

# DEVELOPMENT OF STRATEGIC DIRECTIONS FOR EDUCATION REFORMS IN KAZAKHSTAN FOR 2015-2020

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## EXECUTIVE SUMMARY



The development of the education system is a priority for Kazakhstan, as investment in education is key to the well-being of society as a whole. Education, which constitutes a major investment into human capital, is also a key driver of economic growth. In an integrated dynamic global market place, education systems must continually improve and work to adapt to changing circumstances. The State Programme of Education Development in the Republic of Kazakhstan for 2011- 2020 (SPED) is the foundation document driving education reform in the country. Although the SPED states that “in 2015, the transition period will be completed, and

the education system of the Republic of Kazakhstan will correspond to the models of developed countries in its structure, content, management and financing mechanisms”, no clear vision has been established for the second stage of this development for 2015 to 2020.

This diagnostic report provides an analysis of the problems that the Kazakhstan system of education needs to address in the next stage of its development and is offered as a step towards this goal.

- Pre-school education
- Secondary education
- Equity and Inclusion
- Teachers and Teacher Education
- Infrastructure and Resources
- Management of Change
- Technical and Vocational Education (TVE) and Training
- Higher Education and Research

## **Pre-school education**

Although there has been impressive growth in the provision of pre-school education, it is unevenly distributed across urban and rural areas and inaccessible to a substantial number of rural children and families. Furthermore, high demand for an insufficient number of pre-school places has created corrupt practices in the registration of children. There is also great concern regarding the increase in the number of private kindergartens being set up outside of the formal licensing process and with relaxed inspection procedures.

Much focus has been placed on the quantity of pre-school places yet this has not been matched by an equally attentive focus on quality. Thus, other issues for concern in pre-school education in Kazakhstan include: the poor quality of teacher training; the lack of high quality teaching staff<sup>1</sup>; the low recruitment rates of the pre-school training programmes in pedagogical institutes; the slow development of inclusive education in early years (less than a third of young children with special needs have access to pre-school education) (MES, 2010); the lack of support in offering a trilingual programme (Kazakh, Russian and English); and the dearth of training and mentoring programmes designed for its implementation.

The current perceptions of pre-school education need to change where it should not only be preparation for formal schooling after age six, but a veritable stage in the education process. Over the years, the concept of a child has shifted from the image of an empty vessel to the image of a powerful *learner from birth*. Alongside this growing understanding of the ‘powerful child’ has come a renewed focus on *learning* (what children do best). Teachers consider with great care what shapes and fosters this learning, and how they can best cherish and sustain it. In Kazakhstan, official documents refer to current areas for concern, including the recruitment of well-qualified trainees, low salaries and lack of prestige, long working hours, overload and external pressures, as well as the lack of appropriate continuing professional development. These issues must be resolved, but approaches to their resolution need to be framed by a new understanding of what pre-school education should be like.

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<sup>1</sup> There has been a significant increase in the level of training of teaching staff: the proportion of educators with higher education was 42% in 2005 rising to 55.4% in 2010, and 57% in 2012, although there is considerable scope for further improvement.

Some of the buildings used for pre-school education are unsuitable, lacking the most basic facilities, suitable equipment, opportunities for outdoor learning or access for children/adults with disabilities. In many countries, pre-school education buildings are no longer exclusively dedicated to education, but have developed as integrated multi-service centers for young children and their families, incorporating health services, speech therapy, social care, and adult learning opportunities. This is a possibility to be carefully considered in the shaping of the new forms of pre-school organisations.

### **Secondary education**

In secondary education, in spite of many initiatives and a strong will to reform, the current plans are poorly co-ordinated, insufficiently ambitious and lack an understanding of the educational principles and practices that need to be applied if Kazakhstan is to move forward nationally and onto the international stage in the way in which it seeks.

Curriculum, assessment, textbooks, pedagogy, teacher training and school leadership all have to be developed together in a co-ordinated way with careful synchronisation. These aspects need to be informed by the same goals and values or they will undermine each other<sup>2</sup>.

National standards, subject programmes, pedagogy and textbooks need to be revised with a view to setting expectations for the development of more challenging intellectual function – comparing, analysing, applying, critiquing, inquiring, explaining, arguing – not just memorising and recalling.

Unified National Testing (UNT), being one of the most powerful and dysfunctional elements of the education system in Kazakhstan, needs to be revised radically to ensure that it is testing the variety of intellectual tasks that the country (and the higher education system) should require of students. It should employ a wider range of contemporary assessment methods and provide a broader profile of students' achievement across a range of subjects and accomplishments.

In the education sphere, there is a lack of agreement on what is meant by “trilingualism” and trilingual education; and, little is known of the results that have

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<sup>2</sup> In identifying, briefly, these interdependent elements of an educational system we have also indicated what international evidence (Darling-Hammond, 2010; Hattie, 2012; Levin, 2008; Mourshed et al. 2010; Stobart, 2008) suggests are key levers for change, the most powerful perhaps being (high-stakes) assessment; teacher education and leadership at both the school level and in the wider administrative and support structure.

been achieved by students in various types of trilingual education programmes elsewhere in the world and how this was accomplished. Current planning is underway with insufficient knowledge about trilingual education, and based partly on some false assumptions.

The levels of fluency to be achieved in Kazakh, Russian and English are insufficiently and inconsistently defined. Furthermore, curriculum goals are not fully aligned with the trilingual goals, and assessment of language learning is not aligned with curriculum intentions. These factors make it difficult to plan, among others, for curriculum and textbook development, and for teacher pre- and in-service training. Stakeholders in trilingual education are not co-operating sufficiently to achieve current government targets.

### **Equity and Inclusion**

In spite of many efforts to ensure equity in education, children attending rural schools remain at a significant disadvantage compared with those attending urban schools. In particular, this is due to the requirements of investment in infrastructure, resources, and teacher development and a more equitable approach to school finance. Current approaches to school finance puts schools, and hence children in poorer areas, at a disadvantage. Even the proposed per capita approach to funding will risk perpetuating this source of inequality unless it includes ways of addressing the particular difficulties facing small rural schools.

There is a complex interaction between rurality, the first language of children, and the language of instruction in schools that needs to be better understood. Both in urban and rural areas students taking the UNT in Russian seem to perform better than those taking it in Kazakh according to UNT and scores of the OECD's Programme for International Student Assessment (PISA). There are disadvantages for those educated in a language other than Kazakh or Russian, such as, for example, the impossibility of taking the UNT in their own language. One symptom of underlying inequalities is seen in young poorly qualified Kazakh males who drift into towns, fail to find employment and become disaffected. This has been identified as a social problem that requires an urgent educational response.

Children growing up in the state-run residential institutions are facing high risks of stigmatisation, unemployment, and poverty.

The education system fails to provide adequately for children with special needs through the implementation (to the extent possible) of inclusive education. Issues include inaccessible buildings, inadequate learning support and teachers who are unequipped to understand or meet the needs of these children. There are no funding mechanisms to support the inclusion of children with special needs into mainstream schools. The new funding formula “grants for better performance” is designed to reward schools for the number of students obtaining good UNT results and medals. Such bonus systems tend to reward the already advantaged population, the school’s previous achievements and successful student intake yet they tend to disadvantage others.

### **Teachers and Teacher Education**

The teacher salary structure in the “*stavka*” system is fragmented, complex and difficult to administer. Teacher salaries need to be increased to place them above the national average rather than below in order to attract quality candidates. System efficiency indicators such as the student to teacher ratio are very low (average ratio 8.2). This requires careful analysis, and possibly, revision of school staffing norms and school network rationalisation.

With regard to teacher education, there are serious issues related to attracting, recruiting, selecting and preparing high quality candidates to teach in Kazakhstan. Teacher education needs to be reformed urgently and systems along the teacher’s career path need to be aligned in order to improve teachers’ professional learning and development. Clear standards are needed that correlate to the vision of the teacher, the school and professional learning – and the application of these standards to the development of the teacher’s education curriculum and to student/teacher assessment.

### **Infrastructure and Resources**

Infrastructure is a major issue as many school buildings are unfit for purpose – as judged even against current standards of health and hygiene as well as educational functionality. Many existing schools lack the facilities and resources to provide a proper learning environment for e.g. the kind of practicals that are required or should be required if students are to learn to apply knowledge and learn to investigate natural phenomena for themselves; for work in the arts or for physical education. The Nazarbayev Intellectual Schools (NIS) schools are setting

new national standards that are far out of reach of ordinary schools, although the NIS curriculum is still expected to be integrated into the mainstream.

### **Management of Change**

Finally, a more strategic approach needs to be adopted to introduce change. Greater attention needs to be paid to interacting elements of the system (e.g. assessment, curriculum, and teacher training) as they are developed and integrated throughout the education system. Those in key managerial positions in schools Rajon, Oblast and the Ministry need training in the management of the enormous changes that are underway in Kazakhstan and that are presaged in this report.

### **Technical and Vocational Education (TVE) and Training**

The vision statement of the SPED for 2011-2020 should contribute to outlining the strategic objectives. The vision statement, which currently refers to the “achievement of the highly qualified labour force”, should be converted into a set of measurable strategic objectives describing desirable features of “the highly qualified workforce” to be achieved by 2020. The TVE-related objectives of this Programme should be refined so as to directly contribute to achieving the vision. Linkages between the Programme’s vision, the TVE’s strategic objectives, and the TVE system modernisation’s target indicators should be critically reviewed. The TVE development strategy for each of the Programme’s strategic objectives should be designed.

A structure of the SPED, while focusing on numerous activities, does not emphasise some of the principle policy issues raised by the international Human Resource Development (HRD) Conventions and Recommendations adopted by the International Labor Organization (ILO), United Nations Educational, Scientific and Cultural Organization (UNESCO), and European Union (EU) documents. Such areas of international focus are:

- relevance of TVE: (a) to the demand of the population (for personal development and social integration with education, training and employability of youth being a priority), (b) to stakeholders’ expectations (governments at all levels, employers and unions, students, communities, etc.), and (c) to labour market needs (industries, regional economies, employers);
- equality of access to education, training and employment opportunities;

- quality of TVE delivery (to ensure equal access to “quality education”);
- efficiency of TVE systems and institutions (utilisation of resources in producing outcomes).

The national TVE policy development and monitoring processes do not clarify the major intentions in developing TVE, taking into account the interests and determining responsibilities of all the stakeholders, including national and regional authorities, ministries, sector and regional councils, TVE providers, etc. Consequently, the inequality of the stakeholders involved in TVE policy development weakens TVE governance. There is no set of agreed processes for stakeholders to committedly contribute to TVE policy-making, funding, quality assurance, development of qualifications, on-the-job training and student assessment.

Equal access to education, training and employment opportunities is a fundamental international policy objective highlighted in all HRD Conventions and Recommendations of the ILO, UNESCO and the documents of the EU. The ILO HRD Recommendation 195 stated that its “members should: (a) recognize their responsibility for education and pre-employment training and, in cooperation with the social partners, improve access for all to enhance employability and to facilitate social inclusion” (ILO, 2004, p.6). The SPED in Kazakhstan however treats equality as a way of “ensuring equal access of all the participants to the educational process, and to the best educational resources and technologies” (MES, 2010).

International HRD policy documents recognise that technical and vocational education contributes significantly to the personal development and social integration, particularly of young people, resulting in meaningful private and social benefits. This means that TVE should be provided not only at the demand of the labour market but also at the demand of (young) people. The agreement with the international HRD recommendations is expressly confirmed in the Law on Education of the Republic of Kazakhstan (LERK, 2007, Article 3) that states that education aims to ensure personal and social development.

The qualification descriptors adopted in Kazakhstan in 2012 followed the descriptors of the European Qualifications Framework. However, the format adopted in Kazakhstan referred only to the qualification levels rather than to the types of national qualifications leaving some important aspects unspecified. First, the national qualification system does not provide names of qualifications and their

descriptions. Second, the qualification system does not suggest the nominal duration of learning programmes corresponding to the achievement of different qualifications. Third, a concept is promoted that the national qualification system should exist along with the qualification systems of the industry sectors where national qualification levels can be/will be split into various numbers of sub-levels depending on the industry sector specificity. This approach goes against the intended benefit of having the agreed types of national qualifications based on the agreed number of national qualification levels. It is expected that industry sectors should actively participate in the development of occupational standards and qualifications. However the national occupational standards development processes seem to be lacking uniformity and co-ordination. The development of occupational standards for mass trades needs to be assigned to national expert panels agreed upon by the concerned industry sectors, while individual industry sectors should be made responsible for the development of standards only for the occupations which are sector-specific. There should be a national validation process in place to assure the quality of standards and qualifications developed by industry sectors.

Most of the public TVE institutions, except for the few subordinated to the national government, are supervised by regional TVE departments of the Akimats. TVE regional departments, however, are understaffed while being responsible for very large numbers of public colleges and at the same time providing guidance to private TVE institutions. Principle functions of the regional TVE department involve college licensing, director appointments, planning and funding of TVE enrolments (within the so-called state order), and monitoring delivery. Staff in the regional TVE departments need to be knowledgeable regarding equal access to TVE, understand the current and future regional demand for educated and skilled workforce, capable of working with other departments and the regional statistical offices in order to make a case to develop and modernise the regional TVE systems.

Regional TVE participation rates of the 14-24 age group, which is the major potential beneficiary from technical and vocational education, ranges from between 9.4% to 20% thereby reflecting regional disparities in the availability of enrolment opportunities in the public and private TVE providers as well as the differences in students' ability to privately finance their technical education. On average, 54.8% of youth has to privately finance their technical education. In some regions, there are over 65% of fee-financed TVE students aged 14-24.

There are also considerable disparities between regions in their funding of TVE in:

- TVE participation rates of the 14-24 age group (ranging from 9.4% to 21.8%);
- the share of TVE students aged 14-24 funded from regional budgets (ranging from 32.7% to 70.8%);
- average funding rates of the full-time student-year applied in the budgetary funding by regional governments (ranging from KZT 164 000 to KZT 442 000);
- average fee rates applied in the regions which seem to reflect the varying abilities of students
- to finance their technical education (ranging from KZT 80 000 to KZT 280 000).

TVE in Kazakhstan is responsible for preparing and maintaining some 75% of the total labour force. The major structural problem of the national labour force is that 24.4% of jobs do not require any identifiable knowledge and skills (Group 9 of the International Standard Classification of Occupations (ISCO-08), with more than half being unskilled workers in industry, construction, mining and other technology-related sectors of the economy. The other half of unskilled workers come from services, sales, etc. This problem needs to be addressed by increasing the share of skilled workers, which could be accomplished by producing more workers and upgrading qualifications of the employed workforce. Similarly, there is a mismatch between the supply and demand in the labour force. The gathered data show that 20.4% of jobs in the labour market require higher education (managerial and professional jobs) while more than 33% of the economically active population are higher education (HE) graduates or with incomplete higher education, meaning the supply exceeds the demand by 1.7 times. This is also true with technician-level jobs. There are more than 3 times as many graduates at this level. Thus, 80% of skilled worker jobs in the labour market can be carried out either by graduate technicians, HE graduates or by people who graduated with a general education and have never been vocationally trained.

The SPED focuses on “quality assessment” rather than on “quality assurance” while many other countries focus on the latter. Planning quality-related activities needs to be based on the agreed national criterion of TVE quality. Several quality-related activities are listed in the SPED that aim to improve

institutional accreditation, staff training, development of standards, etc. which would benefit by bringing them under a certain quality criterion. Increased involvement in TVE-related activities by regional TVE authorities, regional and sector councils, and various national bodies may result in the conflict of quality assumptions. The introduction of the national quality criterion will also impact on its rather narrow definition provided in the Education Act of Kazakhstan. However the recently proposed standards of accreditation are not based on any nationally agreed concept of TVE quality.

Accreditation is one mechanism to assure TVE quality and is expected to incorporate the current attestation of institutions. Accreditation will aim to assess compliance of TVE institutions as well as their education programmes with the so-called accreditation standards developed by the accreditation agencies. The SPED aims to have 10% of public colleges (49 institutions) accredited by 2015. In 2013, around 20 colleges should be accredited. However, recently proposed standards of accreditation were not based on any nationally agreed criterion of TVE quality. Moreover, the accreditation standards for institutions are not in line with the ISO 9001 and ISO 9004, which determine the international basis for the quality management and organisation systems and processes.

The Programme plans to have greater employer involvement in TVE by introducing the dual system, which combines class-based TVE with structured on the job training, contributing to the development of education programmes, qualifications and standards of all kinds, having employers participate on TVE institutions' boards, and training of TVE staff. It is expected that the so-called "co-operative learning will be widely implemented by 2020". The dual system, which is well-established in Germany, Austria, Switzerland, and Denmark, requires a set of certain important conditions to be successful. Some of these conditions are currently missing in Kazakhstan or need to be clarified, such as the length of on-the-job training in an apprenticeship system, the capacity of national industry to absorb apprentices, apprentice stipends as compared with the market wages of skilled workers. Thus, the concept of public-private partnerships in TVE and the intended introduction of the dual system should be reviewed taking into account the core interests of industry stakeholders and trainees.

In the SPED (MES, 2010, p.19), training and upgrading of teaching staff is given high priority in order to provide the teaching profession a certain prestige and improve the quality of TVE. This would involve subject-specific teachers and

vocational instructors who are planning to upgrade their qualifications through internships in enterprises. However, it is also important to recognise the need to establish regulations for practical instructors in Kazakhstan. So far, skilled workers from industry can be employed as instructors by TVE institutions without any pedagogical training. Having pedagogical knowledge is an important requirement in many countries where skilled workers and supervisors in companies are involved in training new workers. Those employed as a teacher and/or instructor should be trained and certified for doing so.

### **Higher Education and Research**

This report develops six key policy areas grouped as priority issues.

***Priority One: To improve performance and quality of tertiary education to globally competitive levels.***

*Provision, enrolment, progression:* Following governmental measures to verify the proliferation of small poorer quality institutions, the number of higher education institutions (HEIs), especially private institutions, has been declining steadily since 2004/5, although private HEIs still constitute the majority. The absolute number of higher level students in Kazakhstan almost doubled between 1996 and 2005/6 but has since decreased by 26% – a decrease that can only be partially explained by a declining population. Surprisingly, this decline in enrolment has been heavily concentrated in public institutions. The largest drop in numbers was in extramural courses, whose quality was particularly poor. University enrolment rate in Kazakhstan is still well below most OECD countries, although not out of line with the average of countries of a comparable income level. Recently, rising dropout rates have been another source for concern.

*Quality assurance:* Kazakhstan has made progress towards implementing an institutional quality assurance system. By 2013, 3.6% of the total 139 HEIs had received full institutional accreditation and another 16.6 % are expected to reach that goal by the end of the year with approximately the same number of institutions receiving discipline-specific accreditation. Funding will be tied to accreditation (see below). However, there is reliance on centralised quality control and on compliance rather than a culture of quality assurance and self-evaluation at the institutional level.

*Access and equity:* The policy of reducing the number of HEIs appears to have had a disproportionate impact on Oblasts with a greater incidence of poverty. In addition, enrolment levels differ in rural and urban areas which may be attributed to the difficulties that graduates in rural areas, especially those from small schools, have in achieving the grades on the UNT, which is required for access to full-time higher education. In spite of the welcomed establishment of the National Qualifications Framework in 2010, there is no clear pathway from technical-vocational education (TVE) to higher education. Transfer and progression are thus unclear and in some cases impossible. There is extensive anecdotal evidence that the public continues to mistrust the quality of TVE, and that possession of these qualifications does not reduce the time required to obtain a degree.

***Priority Two: Align higher education to meet the labour market needs of a rapidly changing, increasingly knowledge-based, technology-intensive economy.***

*Labour market:* Graduate employment rates, based on estimates of less than 5% unemployment in 2011, appear to be relatively satisfactory. The structure of the labour force is that of a “middle income” country so it is probable that future economic growth will see a shift of labour into the secondary (industry and construction) as well as the tertiary (services) sectors. Developing technology and increasing globalisation will mean that all graduates must be prepared for changing skills demands and the requirement to continuously upgrade professional expertise. It is essential that at least the first university degree of any graduate provide the foundation on which later professional specialisations can be based and, through what is usually called “lifelong learning”, be frequently updated. This report examines the mix of disciplines in which Kazakh students now graduate and raises questions about their readiness for the labour markets that they are likely to encounter. It also compares the distribution of the fields of study by the graduates of HEIs that shows a very marked divergence between Kazakhstan and comparator countries. In particular, it notes that the continuing high enrolment in business and law and low enrolment in science and technology cannot be expected to meet the needs of the innovation technology-based economy that Kazakhstan hopes to become while demand for so many law and business graduates can hardly be expected to continue indefinitely.

*Government measures to improve the responsiveness of education and training:* Several initiatives to strengthen the connection between higher education

and the labour market are proposed in order to depart from previous modes of identifying labour market needs by state orders. When fully implemented, the National Qualifications Framework will enable and facilitate employer recognition of educational qualifications at all levels of the system. A separate Roadmap Report deals with the reform to date of the TVE system, including the occupational structure of the Kazakh labour market.

*Issues:* Measures are needed to: i) increase the proportion of graduates in science and technology; ii) focus on strong technician-level tertiary education systems at the level of ISCED 5B (Tertiary B); iii) strengthen information about career opportunities and the labour market and iv) improve the relevance of programmes for the labour for R&D. Moreover, the lack of pathways through the education system (mentioned under priority one) may discourage lifelong learning.

***Priority Three: To build capacity for internationally recognised research and to integrate education, innovation and research in HEIs.***

*Building capacity for research in HEIs:* Since the 2001 Law on Science was established, Kazakhstan has increased funding for HEIs to engage in scientific research. Currently there are several initiatives underway to build capacity in order to compete globally in research and innovation and to integrate education, innovation and research in HEIs. The primary strategies include: i) increasing funding for, and the capacity of, research universities to compete globally, while beginning to differentiate the missions of other institutions to focus on national, regional and local research or educational needs; ii) reorienting the “Bolashak” Scholarship Programme toward graduate education (Master’s and doctoral candidates) to study in international universities; and iii) developing Nazarbayev University (NU) as a national model for the development of research capacity. In addition, Kazakhstan has taken a number of important steps to strengthen the capacity for research and innovation in HEIs, through the planned establishment of one or two research and ten “innovation” universities and through the development of a system for training qualified staff. In 2011, there were 1 337 Ph.D. students enrolled in Kazakh universities, the majority in social sciences, education, economics and business and engineering and technology, with relatively few in agricultural science and veterinary medicine.

*Funding Research:* Government expenditure on research and development (R&D) increased by 4% from 2007 to 2011, (although it declined 2010-2011). The government has also shifted more of this expenditure to HEIs: between 2007 and

2011 R&D spending at HEIs increased by 70% or USD 19 million, with declining R&D expenditures for other institutions. Total research expenditures in Kazakhstan (HEIs and research institutes) are approximately .038% of GDP, with a goal to increase research spending to 1% by 2015. Capital expenditures for R&D have been expanding rapidly, growing more than 300% in the last five years. It is unknown how much of this is for development of new facilities or renovation and improvements in existing facilities.

*Issues:* In spite of the progress noted above, a potential barrier to the national goals for integrating research, innovation and education is the continuing bifurcation of the research enterprise between HEIs and research institutes. While additional funding in 2012/13 flowed to HEIs, a larger proportion of the research budgets remain in the research institutes, sponsored by non-education ministries. Limited resources result in research funds spread across many organisations, thereby potentially compromising the quality of research overall.

Even with the increased investment, Kazakhstan spends much less than its international competitors on R&D at HEIs as a percent of GDP. Kazakhstan also continues to have a far higher percentage of applied research and lower percentage in R&D, compared to international norms

Other barriers to progress are: i) heavy teaching workloads of academic staff that can limit time for research; ii) inadequate integration of education, research and industry (role of research universities, innovation clusters); iii) lack of a commercialisation infrastructure for researchers (institutions, training innovation managers, cultivating entrepreneurship culture); iv) need to continue to train, attract, and retain best research minds in Kazakh HEIs; v) low level of private demand for R&D in the country; and vi) lack of an effective national innovation system (better coordination among the government agencies responsible for funding research and innovation in the country).

***Priority Four: To build institutional capacity for a diverse, globally competitive higher education system.***

It is widely accepted that higher education systems require a range of institutions with differentiated educational missions in terms of student selection, types of programmes offered and degrees awarded; types of research and extent of regional and community engagement. Their financing needs to reinforce mission differentiation: to maintain a balance between the need for a limited number of

globally competitive research universities granting degrees at the post-graduate level of research-intensive doctorates; and the need for institutions focused primarily on teaching at the undergraduate level.

*Progress to date:* Through the new classification of institutions, Kazakhstan is promoting the differentiation of institutions according to the scope and types of academic programmes and the level of research. Data from 2011 indicates that of the 149 institutions in that year there were 90 universities, 26 academies and 33 institutes. The clearest element of national strategy is to develop world-class research universities on the model of Nazarbayev University that are recognised at the highest levels of global rankings. One issue that Kazakhstan must address is the amount of both financial and human resources it can afford to invest in such globally competitive universities.

*Issue:* It is unclear whether Kazakhstan has an adequate strategy to develop the network of institutions with diverse missions, each performing at the highest international standards of quality and performance appropriate for its mission required to achieve the President's 2050 vision.

***Priority Five: To establish a financing framework for a competitive, sustainable higher education system.***

*Mobilisation of public resources:* Kazakhstan spends considerably less of its GDP on tertiary education than most other countries, including those with a similar GDP per capita. Several indicators, such as salary levels for faculty that are so low as to invite corruption and consistent feedback from employers that students are graduating from college ill-prepared for the working world, suggest that the level of funding is insufficient to produce the current level of degree outputs at a high level of quality.

*Resource allocation:* Kazakhstan's approach to funding institutional capacity building and applied research on high priority issues differs substantially from its approach to funding the education of its citizens. For teaching and learning, with very few exceptions (Nazarbayev University being the principal one), Kazakhstan does not utilise its resources to create capacity and does not make a conscious effort to create and sustain types of institutions that are appropriate for diverse needs.

Post-independence sector growth was funded primarily through student fees. The share of private financing is one of the highest in the world. Most public funds devoted to higher education are allocated through the provision of merit-based state grants (essentially a voucher) to students who obtain the highest scores on the UNT. Approximately a quarter of enrolled students receive state grants. Although a small proportion of these grants are allocated to some disadvantaged groups such as orphans, the disabled and students from rural areas, the system is highly unequal, since an allocation based solely on pure academic merit tends to favour richer families who do better on the UNT as they are likely to attend better schools and can afford private tuitions. Once in receipt of a grant, the student has complete freedom to enrol in any institution of his/her choice. From 2015 only accredited institutions will be acceptable which provides a major incentive for institutions to participate in the accreditation process. A certain number of grants are restricted to disciplines specified as being of state interest. Similarly, students who receive the grants overwhelmingly choose state-owned institutions, increasing the inequalities of higher education expenditure.

*Current government response:* Recent development plans increasingly recognise that reliance primarily on private institutions and free student choice may be incompatible with other national goals. The systematic reduction in the number of HEIs, and the creation and funding of Nazarbayev University with a new model of both governance and finance, are important steps. Nothing comparable has yet been worked out for financing the rest of the higher education system on a sustainable basis.

Kazakhstan has also taken modest steps to address the problem of affordability for the majority of students who do not receive state grants. The country has established the National Education Storage System (NESS) and a student loan programme. While these two programmes provide ways to help families with the terms of payment for college, they do nothing to reduce the overall cost of attendance.

*Issues:* With the current level of state funding and the allocation mechanisms discussed, Kazakhstan cannot expect to educate enough of its population to high standards or conduct enough research to yield the needed levels of innovation. The report notes the inconsistencies between the government's approach to funding research versus undergraduate education and between national goals and the way in which funds are allocated to pursue these goals.

***Priority Six: To establish a leadership and governance framework at both the institutional and national levels for a competitive system***

International experience shows that for universities to respond to multiple demands, it is important that they have autonomy in their decisions about academic course content, staff appointments and institutional financing. At the same time, such academic freedom must be balanced with the need to be accountable to taxpayers. Increasingly, these responsibilities require the redefinition of the roles and responsibilities of different levels of the higher education system both at ministerial level and at institutional-level governing boards. Modern HEIs require fundamental changes in the qualifications of institutional leaders: rectors, presidents, and senior institutional administrators

*Progress to date:* Kazakhstan has taken important steps both to increase institutional autonomy as well as to reform the role of the Ministry of Education and Science (MES) of the Republic of Kazakhstan and national-level entities. Nazarbayev University will serve as one model of a new kind of corporate governance. Supervisory boards have been established for four national universities. Increased autonomy for institutions will be granted to HEIs accredited through the new independent process. The MES is redefining its role in support of a more decentralised, autonomous network of institutions while at the same time maintaining essential national-level regulatory controls. The establishment of new independent entities to carry out critical functions previously undertaken by the MES illustrates this intent (e.g. the Bologna Process and Academic Mobility Center and the new independent national Center for statistics and analysis, the National Center for Education Statistics and Assessment (NCESA).

*Institutional level issues:* While the principle is being widely discussed, there continue to be legal constraints on autonomy of public universities in Kazakhstan, which do not apply to private HEIs or to NU. There are regulatory constraints related to the capacity of institutions to assume increased responsibility for curriculum and academic programme development. Rigid budgetary controls based on historic practices limit the flexibility of university managers. The capacity to implement a new governance model for all public institutions is required which will focus on the need to earn greater autonomy and public trust through improved accountability for the expenditure of public funds and the guarantee of excellent education outcomes.

*National level issues:* While institutional autonomy is important, so is national-level capacity for providing leadership and oversight for the tertiary sector as a whole, utilising the key policy tools of policy leadership, finance, regulation, and accountability. In this respect, it will be necessary to clarify the role and responsibilities of the MES in steering the higher education system and in implementing policy reform; and to create a platform to enable policy makers, central administrators and funding agencies at national level to develop strategies and implement system reform.

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