

Chapter 1

School education in Kazakhstan

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

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

Context

Geographic and demographic characteristics

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

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

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

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

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

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

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

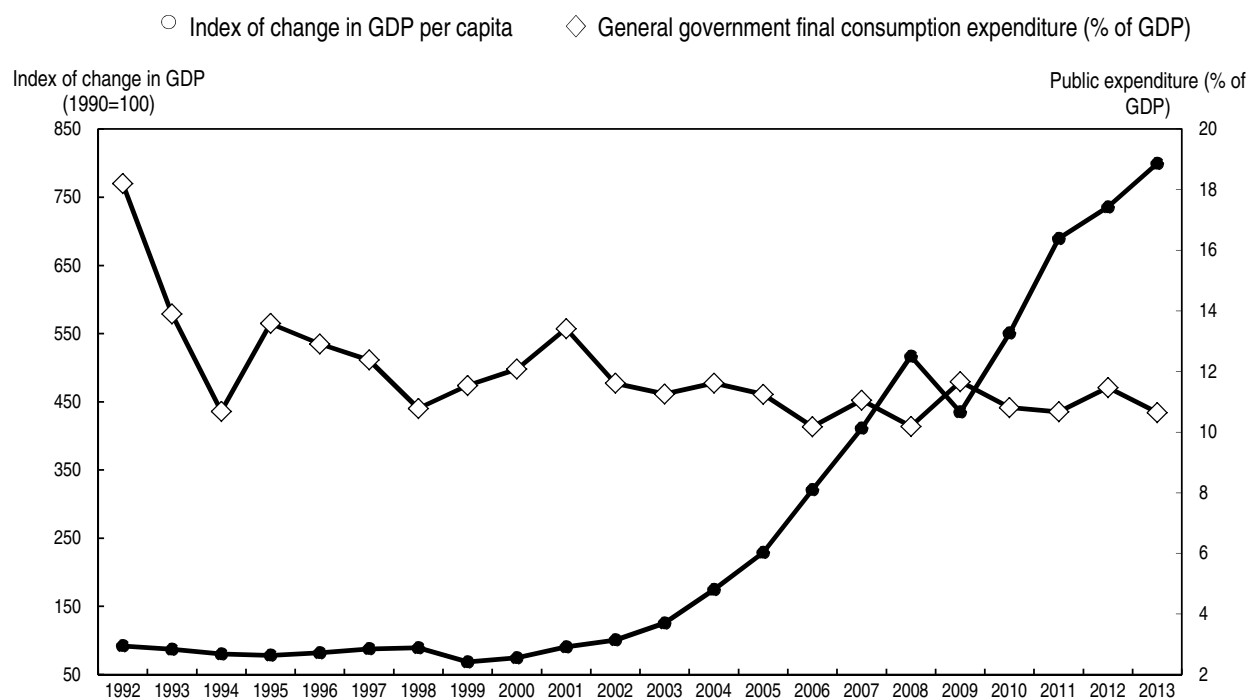
The net migration rate (the difference of emigrants and immigrants) is positive and accounted to 6 990 individuals for the period 2008-12. There are marked differences in the skill composition of immigrants and emigrants. The number of emigrants with higher education (5 829) almost doubles that of immigrants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

Economic growth and inequalities

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

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

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



Note: General government final consumption expenditure (formerly general government consumption) includes all government current expenditure for purchases of goods and services (including compensation of employees). It also includes most expenditure on national defence and security, but excludes government military expenditures that are part of government capital formation.

Sources: World Bank Statistics (2014), World Bank national accounts data, World Bank data website, <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD>; UNDATA (2014), <http://data.un.org/>.

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

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

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

The governance of the education system

A hierarchical distribution of responsibilities

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

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

Table 1.1. **Regions of Kazakhstan**

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

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

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

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

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

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

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

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

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

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

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

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

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

Legal and strategic foundations

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

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

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

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

The structure and main features of the school system

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

Structure of the education system

Pre-primary education

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

School education

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

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

Post-secondary and tertiary education

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

Main features

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

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

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

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

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

Kazakhstan (2013)				
	Number of schools	%	Number of students	%
All general secondary schools	7 648	100.0	2 571 989	100.0
<i>of which:</i>				
State-owned day schools	7 307	95.5	2 525 047	98.2
Non-state owned day schools	107	1.4	19 579	0.8
Evening schools	81	1.1	12 661	0.5
Nazarbayev Intellectual Schools (NIS)	15	0.2	9 700	0.4
Other schools ¹	138	1.8	5 002	0.2
State-owned day schools	7 307	100.0	2 525 047	100.0
<i>of which:</i>				
With Kazakh language of instruction ²	3 796	52.0	1 607 509	61.9
With Russian language of instruction	1 349	18.5	894 658	34.4
With other languages of instruction	76	1.0	95 339	3.7
With more than one language of instruction	2 086	28.5	n/a	n/a
<i>of which:</i>				
Urban schools	1 605	22.0	1 403 377	55.6
Rural schools	5 702	78.0	1 121 670	44.4
<i>of which:</i>				
Small-class schools	3 639	49.8	284 267	11.3
Kazakhstan (2013) vs. OECD average (2012)				
	Kazakhstan (2013)		OECD average (2012)	
Public spending as % of GDP³				
Total education spending	3.8		5.6	
Primary and secondary education	2.1		3.6	
Net enrolment rate (%)				
Primary and lower secondary education (ages 5-14)	99		98	
Upper secondary education (ages 15-19)	86		83	
Average class size⁴				
Primary education	23		21	
Secondary education	18		24	
Student-teacher ratio⁵				
Primary education	17		15	
Secondary education	6		13	
Learning outcomes				
PISA 2012 mathematics, average score	432		494	
PISA 2012 mathematics, % scoring below Level 2	45		23	

Notes:

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

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

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

Access, performance and attainment

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

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

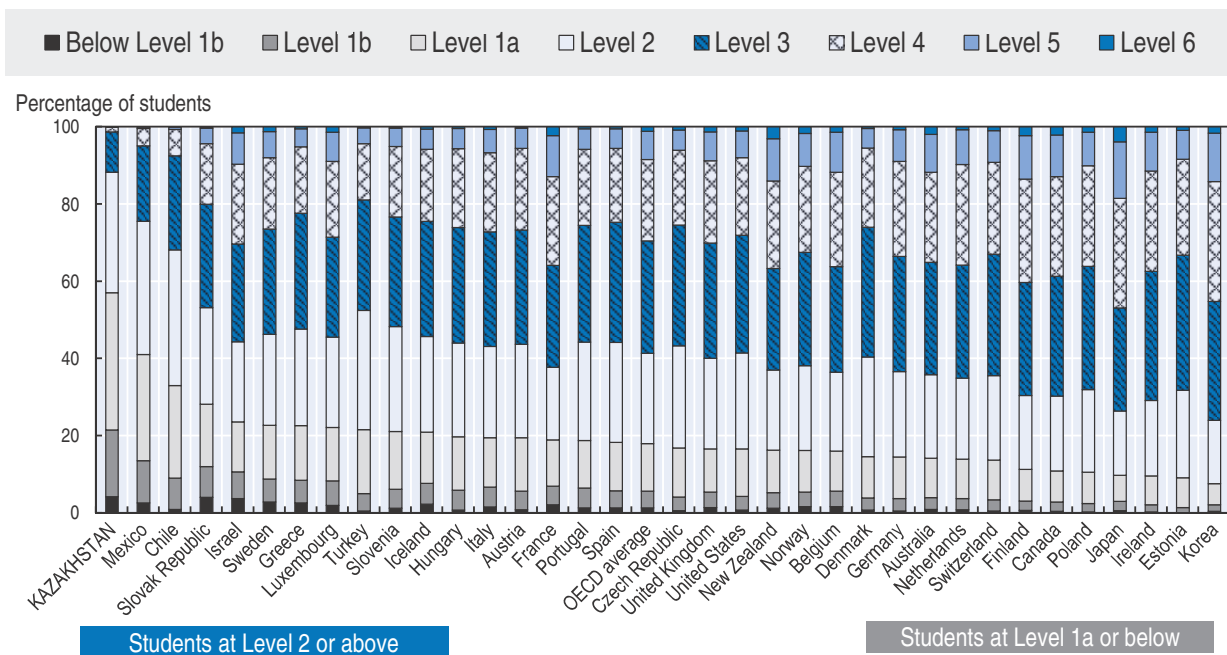
International assessments also provide important insights into student performance in Kazakhstan in recent years. Since 2007, Kazakhstan has participated in the Trends in International Mathematics and Science Study (TIMSS) conducted by the International Association for the Evaluation of Educational Achievement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

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

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

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

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



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

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

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

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

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

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

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

Recent relevant policy developments

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

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

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

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

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

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

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

Notes

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

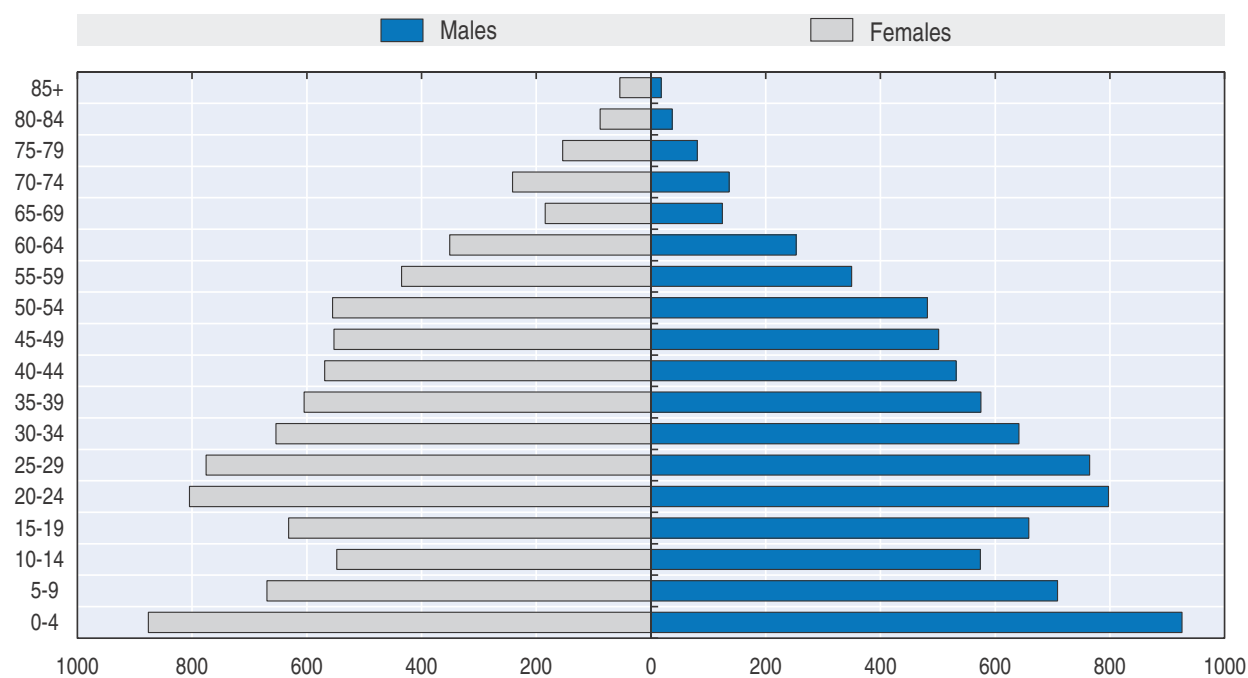
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ANNEX 1.A1

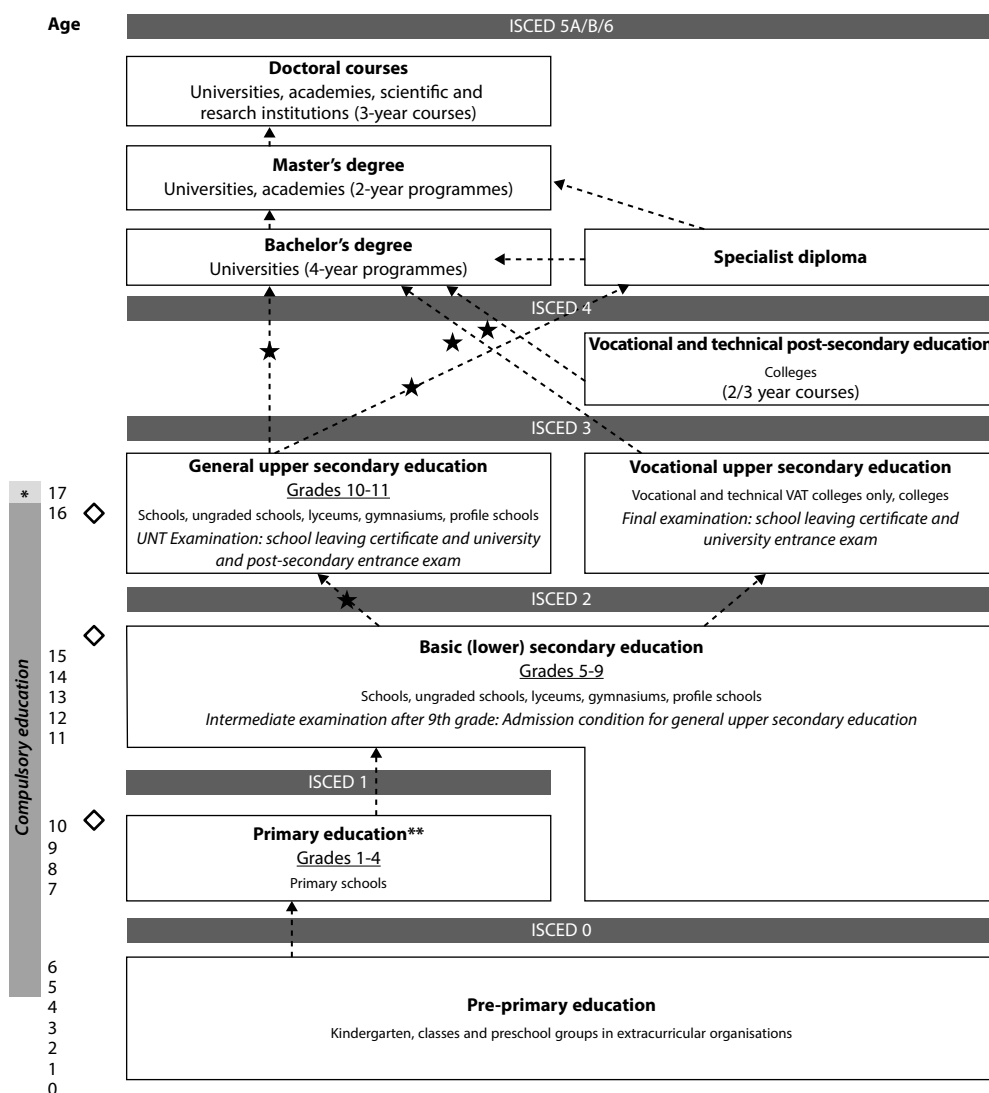
*Structure of the population by gender and age, 2013*Figure 1.A1.1. **Structure of the population by gender and age, 2013**

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

ANNEX 1.A2

The education system of the Republic of Kazakhstan

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



- * Current transition to 12-year model
- ** The Ministry of Education of Kazakhstan does not differentiate between primary and lower secondary education. Only a few "primary education only" schools offer grades 1 to 4. Primary education can start at the age of 6 or 7.
- ★ Specific entrance conditions
- ◇ Diagnostic test or entrance examination

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

ANNEX 1.A3

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

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

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

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

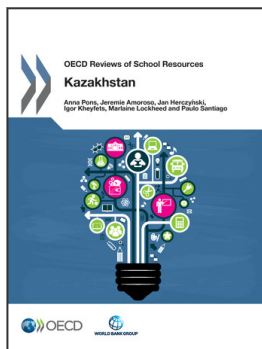
Indicator	2010	2015	2020	Authority monitoring progress
Share of school students provided with school bus transportation from home to school and back (of the total number of students needing transportation)	63%	80%	100%	Local executive bodies; Ministry of Education and Science
Number of “supporting schools”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

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

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

* Statistics not available

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



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