

Chapter 1. The Serbian education system

Serbia has seen improvements in access to education and international assessments show that learning outcomes have remained generally stable in recent years, with slight improvements among the highest-achieving students. This signals widening educational inequities and a large share of students in Serbia continue to leave school without mastering basic competencies. These issues reflect chronic underfunding for education and a limited capacity to drive changes in teaching and learning across the system. This chapter reviews some of the contextual features of Serbia's education system and highlights how evaluation and assessment can help the country achieve higher learning standards for all students.

Introduction

The education system in Serbia has been undergoing major changes. Driven by a strong commitment to European Union (EU) integration, Serbia has announced and launched various reforms to address a growing demand for a better and more equitable education system. These include the introduction of achievement standards at the end of compulsory and upper secondary education, teacher and principal standards and a school evaluation framework.

Participation in compulsory education is now virtually universal and Serbia has made progress expanding access to pre-primary and higher education. International assessments show that the learning outcomes of students in Serbia remained generally stable in recent years, with slight improvements among the highest-achieving students. This signals widening educational inequities and many students continue to leave school without mastering basic competencies for further education and life. Differences in access and outcomes persist across socio-economic groups and regions, limiting the life opportunities of many individuals and impeding national development. This chapter provides an introduction to how evaluation and assessment in Serbia's education system can steer the country towards higher learning standards for all students.

National context

Economic context

Serbia is among the richest countries in the Western Balkan region

An upper-middle-income country, Serbia has the largest economy in the Western Balkans as measured by gross domestic product (GDP) (World Bank, 2019^[1]). In per-capita terms, the country also ranks among the richest in the region, after Montenegro (USD 7 782 in 2017) (World Bank, 2019^[2]). Despite this, real wages in Serbia (EUR 422) were among the region's lowest in 2018, except Albania (EUR 378) and North Macedonia (EUR 376) (Serbian Monitor, 2018^[3]). In the years following the 2008 economic crisis, Serbia suffered one of the lowest annual growth rates in the region (0.4%); however, this started to change in 2018 as favourable external conditions and sound economic policies led to a growth rate of 3.2%, which is expected to remain high in the coming years (The Economist, 2018^[4]).

Unemployment remains high, in particular among young people

Serbia's recent economic growth, coupled with job creation, has contributed to a significant decline in the country's unemployment rate from nearly 20% in 2014 to 13% in 2018 (World Bank, 2018^[5]). Nevertheless, unemployment is more than double that of OECD countries (see Table 1.1) (World Bank, 2019^[6]). Unemployment is especially prevalent across Serbia's youth population, of which nearly one-third is without a job (Table 1.1). Even among youth who have attained a tertiary education, around 27.8% were unemployed in the last quarter of 2018 (Eurostat, 2018^[7]). This has led to many young people migrating to neighbouring European countries with better job prospects (WFD, 2019^[8]). For example, research on student migration revealed that a third of Serbian college students who participated in a 2018 survey conducted by the government planned to move abroad after graduation, mainly for economic reasons such as being unable to find a job in their profession or advance professionally (WFD, 2019^[8]).

Poverty rates in Serbia also remain very high. Despite a decrease in poverty rates from 24% in 2014 to 22% in 2018, over one-fifth of the population in Serbia still lives in poverty (World Bank, 2018^[5]). This is a higher share than in other Western Balkan countries, such as North Macedonia (20.6%) and Montenegro (4.8%) (World Bank, 2018^[5]).

Table 1.1. Education and development in Serbia

	Serbia	Western Balkans average	EU average	OECD average
GDP per capita, PPP (constant 2011 international \$), 2018*	16 035	13 660	38 076	40 488
GDP per capita growth (annual %), 2018*	4.9	3.9	1.8	1.6
Population growth (annual %), 2018*	-0.6	-0.13	0.2	0.6
Rural population (% of total population), 2018*	44	42.2	24	19
Unemployment rate, aged 15-24, all persons (%), 2018**	32.1	36.7	15.2	13.9
Unemployment rate, aged 15 and over, 2018**	13.5	17.6	6.8	5.3
Share of youth (15-24 year-olds) not in employment, education or training (NEET), (%), 2018**	17	19.8	9.4	9.8
Share of female youth (15-24 year-olds) not in employment, education or training (NEET), (%), 2018**	17.5	18.6	11.7	10.8
Human Development Index (HDI), 2017****	0.78	0.78	0.88	0.89
Literacy rate, 15-24 year-olds, 2016***	99.7

Note: Data for Albania missing (share of total youth and female NEET); Data for Australia missing (share of total youth and female NEET); Data for Korea missing (share of total youth and female NEET); Data for Kosovo missing (rural population, unemployment rates, share of total youth and females NEET and HDI); Data for North Macedonia missing from HDI.

.. : Missing value or not available.

PPP: Purchasing Power Parity.

Source: * World Bank (2018^[9]), *World Bank Indicators: Education*, <https://data.worldbank.org/topic/education> (accessed on 15 June 2018); ** ILO (2018^[10]), *ILOSTAT*, <https://www.ilo.org/ilostat/> (accessed on 15 July 2018);

*** UIS (UIS, 2019^[11]), *UNESCO Institute for Statistics*, <http://data.uis.unesco.org/> (accessed on 14 June 2019); **** UNDP (2016^[12]), *Human Development Index*, <http://hdr.undp.org/en/data> (accessed on 15 July 2018).

High levels of inequality are particularly concentrated in some regions

Income inequality has increased since 2000 and at 38.6, Serbia's Gini coefficient stands above the average of neighbouring countries, such as Croatia (30.6) and North Macedonia (35.2). High levels of inequality are a result of the low redistributive power of taxes and social transfers, as well as high rates of inactivity in the working-age population (Arandarenko, Mihail; Kristic, Gorana; Zarkovic Rakic, 2017^[13]). The incidence of disadvantage is mostly concentrated in specific regions of the country. In particular, over 30% of the population the Southern and Eastern Serbia and the Šumadija and Western Serbia regions were considered to be at risk of poverty in 2011 (see Table 1.2).

Table 1.2. Estimates of at-risk-of-poverty by region in Serbia in 2011

Region	Poverty rate
Belgrade region	10.5%
Southern and Eastern Serbia	33.0%
Vojvodina Region	25.8%
Šumadija and Western Serbia	32.3%

Source: Adapted from Statistical Office of the Republic of Serbia/World Bank (2016^[14]), *Poverty Map of Serbia – Method and Key Findings*, <http://pubdocs.worldbank.org/en/859541477472336209/Poverty-Map-of-Serbia.pdf> (accessed on 1 February 2019).

Social context

Demographic decline is shifting demand for education

Similar to other East European countries, the Serbian population is projected to decline by more than 15% by 2050. This trend is partly the result of low fertility rates (1.6 births per woman in 2010-15), which are below the level required for population replacement (around 2.1 births per woman) (United Nations, 2017^[15]). Over the last decade, this has led to an important decrease in the student population in schools. The number of students in Serbia decreased by almost 8% and 10% in basic education schools and upper secondary schools respectively (UIS, 2019^[11]). The Ministry of Education, Science and Technological Development (hereafter the ministry) is currently working with local governments to develop a proposal for rationalising and reorganising the school network in response to this decline (see Chapter 3).

Despite significant progress, corruption in public administration is still perceived as high

Serbia has made significant progress in consolidating democratic governance by strengthening the rule of law and reforming public administration (European Commission, 2018^[16]). Elections are administered following international standards (Transparency International, 2014^[17]). The prospect of integration in the EU has also led the country to strengthen its anti-corruption systems, for example by signing the UN Convention against Corruption. However, progress is slow and implementation of existing legislation, policies and oversight by relevant public bodies remains weak (Transparency International, 2014^[17]). In 2013, a public opinion survey revealed that 70% of respondents perceived corruption was a major issue in the public sector (Transparency International, 2014^[17]). Serbia has also dropped in Transparency International's Corruption Perceptions Index since 2016 and as of 2018, ranked 87th out of 180 countries. This is similar to neighbouring Bosnia and Herzegovina (89th) and North Macedonia (93rd), but below most OECD countries (Transparency International, 2018^[18]).

Similar to other public sectors, the Serbian government introduced several reforms to improve the transparency and integrity of practice in the education sector but concerns remain (OECD, 2012^[19]). For example, the government reformed rules for appointing school principals to help reduce the role of local authorities and avoid the interference of local politicians (see Chapter 4). However, ensuring better integrity in the education sector will require additional efforts. The absence of transparent guidelines for hiring and firing staff contributes to a perception among stakeholders that the appointment and promotion of teachers and school staff are routinely based on political affiliation or favours, not (only) on competency.

Serbia is ethnically and linguistically diverse

Serbia's population is among the most ethnically homogenous in the region. Ethnic Serbs make up 83% of the total population. Other minorities include Hungarians (3.5%), Roma (2.1%) and Bosniaks (2%). Data on the Albanian population is imprecise, given that the majority boycotted the last national census (SORS, 2011_[20]). For historical reasons, the largest share of minorities resides in the Autonomous Province of Vojvodina, located in the north of the country (SORS, 2011_[20]).

Certain minority groups, in particular the Roma, are more likely to face unemployment and poverty, compared to the rest of the population. In 2009, less than one in three Roma were employed, of which 80% were in an informal job (Gligorov, Ognjenović and Vidovic, 2011_[21]). A more recent survey about the Roma population in Serbia found that in 2017 the unemployment rate among Roma was as high as 37% in the country (UNDP, 2018_[22]).

Key features of the education system in Serbia***Governance of the education system****Serbia's National Education Strategy 2020 is ambitious and comprehensive*

In 2012, the ministry introduced the Strategy for Education Development in Serbia 2020 (hereafter the strategy). This document recognises the key role education plays in advancing Serbia's economic, social, scientific, technological and cultural development needs. The strategy was developed with over 200 stakeholders and is based on a diagnosis of the education system's strengths, weaknesses, opportunities and threats (SWOT), from pre-primary to adult education (MoESTD, 2012_[23]). It sets out four broad long-term objectives for education and identifies an ambitious list of actions to improve teaching and learning (see Box 1.1). However, there is little prioritisation of what issues and actions are most important for driving improvement.

Serbia's education strategy will end in 2020. As such, the ministry has started discussions about the contents for a new medium-term strategy, which will outline the country's vision for education from 2020 to 2030. This new strategy will cover a critical period for Serbia's national development and potential accession to the EU (MoESTD, 2012_[23]).

Qualitative objectives characterise the action plan, making it difficult to track and measure goals

The Serbian ministry launched the Action Plan for the Implementation of the Strategy 2020 (hereafter the action plan) in 2015 to support the implementation of the education strategy by specifying individual activities, implementation methods, deadlines, key actors, instruments for monitoring, indicators of progress, as well as procedures for evaluation and reporting. There is an individual action plan for all education levels – including one for pre-university education, one for higher education and a cross-cutting strategy (MoESTD, 2014_[24]). In 2018, a working group charged with monitoring the implementation of the action plan published a report on progress made towards achieving the strategy between 2015 and 2018. However, this report is mainly descriptive and provides few meaningful conclusions on how to prioritise future reforms.

This is partly because quantitative indicators in the strategy document do not fully align with the action plan's indicator framework. Moreover, some of the indicators are vague, which makes it difficult to measure progress at the national level in a meaningful way.

For example, the action to evaluate student achievement in primary school is measured by the number and types of student educational achievements, results on educational achievements and number of programmes for the promotion of teacher competencies (in the areas of student assessment) (MoESTD, 2014^[24]). These may not be the most relevant measures for evaluating student achievement nor do they clearly express how such improvements would contribute to the realisation of Serbia's vision for primary education.

Box 1.1. Strategy for Education Development in Serbia 2020

The Strategy for Education Development in Serbia 2020 (hereafter the strategy) sets out four broad, long-term objectives for the Serbian education system:

1. Raising the quality of education and its outcomes of education.
2. Increasing the coverage of the Serbian population across all levels of education, from pre-school to lifelong learning.
3. Developing and maintaining the relevance of education by harmonising the structure of the system with individual, economic, social, cultural, research, public and educational needs.
4. Increasing the efficiency of the use of educational resources, including the completion of education on time, with an emphasis on reducing dropout.

These objectives are translated into several concrete activities outlined in the associated action plan. Many of the proposed activities are relevant to evaluation and assessment efforts that can help improve educational quality, such as:

- Establishing a body for the accreditation of pre-school institutions and programmes.
- Revising the final exam in primary schools.
- Developing an exam for the end of upper secondary education (general, artistic and vocational) and introducing a specific evaluation system in artistic education.
- Standardising qualification exams in upper secondary vocational education.
- Developing an admissions procedure to higher education based on the baccalaureate.
- Revising the teacher professional development and support systems.
- Developing methodology for collection and analysis of education data.

Source: MoESTD (2012^[23]), *Strategy for Education Development in Serbia 2020*, <http://erasmusplus.rs/wp-content/uploads/2015/03/Strategy-for-Education-Development-in-Serbia-2020.pdf> (accessed on 4 February 2019); MoESTD (2014^[24]), *Action Plan for the Implementation of the Strategy for Development of Education in Serbia 2020*, Ministry of Education, Science and Technological Development.

The ministry holds a high level of responsibility in designing education policies but capacity to conduct system evaluation is limited

The ministry is the main body responsible for designing and implementing education policy in Serbia for all levels, from pre-primary to higher education. The minister reports directly to the central government as well as to the National Assembly's Committee on Education, Science, Technological Development and Information Society. Despite its role in steering Serbia's education system, the ministry itself has limited capacity to conduct system evaluation, largely because some of the institutions and tools for conducting this process remain underdeveloped. For example, there are challenges around national data collection and prior to 2018, Serbia had not conducted a national assessment since 2006. Even when information is available, the lack of staff with relevant experience hinders comprehensive system evaluation (MoESTD, 2018^[25]). As a result, the monitoring and evaluation of Serbia's education strategy and action plan are neither a systematic process nor are their findings made publicly available.

Specialised institutes affiliated to the ministry are understaffed

Specialised institutes affiliated with the ministry provide technical expertise and develop policies in specific areas. The Law on the Foundations of the Educational System (2017) regulates their work (Figure 1.1):

- The Institute for Education Quality and Evaluation (IEQE), established in 2004, is the leading agency on policies related to assessment and system monitoring. The IEQE is responsible for developing the standards and tools used in external school evaluation, planning and developing examinations taken in school education (the end of basic education examination and the newly introduced State Matura at the end of upper secondary education). The IEQE is also responsible for developing the new national assessment and managing Serbia's participation in international assessments. Finally, this body carries out research that feeds into system external evaluation and strategic planning.
- The Institute for Improvement of Education (IIE), established in 2004, is responsible for curriculum development, the quality assurance of textbooks and co-ordinating the professional development of teachers, school principals and professional associates (support staff). The IIE played a central role in developing Serbia's curriculum reform, which started rolling out in 2018 with Grades 1, 5 and 9 (see Chapter 2). This body also is responsible for vocational education and training (VET) school examinations and adult education; however, the majority of staff working on VET issues within the IIE will soon move to the newly established National Education Qualification Agency.
- Autonomous Province of Vojvodina, has specific responsibilities related to education in this territory. The Division for Education that administers pre-school, primary and secondary school education and student accommodation. It also ensures the right of minority national communities to learn in their mother tongue.

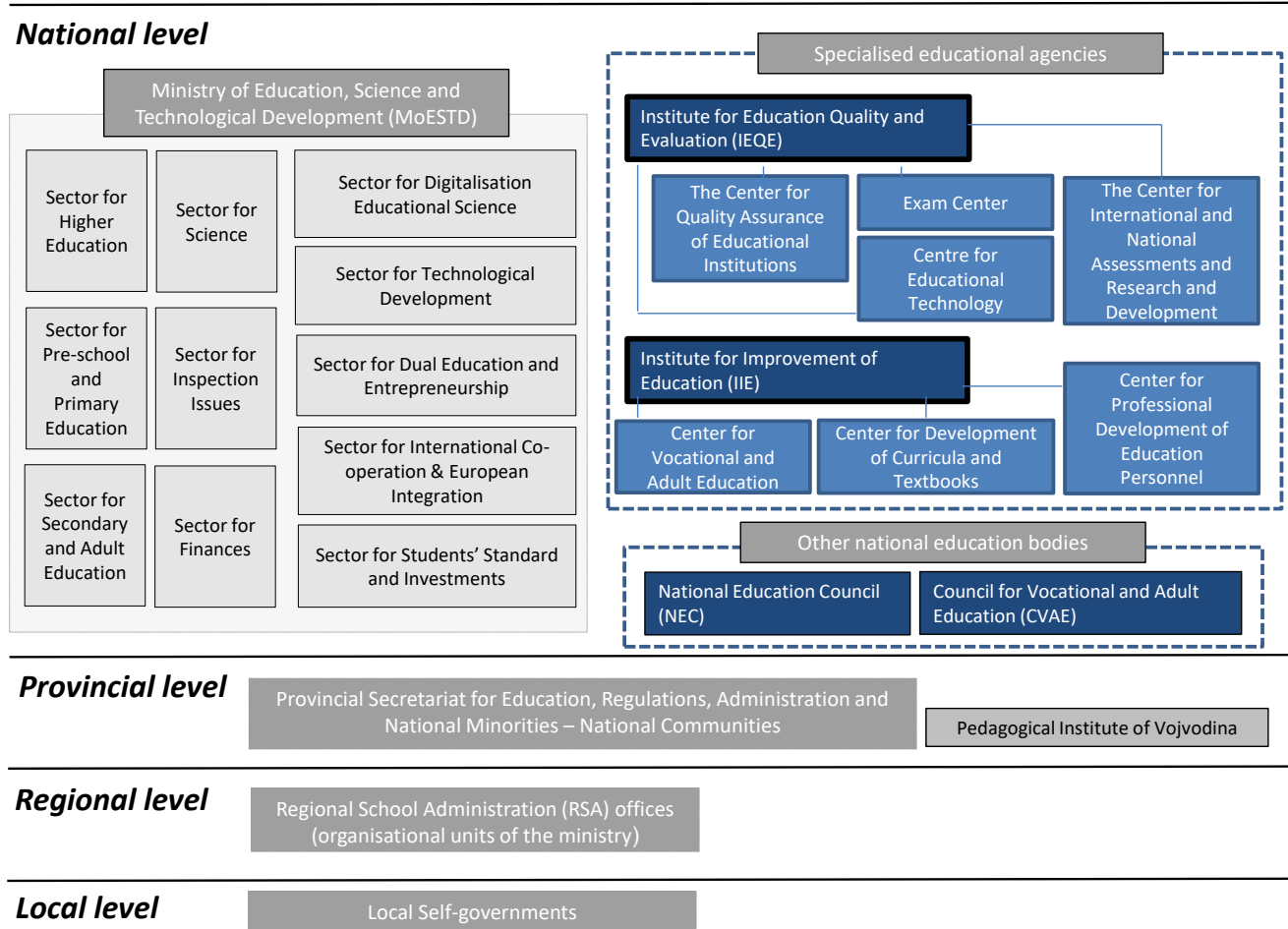
While Serbia's specialised education institutes have significant technical expertise, most do not have enough staff and are underfunded. For example, in 2017, only 15 of the 33 positions in the IEQE were filled (MoESTD, 2018^[25]). In particular, very few personnel are skilled in quantitative research, statistical, psychometric and survey design experience. The lack of adequate resources is particularly problematic as the IEQE is in charge of

implementing two new major reforms (the development and introduction of the new Matura by 2020 and the new national assessment), in addition to its current mandate.

The National Education Council plays an advisory role

The National Education Council (NEC) was formed in 2006 to help define Serbia's educational standards, curricula and examinations. Since 2017, this body has held a strictly advisory role that spans all education levels, with the exception of higher education. The 35 members of the council represent a wide range of stakeholders, including university professors and teacher associations. Within its advisory role, the council helps to monitor and co-ordinate the development of education and training in Serbia, as well as relaying the interests and needs of all social partners.

Figure 1.1. System of education governance in Serbia



Source: MoESTD (2018^[25]), *OECD Review of Evaluation and Assessment: Country Background Report for Serbia*, Ministry of Education, Science and Technological Development.

Regional School Authorities play a role in both school evaluation and support

The Regional School Authorities (RSAs) are deconcentrated organisational units under the responsibility of the ministry. The 17 RSAs located across Serbia are responsible for conducting external school evaluation following the framework guidelines designed by the IEQE and prescribed by the ministry. They are also responsible for following up with schools on their school development plan and appraising teachers for promotion purposes. The dual function of the RSAs as evaluator and close advisor to schools is problematic as it jeopardises the independence of judgement of the external school evaluation (see Chapter 4).

Local self-governments play a limited role in education

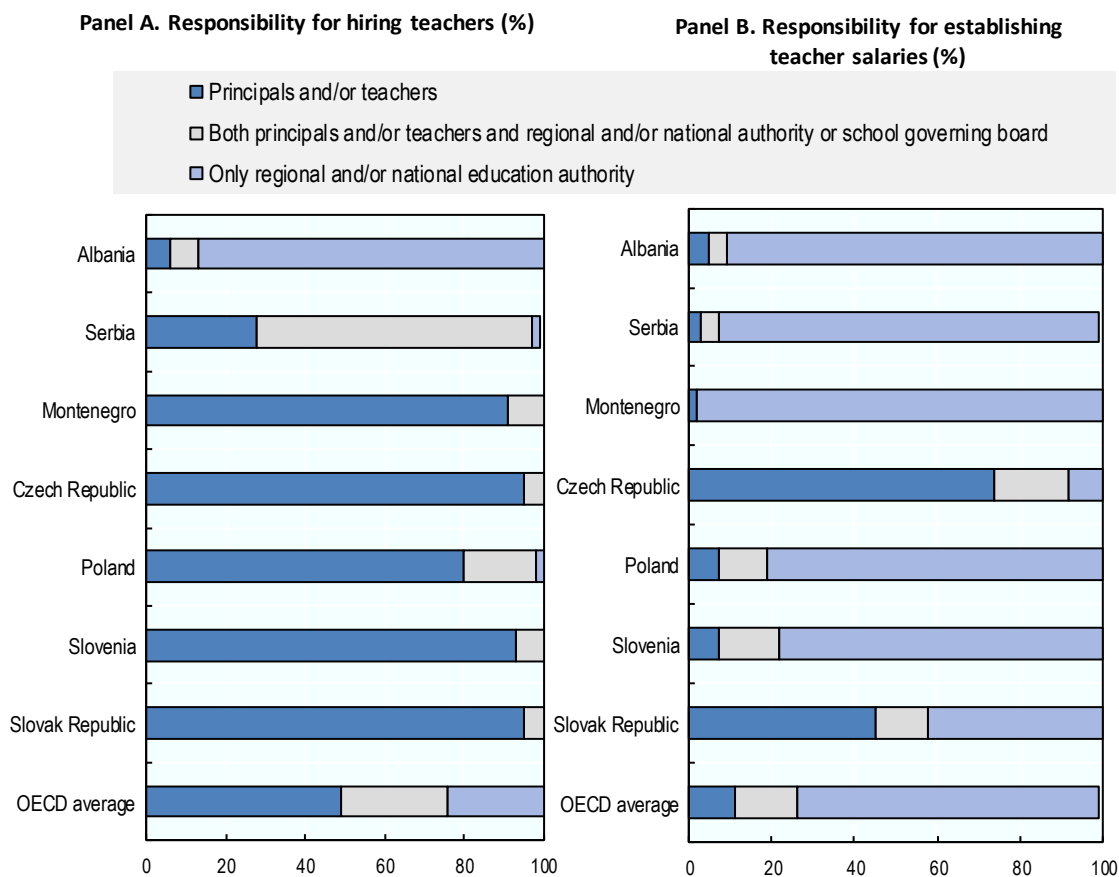
Although administrative management is mostly deconcentrated, decision-making power in education still lies at the central level. Local self-government plays a role in the oversight of schools through their representative on the school board. They are also responsible for funding continuous professional development for teachers and other school staff. However, not all local self-governments allocate sufficient funds for professional development (see Chapter 3).

Schools have some autonomy over resource allocation and management

Data from the OECD Programme for International Student Assessment (PISA) reveal that in Serbia, similar to the majority of OECD countries, schools have considerable responsibility in recruiting and dismissing teachers. School principals in Serbia select teachers through an open call for recruitment. However, this autonomy has been restrained in recent years by the obligation to prioritise unemployed licensed teachers over novice teachers (see Chapter 3). Schools also do not have a major influence on teachers' salaries, as is the case in most OECD countries. The Serbian ministry is solely responsible for establishing teacher salaries, as well as determining any salary increases (Figure 1.2) (OECD, 2013^[26]). On the other hand, Serbian schools have some autonomy over the school budget allocation, although this is more limited compared to OECD countries (OECD, 2013^[26]).

While school leaders in Serbia have a high level of responsibility in managing staffing and budget at the school level, they receive very little training and guidance in how to carry out these tasks. Until recently, there was no mandatory initial preparation for school principals; however, a new training programme is being introduced to help prepare principals for the licensing exam. Nevertheless, the majority of principals do not attend continuous professional training (OECD, 2014^[27]).

Figure 1.2. Distribution across the education system of responsibility for school resources



Note: Percentage of students in schools whose principals reported that “only principals and/or teachers”, “only regional and/or national authority”, or “both principals and or/teachers” and “regional and/or national education authority”, or “school governing board” has/have considerable responsibility in the tasks.

Source: OECD (2013^[26]), *PISA 2012 Results: What Makes Schools Successful (Volume IV): Resources, Policies and Practices*, <https://dx.doi.org/10.1787/9789264201156-en>.

Schools have limited flexibility in adapting the curriculum to their needs but extensive autonomy over assessment

The curriculum is centrally determined in Serbia. According to PISA 2012 data, 3 times the number of school principals (61%) in Serbia reported that course content is determined centrally, compared to 24% across OECD countries (OECD, 2013^[26]). Ongoing curriculum reform places a greater emphasis on competency development than content. It has introduced extensive teaching and learning plans, which list what subjects should be taught and how often they should be taught each week. The curricular programmes also provide detailed instructions on the content and desired learning outcomes by subject and grade level. Every four years, schools are required to use these teaching and learning plans and programmes to develop their own school-level programme, in accordance with law. As part of this exercise, schools also specify how they will adapt the curriculum to individual school needs. However, schools receive limited guidance and, on average, have limited capacity to do this. As a result, the majority of schools using the national curriculum do not reflect the local contexts or school-specific student needs (MoESTD, 2018^[25]).

While there are national procedures and criteria for evaluating student achievement at the primary and secondary level, teachers in Serbia seem to enjoy considerable autonomy in developing student assessments. According to PISA data, 93% of school principals reported that only school principals, teachers or the school board determine student assessment policies in Serbia – similar to 88% on average across OECD countries (OECD, 2013^[26]).

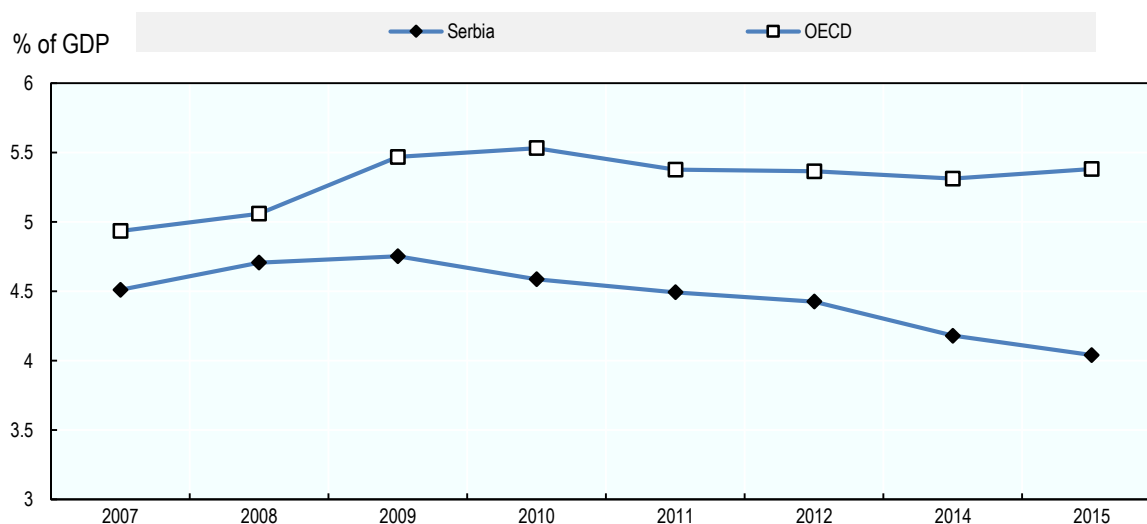
Funding the education system

Public spending on education has been historically low but spending per student is on the rise for pre-primary and tertiary education

Serbia's level of public expenditure on education has been historically low and, at 4% of GDP in 2015, remains lower than the OECD average (5.3%) (UIS, 2019^[11]) (see

Figure 1.3). The country's share of total government expenditure allocated to education also remained low and mostly unchanged over the past decade (10% in 2007 and 9% in 2015) similar to OECD countries (12.7% in 2007 and 13% in 2015) (UIS, 2019^[11]). Spending on education in Serbia is below the United Nations benchmark of 15%-20% of total government expenditure allocated to education (UNESCO, 2014^[28]).

Figure 1.3. Public spending on education as a percentage of GDP, 2007-15



Source: UIS (2019^[11]), UNESCO Institute for Statistics, <http://data.uis.unesco.org/> (accessed on 14 June 2019).

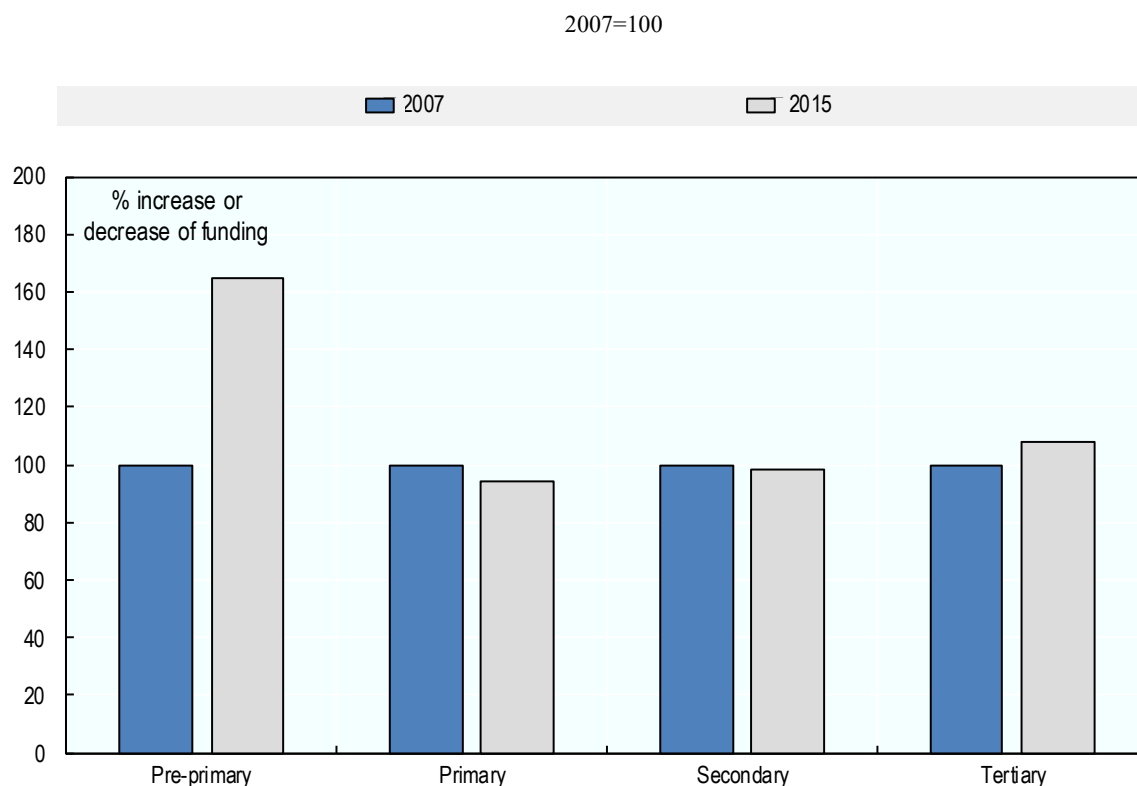
In terms of spending by education levels, per student funding in Serbia has decreased for primary (5.8%) and secondary education (1.7%) between 2007 and 2015 (see

Figure 1.4) (UIS, 2019^[11]). On the other hand pre-primary education has seen an increase in per student funding (64.5%), although this remains very low. Per-student funding in the tertiary sector also increased (8%) between 2007 and 2015 (UIS, 2019^[11]).

Compared to that of neighbouring and other European countries, Serbia's public expenditure on secondary education is relatively low. However, allocations across other education levels are similar (see Figure 1.5). For example, public expenditure on primary education (1.9% of GDP) is on par with neighbouring countries in the Western Balkans but

higher than in most OECD and EU countries (1.4% and 1.3% respectively). Tertiary education receives the second largest share – at 1.3% of GDP – similar to EU and OECD countries (1.1%) (OECD, 2018_[29]).

Figure 1.4. Trends in initial government funding per student, constant PPP\$, by level

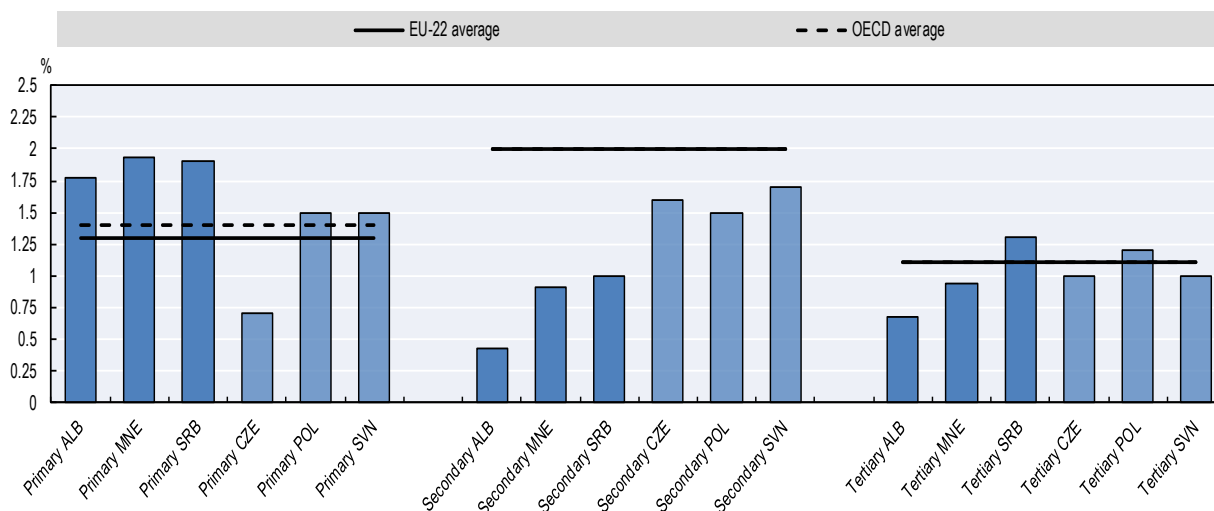


Source: UIS (2019_[11]), UNESCO Institute for Statistics, <http://data.uis.unesco.org/> (accessed on 14 June 2019).

Serbia spends the least on secondary education, unlike OECD countries

Serbia allocates considerably fewer resources to secondary education on a per student basis and as a percentage of GDP than EU and OECD countries (see Figure 1.5), despite having similarly high enrolment rates (OECD, 2018_[29]). Spending on secondary education is especially low considering that Serbia has very large shares of students enrolled in vocational programmes, which are often more expensive on a per student basis. The mostly theoretical nature of Serbia's VET programmes can help explain the low per student spending, whereas these programmes tend to be more costly across OECD countries because of the need to adapt infrastructure and materials for practical learning.

Figure 1.5. Public expenditure on education by level as percentage of GDP, 2014



Notes: EU-22 average refers to the 22 member states of the European Union which are also members of the OECD: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom.

Data for Bosnia and Herzegovina, North Macedonia and Kosovo are not available. National statistical offices and ministries of the South East Europe (SEE) region provided economy-specific data as part of the Competitiveness Outlook assessment conducted in 2016/17.

ALB – Albania; CZE – Czech Republic; MNE – Montenegro; POL – Poland; SRB – Serbia; SVN – Slovenia.

Source: OECD (2017^[30]), *Education at a Glance 2017: OECD Indicators*, <http://dx.doi.org/10.1787/eag-2017-en>; OECD (2018^[29]), *Competitiveness in South East Europe: A Policy Outlook 2018*, <https://dx.doi.org/10.1787/9789264298576-en>.

The ministry and local governments share responsibility in funding the school system

Considering that virtually all schooling in Serbia is public, the education sector largely depends on public funding. The ministry directly pays the salaries of school principals and teachers, development programmes in schools and funds capital investments (MoESTD, 2018^[25]). Local governments (municipalities) are responsible for the maintenance costs of school facilities and utility bills, which represent a third of central public funding of education (World Bank, 2015^[31]). They are also responsible for covering costs related to early childhood education, as well as additional support for students with special educational needs (SEN) (MoESTD, 2018^[25]). However, there are no systematic mechanisms to support disadvantaged regions, which risks further increasing regional disparities.

Importantly, local governments are responsible for funding professional development for teachers and other school staff. Since there is no central funding for professional development activities (beyond the free, mostly mandatory training provided by central education authorities, such as the IIE) and considering that allocations from local authorities are not always sufficient, some schools raise funds from the local community, businesses or donor organisation to implement their development plans. Teachers may also pay out-of-pocket for their professional development.

Per student funding remains to be implemented

For more than a decade, Serbia has tried to introduce a per capita funding model for education (World Bank, 2012^[32]). Key policy documents, such as the 2009 Framework Law on Education and the Strategy for Development of Education, explicitly reference this approach. However, the Serbian government never fully implemented this policy and it is not referenced in current education law. Schools continue to receive funding through an inputs-based system, according to the number of classes within the school (MoESTD, 2018^[25]). As a result, the level of resources each school receives is similar across years because there are very limited financial incentives to consolidate and adapt school networks, despite Serbia's demographic decline.

Serbia's declining student population requires greater rationalisation of the school network

Faced with a declining birth rate, the Serbian government is currently working with municipalities to reorganise the school network for basic education. However, previous approaches to index school funding to class size and reviewing the network of upper secondary schools have not led to a decrease in the number of teachers on the payroll. New regulations to review the school network were adopted in 2018 but it is unclear to what extent these will be successful in reducing the size of the Serbia's teaching workforce. This is a concern since the number of teachers in Serbia has increased by 9% in basic schools and by 8% in secondary schools over the past decade (SORS, 2019^[33]; UIS, 2019^[11]). However, student-teacher ratios in classrooms have remained relatively stable, in part because of demographic decline and an increasing number of teachers who only work part-time.

The notable surplus of teachers partially contributes to salaries being the most expensive item in the Serbian education budget. More than 90% of the ministry's budget goes towards teacher salaries, higher than in neighbouring countries where 70% of recurrent government expenditure goes to salaries. In addition, only 5.7% of total government expenditure is designated for capital spending (World Bank, 2015^[31]), lower than the average across OECD countries (8%) (OECD, 2018^[34]). If Serbia chooses to restructure its school network and consolidate schools, the government will need to make significant financial investments.

Structure of schooling in Serbia

The duration of compulsory education is extending but remains shorter than in most OECD countries

In Serbia, education from primary (ISCED 1) to the end of lower secondary (ISCED 2) is compulsory, that is, from age 6.5-7.5 to 14 (Figure 1.6). Primary and lower secondary are also considered to be part of the same cycle and commonly referred to as "primary education" (MoESTD, 2018^[25]). In 2006, Serbia amended the Law on the Foundation of Education Systems to include nine months of preparatory pre-school as part of compulsory education. Children between the ages of 5.5 and 6.5 years are required to enrol and the programme receives public funding. There are also ongoing discussions about extending compulsory education to include secondary education.

Figure 1.6. Structure of the education system in Serbia

ISCED 2011	Starting age	Grade	Education programme in English (examinations where applicable)				
8	24/25		Higher education - Doctoral Studies - Doktorske akademske studije				
7	22/23		Higher education - Master Academic Studies - Master <i>akademske studije</i>	First and second cycle integrated studies - <i>Integrirane akademske studije</i>	Higher education - Specialist Academic Studies - <i>Specijalističke strukovne</i>	Higher education - Master Professional Studies - Master <i>Strukovne studije</i>	Higher education - Specialist Professional Studies - <i>Specijalističke strukovne studije</i>
6	19		Higher education (Basic academic studies) - <i>Osnovne</i>			Higher education (Basic professional studies) - <i>Osnovne strukovne</i>	
4	18						Post- secondary education (Specialist education/Craft education) - <i>Specijalističko obraz/Majstorsko obraz</i>
3	15	12	Upper secondary - Four-year general secondary education - <i>Opšte srednje (School-level exam)</i>	Upper secondary - Four-year art secondary education - <i>Srednje umetničko obraz (School-level exam)</i>	Upper secondary - Four-year VET secondary education - <i>Srednje stručno obrazovanje (School-level exam)</i>		Upper secondary - Three-year VET secondary education - <i>Srednje stručno obrazovanje (School-level exam)</i>
		11					
		10					
		9					
2	11	8	Primary & lower secondary education - <i>Osnovno obrazovanje (National-level final examination at the end of Grade 8)</i> Compulsory				
		7					
		6					
		5					
		4					
1	7	3					
		2					
		1					
		0.6					
0	5.5	Preparatory pre-school education - <i>Predškolsko vaspitanje i obrazovanje</i> Compulsory					
	3	Kindergarten - <i>Predškolski programme</i>					
	0.6	Nursery - <i>Jasleni programme</i>					

Source: MoESTD (2018_[25]), *OECD Review of Evaluation and Assessment: Country Background Report for Serbia*, Ministry of Education, Science and Technological Development.

Education provision is predominantly public

At the primary and lower secondary school levels, there are very few private institutions available. At the upper secondary level, there are only a handful of private institutions (9% or 48 out of 508 secondary institutions) (MoESTD, 2018_[25]). The diversity of provision is greater at the tertiary level of education, with approximately 13% of students enrolled in

private higher education institutions in Serbia (SORS, 2019_[33]). The majority of students in OECD countries also attend public education institutions (from 70% in higher education to nearly 90% in primary education); however, the share of students enrolled in public education remains higher in Serbia (OECD.Stat, 2018_[35]).

Satellite schools are numerous and face infrastructure challenges

Around 10% of primary students in Serbia attend satellite schools at the primary level (SORS, 2019_[33]). Despite a low share of total enrolment, there were twice as many satellite schools available than central schools in the 2016/17 academic year (MoESTD, 2018_[25]). Satellite schools are part of a school cluster administratively run by a central school. They are usually smaller and were originally created to increase educational access in remote areas (World Bank, 2009_[36]). A UNICEF report shows that satellite schools tend to have poor infrastructure, including access to water and sewage services, when compared to central schools (UNICEF, 2003_[37]). To optimise the school network in light of a declining student population, the Serbian government has discussed limiting the number of classes in satellite schools and closing small satellite schools altogether (World Bank, 2009_[36]). In 2018, Serbia adopted new regulations requiring local self-governments to develop a policy on their networks of pre- and primary schools. This has led to the closure of some satellite schools.

National examination marks the end of compulsory education and grants entry into upper secondary school

At the end of lower secondary school, students take a national examination, which serves several purposes: it certifies the completion of compulsory education and grants entry into upper secondary school (see Chapter 2). The examination is comprised of three areas: mother tongue, mathematics and a combined test that covers topics in biology, chemistry, physics, history and geography. Students are marked on a scale of 0-20 in each test. There is no minimum mark required to pass, meaning that every student who sits the examination is considered to have completed compulsory education (MoESTD, 2018_[25]).

For students who progress into upper secondary education, their performance in the examination (40% of the total points) and in lower secondary education (60% of the total points) are taken into account. After taking the national examination, students create a list of up to 20 schools they would like to attend. The lists feed into a national database that uses software to allocate students into upper secondary schools – based on their academic performance and list of preferences. Upper secondary schools have no responsibility in selecting students. The majority of students gain admission into their top choice of school, as they are familiar with the chances of acceptance based on their academic performance and, therefore, list their preferences accordingly. There is evidence the high-stakes associated with the national examination creates pressure on students to attain good grades and on teachers to inflate grades of classroom assessments (MoESTD, 2018_[25]).

Students in four-year upper secondary school programmes can access tertiary education

In Serbia, general (*gymnasia*), vocational and art schools are available at the upper secondary level. General and art schools offer four-year programmes and vocational schools offer both four- and three-year programmes. Only students who have completed a four-year programme, either academically focused or professionally oriented, can access tertiary education (MoESTD, 2018_[25]). As of 2017, 25.6% of students were enrolled in

general upper secondary education, while 74.4% were enrolled in vocational schools (UIS, 2019_[11]). The majority of upper secondary students (around 55%) complete 4-year vocational programmes, of which more than half then enrol in tertiary education (MoESTD, 2018_[38]). However, virtually all students who complete a general upper secondary programme (92%) continue to the tertiary level (MoESTD, 2018_[38]). Vocational students who have completed three-year programmes can access post-secondary programmes (specialised education and master craftsman education) that last one or two years (OECD, 2012_[19]).

Many students participate in vocational education at the upper secondary level and programmes are undergoing reform

Nearly 75% of students in Serbia enrol in vocational education, including art schools, at the upper secondary level (UIS, 2019_[11]). Serbia's student enrolment in vocational education is similar to neighbouring Bosnia and Herzegovina (76%) but much higher than Montenegro (67%) (UIS, 2019_[11]) and the OECD average (42.7%) (OECD, 2016_[39]). Serbian vocational schools offer a variety of programmes in different fields of study. In 2017, the majority of students were enrolled in economics, law and administration programmes (18.8%), followed by electrical engineering (14%) and health and social welfare programmes (13%) (SORS, 2019_[33]).

Serbia implemented a dual model for vocational education in 2019, whereby students attend regular classes in school and take part in work-based learning experiences outside of the classroom. The goal of this reform is to better align educational outcomes to labour market needs, thus strengthening the competitiveness of the Serbian economy (European Commission, 2019_[40]). Importantly, the reform reflects demands to move away from the previous theoretical model of vocational education towards more work-based learning (ETF, 2018_[41]).

Disparities in access to tertiary education are caused by lack of a standardised admissions process and financial barriers

Tertiary education institutions in Serbia set their own admissions criteria. Most take into account academic performance throughout upper secondary education as well as marks on admission tests. Unlike the majority of countries in the OECD and across Europe (OECD, 2016_[42]), Serbia currently lacks a standardised national examination for admission into tertiary institutions. Moreover, the country's school-based examination (known as the "small Matura"), which certifies the completion of upper secondary school, does not inform tertiary admission decisions. As a result, students must prepare for multiple admission tests set by individual higher education institutions and often have to travel to each of these institutions to take tests.

This system is particularly disadvantageous for students from low-income families and those residing in rural areas as they must cover costs related to travelling to each institution (mostly located in urban centres) and to attending multiple test preparatory programmes. Costs can be especially high if a student applies to more than one institution. The cost of attending university in Serbia is also high relative to per capita income. While public support to students is limited, there are some affirmative action programmes that aim to increase the tertiary enrolment rates of vulnerable student groups. Nevertheless, low-income students – in particular those from rural areas – are less likely to access tertiary education. Only 6.8% of the working-age population in rural areas have reached higher

education, compared to 23% in urban areas (Government of the Republic of Serbia, 2014^[43]).

To address these issues, the ministry is currently developing a national examination at the end of upper secondary called the State Matura. This examination will have the dual purpose of certifying completion of upper secondary education and improving the fairness of the admission process into tertiary institutions. The ministry expects to roll out the State Matura by 2020 (see Chapter 2). Serbia's Education Strategy 2020 aims to further improve the equity of the tertiary admissions and participation by introducing students' socio-economic background status as a criterion for admission, in addition to their academic achievements, and as an element to calculate tuition fees (Pešikan and Ivić, 2016^[44]).

Main trends in participation, learning and equity

Serbia has traditionally attached high value to education and succeeded in improving access to schooling for a majority of students. Participation across all levels of education has increased and virtually all Serbian children now enrol in compulsory education. Learning outcomes have remained generally stable in recent years, as measured by international student assessments. However, a large share of students in Serbia continues to leave school without the basic skills needed to succeed in life. In addition, students from low socio-economic backgrounds are still less likely to progress in education and have high academic performance.

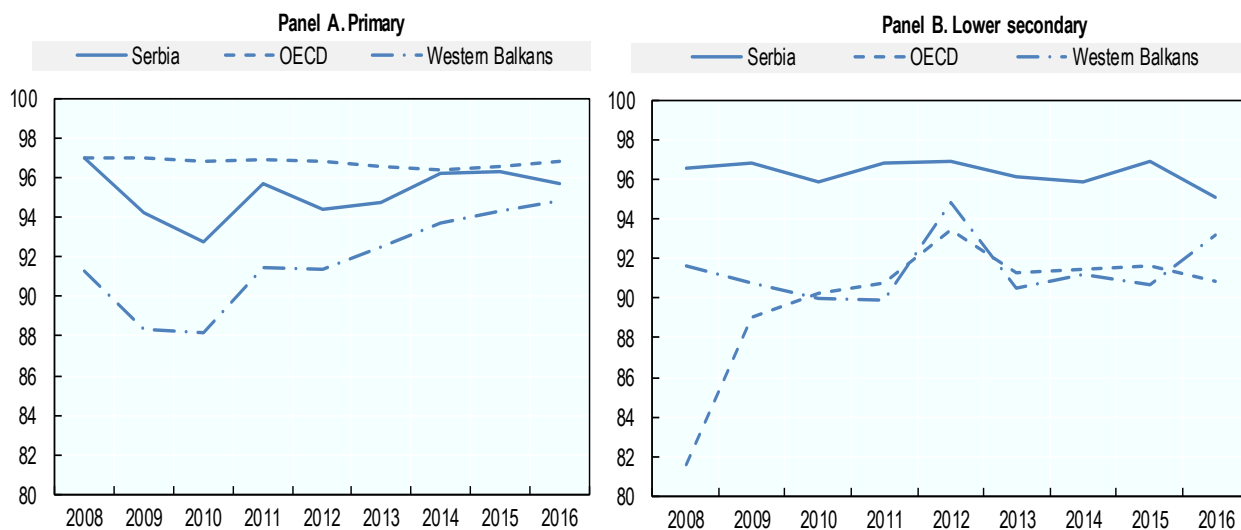
Participation

Participation in primary and lower secondary education is almost universal and increasing in upper secondary

Serbia has high levels of participation at the primary and lower secondary levels. Net enrolment in primary school has remained historically high and equivalent to the OECD average. At 97%, the enrolment rate in lower secondary is higher than the average across OECD countries (91%) and in the Western Balkan region (90%) (Figure 1.7) (UIS, 2019^[11]). Serbia's large school network has helped support the implementation of compulsory education, even in areas with low population density (MoESTD, 2012^[23]).

The majority of students in Serbia continue from lower secondary into upper secondary schools. As of 2016/17, the transition rate between these two levels was approximately 99% (Statistical Office of the Republic of Serbia, 2018^[45]), similar to most EU and OECD countries. Participation in upper secondary increased steadily in the past decade reaching an 87% net enrolment rate in 2016. At this level, Serbia's net enrolment is higher than the EU and OECD averages (82% and 79% respectively) and the regional average (78%), which have experienced declining enrolment rates (see Figure 1.8) (UIS, 2019^[11]).

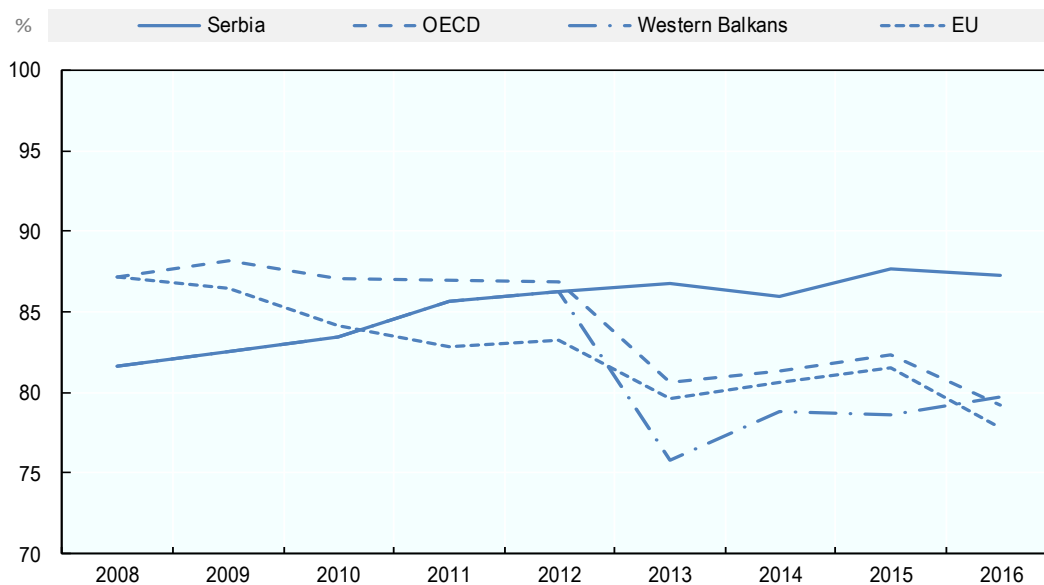
Figure 1.7. Net enrolment rates for primary and lower secondary education, 2008-16



Notes: For OECD countries, primary education, data missing from Austria, the Czech Republic, Korea and the Slovak Republic. For OECD countries, lower secondary education, data missing from Canada, Germany and Korea. For the Western Balkans, data missing from Bosnia and Herzegovina, Kosovo and North Macedonia.

Source: UIS (2019^[11]), UNESCO Institute for Statistics, <http://data.uis.unesco.org/> (accessed on 14 June 2019).

Figure 1.8. Net enrolment rates in upper secondary education, 2008-16



Source: UIS (2019^[11]), UNESCO Institute for Statistics, <http://data.uis.unesco.org/> (accessed on 14 June 2019).

Serbia introduced a mandatory preparatory year before primary education but participation in pre-primary education remains low

In 2006, Serbia introduced the Preparatory Pre-school Programme, an obligatory year of pre-primary education for children between the ages of 5.5 and 6.5. The programme aims to prepare children for starting primary education by developing key cognitive, social-emotional and physical competencies (MoESTD, 2018_[25]). Participation is free at public kindergartens and primary school facilities and attendance has been increasing, from 87.5% in 2010 to 97.1% in 2018 (Government of Serbia, 2018_[46]). However, younger children are less likely to participate in non-compulsory pre-primary education. In 2018, only 26.2% of 0 to 3 and 63.9% of 3 to 5.5-year old children were enrolled in pre-primary programmes (Government of Serbia, 2018_[46]).

One reason for low participation among younger children is that Serbia's pre-primary education system was designed to support working parents. In fact, parental employment remains one of the main criteria for admission into pre-school and in 2011, only 10% of students with unemployed parents were enrolled in pre-school institutions, compared to 61% of children with parents who were employed (Pešikan and Ivić, 2016_[44]). Parents are also expected to contribute up to 20% of pre-school fees, although disadvantaged families are exempt (Official Gazette, 2010_[47]). While charging fees is a common practice across OECD countries, almost one-quarter of Serbia's population lives in poverty, making it difficult for them to pay. In the Multiple Indicator Cluster Survey (hereafter MICS) of 2011, over 12% of parents mentioned costly services as a reason for pre-school non-attendance (UNICEF, 2012_[48]). There is also evidence suggesting that pre-primary education is still understood to be child caring, rather than an important stage in children's cognitive and non-cognitive development, which can influence participation rates (UNICEF, 2012_[48]).

While access to tertiary education has expanded, the high private cost is preventing many from accessing tertiary education

The higher education system in Serbia has expanded in the past decade. This is reflected by an increase in the gross enrolment ratio from 48% in 2008 to 62% in 2016, gradually nearing the average across OECD countries (70%) (OECD/CAF/UN ECLAC, 2014_[49]; UIS, 2019_[11]).

Tuition fees for higher education are very high relative to per capita income, creating a barrier for many students. Fees in public institutions, for example, may vary between EUR 285 and EUR 2 280 and in private institutions from EUR 1 000 to EUR 4 500 (European Commission, 2017_[50]). The median cost of participating in one of the top ten areas of study in Serbia is more than four times higher than in most OECD countries (OECD, 2012_[19]). Even the cheapest institutions charge fees that are considerably above the average in OECD countries. While a limited number of places are publicly funded, most students (59%) had to self-finance their participation in 2017 (SORS, 2019_[33]). Moreover, financial support in the form of student loans and state grants are available but distribution is mainly based on academic performance in upper secondary school and results from the admissions examination. (European Commission, 2017_[50]). Only 10% of student loans and scholarships are granted to students from vulnerable groups (including socio-economic status) (MoESTD, 2019_[51]).

Recent tertiary graduates face a difficult transition into the labour market

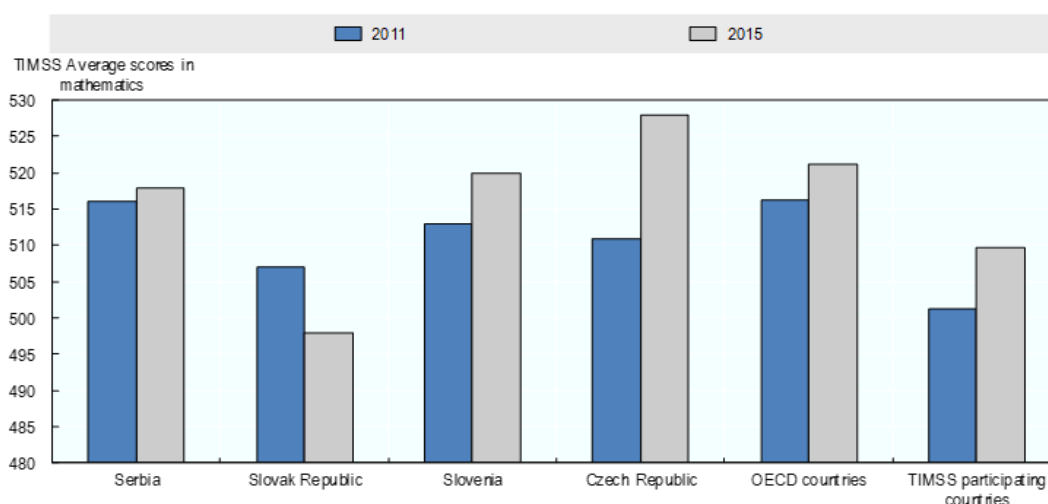
While the overall unemployment rate for people with tertiary education was 15.3% in 2015, the unemployment rate of recent graduates was as high as 42.4% (Eurostat, 2018^[7]; European Commission, 2016^[52]). Employers often report that graduates lack “soft skills” - including teamwork, decision-making, adaptability, analytical and problem-solving skills. Indeed, many graduates believe that the curriculum and traditional teaching methods used in Serbian higher education institutions do not prepare them with the skills and competencies needed to secure jobs. One reason is that many higher education institutions adopt traditional methods of teaching that do not necessarily encourage interactive thinking or collaboration (European Training Foundation, 2014^[53]; Bartlett et al., 2012^[54]). In addition, employers who are able to provide this information are rarely involved and there are no dedicated institutions responsible for tracking employer needs and communicating these to higher education institutions (European Commission, 2016^[52]).

Learning environment and outcomes

Learning levels of younger students in primary school are comparable to OECD peers

Grade 4 students in Serbia performed at levels comparable to their peers in OECD and neighbouring countries with similar income levels in the Trends in International Mathematics and Science Study (TIMSS) (see Figure 1.9). In fact, young students in Serbia performed better than the average of TIMSS participating countries (IEA, 2015^[55]). However, only very few students in Serbia (10%) can perform at “advanced” levels, meaning they can apply their knowledge and understanding to solve a variety of complex problems. While this is on par with the average across OECD countries (9%) that participated in TIMSS, it is markedly lower than the share of “advanced” performers in high TIMSS-performing countries, including the Russian Federation (20%), Korea (41%) and Singapore (50%) (IEA, 2015^[55]).

Figure 1.9. Average performance in mathematics (TIMSS, Grade 4), 2011 and 2015



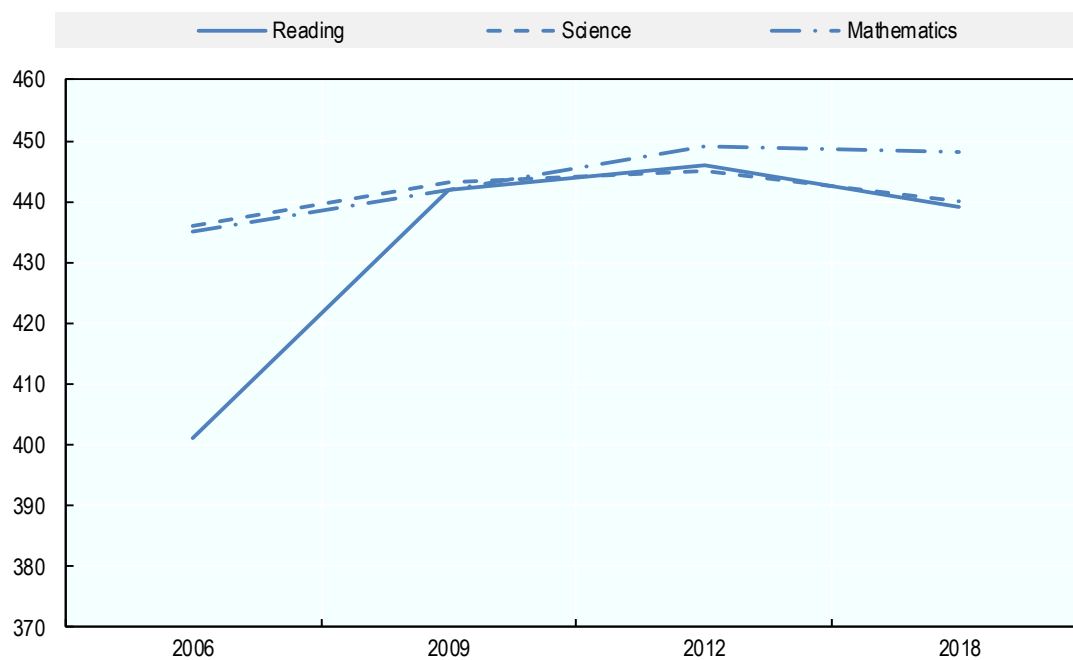
Source: IEA (2015^[56]), *TIMSS 2015 International Results in Mathematics*, International Association for the Evaluation of Educational Achievement, <http://timssandpirls.bc.edu/timss2015/international-results/wp-content/uploads/filebase/full%20pdfs/T15-International-Results-in-Mathematics.pdf> (accessed on 21 October 2019).

Learning outcomes have remained generally stable for students in lower secondary education in recent years but remain relatively low overall

The average learning outcomes of students in lower secondary education (referred to in Serbia as second cycle of primary education) have remained generally stable since the country first participated in the 2006 cycle of PISA. There was some improvement between 2006 and 2012 PISA cycles. In fact, Serbia was one of the few countries in the Western Balkans region to improve average performance across all PISA domains – reading, mathematics and science – during this period. The largest improvement was in reading, where mean performance increased by 45 points, mostly from 2006 to 2009. However, results from PISA 2018 show a slight decrease in learning outcomes since 2012, especially in reading and science (see Figure 1.10). Today, fifteen-year-old students in Serbia perform more than 1 year behind their peers in OECD countries across all subject domains, particularly in science (49 score point difference) (see Figure 1.11).

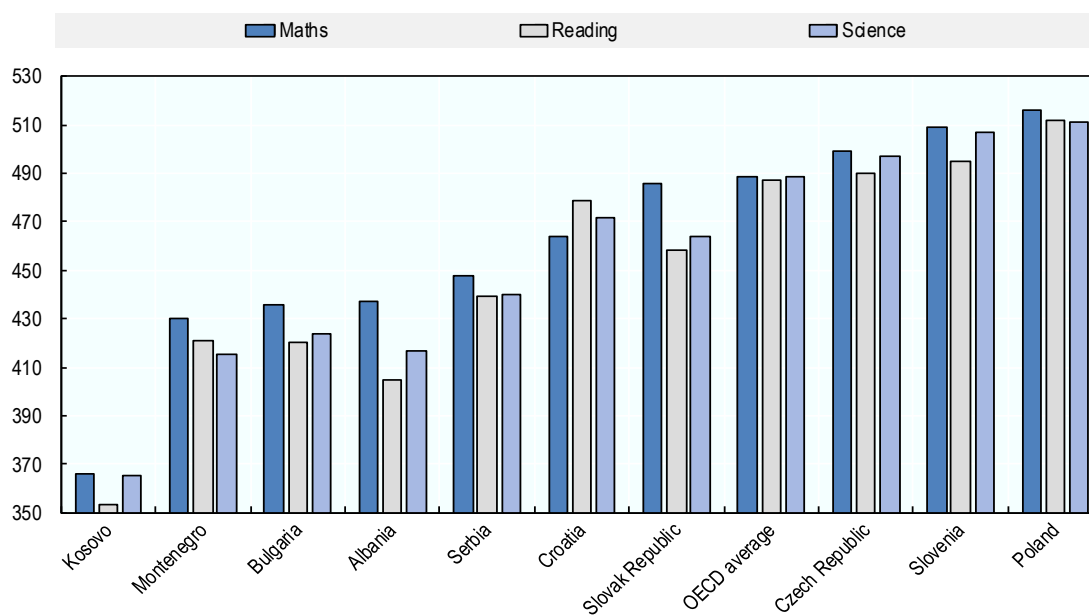
In general, Serbia's share of low performers (students who score below Level 2 on the PISA scale) has decreased across all PISA domains since 2006. The overall decrease in the share of low performers was particularly significant in reading, going from 51.7% in 2006 to 32.8% in 2009. However, recent results from PISA 2018 show a widening performance gap among the country's lowest and highest performing students (students who score a Level 5 or above). While it is promising that Serbia's share of overall high-performers in reading has increased by nearly 2% since 2009, the simultaneous increase in low-performers (4.9%) means that fewer students are achieving moderate outcomes. These performance distributions are slightly more positive than other Western Balkans countries but remain far from OECD averages. According to PISA 2018, Serbia's share of low-performers in mathematics (nearly 40%) was smaller than the shares in neighbouring Albania (42.4%) and Montenegro (46.2%) but much higher than the average of OECD countries (22.2%) (see Figure 1.12). On the other hand, very few students in Serbia (5.2%) are able to perform at highest proficiency levels, compared to OECD countries (11.4%) (OECD, 2019^[57]).

There is a common belief among Serbian researchers and policymakers that the quality of teaching and learning is better for all students in the early grades (Grade 1 to 4) than in Grades 5 to 12. This is attributed to the limited initial training of Grade 5 to 12 teachers (subject teachers) on pedagogy and didactics, compared to that of teachers in early grades (classroom teachers) (see Chapter 3). While this hypothesis seems plausible, it is difficult to verify due to limited data on teaching practices and student learning in early grades (see Chapter 5).

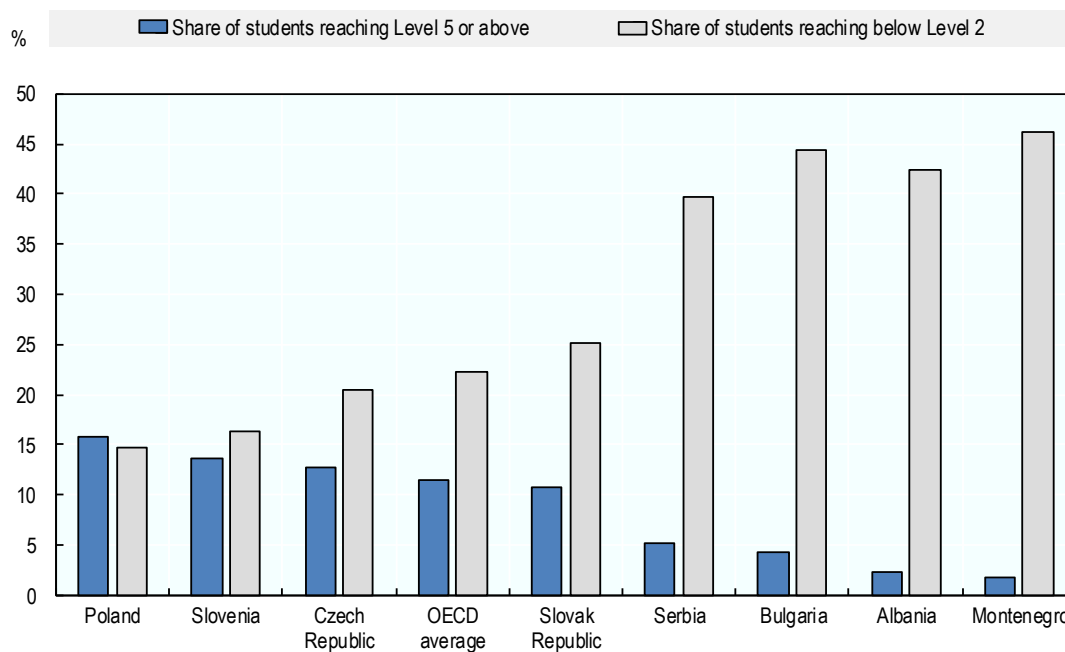
Figure 1.10. Student's proficiency in PISA across all domains (PISA 2006-2018)

Note: Improvement in science scores was not statistically significant for science across the three cycles of the PISA survey.

Source: OECD (2019^[57]), *PISA 2018 Results (Volume I): What Students Know and Can Do*, <https://doi.org/10.1787/5f07c754-en>.

Figure 1.11. Student's proficiency in PISA across all domains (PISA 2018)

Source: OECD (2019^[57]), *PISA 2018 Results (Volume I): What Students Know and Can Do*, <https://doi.org/10.1787/5f07c754-en>.

Figure 1.12. Share of top performers and low achievers in mathematics (PISA 2018)

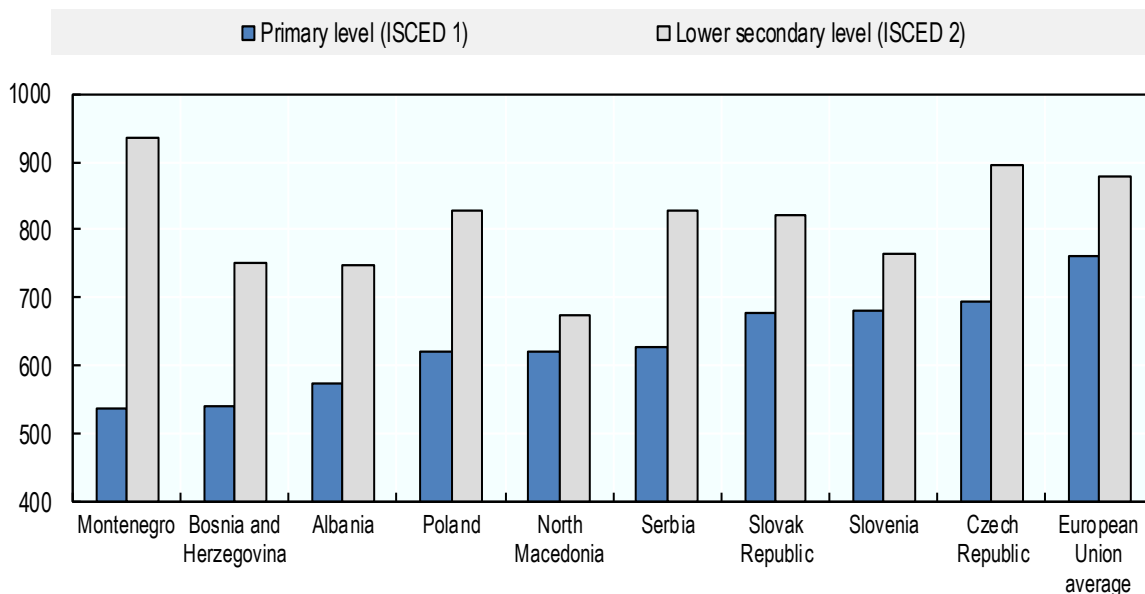
Source: OECD (2019^[57]), *PISA 2018 Results (Volume I): What Students Know and Can Do*, <https://doi.org/10.1787/5f07c754-en>.

Students attend school for a similar number of years but receive fewer hours of instruction than their EU and OECD peers

Full-time compulsory education across EU countries typically last from 8 to 12 years. At nine years of compulsory education (including the preparatory year), Serbia is within this range. Students in Serbia also receive minimum hours of instruction across primary and lower secondary education that are comparable with neighbouring countries, including the Slovak Republic and Slovenia (see Figure 1.13). However, compared to the EU average, students in Serbia receive 100 fewer hours of instruction each year during regular school hours at the primary level and 30 fewer hours at the lower secondary level. OECD research indicates that the amount of instruction time available to students is an important indication of students' opportunities to learn. Students tend to perform better if a high percentage of their learning time is spent during normal school hours in a classroom (OECD, 2013^[26]).

The allocation of after-school study time is also similar to that of OECD countries, as reported in PISA 2012. This means that Serbian 15-year-old students spend roughly the same number of hours per week on homework (4.4 hours), working with a private tutor (1.3 hours) and attending after-school classes (0.6 hours) as their peers in OECD countries (4.9, 0.7 and 0.6 hours respectively) (OECD, 2013^[26]).

Figure 1.13. Minimum instruction time for compulsory curriculum, in hours, per year by ISCED level, 2017/18



Source: European Commission/EACEA/Eurydice (2018^[58]), *Recommended Annual Instruction Time in Full-time Compulsory Education in Europe 2017/18*, <http://dx.doi.org/10.2797/616811>.

Learning environment negatively impacts student learning

Student truancy has a discernible effect on the learning environment and, ultimately, on student performance and engagement (OECD, 2019^[59]). Students in Serbia are more likely to report that they arrived late for school (61.1%) and skipped classes (24.5%) compared to their peers in OECD countries (47.6% and 21.3% respectively). As a result, Serbia has a lower index of disciplinary climate (0.03), compared to Albania (0.84), Montenegro (0.44) and OECD countries (0.04). PISA 2018 results also show that on average across OECD countries, skipping classes and being late for school have a detrimental effect on reading performance (a decline in 37 and 26 score points respectively) (OECD, 2019^[59]).

Teachers' formal education levels are lower than in OECD countries

In Serbia, both classroom teachers (responsible for Grades 1 to 4) and subject teachers (responsible for Grades 5 to 12) are required to complete their bachelor's as well as postgraduate degrees (ISCED 7) to enter the teaching profession. However, many teachers do not yet meet these standards. According to TIMSS 2015 data, only 39% of classroom teachers had completed their bachelor's programmes and 12% completed postgraduate degrees, compared to 58% and 26% respectively across TIMSS 2015 participating countries (IEA, 2015^[55]). This can be explained by the fact that qualification requirements for classroom teachers in Serbia were previously lower than what is currently required. Nevertheless, the qualifications of Serbian classroom teachers are markedly lower than in many OECD countries, including neighbouring countries such as the Slovak Republic and Poland, where 100% and 97% of teachers have postgraduate degrees respectively (IEA, 2015^[55]).

Use of innovative and creative teaching methods in classrooms is limited

In Serbia, teachers are found to apply a predominantly teacher-centred model, with limited emphasis on creative methods of teaching that encourages interaction, teamwork, decision-making or problem solving among students (OECD, 2012_[19]). This partly reflects the quality of initial teacher education. Data from the OECD Teaching and Learning International Survey (TALIS) from 2013 shows that in Serbia slightly fewer teachers than on average in TALIS participating countries report that their formal education included content (93% vs. 95%), pedagogy (89% vs. 92%) and practical components (78% vs. 89%) for some or all of the subjects they teach (OECD, 2014_[60]).

Professional development is not informed by the needs of teachers and schools

In Serbia, teachers have to complete at least 64 hours of professional development every year. According to TIMSS 2015 data, 49% of teachers reported having participated in professional development for mathematics content in the last 3 months – higher than the average across TIMSS participating countries (43%) (IEA, 2015_[56]).

The areas in which teachers in Serbia report the highest level of need for professional development include teaching students with special needs (35% of the teachers) and teaching for new technologies in the workplace (21%) (OECD, 2014_[60]). However, the ministry centrally determines training programmes on offer every three years and there is no evident link between their decisions and the actual demand from schools and teachers (OECD, 2012_[19]). For example, findings from teacher self-evaluations or principals' evaluations of the teachers are not used to inform professional development needs.

Equity*Socioeconomically disadvantaged children are less likely to participate and progress in education*

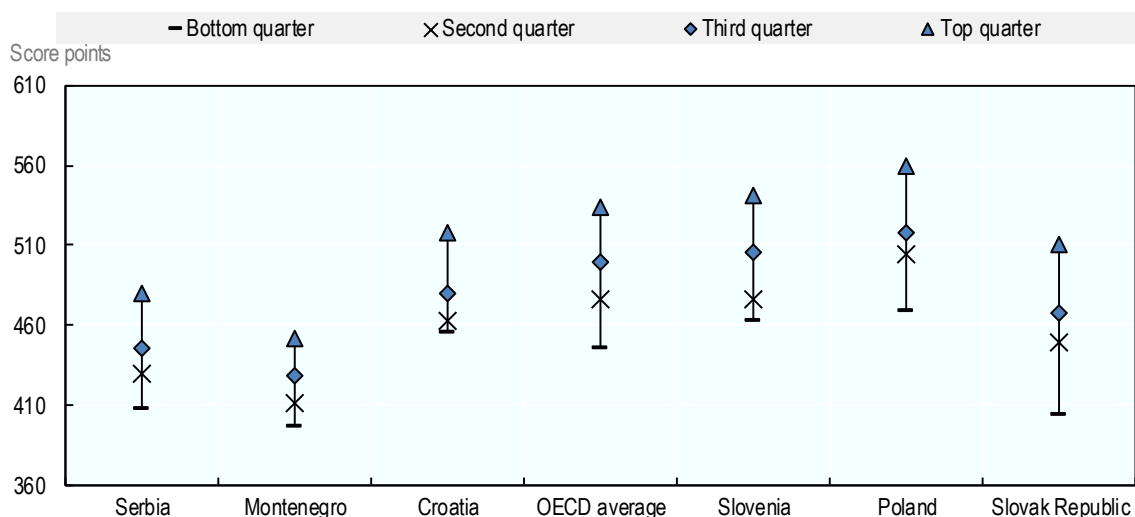
Participation in compulsory education in Serbia is virtually universal for students from all socio-economic backgrounds. However, disadvantaged students are much less likely to participate in non-compulsory levels. For example, only 9% of students from the poorest families enrolled in pre-primary education, which includes children ages 3 to 5, compared to 82% of those from the wealthier households in 2014 (SORS and UNICEF, 2014_[61]). Disadvantaged students are also less likely to be enrolled in upper secondary education (74% of those from the poorest quintile), compared to nearly all students from the richest income quintile (97%) (SORS and UNICEF, 2014_[61]). They are also less likely to complete upper secondary education.

Students from the lowest-income groups are three times less likely to enrol in *gymnasia* compared to the average Serbian student. This is true even among the highest-performing students. The share of top performers from the lowest socio-economic backgrounds is 29 percentage points lower than average, whereas it is 16 percentage points higher than average for those from the wealthiest backgrounds. This is of concern since the majority of students in Serbia's vocational schools do not continue their studies after upper secondary education. A likely reason for this is that poorer students are unable to afford to continue in education, in particular in light of high tuition fees and limited financial support in higher education; therefore, they tend to choose the path that allows faster access to the labour market (Baucal and Pavlović-Babić, 2009_[62]).

Disadvantaged students underperform

Students from disadvantaged backgrounds in Serbia performed around two years behind their peers from wealthier families (73 score point difference) in the reading domain of PISA 2018 (see Figure 1.14). This gap is not as large as the one found across OECD countries (89 score point difference) but larger than some of its neighbouring countries such as Croatia and Montenegro (63 and 55 score point difference respectively) (OECD, 2019_[63]). At the same time, students in Serbia from disadvantaged backgrounds are more likely to be considered “resilient”, that is a student who is able to beat the odds and have high performance levels in PISA, than across OECD countries. 13.2% of students in Serbia are classified as resilient, compared to 11.3% in OECD (OECD, 2019_[63]).

Figure 1.14. Performance in reading by national quarters of the PISA index of economic, social and cultural status (PISA 2018)



Source: OECD (2019_[63]), *PISA 2018 Results (Volume II): Where All Students Can Succeed*, <https://doi.org/10.1787/b5fd1b8f-en>.

Schools' socio-economic background tend to impact students' performance

In Serbia, as in many OECD countries, disadvantaged schools tend to reinforce students' socio-economic inequalities and can have a negative impact on learning outcomes. Results from PISA 2012 reveal that the gap in performance between Serbian schools is quite high (101 score point difference associated with a one-unit increase in the school mean economic, social and cultural status), compared to OECD average (72 score point difference) (OECD, 2013_[64]). In addition, disadvantaged students in Serbia have only a one-in-seven chance of being enrolled in the same school as high achievers (OECD, 2019_[63]).

Disparities among regions remain prominent

On average, enrolment rates in preparatory, primary and secondary levels of education are very high. However, net completion rates are only 76% and 79% for students in primary and lower secondary education (primary education in Serbia) in Vojvodina and Southern and Eastern Serbia respectively, as compared to 95.5% in the regions of Šumadija and Western Serbia (UNICEF, 2015_[65]).

Results from the IEQE's national report on final examinations show that students from Bor, Zaječar, Central Banat, and Braničevo districts have some of the lowest exam results (MoESTD, 2018^[38]).

Participation in education and learning outcomes are lower in rural areas

While participation rates in Serbia's preschool preparatory programme are similar in rural and urban areas, children aged 3-5 are much less likely to be enrolled in pre-primary education in rural areas (27.3%) compared to their peers in urban areas (62.6%) (SORS and UNICEF, 2014^[61]). This gap reflects an underdeveloped network of early childhood education and care (ECEC) centres. Its unbalanced distribution means that pre-schools in rural parts of Serbia are located more than twice as far from homes compared to urban areas. Many poorer municipalities in rural areas do not have the financial resources to develop a network of pre-primary institutions or establish the transportation infrastructure to increase accessibility. Parents – who are also required to contribute to their child's education at this level – find it difficult to cover costs for transportation to the school (Pešikan and Ivić, 2016^[44]).

Participation in compulsory education is also lower in rural areas. In 2013, the rate of primary school completion was 94% in urban areas, compared to less than 75% in rural parts of Serbia (Pešikan, 2015^[66]). In the same year, the out-of-school rate from primary education was estimated to be 0.3% in urban areas, compared to 2% in rural areas (SORS and UNICEF, 2014^[61]). As most primary and secondary schools are concentrated in urban areas, the large distance to schools discourages the participation of many rural children (SORS and UNICEF, 2014^[61]). Moreover, the conditions of schools are often worse in rural areas compared to schools located in urban cities. This includes lack of equipment and resources for learning, multi-grade teaching and the availability of less qualified teachers (Pešikan and Ivić, 2016^[44]).

Learning outcomes tend to be higher in urban schools than in rural schools. In 2018, students attending schools located in Serbian cities scored on average, 122.3 points higher in the PISA test of reading than students attending schools in rural areas in the country. Although this is comparable to the difference found in the Slovak Republic and Hungary (107.1 and 126.1 score points respectively), it is noticeably higher than across OECD countries (43 score points) (OECD, 2019^[57]).

Despite efforts to address inequity, participation levels of Roma children remain low

Serbia's constitution and relevant laws guarantee that all children have access and are included in education. However, Roma children are still far less likely than Serbians to participate and progress in education. Virtually all Serbian students participated in the Preparatory Pre-school Programme (98%) in 2014, compared with only 63% of Roma children. In fact, Roma participation decreased from 70.6% in 2010 (UNICEF, 2015^[65]). One reason for low participation rates is the distance to a preschool preparatory programme facility, which doubles for Roma children. Additionally, many Roma parents were found to be unaware of the mandatory nature of the preschool preparatory programme (Pešikan and Ivić, 2016^[44]).

At the primary and lower secondary school levels, the disparity in participation reduces, but remains considerable, with primary school net attendance for Roma children reaching 85% compared to 98% for Serbian children. However, only 37% of Roma students complete compulsory education. The gap becomes even more pronounced as students

progress in education. Around one in five Roma students in Serbia are enrolled in upper secondary education, compared with 89% of Serbian students. As a result, less than 1% of Roma have obtained a higher education degree compared to 16% of the national average (UNICEF, 2015^[65]).

Finally, data shows that girls from Roma families are much less likely to go beyond primary and lower secondary school in Serbia than their male counterparts, which is markedly different from the national trend (SORS and UNICEF, 2014^[61]).

Conclusion

Serbia has made considerable efforts to increase access to education. Nevertheless, the learning outcomes of students remain relatively low compared to OECD countries and the country faces important equity issues in terms of participation and performance. Creating a system so that there is greater awareness and understanding of how students progress in their learning (Chapter 2) and how the education system overall is performing (Chapter 5) will need to be matched by greater support to create effective teaching and learning environments (Chapters 3 and 4). This report looks at how the creation of a coherent framework for evaluation and assessment embedded within a long-term strategy for reform could help to improve equity and quality across the system (Box 1.2).

Box 1.2. OECD Reviews of Evaluation and Assessment in Education

OECD Reviews of Evaluation and Assessment look at how evaluation and assessment policy can be used to improve student outcomes. They examine countries' evaluation and assessment policies and practices for school education, and draw on insights from international practices to provide actionable recommendations.

The reviews focus on four key components:

- **Student assessment** monitors and provides feedback on individual student progress and certifies the achievement of learning goals.
- **Teacher appraisal** assesses the performance of teachers in providing quality learning for their students.
- **School evaluation** looks at the effectiveness of schools in providing quality education.
- **System evaluation** uses educational information to monitor and evaluate the education system against national goals.

The reviews draw on existing OECD work on evaluation and assessment, which included reviews of 18 countries' evaluation and assessment policies and practices. Each country review is based on national information provided by the country to the OECD, background research and country visits. During the country visits, a team of OECD staff and international experts meet with key actors across the education system to identify policy strengths and challenges, and discuss the challenges of evaluation and assessment with national actors. The OECD prepares a report for the country, which analyses national practices and policies, and provides policy recommendations to strengthen evaluation and assessment linked to national goals and priorities.

Annex 1.A. Key indicators

Annex Table 1.A.1. Table of Key Indicators

#	List of key indicators	Serbia	OECD
Background information			
Economy			
1	GDP per capita, PPP (constant 2011 international \$), 2018*	16 035	40 488
2	GDP per capita growth (annual %), 2018*	4.9	1.6
Society			
3	Population growth (annual %), 2018*	- 0.6	0.6
4	Population aged 14 years or less (%), 2018*	16.3	17.8
5	Fertility rate (births per woman), 2017*	1.46	1.7
<i>Unemployment rates</i>			
6	Youth unemployment rate (aged 15-24 years old), 2018**	32.1	11.9
	Total unemployment rate (aged 15 and above), 2018**	13.5	5.3
Education indicators			
System			
7	Usual starting age of early childhood education programmes, 2017***	3	3
8	Starting age of compulsory education, 2017***	7	5.5
9	Duration of compulsory education (years), 2017***	8	11
Students			
<i>Net enrolment rates (2016)</i>			
10	Pre-primary education (ISCED 0)***	58.8	84.5
	Primary education (ISCED 1)***	95.7	96.6
	Secondary education (ISCED 2 and 3)***	93.1	92.2
11	Tertiary education attainment rate (25-year-old and above) (ISCED levels 5 to 8), 2015***	13.5	24.5
12	Share of students enrolled in vocational programmes for upper secondary education, 2017***	75	42
Teachers			
<i>Ratio of students to teaching staff (2016)</i>			
13	Primary education (ISCED 1)***	14.5	14.5
	Secondary education (ISCED 2 and 3)***	8.2	12.6
<i>Share of female teachers (2016)</i>			
14	Pre-primary education (ISCED 0)***	98	96.2
	Primary education (ISCED 1)***	86	84
	Lower secondary education (ISCED 2)***	65	69
	Upper secondary education (ISCED 3)***	65	59

#	List of key indicators	Serbia	OECD
Finance			
15	Total expenditure on education as a percentage of GDP, 2015***	4.0	5.3
16	Total public expenditure on primary education as a percentage of total government expenditure, 2015 ***	4	3.9
17	Total public expenditure on secondary education as a percentage of total government expenditure, 2015 ***	2	5.5
18	<i>Initial government funding per student in PPP\$ constant (2015)</i>		
	Primary education (ISCED 1)***	6 631.34	8 300.45
	Secondary education (ISCED 2 and 3)***	1 688.74	9 102.09
	Tertiary education (ISCED levels 5 to 8)***	5 102.05	12 131.64
Learning outcomes			
19	Mean students' performance in science, PISA 2018****	440	489
20	Mean students' performance in reading, PISA 2018****	439	487
21	Mean students' performance in mathematics, PISA 2018****	448	489
22	Percentage of students below PISA proficiency level 2 in reading, PISA 2018****	37.7	22.7
23	Percentage of variance in reading performance explained by student's socio-economic background, PISA 2018****	7.8	12
24	Percentage of resilient students in reading performance, PISA 2018****	13.2	11.3
25	Percentage of top performers in reading performance, PISA 2018****	2.6	8.7

Source: * World Bank (2018^[9]), *World Bank Indicators: Education*, <https://data.worldbank.org/topic/education> (accessed on 15 June 2018); ** ILO (2018^[10]), *ILOSTAT*, <https://www.ilo.org/ilostat/> (accessed on 15 July 2018); *** UIS (UIS, 2019^[11]), *UNESCO Institute for Statistics*, <http://data.uis.unesco.org/> (accessed on 14 June 2019); **** OECD (2019^[57]), *PISA 2018 Results (Volume I): What Students Know and Can Do*, <https://doi.org/10.1787/5f07c754-en>.

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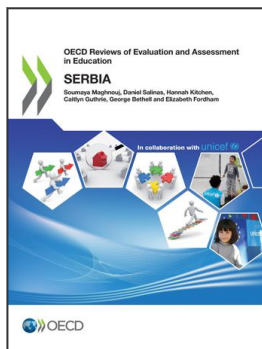
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