology schools separately from the *beyindik mektep* schools for students of maths/natural science and social science/humanities, and/or merging upper secondary schools and colleges so that all pathways are available in one institution.
- It is also recommended that separate curricula be developed for each of the three *beyindik mektep* subject fields. For the technology field, the Ministry of Education should work with Kasipkor and employer representatives to develop a high-quality, exciting and business-relevant curriculum and a new programme to train teachers to teach it effectively.
- Whatever the final shape of the upper secondary system, it is recommended that decisions on which institution individual students attend after 10th grade should depend primarily on student choice, subject to meeting the minimum threshold standard for their chosen pathway in the national 10th grade assessment proposed in this report.

Assessment of learning outcomes and teaching quality (Chapter 3)

- Criteria-based assessment systems should be put in place in all primary and secondary (including upper secondary) schools in Kazakhstan. This will help to improve teaching quality and relevance to individual students, raise standards in schools and classrooms, it will permit comparisons of student performance with regional and national benchmarks, aid the identification of slow learners and academic strugglers, discourage over-marking by teachers and make reports to parents on student performance more meaningful.
- Assessment criteria should be an integral part of the revised curricula and syllabuses developed for every grade for all subjects to be taught in 12-year education. Documents describing the new curricula and syllabuses should include or attach the assessment criteria to be used at every stage. Assessment criteria should be defined not only for current school subjects but also for the higher-order thinking skills the government wishes students to acquire.
- Training of teachers unfamiliar with criteria-based assessment should start as soon as possible, so that all teachers in Kazakhstan have been trained to use it effectively by the time the 12-year model is introduced in all secondary schools. The NIS criteria-based assessment system can be used while curricula and syllabuses are being revised as recommended.
- It is recommended that standardised national tests are administered at the end of each phase of education, i.e. at the end of primary school, currently the 4th grade, and at the end of basic secondary school, currently the 9th grade but in future the 10th grade. Standardised tests will permit comparisons of student performance with regional and national benchmarks at these stages. There will be greater public trust in the test results if the test questions have not been seen by the students beforehand and if they are marked by teachers other than the students' regular teachers.
- When the 12-year education model is introduced and *beyindik mektep* schools set up to teach an envisaged 60% of 10th grade students intending to go on to university, this same end-of-10th-grade standardised assessment should be used to assess whether aspiring entrants to *beyindik mektep* schools meet defined minimum entry standards in key subjects such as language, maths and science. The review team recommends strongly against the alternative of introducing another UNT-type exam to allocate *beyindik mektep* places, regardless of individual students' career aspirations.

- The Ministry of Education should put in place systems for efficient, reliable collection of data on all pupils' attainment in national standardised tests. This will permit meaningful comparisons of student attainment in different schools. The government should also plan to collect more, and more reliable, information on relevant characteristics of schools and their pupils, so that schools can be grouped in "families" of similar schools for comparison purposes; and then to develop value-added indicators and systems for collecting and processing the data they require, so that all schools can be compared on a common basis that takes account of all relevant differences between schools and their pupils.[1]
- If in addition the Kazakhstan government wishes to be able to monitor national education standards over time, or wants schools to be able to monitor their own standards over time, it is suggested that advice be sought, from international experts, on how to equate the difficulty level and therefore the results of tests asking different questions in different years.
- The external assessment currently taken at the end of the 9th (in future, 10th) grade should be re-designed so that, like PISA, it tests not only knowledge but also the ability to apply knowledge and the higher-order thinking skills.
- As recommended in the 2007 OECD report on higher education, the UNT should be replaced by two separate external assessments. The first should be a national school-leaving exam which also sets the minimum standard for university entry. This exam should be designed to enable all 12th grade school school-leavers – whether leaving for work, college or university – to demonstrate more fully the knowledge and skills they have acquired in all their school subjects, including the higher-order thinking skills. For these purposes, the multiple-choice style of the present UNT is unsuitable and should be abandoned. The second exam should be a university entry test, developed specifically to select the best-qualified applicants for scarce university places from among those who have passed the school-leaving exam. The 2007 OECD report suggested that this test should be a test of scholastic aptitude rather than knowledge, like the SAT test used in the United States, so as to be equally to fair to students from different backgrounds who have had differential preparation.[2] These two new exams should be introduced at the time the 12th grade of schooling is introduced.
- The CT taken by college leavers should also be reformed. Candidates from colleges should be asked to present just two obligatory subjects, maths and Kazakh/Russian language, plus a selection from a wider range of optional subjects. The range should embrace not only school

subjects relevant to careers but also specialisms related to career fields (e.g. Healthcare, Engineering, Agricultural Science, and Education). Other recommendations on the UNT apply equally to the CT.

- The Ministry of Education's own analytical reports on the results of 2012 national assessments include a number of other recommendations which should be implemented in order to improve the quality and relevance to students of school education and. These include recommendations to:
  - re-focus school education on developing the skills to apply knowledge in real-life situations, and eliminate "drilling" at schools;
  - transform the traditional list of teaching goals into a list of desired student competences;
  - develop system-wide measures to instil a culture of knowledge, critical thinking and development of students' personal competences;
  - develop a new professionalism in teaching and school management;
  - improve teachers' professional skills through innovative forms of teacher training;
  - strengthen teaching and other resources in rural schools;
  - encourage teachers to develop research and creative skills in their students;
  - increase teachers' responsibility for the academic progress of every student;
  - ensure that teachers differentiate teaching according to students' individual abilities, provide students with individual support, and identify and correct learning problems at an early stage;
  - improve students' motivation to learn;
  - study and replicate the best practices of leading schools with good results;
  - make widespread use of the latest teaching technologies, replicating best national and international practice;
  - do more to engage parents in the education process.

Good policies for better teachers and school leadership (Chapter 4)

Recommendations regarding policies for better teachers

- Kazakhstan is recommended to set clear targets and take steps to reduce the percentage of teachers in all grades of general secondary education who have not completed higher education.
- To attract effective teachers where they are most needed, Kazakhstan is recommended to develop targeted policies at multiple levels, including aligning teacher education programmes with the needs of challenging or disadvantaged schools, improving working conditions in challenging or disadvantaged schools, and ensuring adequate financial incentives to attract and retain teachers in these schools.
- It is recommended that Kazakhstan take a more comprehensive view of the factors influencing the status of the teaching profession and develops a strategy to identify and monitor key indicators.
- In developing plans to modify the current basis for candidate selection and recruitment into teacher training programmes, Kazakhstan is recommended to consider adopting as much as practicable of Finland's good practice.
- It is recommended that Kazakhstan develops, in close collaboration with teachers, a coherent system linking detailed professional standards for teachers that reflect a shared understanding of what is considered to be accomplished teaching for different subjects and different levels; and also that these professional standards should be the basis for the development of standards for the attestation of teacher education programmes, for regular teacher evaluation and attestation processes, and for the development of formal professional development plans.
- Similarly, successful completion of the mentoring programme should be clearly aligned with professional standards and be tied to the attestation system.
- The new teacher in-service training programme developed by Cambridge University and the Nazarbayev Intellectual Schools (NIS) Centre of Excellence should be available on a larger scale. Before changes in pedagogical practices and approaches to learning as promoted in this training programme can be observed at a system-wide level, a critical mass of teachers championing these changes must be present at all levels of the system and in all schools, including in ungraded schools.
- It will be essential to ensure an equitable distribution of teachers receiving the training, and that the programme does not only benefit

teachers who are already high-performing. It is also desirable to extend the programme to school administrators, to enable them to learn the new approaches to teaching and create optimal conditions within schools for implementing change.

- The review team recommends that teachers be provided with an effective platform from which they can play a central role in shaping educational policies, as the current trade union for workers in the sphere of education does not effectively meet the goal of ensuring that teachers are at the centre of policy development and implementation.
- To help increase the status of the teaching profession and to help attract top candidates, it is essential to ensure that teacher salaries are attractive compared to the salaries of professions with similar educational level requirements.
- It is recommended that financial bonuses for outstanding performance be linked to a more comprehensive set of criteria for assessing teacher performance that are linked to professional standards. The review team also recommends that all teachers be given equal opportunities to reap the financial benefits associated with participation in professional development.
- Kazakhstan should consider aligning national data collection efforts, in particular in the areas of teacher policies, with international indicators to facilitate international comparisons.

Recommendations regarding policies for better school leadership

- The OECD recommends the Kazakh authorities to consider following the example of OECD countries in defining a comprehensive and relevant set of criteria for selecting their school leaders.
- The best way to help those principals who are already in the profession to adjust and take on their new role is to provide them with good in-service training and couple it with adequate monetary and non-monetary incentives for improvement. The potential of the NIS Centres of Excellence could be mobilised for the development of such in-service training. A primary focus of such training, at least until 2020, should be the autonomous management of education institutions in a system that applies per capita formulas for resource allocation.
- Kazakhstan should also develop and introduce a system of rewards and incentives for principals that would match the stages and elements of new and mandatory in-service training. A primary focus of such training should be the autonomous management of education institutions in a system which applies per capita funding.

Education expenditure and financing mechanisms (Chapter 5)

The fiscal and macroeconomic context

- The OECD review team considers that it is time for the authorities to open a discussion on responses to less obvious but equally urgent needs for resources in the educationsystem, most notably to those that emerge in the course of daily operations in the education sector. The analysis presented in this report argues in favour of purposeful increases in education expenditure to address these needs. In order to be sustainable, an increase in financing for education should be embedded in an overall increase in public expenditure.

Aggregate education expenditure

- Overall spending on education in Kazakhstan is below regional and international averages. This impacts some areas of education more than others. The balance of expenditure between levels of education should be brought more in line with the expectations towards these levels, most notably towards the universities which are also responsible for teacher training and innovation in education.
- The authorities would also be well advised to consider whether the share of the overall education budget that is being allocated for reforms is proportionate to the resources "left over" for current and not reform-related expenditure items (salaries, repairs, transportation, etc.). The OECD suggests that the authorities develop a plan for gradual adjustment (increase) in current expenditure and a fair distribution of financial burden across levels of governance. Advance planning will thereby be of decisive importance.

Investment in educational change

- The authorities envisage a gradual shift of long term investment from infrastructure to capacity for systemic innovation. Having in mind the considerable number of schools that still require capital investment, it is recommended to keep infrastructure improvement as top priority until the share of schools in need of overhaul or general repair is reduced to more acceptable levels, say 5% in any given region, and until distant learning connectivity of ungraded and rural schools is fully ensured.

Spending on schools

- The persistent failure to ensure a balanced, equitable supply of resources to all schools according to their needs is due to dysfunctional allocation mechanisms, the negative side effects of which appear to be amplified by historically and geographically determined inefficiencies in the school network and by demographic developments. The OECD review team fully supports the plan of the education authorities to address this problem with urgency by migrating to a system of per capita funding.

Spending on teachers

- All teachers without exception should be provided with incentives to be productive and creative members of a strong and good collective. This is an essential part of a bigger task: to increase the status of the profession, help attract good candidates to teaching, and ensure that also smaller schools and schools in rural areas can benefit from good and motivated teachers who have sufficient time to prepare their classes. The review team recommends that the authorities ensure that:
  - The statutory and in particular the starting salaries be attractive compared to the salaries of professions with similar educational level requirements.
  - Financial bonuses for good quality teaching are linked to a more comprehensive set of criteria for assessing teacher performance that are linked to professional standards.
  - All teachers are given equal opportunities to reap the financial benefits associated with participation in professional development.
  - Until inflation stabilises at its recent levels, indexation of the wages of teachers should be undertaken more intensively to remedy its effects.
- All of these measures are "boiling down" to the introduction of meaningful, quality-oriented mechanisms for an increase in teacher remuneration, which in Kazakhstan at present is way below any international benchmark. Such increases will more than likely require an overhaul of the current salary scale system along the lines suggested below:
  - Bundling a set of core tasks into statutory salaries that are more adequate and fair.

- Reducing the number of compensation payments for additional work in favour of providing for more quality-related incentives (rewards) to younger and mid-career teachers.
- Setting a fairer, more realistic number of teaching hours and determining a standard distribution of hours (and tasks) beyond classroom teaching. This should make sure that teachers have time to devote to improving the quality of their work in class (e.g. preparation of classes, exchange with fellow teachers, professional development, involvement in school management) and that they are compensated for it as part of their statutory salary package.

Better resource allocation mechanisms (per capita funding)

- It is very important to undertake a comprehensive assessment of the financial implications of applying PCF nationwide. The evidence collected in this way should be used to determine the amount of additional resources and where they will come from, to embed the increases in the wider context of public expenditure policies to ensure their longer term commitment, and work on building a consensus on the distribution of financial burden across levels of governance.
- The OECD review team endorses the recommendation of the UNICEF report on per capita funding in education in Kazakhstan (UNICEF, 2012) for the creation of a dedicated institution in charge of PCF monitoring and implementation that could serve these purposes.
- It is also suggested to establish a committee with representation of all sides involved or affected by the per capita funding reform. The committee would steer the scaling up of the pilot nationally and serve as a feedback channel for concerns from the regions, their schools and local authorities. Measures like these should aim at strengthening ownership and ensuring that potential problems are detected on time.
- The imminent radical overhaul of financing mechanisms through the per capita funding reform should be used as an opportunity to initiate long overdue improvements in the area of teacher remuneration.
- The per capita funding model will vest more responsibility in the school leadership than ever before, but without proper support the principals might become the weakest link in the implementation of the PCF reform. The OECD review team identifies an urgent need for comprehensive professional training for principals before the PCF pilot is scaled up nationwide – either as part of a larger plan for

professionalisation of school leadership in the country or as a stand-alone project. School and local administrators and accountants should be able to benefit from similar training.

- The OECD review team considers the plan to implement the PCF reform by 2015 to be over-optimistic. It is suggested that the authorities revise the roadmap of PCF implementation and allow for more time for a good education financing reform to become even better.
- More time would also be needed should the authorities decide to follow the OECD recommendation to *not* exclude the ungraded schools from the reform. To protect these schools from becoming the losers of the reform, the per capita funding formula should be adjusted by incorporating coefficients for ungraded schools.

Table 7.1. **Overview of recommendations and areas of policy intervention**

CHAPTERS AND RECOMMENDATIONS		Area of policy intervention
Chapter 2: Equity and effectiveness of schooling		
2.1	Identify and provide support to students at risk of under-achievement, in particular students in small schools and rural locations; lower-attaining boys; students in Kazakh-language schools; students in lower-attaining regions; and students from less socio-economically advantaged families.	Equal educational opportunities
2.2	Set minimum school size and teacher quality standards for small schools and rural locations (including ungraded schools) and ensure that where these standards cannot be met, students are provided with free transportation and/or distant learning opportunities.	
2.3	Revisit and possibly revise the plans for introducing inclusive education by making them more effective and ambitious.	
2.4	Undertake a full review and revision of the current secondary school curriculum to reduce overload, introduce non-academic subjects that promote imagination, creativity and collaborative skills, and revise the time allocations for science and mathematics.	Effectiveness of teaching and learning
2.5	Develop better teaching aids and resources and train teachers trained to use them more imaginatively for the sake of assisting the development of higher-order thinking skills and catering for those students who struggle to learn with current textbooks and teaching methods.	
2.6	Develop a tailored national curriculum for the 12th grade.	
2.7	Consider moving to a 5-day school week and adjusting the school calendar to incorporate terms and holidays of more even length.	

CHAPTERS AND RECOMMENDATIONS		Area of policy intervention
2.8	Improve career guidance in secondary schools and promulgate a national minimum standard of what career guidance should entail.	
2.9	Sustain and implement the plans to create new, or newly-designated, upper secondary schools (beyindik mektep) or classes for the 11th and 12th grades.	Changes in the organisation of schooling
2.10	Set up technology schools separately from the beyindik mektep schools; provide them with separate high-quality, high-relevance curricula and train teachers to teach them effectively.	
2.11	Decisions on which institution individual students attend after 10th grade should be based on meeting minimum threshold standards for the chosen pathway and not competition.	
3.1	Criteria-based assessment systems should be put in place in all primary and secondary (including upper secondary) schools in Kazakhstan.	Criteria based assessment
Chapter 3: Assessment of learning outcomes and teaching quality		
3.2	Assessment criteria should be an integral part of the revised curricula, developed for every grade for all subjects to be taught in 12-year education. Training of teachers unfamiliar with criteria-based assessment should start as soon as possible.	
3.3	Standardised national tests should be administered at the end of each phase of education. The one at the end of lower secondary education should be used to assess whether aspiring entrants to beindik mektep schools meet defined minimum entry standards in key subjects such as language, maths and science.	Standardised external tests
3.4	The Ministry of Education should put in place systems for efficient, reliable collection of data on all pupils' attainment in national standardised tests.	
3.5	The external assessment currently taken at the end of the 9th (in future, 10th) grade should be re-designed to test not only knowledge, but also higher-order thinking skills and the ability to apply knowledge.	
3.6	The UNT should be replaced by two separate external assessments: school leaving exam setting minimum standards for university entry, and university entry test.	
3.7	The CT taken by VET school graduates should also be reformed to eliminate the disadvantage at which they are vis-à-vis graduates from general secondary schools	
3.8	The implementation of recommendations of the analytical reports on the results of 2012 national assessments should commence as soon as possible.	Follow-up to national analytical results
Chapter 4: Good policies for better teachers and principals		
4.1	Set clear targets and take steps to reduce the percentage of teachers in all grades of general secondary education who have not completed higher education.	Policies for better teachers
4.2	Align teacher education programmes with the needs of challenging or disadvantaged schools, improving working conditions in challenging or disadvantaged schools, and ensuring adequate financial incentives to attract and retain teachers in these schools.	

CHAPTERS AND RECOMMENDATIONS		Area of policy intervention
4.3	Develop a strategy to identify and monitor key indicators on the status of the teaching profession.	
4.4	Develop a coherent system of professional standards on what should be considered as accomplished teaching for different subjects and different levels and use them as a basis for attestation of teacher education programmes, for regular teacher evaluation and attestation, and for the development of formal professional development plans.	
4.5	Speed up the expansion of the in-service training programme developed by Cambridge University and the Nazarbayev Intellectual Schools (NIS) Centre of Excellence, so that it is available faster to more teachers.	
4.6	Provide teachers with an effective platform from which they can play a central role in shaping educational policies.	
4.7	Ensure that teacher salaries are attractive compared to the salaries of professions with similar educational level requirements.	
4.8	Financial bonuses for outstanding teacher performance must be linked to a more comprehensive set of criteria that in turn are linked to professional standards.	
4.9	Kazakhstan should consider aligning national data collection efforts with international indicators to facilitate international comparisons. The selection of education indicators should be aligned to international practice. Standards for the quality of evidence should also be introduced.	
4.10	Define a comprehensive and relevant set of criteria for hiring school principals, which draw on international best practice.	Policies for better school leadership
4.11	Design mandatory new in-service training for principals and couple it with adequate monetary and non-monetary incentives for improvement. The potential of the NIS Centres of Excellence could be mobilised to that end.	
4.12	The initial focus of this new generation of training for principals should be the autonomous management of education institutions in a system that applies per capita formula.	
4.13	Develop and introduce a system of rewards and incentives for principals that would match the stages and elements of the new mandatory in-service training.	
Chapter 5: Education expenditure and financing mechanisms		
5.1	Increase the level of overall public expenditure to ensure the sustainability of increases in spending on education.	The fiscal and macroeconomic context
5.2	Bring the distribution of funding between levels of education should be in line with the expectations towards these levels, most notably towards universities which are also responsible for teacher training and innovation in education.	Aggregate expenditure on education
5.3	Keep infrastructure improvement as top priority until the share of schools in need of overhaul or general repair is reduced to more acceptable levels in any given region and until distant learning connectivity of ungraded and rural schools is fully ensured.	The focus of longer-term investment in education

CHAPTERS AND RECOMMENDATIONS		Area of policy intervention
5.4	Continue the migration to a system of per capita funding, taking into consideration recommendations 5.13-5.16	Spending on schools and teachers
5.5	The statutory and in particular the starting salaries should be increased in order to become attractive compared to the salaries of professions with similar educational level requirements.	
5.6	Financial bonuses for good quality teaching are linked to a more comprehensive set of criteria for assessing teacher performance that are linked to professional standards.	
5.7	All teachers are given equal opportunities to reap the financial benefits associated with participation in professional development.	
5.8	Until inflation stabilises at its recent levels, indexation of the wages of teachers should be undertaken on a regular basis to remedy its effects.	
5.9	Initiate an overhaul of the current salary scale system by:	
5.10	Bundling a set of core tasks into statutory salaries that are more adequate and fair;	
5.11	Reducing the number of compensation payments for additional work in favour of providing for more quality-related incentives to younger and mid-career teachers;	
5.12	Setting a fairer, more realistic number of teaching hours and determining a standard distribution of hours (and tasks) beyond classroom teaching.	
5.13	Undertake a comprehensive assessment of the financial implications of applying PCF nationwide to determine the amount of additional resources that will be needed after PCF is introduces and where they will come from.	Per capita funding reform (PCF)
5.14	Create a dedicated institution in charge of PCF monitoring and implementation and establish a committee with representation of all sides involved or affected by the per capita funding reform.	
5.15	Use the PCF reform as an opportunity to initiate long overdue improvements in the scheme of teacher remuneration.	
5.16	Revise the roadmap of PCF implementation to allow for more time and for the inclusion of ungraded schools, so that a good education financing reform to become even better.	

Notes

1. The OECD review team was informed of the establishment of a *National Educational Database* in 2012 by the MESRK and of its successful piloting.

2. According to information received by the MESRK in the final stages of preparation of this report, the Ministry plans to modify the UNT in 2015 so that it comprises two parts: graduation test and university admission test.

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Annex 7.A1

Ownership and involvement in reforms

In September 2008, General Directors of Education Ministries in OECD countries met to discuss why some educational reforms succeed and others fail. They considered how to engage parents, teachers, and politicians to support reforms, and what changes the minds of stakeholders who initially resist reforms or their implementation. Several recurrent themes emerged from their exchange of experiences:

- Policy makers need to build consensus on the aims of educational reform and actively engage stakeholders, especially teachers, in formulating and implementing policy responses.
- Some reforms capitalise on external pressures or crises as part of building a compelling case for change.
- All political players and stakeholders need to develop more realistic expectations about the pace and nature of reforms to improve outcomes.
- Reforms need to be backed by sustainable financing.
- There is some shift away from reform initiatives per se towards building self-adjusting systems with rich feedback at all levels, incentives to react, and tools to strengthen capacities to deliver better outcomes.
- Investment is needed in change-management skills in the education system. Teachers need reassurance that they will be given the tools to change and recognition of their professional motivation to improve outcomes for their students.
- Evidence can be used more effectively to guide policy making, combining international benchmarks with national surveys and with inspectorates to achieve a better diagnosis.

- Evidence is most helpful when it is fed back to institutions along with information and tools about how they can use the information to improve outcomes.
- "Whole-of-government" approaches can include education in more comprehensive reforms. These need effective co-ordination and overall leadership across all the relevant ministries.

The OECD's recent review of reforms in public policy suggests that, in most circumstances, it pays to closely engage those who will be most directly affected by reform. Inclusive, consultative policy processes are no guarantee against conflict when sensitive reforms are under consideration, but over time, such an approach seems to pay dividends. In particular, it can create greater trust among the parties involved. This may make all stakeholders more willing to rely on commitments to steps that will mitigate the cost of reform for them.

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Secondary Education in Kazakhstan

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Contents

Executive summary

Chapter 1. Overview of the education system of Kazakhstan

Chapter 2. Equity and effectiveness of schooling in Kazakhstan

Chapter 3. Assessment of learning outcomes and teaching quality in Kazakhstan

Chapter 4. Good policies for better teachers and school leadership in Kazakhstan

Chapter 5. Education expenditure and financing mechanisms in Kazakhstan

Chapter 6. Vocational education and training in Kazakhstan

Chapter 7. Recommendations of the OECD review of secondary education in Kazakhstan

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