OECD Reviews of Evaluation and Assessment in Education

SERBIA

Soumaya Maghnouj, Daniel Salinas, Hannah Kitchen, Caitlyn Guthrie, George Bethell and Elizabeth Fordham

In collaboration with unicef





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Foreword

Serbia has made 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. Moreover, a large share of students in Serbia continue to leave school without mastering basic competencies and efforts to achieve educational excellence are jeopardised by limited institutional capacity and low levels of public spending on education. Serbia needs to strengthen school leadership, modernise the teaching profession and provide schools with the support they need to prepare their students for success in a creative and knowledge-based economy. This is crucial to the country's economic development, social prosperity and European integration.

This review was undertaken in partnership by the OECD and UNICEF at the request of, and in close collaboration with, the Ministry of Education, Science and Technological Development in Serbia.

Focused on the country's educational assessment and evaluation systems, this review offers recommendations to help Serbia capitalise on promising policies and practices that support student learning. The proposals put teaching and learning at the heart of assessment and evaluation, meaning that student assessments, teacher appraisals and both school and system evaluations all contribute to the ultimate goal of helping students learn.

The review builds on the collaboration between the OECD Directorate for Education and Skills and UNICEF. It has benefitted from our organisations' complementary experience and expertise to provide an analysis that is grounded in the context of evaluation and assessment in Serbia's education system while drawing on international research and best practice from around the world.

Above all, we hope that this review will be a useful reference for Serbia as it reforms its educational evaluation and assessment systems. As the country develops its next mid-term education strategy and introduces a new national assessment and examinations system, this review provides guidance that can be used to inform decision-making. We hope that the review's recommendations contribute to the development of an education system that provides excellence for all.

Andreas Schleicher

Director for Education and Skills and Special Advisor on Education Policy to the OECD Secretary-General

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UNICEF Representative to Serbia

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We are very grateful to the officials and education experts from the ministry and beyond, who graciously shared their insights and knowledge with us, in particular the members of the Steering Committee: Gordana Kosanović, Special Advisor to the Minister; Slavica Jašić, Head of Sector for Pre-school and Primary Education; Gordana Cvetković, Head of the Group for Minorities' Education, Social Inclusion and Prevention of Violence and Discrimination; Ljiljana Marolt, Head of the Group for Pre-school Education; Dragan Marinčić, Coordinator for Development of Secondary Education and Adult Education; Aleksandar Pajić, Special Advisor for Secondary Education and Adult Education; Zlatko Grušanović, Director of the Institute for Improvement of Education; Gordana Čaprić, Deputy Director of the Institute for Education Quality and Evaluation; Aleksandar Baucal, Professor at the Faculty of Philosophy, University of Belgrade.

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The OECD review team was led by Elizabeth Fordham (OECD Secretariat), co-ordinated by Soumaya Maghnouj (OECD Secretariat) and included George Bethel (Director of Anglia Assessment), Daniel Salinas (OECD Secretariat), Hannah Kitchen (OECD Secretariat) and Caitlyn Guthrie (OECD Secretariat). Within the OECD Secretariat, we

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Abbreviations and acronyms

CAS	Common Admission System
ECEC	Early Childhood Education and Care
ECTS	European Credit Transfer and Accumulation System
EMIS	Education Management Information System
ESCS	PISA index of economic, social and cultural status
EU	European Union
GDP	Gross Domestic Product
GPA	Grade Point Average
HDI	Human Development Index
HEI	Higher Education Institution
IEA	International Association for the Evaluation of Educational Achievement
IEQE	Завод за вредновање квалитета образовања и васпитања - Serbia's Institute for Education Quality and Evaluation
IIE	Завод за унапређивање образовања и васпитања - Serbia's Institute for Improvement of Education
ISCED	International Standard Classification of Education
IT	Information Technology
MICS	Multiple Indicator Cluster Survey
MoESTD	Министарство просвете, науке и технолошког развоја - Ministry of Education, Science and Technological Development of Serbia
NEET	Not in Education, Employment or Training
NGOs	Non-governmental organisations
PIRLS	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
PPP	Purchasing Power Parity
RSAs	Regional School Authorities
SEN	Special Education Needs
SICI	Standing International Conference of Inspectors
SORS	Републички завод за статистику - Statistical Office of the Republic of Serbia
STEM	Science, Technology, Engineering and Mathematics
TALIS	Teaching and Learning International Survey
TIMSS	Trends in International Mathematics and Science Study
UIS	UNESCO Institute for Statistics
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
VET	Vocational Education Training

Executive summary

Serbia's education system performs well compared to other countries in the Western Balkans. There have been improvements in access to education and Serbia has undertaken major institutional reforms in recent years, such as the introduction of achievement standards at the end of compulsory education, teacher standards and a school evaluation framework. However, progress has not benefitted all population groups equitably and a large share of students in Serbia continue to leave school without mastering the basic competencies needed for further education and life. Addressing these educational challenges is crucial to the country's economic development, social prosperity and European integration.

As Serbia works to develop a new national education strategy for 2030, it needs strong evaluation and assessment systems to detect and address areas of low and inequitable performance. This report examines the design and implementation of policies related to student assessment, teacher appraisal, and school and system evaluation in Serbia. In particular, it recommends that Serbia develop reliable measures on the extent to which students are meeting national learning standards and use these measures to inform practices in the classroom and policies at the regional and national levels. Improving students' learning will require strengthening school leadership, modernising the teaching profession and providing the support schools need to implement the competency-based curriculum and meet the individual needs of students. These reforms will also require adequate funding and capacity, which are currently jeopardised by the country's overall low level of public expenditure on education.

Improving the value of school-based assessments and central examinations for teaching and learning

Serbia is working to reform school-based assessment practices and centralised examinations to better reflect the curriculum, which places an emphasis on student-centred approaches and higher-order competencies and skills. For example, learning standards and curricular plans are helping to clarify new expectations and measure what students should know and be able to do. In addition, there are plans to introduce a new centralised State Matura examination in June 2021. This will improve the integrity and equity of student selection into tertiary education and help reinforce the curriculum. However, the success of these reforms will require improvements in their design and plans for implementation.

To make education in Serbia more learner-centred, student assessment practices both in schools and nationally must reinforce this goal. This report identifies several factors that currently limit the educational value of student assessment in Serbia and recommends how these should be addressed. First, teachers and students require more support to shift their attention from grades to learning. This means helping teachers focus on where individual students are in relation to learning standards but also ensuring that students understand how they can develop and improve. There is also a need for further reflection on the design and implementation of the new Matura exam at the end of upper secondary school. This report recommends that Serbia carefully pilot and prepare the new Matura to create a sound and

trusted instrument. Parallel measures to strengthen the technical quality and implementation of the central examination at the end of basic education (Grade 8) would further reinforce public confidence in the country's examination system while ensuring a more positive backwash on teaching and learning in schools.

Promoting and supporting good teaching

Teacher appraisal refers to how teachers are assessed and given feedback on their performance and competencies. This process can be a strong lever for modernising and improving teaching and learning. While Serbia was one of the first countries in the Western Balkans to set up a merit-based career structure for teachers, the use of teacher appraisal to inform promotion and professional development remains nascent compared to OECD and neighbouring countries. For example, schools receive no guidance on how to use appraisal to encourage professional development and the merit-based career structure does not bring gains in terms of salary or professional recognition, weakening its potential as an incentive for teachers to develop professionally and take on new roles. This report recommends that Serbia provide teachers with stronger encouragement and incentives to develop their practices and seek higher responsibilities. The ministry must also address structural issues, such as low teacher salaries and a large, ageing teaching workforce, in order to promote and support good teaching.

Developing schools' capacity for improvement

School evaluation serves the dual purpose of helping schools improve their practices and keeping them accountable for the quality of their work. Serbia has made a strong push in the past two decades to develop both an external school evaluation system and school self-evaluation. External school evaluation in Serbia has many positive elements and self-evaluation is required on an annual basis. However, gaps and tensions in these processes undermine the potential of evaluation to help schools improve their teaching and learning practices. In particular, schools receive a limited amount of technical follow-up and school evaluation reports are commonly perceived as summative rather than formative.

This is a concern since schools often lack the capacity to use evaluation exercises to define and implement improvement plans on their own. For example, school principals in Serbia do not receive adequate training on how to play their role as instructional leaders and chronic underfunding means that many schools must rely on parents, non-governmental organisations or the private sector to fund their school development plans. This report suggests ways for Serbia to further strengthen external and self-evaluation and embed these processes in a larger framework of school improvement.

Building stronger foundations to evaluate national education performance

System evaluation refers to the processes that countries use to monitor and evaluate the performance of their education systems. A strong evaluation system serves two main functions: improving educational performance and holding the government and other stakeholders accountable for meeting national goals. Serbia has established some of the basic components of system evaluation. For example, a national education strategy provides a reference for planning and the ministry works with external partners, such as universities, to conduct research and evaluations. However, important parts of the evaluation infrastructure are still missing. Specifically, the lack of a national assessment of student learning and a fully functioning education management information system (EMIS)

leaves the country without an adequate evidence base to guide and monitor policy reforms. This makes it difficult to understand the main issues holding back educational improvement.

Serbia's new post-2020 education strategy presents an opportunity to strengthen system evaluation. In particular, this report recommends that Serbia prioritise developing and implementing the new national assessment to support system goals and improving the availability and functionality of education data stored in the Unified Information System of Education (UISE). The new strategy also presents an opportunity to develop a clear reporting framework that includes measures on the extent to which students are meeting national learning standards. The monitoring and evaluation reforms recommend in this report can help ensure that Serbia's new strategy affects education policy and practice. In turn, improving the education system from a good regional performer to an excellent one.

Assessment and recommendations

Introduction

Serbia's education system performs well compared to other countries in the Western Balkans. There have been improvements in access to education and Serbia has undertaken major institutional reforms in recent years, such as the introduction of achievement standards at the end of compulsory education, teacher standards and a school evaluation framework. However, progress has not benefitted all population groups equitably and a large share of students in Serbia continue to leave school without mastering the basic competencies needed for further education and life. Addressing these educational challenges is crucial to the country's economic development, social prosperity and European integration.

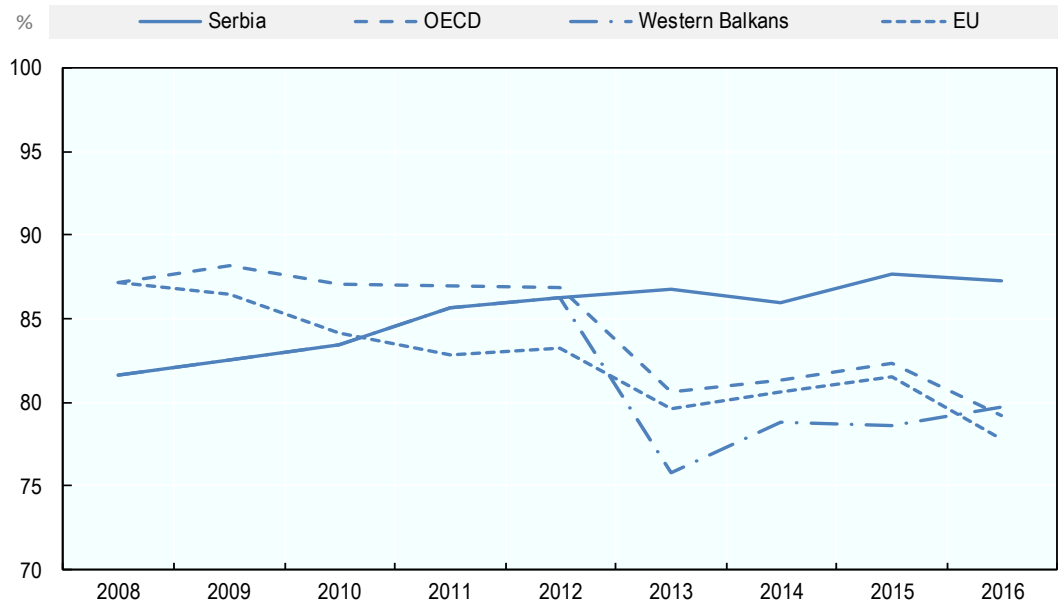
As Serbia works to develop a new national education strategy for 2030, it needs strong evaluation and assessment systems to detect and address areas of low and inequitable performance. In particular, Serbia should develop reliable measures on the extent to which students are meeting national learning standards. Plans for a new national assessment and final examination (Matura) at the end of upper secondary school are positive steps toward providing data on student achievement and results can inform teaching and learning practices across the country. However, these reforms require adequate funding and capacity, which are currently jeopardised by Serbia's overall low level of public expenditure on education. Improving students' learning will require developing school level agency to use quality teaching and learning practices. This means strengthening school leadership, modernising the teaching profession and providing the support schools need to prepare their students for success in a creative and knowledge-based economy.

Main trends

Nearly all children in Serbia now participate in compulsory education

Serbia has high levels of participation in compulsory education, which covers primary and lower secondary levels (from age 7 to 14). Net enrolment at the primary level is equivalent to the OECD average and at 97%, the enrolment rate in lower secondary education is higher than the average across OECD countries (91%) and in the Western Balkan region (90%) (UIS, 2019[1]). Moreover, the majority of students in Serbia continue from lower secondary to upper secondary schools. As such, participation in upper secondary education increased steadily in the past decade, reaching an 87% net enrolment rate in 2016. This is higher than the EU (82%), OECD (79%) and regional (78%) averages, which have experienced declining enrolment (Figure 1).

Figure 1. Net enrolment rates in upper secondary education, 2008-16



Source: UIS (2019[1]), *UNESCO Institute for Statistics*, http://data.uis.unesco.org/ (accessed on 14 June 2019).

Learning outcomes remain relatively stable for students in lower-secondary education

National data on student learning outcomes in Serbia is limited. However, results from international assessments reveal that the average learning outcomes of students in lower secondary education (referred to in Serbia as second cycle of primary education) have generally remained stable, with slight overall improvements since the country first participated in the 2006 cycle of the OECD Programme for International Student Assessment (PISA). Between 2006 and 2012, Serbia was one of the few countries in the Western Balkans region to improve average performance across all PISA domains – reading, mathematics and science. The largest improvement during this period was in reading, where mean performance increased by 45 points, mostly from 2006 to 2009. In general, Serbia also decreased its share of low performers (students who score below Level 2 on the PISA scale) 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, results from PISA 2018 show a slight decrease in learning outcomes since 2012, especially in reading and science. Today, fifteen-year-old students in Serbia continue to perform more than 1 year behind their peers in OECD countries across all subject domains, particularly in science (49 score point difference).

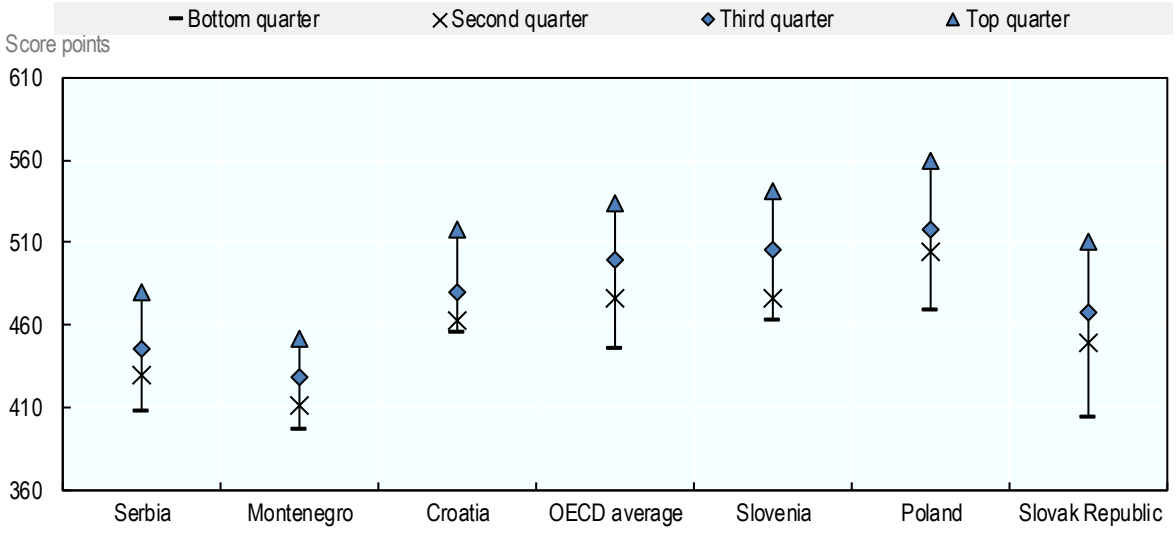
Participation and outcomes vary considerably

There is significant variation in both participation and outcomes in the Serbian education system. Although enrolment rates have increased considerably, these vary across socio-economic groups and regions. This is true for all levels of education, especially non-compulsory levels. For example, only 7% of students from the poorest families enrolled in pre-primary education in 2008, compared to 64% of those from the wealthier households (Pešikan and Ivić, 2016[2]).

With respect to learning outcomes, 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 2). While this gap is not as large as the one found across OECD countries (average difference of 89 score points), it is larger than neighbouring Croatia and Montenegro, which have a 63 and 55 score point difference, respectively (OECD, 2019[3]). Despite this, 13.2% of students in Serbia from disadvantaged backgrounds are considered "resilient" (able to beat the odds and achieve high performance levels in PISA), compared to the OECD average (11.3%) (OECD, 2019[3]). Other dimensions according to which student outcomes in Serbia vary include:

- **Geographic location:** Similar to other countries in the region, there are geographic disparities within Serbia. Students in rural areas are less likely to participate and complete school. In 2013, the drop-out rate from primary education was 1% in urban areas, compared to 14.25% in rural areas (Pešikan, 2015[4]). Learning outcomes also tend to be lower in rural areas: students attending schools located in Serbian cities scored on average 122.3 points higher in the PISA test of reading than students attending schools located in rural areas (OECD, 2019[5]).
- **Roma background:** While there are large discrepancies between official census data and estimates, there are indications that Serbia has one of the largest shares of Roma people in the Western Balkans region. Some estimates reveal that the Roma community represents as much as 8% of the total Serbian population, below North Macedonia (9.7%) but higher than the share in other neighbouring countries (Council of Europe, 2012[6]). In terms of education, Roma children are far less likely than Serbians to participate and progress in school and higher education, especially when living in poverty. Only 37% of Roma students complete compulsory education and around one in five Roma students are enrolled in upper secondary education, compared to 89% of Serbian students (UNICEF, 2015[7]). Moreover, a study by UNICEF, which examined an unweighted sample of around 25 cases, found that only 4.7% of children from the poorest families among Serbia's Roma settlements attend secondary education, compared to nearly 40% of those who come from more advantaged socio-economic backgrounds.

Figure 2. Mean performance in reading by national quarters of the PISA index of economic, social and cultural status (PISA 2018)



Source: OECD (2019[3]), *PISA 2018 Results (Volume II): Where All Students Can Succeed*, https://doi.org/10.1787/b5fd1b8f-en.

Teachers are not all well prepared to teach

Teachers in Serbia are not all well prepared to address the equity and quality issues in their country's education system. This is partially because the requirements for entry into initial teacher education are not selective enough and the quality of programmes varies significantly. For example, some teachers enter the profession without having received any practical training in schools during their initial teacher education. Such gaps in pedagogical experience often go unaddressed as teachers continue in their careers because participation in professional development remains low, despite being mandatory. Lack of financial support and dissatisfaction with professional development offers help explain why many Serbian teachers do not complete all of their required professional development credits (Figure 3). This presents challenges in terms of updating teaching practices in line with Serbia's new curriculum and evidence about approaches that help students learn.

Figure 3. Percentage of mandatory training completed

Share of surveyed teachers reporting not having completed a percentage of the mandatory 100 credit points of professional development, by reasons for non-completion

Source: IEE (2017[8]), *Izveštaj: Ispitivanje Potreba za Stručnim Usavršavnjem [Report: Examining the Needs for Professional Improvement]*, Institute for Improvement of Education.

Education spending is chronically low

Serbia's level of public expenditure on education has remained historically low and mostly unchanged over the past decade. 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[1]). Nevertheless, per student spending in Serbia has increased for all educational levels in recent years, partly because of the country's declining student population. Serbia has tried for more than a decade to introduce a per-capita funding formula for education, which most OECD countries have used to distribute resources more responsively to schools' contexts and needs (OECD, 2017[9]). However, the government has never fully implemented school financing reforms, making it difficult for small and socio-economically disadvantaged schools to meet the needs of their students.

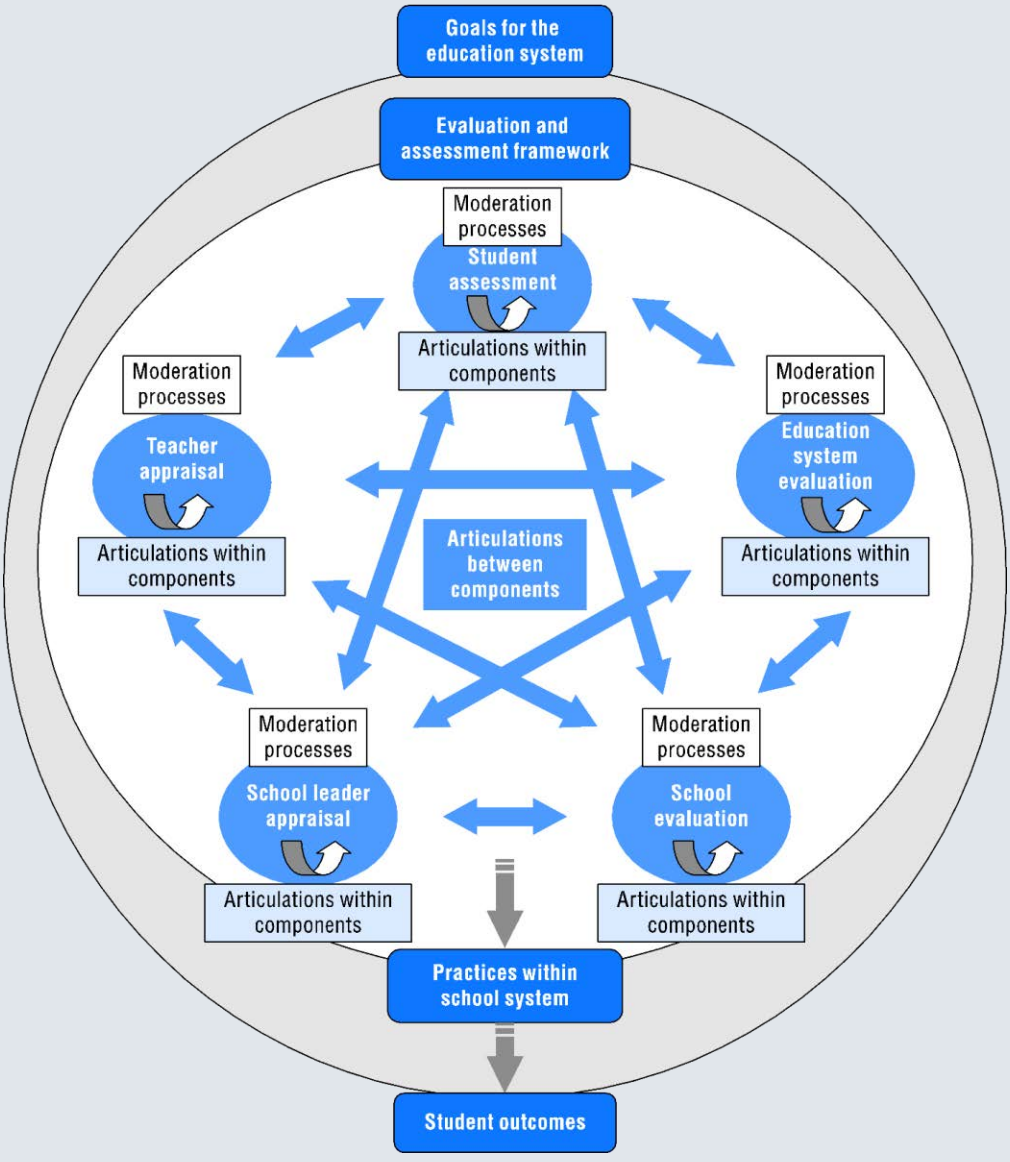
Evaluation and assessment in Serbia

This review analyses how policies for assessing student learning, appraising teachers, evaluating schools and evaluating the performance of the education system as a whole can be used to improve student outcomes in Serbia. The review draws upon the OECD's analysis of policies and practices for evaluation and assessment in over 30 education systems to identify how Serbia can raise the quality of teaching and learning in schools (see Box 1). In undertaking this review, the OECD team identified three interrelated, systemic issues to address to strengthen evaluation and assessment in Serbia's education system.

Box 1. OECD reviews on evaluation and assessment

The OECD reviews show how the components of evaluation and assessment – student assessment, teacher appraisal, school evaluation, school leader appraisal and system evaluation – can be developed in synergy to enhance student achievement in primary and secondary education (Figure 4).

Figure 4. Interactions within the evaluation and assessment framework



This work has highlighted three hallmarks of a strong evaluation and assessment framework:

- *Setting clear standards for what is expected nationally of students, teachers, schools and the system overall*. Countries that achieve high levels of quality and equity set ambitious goals for all, but are also responsive to different needs and contexts.
- *Collecting data and information on current learning and education performance*. This is important for accountability – so that objectives are followed through – but also for improvement, so that students, teachers, schools and policymakers receive the feedback they need to reflect critically on their own progress and remain engaged and motivated to succeed.
- *Achieving coherence across the evaluation and assessment system*. This means, for example, that school evaluation values the types of teaching and assessment practices that effectively support student learning and that teachers are appraised on the basis of the knowledge and skills that promote national education goals. This is critical to ensure that the whole education system is working in the same direction and that resources are used effectively.

Source: OECD (2013[10]), *Synergies for Better Learning: An International Perspective on Evaluation and Assessment*, http://dx.doi.org/10.1787/9789264190658-en.

Building capacity for school improvement

Strong school leadership is key to defining a school's goals, supporting the professional development of teachers and collaborating with staff to improve learning (Schleicher, 2015[11]). School leaders need training and support to accomplish these tasks effectively. In Serbia, school principals and leadership staff have some autonomy in how they allocate their school's budget and manage instruction; however, the majority of school leaders never receive formal training on key areas of their work, such as instructional leadership. This limits the ability of school leadership staff to become proactive agents of improvement in Serbian schools.

While Serbia has guidelines on the key functions of school leaders, such as appraising teachers or conducting school self-evaluation, these are outdated and not fully aligned with recent education policies. Without sufficient training and guidance, it is not surprising that the country's school principals are not using evaluation and assessment to set clear strategies for teaching and learning in their schools. For example, regular teacher appraisal does not systematically inform the professional development plan of individual teachers, student assessment results do not guide instruction and school self-evaluation is not an embedded part of the school planning cycle. Chronic underfunding and little external support (i.e. lack of coaching opportunities or participation in peer learning) further exacerbate these issues, limiting the capacity of schools to enact meaningful changes in their policies and practices.

This review makes several recommendations about how Serbia could develop school leadership capacity. At the national level, this review recommends placing school improvement at the centre of Serbia's new national education strategy by setting clear goals

for strengthening the leadership competencies of school principals and better co-ordinating the agencies responsible for providing schools with technical support. In particular, the roles of Serbia's Institute for Education Quality and Evaluation (IEQE), the Institute for Improvement of Education (IIE) and Regional School Authorities (RSAs) should be reviewed to ensure greater alignment among their respective work programmes and functions. Opportunities for coaching and mentorship in areas such as school leadership, student assessment and school self-evaluation should also be provided. Finally, the Serbian Ministry of Education, Science and Technological Development (hereafter the ministry) should ensure that schools have adequate public funding to organise professional learning opportunities for their staff and implement school improvement plans.

Modernising and professionalising teaching

Preparing students to compete in 21st century economies requires teachers who are knowledgeable, skilled and motivated to continue improving. Over the past 15 years, Serbia has introduced several reforms related to the teaching profession. Flagship policies include a merit-based career structure, adoption of teacher standards and a master's in education programme. While these reforms aim to increase the attractiveness of the teaching profession and encourage teachers to develop their competencies throughout their careers, they have yet to catalyse real change in teaching practices. For example, very few teachers apply for higher positions along the merit-based career structure. Moreover, results from external school evaluation over the past five years show that the overall quality of teaching and learning in Serbian schools remains low. Teachers continue to use knowledge-based and teacher-centred approaches that do not align with the expectations of the country's new curriculum and learning standards.

Several structural barriers have contributed to this situation. Serbia's merit-based career structure does not define clear expectations for advancement nor does it incentivise teachers to apply for promotions. For example, there are no links between promotions and salary increases. Moreover, the initial training teachers receive does not prepare them sufficiently for the job. In particular, the content of programmes taught in Serbian education faculties is often outdated and subject teachers (in Grades 5 to 12) receive very limited training on pedagogy. Serbia also has difficulties attracting talented and motivated young people to become teachers. This is partially because the base salary of Serbian teachers is lower than teacher pay in many other countries and compared to salaries for other professions within the country. A general oversupply of teachers, caused by demographic decline, has led to fewer employment opportunities for teachers and an increase in the number of part-time jobs. This affects the quality of education and further hinders Serbia's capacity to hire new talent into the profession.

This review makes several recommendations about how Serbia can modernise and professionalise its teaching workforce. Strengthening the incentives for teachers to develop and seek higher responsibilities will be important. Making better use of appraisal to consolidate the competencies of beginner teachers and inform professional development throughout their careers, can help raise the quality of teaching and learning even further. Serbia should also monitor the quality of initial teacher education more closely and keep providers accountable for equipping their graduates with the competencies needed to become good teachers. Appraisal of candidate teachers can help here, by linking the allocation of scholarships and initial teacher placements based on performance.

Prioritising national education goals and monitoring progress

The Strategy for Education Development in Serbia 2020 (hereafter the strategy) marks an important shift in the way Serbia develops education policy: from a culture based on political negotiations over legislation, towards one that draws on evidence and focuses attention and accountability on addressing the challenges facing the country. However, while the abundance of goals and targets interspersed throughout the current strategy provide great ambitions for Serbia's education system, they offer little prioritisation of what issues are most important for the future. As Serbia prepares for its next medium-term strategy, which will outline the country's vision for education to 2030, the ministry should distil its ambitions for education into a small set of high priority goals that can help steer improvement in Serbian classrooms, schools and the education system as a whole.

This review provides recommendations on how building stronger foundations for system evaluation will help Serbia to focus and align education reforms with main priorities to improve student learning. In particular, evaluation tools such as the new national assessment are critical to better understanding the extent to which students in Serbia are meeting national learning standards and helping teachers make informed professional judgements to meet the individual needs of their students. Serbia will also need to strengthen the functionality of the Unified Information System of Education (UISE) so that relevant and reliable data can be easily accessed by policymakers and other stakeholders to inform education policies, measure progress and maintain focus on national education goals.

Improving the value of school-based assessments and central examinations for teaching and learning

The primary purpose of student assessment is to determine what students know and are capable of doing. This can help teachers improve their practice and inform decisions about student placement, especially when opportunities are limited. Serbia is working to reform school-based assessment practices and centralised examinations to serve this purpose. For example, learning standards and new curricular plans are using competency-based and student-centred approaches to modernise teaching and learning. In addition, there are plans to introduce a new centralised State Matura examination in June 2021. This exam will certify the completion of secondary school and become the main criterion for selection into tertiary education through a new admissions system. However, the success of these reforms will require improvements in their design and plans for implementation.

As Serbia seeks to make education more learner-centred, student assessment practices both in schools and nationally must reinforce this goal. To do this, the ministry needs to address several factors that currently limit the educational value of student assessments. First, teachers and students require more support to shift their attention from grades towards learning. Ensuring a better balance between school-based formative and summative assessments can help. There is also a need for further reflection on the design and implementation of the new Matura exam at the end of upper secondary school. While there is a legitimate desire to advance this landmark reform quickly, the new Matura will have significant implications for students and universities and, therefore, must be carefully piloted and prepared to design a sound and trusted instrument. Parallel measures to strengthen the technical quality and implementation of the central examination at the end of basic education (Grade 8) would further reinforce public confidence in the country's examination system while ensuring a more positive backwash on teaching and learning in schools.

Policy issue 2.1. Ensuring a better balance between formative and summative purposes in school-based assessment

In Serbia, there is a marked imbalance between school-based assessment *for* learning (formative assessment) and assessment *of* learning (summative assessment). On the one hand, there are frequent summative assessments because teachers must assign a minimum number of numerical marks to all students each year. This has high stakes for students since cumulative grade point average (GPA) influences their options for upper secondary and tertiary education. By contrast, formative assessment in Serbia is underdeveloped, largely because summative assessment weighs so heavily, but also because the purposes of formative assessment are poorly understood, valued and practised. For example, while there is a law mandating that teachers administer initial diagnostic assessments at the beginning of the school year to all students, it is unclear whether teachers are using these results to adapt their instructional practices and focus on individual student needs. This imbalance can have negative consequences as it generates pressure for students and parents to focus on getting good marks rather than authentic learning. Moreover, some teachers and schools may respond to this pressure by inflating student grades.

Serbian teachers also receive little guidance and training on how to use assessment to inform teaching and learning. This is especially important if the ministry expects teachers to align their assessment practices with the new competency-based curriculum, which requires teachers to evaluate complex outcomes that are hard to visualise and judge reliably. Results of external school evaluations show that teachers struggle with assessing student learning in more than half of Serbia's schools (IEQE, 2017[12]). In response, the ministry identified improving teacher assessment literacy as a professional development priority for 2017-20.

Box 2. Recommended actions for ensuring a better balance between formative and summative school-based assessments

Recommendation 2.1.1. Revise the student assessment framework to encourage a shift in focus from marks to learning. Serbia needs to revise its national framework for student assessment to ensure that teachers have the space to use assessment in a more formative manner. Revising the legal requirements around summative assessment and requiring teachers to provide students with descriptive feedback based on performance levels in the new curriculum could help improve the educational value of marking. The ministry should also consider replacing Serbia's traditional 1-5 marking scale with a longer common scale, as this would give teachers greater scope in differentiating how they report classroom outcomes. The success of these reforms will rely on clearly communicating core principles and definitions for student assessment that teachers can use to inform their everyday practice.

Recommendation 2.1.2. Strengthen the support provided to schools in conducting formative assessment. The central government needs to provide schools with more support on how to use assessment results to inform teaching and learning practices. To do this, the Exam Centre could develop nationally standardised initial tests for key transition grades and gradually develop a pool of test item examples for all grades and subjects. This would help improve the quality of teachers' diagnostic judgements, providing a basis for more differentiated responses to the individual needs of learners. The ministry also needs to give teachers better guidance on how to integrate formative assessment approaches within their regular classroom activities. In particular, how to provide feedback in a way that is sensitive, constructive and motivational, but also how to engage students in setting and monitoring their own learning goals. Encouraging the use of student portfolios can help achieve this aim.

Recommendation 2.1.3. Develop teachers' assessment literacy. Serbia needs to improve the quality and practical value of teacher training on assessment. Primarily, the Institute for Improvement of Education and the ministry should ensure that all practising teachers who demonstrate weaknesses with respect to their assessment literacy receive free and mandatory training to help them reach a minimum level of competency. School principals should also receive guidelines, tools and training on how to appraise and develop teacher assessment literacy. Finally, to support this, the ministry should clarify what assessment competencies teachers should have and how these might develop throughout the teaching career.

Policy issue 2.2. Planning for the successful implementation of a new final examination (Matura) at the interface of upper secondary and tertiary education

The plan to introduce a new final examination (Matura) at the end of upper secondary education is a vital reform that promises to enhance fairness, transparency and efficiency in decision-making at this critical juncture in a student's education and life. Specifically, the Matura intends to certify the completion of upper secondary school and inform student selection into tertiary education. The associated introduction of a new admissions system aims to allocate university places and scholarships based on student choice and merit. Within this new system, results from the curriculum-based Matura will provide the main measure of aptitude, largely replacing the current selection tests administered by individual tertiary institutions.

Preparing adequately for the implementation of this reform will be crucial to its success. However, with less than two years until the first cohort of students is expected to take the Matura (in June 2021), many design aspects still need to be defined. For example, it remains unclear exactly how the new common admissions system will allocate students to tertiary programmes. The ministry also needs to decide the administrative and marking procedures for the Matura exam. Technical quality and public trust are essential for any high-stakes examination, and Serbia runs significant risks if it moves forward too quickly with this reform, before designs are finalised and instruments piloted.

Box 3. Recommended actions for introducing a new final examination (Matura)

Recommendation 2.2.1. Develop the concept of the new system of student admissions into tertiary education. Serbia has yet to define exactly how the new admissions system will use Matura results to help allocate students to tertiary programmes. To improve the efficiency and transparency of this process, the ministry should consider introducing a common admission system (CAS) that takes into account student preferences, university entry requirements and achievement scores. The CAS's rules and procedures need to be clear for all stakeholders. The algorithm behind the system should consider various inputs and result in a unique offer that matches students with available places. The Common Admission System should also be used to centrally distribute the state scholarships.

Recommendation 2.2.2. Review and complete Matura's examination model. The design concept of Serbia's new Matura needs to include clear procedures for scoring, scaling and reporting student results. There also needs to be an agreement on test items, which should include a combination of multiple-choice and open-ended questions to assess more of the curriculum. This review also recommends that Serbia consider revising the current policy on mathematics testing. Mathematics should be a compulsory exam for all students. However, the exam should be offered at two levels, which would help ensure that all students have attained basic functional numeracy while simultaneously offering some students – for example those who require advanced mathematics for university – an option to take a more difficult exam.

Recommendation 2.2.3. Set up sustainable administrative and information-technology systems to implement the Matura. Serbia needs to clarify the administrative process and infrastructure for the Matura and CAS before the launch of the Matura in 2021. This will require identifying the agencies and actors responsible for key implementation tasks and ensuring they are sufficiently resourced and trained. This review recommends the IEQE Exam Centre lead the overall Matura process, including administration of the CAS. In particular, the Exam Centre should review the CAS information and technology system to ensure it accommodates the additional subjects and electives that will be covered in the new Matura. Securing sustainable funding from the central government for the Matura will be crucial to covering the core human, technical and physical resources required for its effective implementation in the long term.

Recommendation 2.2.4. Set a realistic timeframe for implementation and build public understanding and support for the new system. Serbia should delay the implementation of the Matura by at least two years and set a new target date for 2023. This revised timeline will give the ministry and the IEQE more time to consult with key stakeholders and address outstanding gaps in the exam's design. Extending the implementation timeframe will also allow Serbia to conduct proper two-stage piloting, set up the required administrative and information and technology systems and establish a communications campaign to effectively disseminate results.

Policy issue 2.3. Strengthening the technical quality of the central examination at the end of basic education

The central examination that students take at the end of basic education (Grade 8) has served its dual purpose well since its creation in 2011. First, it certifies students' completion of basic education and, second, it provides scores that are used to automatically place

students into general secondary and vocational education and training (VET) schools, taking into account their "wish list" of desired schools. However, almost a decade after its introduction, the exam would benefit from some refinement in terms of its design and administration.

Despite efforts by the IEQE Exam Centre to include more diverse item types, Serbia's Grade 8 exam relies primarily on items that assess the reproduction of facts and the use of routine cognitive procedures, mostly at lower and intermediate levels of difficulty. The exam also makes little attempt to assess the transversal competencies emphasised in the learning standards. In addition, there are specific well-recognised concerns with the combined test of biology, chemistry, geography, history and physics, which does not provide a valid measure of student achievement for each of these five subject domains.

While procedures are in place to ensure the proper implementation of the Grade 8 exam, there is still some evidence of malpractice. For example, schools do not always administer the test procedures correctly and there have been cases of school staff deliberately giving their students the right answers. This problem does not appear to be widespread, according to analysis by the Exam Centre. However, the lack of public information on the extent of malpractice and of visible measures to address recognised weaknesses contributes to a climate of mistrust. Building public confidence in the quality and integrity of the "little" Matura will be important for supporting Serbia's examination reforms at the end of upper secondary school.

Box 4. Recommended actions for strengthening the technical quality of the central exam at the end of basic education

Recommendation 2.3.1. Develop the exam to measure a wider range of competencies and levels of achievement. Serbia's Grade 8 exam has a limited number of test items and a short scoring scale. This makes it difficult to assess a wide range of competencies reliably. The IEQE Exam Centre should consider increasing the overall number of test items, especially at more advanced levels, to better measure competencies across the ability range. Replacing the combined test with more valid assessments of specific subjects, such as a test of natural sciences and a combined test of history and geography, could be a better way to measure student competencies in specific domains. In addition to changes in the exam's design, the ministry should also invest in developing the capacity of associate teachers and staff within the IEQE to ensure they understand how to assess higher-order competencies and write test items that require students to use these skills.

Recommendation 2.3.2. Build public confidence in the examination system. The ministry and the IEQE Exam Centre should take measures to improve trust in the Grade 8 exam results. Appointing exam supervisors from other municipalities (to avoid bias), introducing greater penalties for malpractice, increasing the number of schools from which tests are reviewed and targeting schools for review where past irregularities were observed are some of the ways in which Serbia could achieve this goal. It is also important to provide more information to the public about improvements in the exam's administration.

Promoting and supporting good teaching

Serbia has taken important steps to professionalise the teaching workforce, notably through the introduction of a merit-based career structure in 2004. However, the use of teacher appraisal to inform promotion and professional development remains nascent compared to OECD and neighbouring countries. For example, schools receive no guidance on how to use appraisal to encourage professional development and the merit-based career structure does not bring gains in terms of salary or professional recognition, weakening its potential as an incentive for teachers to develop professionally and take on new roles. Serbia will also need to address several structural issues in order to promote and support good teaching, such as low teacher salaries and having a large, ageing teaching workforce.

Policy issue 3.1. Providing teachers with stronger encouragement and incentives to develop their practices and seek higher responsibilities

Serbia was one of the first countries in the Western Balkans to set up a merit-based career structure for teachers. However, some important design gaps are limiting the system's potential to effectively reward performance and provide teachers with incentives to update their skills, knowledge and practice. Serbian teachers receive no guidance on the type of competencies they need to demonstrate to advance in their career. Moreover, years of experience has a bigger role in determining salary increases than performance or level of responsibility. As a result, Serbia's merit-based career structure fails to incentivise teachers to gain new competencies and apply for higher positions.

The complexity of the promotion process also discourages many teachers from applying to higher positions. Advisors, who are responsible for teacher promotion appraisals, lack training and there are no common tools or guidelines to ensure the process is consistent and fair. Moreover, teacher councils within schools do not have a mandate for teacher appraisal but often play a significant role in teacher promotion. This limits objectivity and may lead to rewarding loyalty instead of competency. Serbia needs to revise the teacher promotion process to make sure it rewards good teaching and encourages professional development. This can help improve teacher motivation and teaching quality in the education system and, through this, help improve student learning.

Box 5. Recommended actions for providing stronger encouragement and incentives for teachers to develop their practices and seek higher responsibilities

Recommendation 3.1.1. Make sure that expectations and responsibilities at each level in the career structure are well defined and clear for teachers. Serbia should revise its teacher standards to define clearly the competencies expected at each step of the career structure. This will help teachers better understand what competencies they need to develop to advance to higher positions. The new teacher standards should include illustrations of desired teaching practices and set an expectation of continuous development and improvement. Once Serbia defines teacher competencies by career level, it will be important to make sure that teachers receive adequate opportunities to develop these competencies. This means that the list of professional development opportunities, prepared by the Institute for Improvement of Education (IIE), should clearly indicate the competencies targeted by each training programme. School principals, pedagogues and psychologists should also receive sufficient guidance on how to orient teachers to the right programmes aligned with their career goals.

Recommendation 3.1.2. Revise the appraisal for promotion procedure to ensure fairness and independence. As the ministry revises Serbia's teacher standards, it will also need to provide advisors with guidelines on how to assess teacher performance against these. In particular, advisors should receive clear directions on how to conduct classroom observations and interview teachers in a way that captures a teacher's competencies accurately and reliably. Developing tools, such as indicators and descriptors, would be particularly helpful. To ensure fairness, similar criteria should be used to appraise all teachers and the appraisal process should be carried out by advisors from an RSA that is not attached to the teacher's school. The ministry will also need to provide advisors with training on providing feedback to teachers and school principals on how they can help improve teaching.

Recommendation 3.1.3. Strengthen the link between teacher performance and reward. There are almost no rewards or recognition for good or excellent performance in Serbia's teacher career structure. Rewards, both financial and symbolic, can play an important role in inspiring teachers and encouraging them to improve. Teacher salaries in Serbia increase based on years of experience, which partly explains the low numbers of teachers seeking promotion. The ministry should make sure there is a decent salary increase between different levels of the teaching career structure. Financial incentives should be progressive enough to reward performance and the starting salary should be sufficient to attract and retain talented teachers. The ministry might also explore alternative ways to ensure that good teaching performance is recognised and valued, such as by providing more public recognition to exceptional teachers or giving schools a small grant that they can distribute to teachers as a reward for good performance.

Policy issue 3.2. Improving the developmental value of regular in-school appraisal

Serbian schools have a lot of flexibility in how they organise and use the results of regular teacher appraisal, with each school being required to set up its own classroom observation strategy as part of its annual professional development plan. However, there is no national framework for this process, which often leaves Serbian schools without a clear sense of purpose or appropriate methods to develop teacher appraisal. As a result, the quality of

teacher appraisal varies significantly among schools. Another factor that contributes to the lack of consistency in the quality of the regular appraisal process is that school principals and pedagogues have limited initial training and continuous professional development on how to conduct appraisals and how to provide constructive feedback on teaching practices. This undermines the legitimacy and value of the appraisal process and leads some teachers to perceive classroom observation by the school principal as a control mechanism instead of a formative process.

Box 6. Recommended actions for improving the developmental value of regular in-school teacher appraisal

Recommendation 3.2.1. Develop clear guidelines and tools for in-school appraisal. The Institute for Improvement of Education (IIE) should develop national guidelines for in-school appraisal that clearly define the purpose of this practice, identify the sources of evidence that can be used to evaluate different teacher competencies, and explain effective ways to conduct classroom observations and teacher interviews. Appraisal results should identify a teacher's level of competency against the revised teacher standards and feed into their individual professional development plan. These results should also inform the overall school development plan and the principal's decision to validate a promotion appraisal.

Recommendation 3.2.2. Invest in developing in-school capacity for appraisal. Serbia should invest in improving the appraisal capacity of pedagogues and school principals already in service. These actors should have opportunities to develop their appraisal competencies through practical training programmes, peer learning and coaching activities and by using an online platform to exchange good practices and materials. Teachers should also be helped to reflect critically on their own training needs. To this end, the IIE should encourage school principals and pedagogues to use the self-appraisal tool in discussions with teachers about their performance. They could also offer teachers a training module on self-appraisal to explain why this process matters and how it can help develop their practice and foster a sense of self-efficacy.

Policy issue 3.3. Making sure that professional development opportunities meet the needs of teachers

Improving the teacher appraisal system needs to go hand in hand with improving the quality of continuous professional development. Without this link, the regular appraisal process risks being perceived as a meaningless exercise by the teaching profession and is less likely to enhance teaching performance (Danielson, 2007[13]). In Serbia, the results of regular teacher appraisals do not systematically inform professional development. Instead, teacher councils determine development areas and there is no expectation that teachers receive training to help address gaps in the skills and knowledge identified through the appraisal process. Moreover, the IIE commission in charge of accrediting training programmes does not use appraisal results as a source of information to determine its focus areas.

The take-up of professional development in Serbia is very limited compared to OECD countries (OECD, 2014[14]). This is partly because teachers and schools lack financial resources for training and because there is some dissatisfaction with current training offers. Professional development in Serbia mainly takes place outside of schools in seminars or workshops and does not seem to focus on some key skills gaps, such as the use of learning standards. This suggests a need to provide teachers with more opportunities to learn and

develop their competencies within the school setting. While there is an emerging culture of in-school collaboration and peer learning among Serbian teachers, several hurdles, especially lack of funding and limited national guidance, prevent these practices from creating systemic change.

Box 7. Recommended actions for making sure that professional development opportunities meet the needs of teachers

Recommendation 3.3.1. Use information from appraisal to identify teacher development needs. Serbia needs to make better use of information from the teacher appraisal system to improve the quality of professional development programmes and address serious weaknesses in teaching practices. To this end, the Institute for Improvement of Education (IIE) should receive funding to develop a systematic process for collecting information about the professional development needs of teachers across schools and on a regular basis. Asking advisors, school principals and pedagogues to complete a simple questionnaire about training priorities and triangulating results of teacher appraisals with evidence from national assessments and external school evaluations could help achieve this goal. School principals should also have the authority to require teachers who do not meet satisfactory benchmarks in key competency areas to undertake training to improve their practice. Ideally, this training should be free of charge for both the school and teachers.

Recommendation 3.3.2. Develop in-school professional development opportunities and peer learning. Organising in-school professional development activities and encouraging collaborative learning among teachers requires funding. Most schools in Serbia must fundraise or find other means to cover the costs of professional development activities for teachers, creating inequities between schools in rich and poor areas. External school evaluation should check that central funds allocated for in-school professional development and peer-learning activities respond effectively to the needs of teachers. The IIE should support schools in this effort by providing guidance and training on different types of professional development activities. The IIE should also encourage teachers to upload and share lesson plans and assessment examples on an e-learning platform, which will require long-term funding for maintenance and development.

Policy issue 3.4. Preparing and selecting a new generation of teachers

Countries with strong education systems invest significantly in attracting and selecting talented and motivated candidates into the teaching profession and providing them with adequate training to become effective teachers (Schleicher, 2015[11]). Serbia is still far from having a quality initial teacher preparation model that meaningfully selects trains and supports new teachers. The quality of initial teacher education in Serbian universities is low, in particular for subject teachers who work in Grades 5 to 12. In fact, many new subject teachers enter the classroom without having received pedagogical training or classroom experience gained through a teaching practicum. The lack of programme-specific accreditation criteria and quality standards contributes to significant heterogeneity in the content and quality of courses and makes it harder to align initial teacher education with recent reforms to the school curriculum. Moreover, the accreditation commission does not have enough resources to organise follow-up checks to verify that essential requirements are in place.

Once in school, novice teachers do not always have access to adequate feedback and opportunities to develop their practice. While Serbia has a mentorship programme targeting novice teachers, mentors themselves do not receive any training on how to observe classroom practice and provide feedback to their mentees. In addition, the ministry has not updated its guidelines for teacher mentorship since 2007. Therefore, these guidelines do not align with recent reforms, such as the introduction of teacher standards.

Difficulty recruiting new teaching graduates into the position is also holding back efforts to modernise teaching practices in Serbia. The general oversupply of teachers, limited number of available posts and freeze in public service hires have exacerbated this issue. As a result, Serbia has almost completely stopped recruiting new teachers. Nevertheless, shortages persist in some subject areas, such as mathematics, physics and foreign languages, where private sector jobs requiring these skills tend to be more attractive. Serbia needs to recruit talented new teachers to raise the level of qualifications among the teaching workforce and implement new ideas and teaching approaches that align with the curriculum (i.e. learner-centred, competency-based and inclusive education).

Box 8. Recommended actions for attracting new teachers

Recommendation 3.4.1. Select and provide in-school support to motivated and talented new teachers. The Serbian ministry needs to improve the quality assurance of teacher education programmes and ensure that selection into the profession is fair and based on teachers' competencies. Setting accreditation criteria, developing guidelines for the design and duration of teaching practica and limiting state-funded places in initial teacher education to the best-qualified candidates can help achieve this goal. The ministry should consider introducing a national qualifications exam to ensure that teacher candidates have met minimum requirements after completing their initial education. Since the quality of initial teacher education varies and opportunities for practical training are limited, Serbia should strengthen the mentorship programme for novice teachers. To this end, the Institute for Improvement of Education (IIE) might introduce mandatory training for all appointed mentors, update the mentorship manual based on new standards for novice teachers and create a network of mentor teachers who work with several schools. Feedback from mentors can help make the appraisal process for new teachers more formative and inform the decision on whether a new teacher should pass their probation period. Serbia should consider involving RSA advisors in the probation decision to ensure a fair external judgement of teachers' practices in the classroom.

Recommendation 3.4.2. Revise the allocation of human resources to make sure that new teachers are hired. The ministry needs to set up a strategy to address the oversupply of teachers and facilitate the recruitment of new teachers, especially in subject areas where there are already teacher shortages. Appraisal results can be used to help manage the numbers of newly licensed teachers, orient experienced teachers towards other positions, such as pedagogues, and inform a scheme for early retirement that Serbia should consider introducing. To attract and retain teachers in specific subjects, the ministry could offer a fixed number of scholarships to better control teacher supply and anticipate needs in these areas; however, this should be conditional on working in the teaching profession for a minimum number of years. Developing a fast track in the career structure and introducing alternative pathways into the profession could also help retain talented teachers and attract mid-career professionals from the private sector.

Developing schools' capacity for improvement

School evaluation serves the dual purpose of helping schools improve their practices and keeping them accountable for the quality of their work. Serbia has made a strong push in the past two decades to develop both an external school evaluation system and school self-evaluation. External school evaluation in Serbia has many positive elements and self-evaluation is required on an annual basis. However, gaps and tensions in these processes prevent Serbia from making the most of evaluation to help schools improve their teaching and learning practices. In particular, schools receive a limited amount of technical follow-up and school evaluation reports are commonly perceived as summative rather than formative.

This is a concern since schools often lack the capacity to use evaluation exercises to define and implement improvement plans on their own. For example, school principals in Serbia do not receive adequate training on how to play their role as instructional leaders and chronic underfunding leaves many schools reliant on parents, non-governmental organisations or the private sector to fund their school development plans. This suggests a need for Serbia to strengthen external and self-evaluation and embed these processes in a larger framework of school improvement.

Policy issue 4.1. Developing external evaluation into a meaningful process for school improvement

On paper, Serbia has one of the most advanced external school evaluation systems in the Western Balkans. The evaluation process, developed with the help of the Standing International Conference of Inspectorates (SICI) and the Dutch Inspectorate, reflects many features of mature school evaluation systems in OECD countries. However, in practice, external school evaluation has done little to trigger improvements within Serbian schools. This is partly because of the perception that external school evaluation is primarily a rating exercise and does not give schools quality feedback. However, the process also faces challenges caused by limited resources and capacity, combined with a lack of external technical support.

If external evaluation is to serve as a real catalyst for change in school practice and policy, Serbia will need to reinforce its capacity for evaluation. Currently, responsibilities for external school evaluation are divided between the IEQE, a semi-independent agency that develops evaluation resources, and advisors in RSAs, who are responsible for implementation. As a result, there is no single entity responsible for leading external evaluation and ensuring its overall quality and effectiveness. In addition to strong leadership, meaningful external evaluation requires schools to have the right guidance, capacities and incentives to take action in response to evaluation results. The feedback currently provided to Serbian schools is limited to numerical scores and a description of performance against each indicator. Schools rarely receive external follow-up support from RSA advisors, even those that identified as weak or very weak. This leaves schools to determine and implement improvement efforts without sufficient resources or support.

Box 9. Recommended actions for developing external evaluation into a meaningful process

Recommendation 4.1.1. Institutionalise and invest in capacity for external evaluation. Serbia needs to strengthen the external evaluation process to provide a more independent perspective on school quality. To do this, the ministry should consider establishing the Institute for Education Quality and Evaluation (IEQE) Centre for Quality Assurance of Educational Institutions as an independent agency responsible for overseeing and implementing external school evaluation. At a minimum, the centre should have its own dedicated, sustainable funding stream to carry out this mandate. This would enable the centre to train, license and contract individuals of various profiles to staff evaluation teams. Importantly, the persons responsible for evaluating schools should not be the same individuals tasked with helping to implement recommendations or providing other forms of ongoing technical support, as this can create conflicts of interest.

Recommendation 4.1.2. Review how evaluation results are reported and used to support school improvement. The ministry and relevant agencies need to provide schools with useful feedback, as well as more support, to plan and implement change in response to evaluation results. In particular, the Centre for Quality Assurance should consider revising the template for school evaluation reports to include quality descriptors that give meaning to numerical evaluation scores. The template could also include a short summary of findings and benchmarks of contextualised performance data. Serbia will also need to ensure that school principals are adequately prepared to plan school improvement and motivate the school community behind collective follow-up action. Schools that do not meet minimum quality standards during external evaluations should receive additional resources and support to help them improve. A differentiated approach to external school evaluation for both the schools that are struggling and those that perform exceptionally well and follow-up can help ensure that weak schools have frequent opportunities to demonstrate progress and reward those that show strong improvement.

Policy issue 4.2. Supporting schools to develop a culture of self-evaluation and learning

School self-evaluation has been mandatory in Serbia for almost two decades; however, it has not yet led to a culture of continuous learning and improvement in schools. This is in large part because of the limited guidance and support that schools receive on how to engage in meaningful self-evaluation. For example, the school self-evaluation manual does not reflect the new school quality standards introduced in 2011 and updated in 2018. Other challenging factors include the limited capacity for instructional leadership in schools and lack of financial resources to support schools in implementing improvement activities.

Box 10. Recommended actions for supporting schools to develop a culture of self-evaluation and learning

Recommendation 4.2.1. Provide schools with guidance on how to evaluate quality and use the results to inform development plans. To embed self-evaluation in Serbia's school improvement culture, schools need clear direction as to what quality learning looks likes and tools to evaluate their practices in relation to standards and benchmarks. This might involve updating the school self-evaluation manual to include simple prompting questions that highlight core areas to evaluate. The IEQE Centre for Quality Assurance should also monitor the quality of school self-evaluation processes through external school evaluation and provide training to schools that are facing difficulties in this area. Finally, the government should also allocate sufficient funding and human resources for the centre to provide schools with the technical support they need to make the most of the self-evaluation process and drive improvement.

Recommendation 4.2.2. Develop school leadership for improving the quality of their schools. Most principals in Serbia do not receive training in school leadership before or during their first years in this role. As such, the ministry should consider introducing free and mandatory initial education for principals. Developing an independent School Leadership Academy to manage the initial training, certification and continuous professional development of school principals could help achieve this goal. This institution could also conduct research on improving leadership practice, raising the visibility of school leadership and strengthening the professionalisation of principals. A mentorship programme for new school principals could also help provide support and guidance on how to undertake instructional leadership duties and provide meaningful feedback to teachers. Serbia should make use of the external evaluation process to identify leadership capacity gaps and recommend professional development opportunities for school principals. For example, the centre should include school leadership capacity as a core indicator for external evaluation.

Policy issue 4.3. Putting school improvement at the centre of the national education strategy

For school evaluation to contribute meaningfully to the improvement of student learning nationwide, it needs to be part of a broader national effort to build schools' capacity and agency by aligning external support, funding, monitoring and accountability systems. Despite Serbia's efforts to improve school quality, policies remain fragmented and relatively weak. This is in part because the separate agencies responsible for school improvement at the national level are poorly co-ordinated. Schools also lack access to the type of financial and technical resources that would enable them to improve their teaching and learning practices.

Box 11. Recommendations for putting school improvement at the centre of the national education strategy

Recommendation 4.3.1. Develop a national strategy for school improvement. The ministry should put developing school agency for improvement at the centre of its new Education Strategy 2020-30. The strategy should propose that schools form professional leadership teams, comprised of the principal, deputy principal and pedagogue, to drive improvement efforts. An action plan should help organise policies related to professional learning (e.g. School Leadership Academy, mentorship). Finally, the ministry and relevant agencies should develop collectively a unique platform to store resources for school improvement. This can help create a better understanding of the interlinkages between school evaluation, school planning and teaching and learning practices. Locally, the RSAs could encourage schools to collaborate and share experiences through regular events, school exchange visits and the online platform.

Recommendation 4.3.2. Make sure that schools are provided with sufficient financial resources to implement their improvement plans. Providing schools with sufficient financial resources and support should be a central component of Serbia's school improvement strategy. The ministry should consider introducing a central targeted grant to help schools implement their improvement plans, in particular for schools that performed poorly in the external evaluation and those located in low socio-economic areas. These funds should be accompanied by external technical support and monitoring.

Building stronger foundations to evaluate national education performance

System evaluation is central to improving educational performance. It holds the government and other stakeholders accountable for meeting national goals and provides information that can help with the development of more effective policies. Serbia has established some of the basic components of system evaluation. For example, a national education strategy provides a reference for planning and the ministry works with external partners, such as universities, to conduct research and evaluations. However, the country generally struggles to make information about public sector performance widely available (OECD, 2017[15]). In Serbia's education system, this is partly because of important gaps in the evaluation infrastructure. Specifically, the lack of a national assessment of student learning and a fully functioning education management information system (EMIS) leaves Serbia without an adequate evidence base to guide and monitor policy reforms, making it difficult to understand the main issues stalling educational improvement.

Developing a stronger evaluation system will be crucial as Serbia works towards developing its new post-2020 education strategy. If carefully designed and implemented, the new national assessment can provide valuable information about the extent to which students are meeting national learning standards. Encouraging policymakers to access and interpret administrative and assessment data when developing education policies can help address systemic issues and lead to a better understanding of where and why students are falling behind in their learning, despite high levels of school participation. Aligning these reforms can help the Serbian education system improve from being a good regional performer to an excellent one.

Policy issue 5.1. Using the new education strategy to focus on achieving national priorities

Serbia's current education strategy is ambitious and extensive. It includes a diagnosis of the country's strengths, weaknesses, opportunities and threats (SWOT) across the education sector and offers some quantitative targets that align with those established by the European Union's (EU) 2020 Strategy. However, the multiplicity of objectives and lack of prioritisation has made it difficult to determine where to concentrate reform efforts, especially in the context of limited resources for education. Moreover, the progress indicators included in the action plan are not always relevant and lack specific targets. This further weakens accountability since it is difficult to provide snapshots of progress. The multiplicity also presents a risk in terms of policy alignment and co-ordination. As Serbia works to develop its next education strategy, the ministry should focus on identifying key national priorities and developing an action plan better designed to steer implementation.

There is also a need to establish stronger links between the education strategy and resources. This was a considerable challenge for the current strategy, which was based on the education budget, increasing to 6% of gross domestic product (GDP) by 2020 when, in reality, education spending fell across the duration of the strategy. While the Serbian Ministry of Finance prepares annual budgets within a three-year medium-term framework, the timelines for preparing these is too tight for a proper assessment and debate of programmes (OECD, 2017[15]).

Box 12. Recommended actions for using the new education strategy to focus on achieving national priorities

Recommendation 5.1.1. Identify national priorities for the new strategy. Serbia needs to prioritise the strategic issues for its new education strategy. To do this, the ministry should task the Institute for Education Quality and Evaluation (IEQE) with conducting an evaluation of the current strategy and triangulating the findings with other sources of evidence about the performance of Serbia's education system and future trends. Based on this, the ministry should establish a limited number of national goals that are ambitious but achievable. Defining these in clear and measurable terms that are easy to communicate can help mobilise stakeholders across the system to work together toward improving education in Serbia. For example, goals to raise learning outcomes and improve educational equity could help concentrate efforts on key system challenges that are important for individuals and socio-economic development. Consulting the public about the new strategy's development and keeping them informed about progress is important to help support transparency and accountability.

Recommendation 5.1.2. Develop action plans and a monitoring framework with measurable targets. Once Serbia has prioritised a set of strategic issues and identified clear national goals for education, it will be important to operationalise these goals through concrete actions and specific, measurable targets. Developing action plans that align activities with these would help stakeholders better understand what they are working towards and direct change. Serbia should also ensure the action plan is financially viable. This will require robust discussion with the Ministry of Finance to develop a realistic budget.

Recommendation 5.1.3. Monitor progress in building accountability for achieving educational goals. In order to maintain the impetus for system improvement, hold the government accountable for progress and ensure alignment across different policy areas, the ministry should strengthen the role of the special working group created to monitor the new education strategy and action plans. In particular, Serbia should consider having the Minister lead the working group and establishing a regular timeframe to report on achievement (at a minimum every two years), which would provide more leadership and stability to the group's work. The ministry could also develop a performance dashboard for its website to report on progress.

Policy issue 5.2. Enhancing the availability and use of evidence for accountability and policymaking

High-quality and accessible data are integral to system evaluation and accountability. The Serbian government has two key bodies that are responsible for collecting and managing education data. The first is the Statistical Office of the Republic of Serbia (SORS), which collects and processes statistical data for national and international reporting. The second is the education ministry, which collects a wider range of information and manages the Unified Information System of Education (UISE). While the UISE is Serbia's official EMIS, it operates in parallel to the SORS but does not follow international definitions and procedures for collecting data. Moreover, high staff turnover within the ministry and limited budgets make it difficult to develop and improve the UISE system in order to conduct system evaluation. These factors prevent Serbia from establishing a unified source of reliable information about the education system and creates an unnecessary reporting burden for schools.

Box 13. Recommended actions for enhancing the availability and use of evidence for accountability and policymaking

Recommendation 5.2.1. Strengthen the use of data and evidence in policymaking. Serbia should conduct a systematic mapping of available, problematic and missing education indicators across various databases. This would support public accountability vis-à-vis national education goals and help the ministry identify data gaps to orient the future development of Serbia's Unified Information System of Education (UISE). Developing a formal data dictionary and sharing protocol could help improve the quality of education data and encourage actors to rely on the UISE for desired information. To maximise the analytical potential and policy relevance of education data, the ministry should consider using civil identification numbers instead of separate student identifiers. Of course, managing civil identification numbers should be done carefully, with strict protocols about who can access data, how they can access and use it and when data should be anonymised to protect student privacy.

Recommendation 5.2.2. Build the capacity to use data and evidence in policymaking. To strengthen the use of data and evidence in policymaking, Serbia needs to build the capacity of technical staff and key actors across the system. Primarily, this involves re-establishing the ministry's analytics group, which is no longer operational but has a mandate to collect and analyse education data and policies. The IEQE's capacity should also be strengthened so that it can fulfil its growing mandate to support Serbia's system evaluation efforts. Finally, the ministry should ensure there is a reliable budget for the research community to produce evidence that can feed into the policymaking process.

Recommendation 5.2.3. Use data and evidence to create a stronger culture of public accountability. Serbia should consider developing a data portal for schools that includes information about student profiles, school context and learning outcomes, allowing users to make contextualised comparisons across schools. This could link to the UISE system, making real-time administrative and learning outcomes data accessible to a wider range of education actors. The portal could encourage greater use of data to monitor educational progress, promote the exchange of good practices and support the evaluation efforts of schools and RSAs.

Policy issue 5.3. Developing the national assessment to support system goals

National assessments that provide regular and reliable data on student learning outcomes can inform education policy, support strategic planning and help drive system improvement (OECD, 2013[10]). In Serbia, system evaluation has relied on periodic international assessments and the final exam of compulsory schooling (Grade 8) to provide information on student learning. This has been the case since 2006, when the country conducted its last national assessment with funding support from donors. As a result, timely and reliable information about the extent to which students in Serbia are meeting national learning standards is very limited, as is information on the factors associated with differences in learning outcomes.

In 2017-18, the IEQE piloted a new national assessment for students in Grades 7 (basic education) and 11 (the third year of upper secondary). Results will be available in 2019 and discussions are currently underway about how these findings can help establish a new national assessment system. At present, Serbia is considering plans to introduce a sample-based assessment in Grade 6 to support system monitoring. However, there is no clear commitment to include the development of this tool in the country's education strategy and action plans. Moreover, while the IEQE has some of the infrastructure and staff capacity needed to administer large-scale student assessments, this needs to be strengthened if a regular cyclic programme of national assessment is put in place. Currently, there appears to be no increase in funding planned for the IEQE, which is also responsible for introducing the new State Matura.

Box 14. Recommended actions for developing the national assessment

Recommendation 5.3.1. Consider the design options to align the national assessment with its stated purpose. Serbia should create a steering committee, under the minister's leadership, to develop the new national assessment. The committee should be responsible for determining the purpose(s) of the assessment in relation to the national education strategy and for taking decisions on its consequent design and implementation. Specifically, the committee should consider issues related to the grade and subject of the assessment. In addition to Grade 6, Serbia should consider assessing a sample (later a full cohort) of Grade 2 students in mathematics and language, which would strengthen the formative value of the data. Eventually, the committee should consider a sample assessment in Grade 10 (the second year of upper secondary), which would serve *inter alia* to test items for the Matura and cover a range of curriculum domains. Another important consideration is the mode of delivery since moving toward a computer-based assessment in the future would help reduce human error, lower integrity breaches and deliver results more quickly. Finally, the committee should consider what type of test items to include, ensuring that questions are challenging enough to assess higher-order skills and do not encourage memorisation.

Recommendation 5.3.2. Disseminate and use results from the national assessment to inform education policy. Serbia should reflect now, at the design stage, on how it plans to report assessment results to different audiences. This is key to ensuring the assessment supports improvements in teaching and learning, informs policymaking and continues to have the capacity and resources needed for its implementation. In addition to a national report of assessment results, Serbia should consider developing other outputs, such as infographics, factsheets, short briefs or a website to report assessment results. To promote the responsible dissemination and use of the results, Serbia should clearly communicate the context of the assessment, its objectives and provide a description of achievement and correlations according to relevant background information.

Recommendation 5.3.3. Ensure the sustainability of the national assessment. Serbia should include the development and implementation of the national assessment as an indicator in the new national education strategy 2030. This was absent from the current 2020 strategy but would highlight the importance of having a national assessment to support system evaluation and improvement efforts. It would also help ensure sustainable multi-year financing. Having the minister head the national assessment steering committee could provide leadership to explain the assessment's value when results are released, ensure adequate financial support is received and direct the efforts of RSAs, schools and teachers to implement the assessment instrument.

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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.

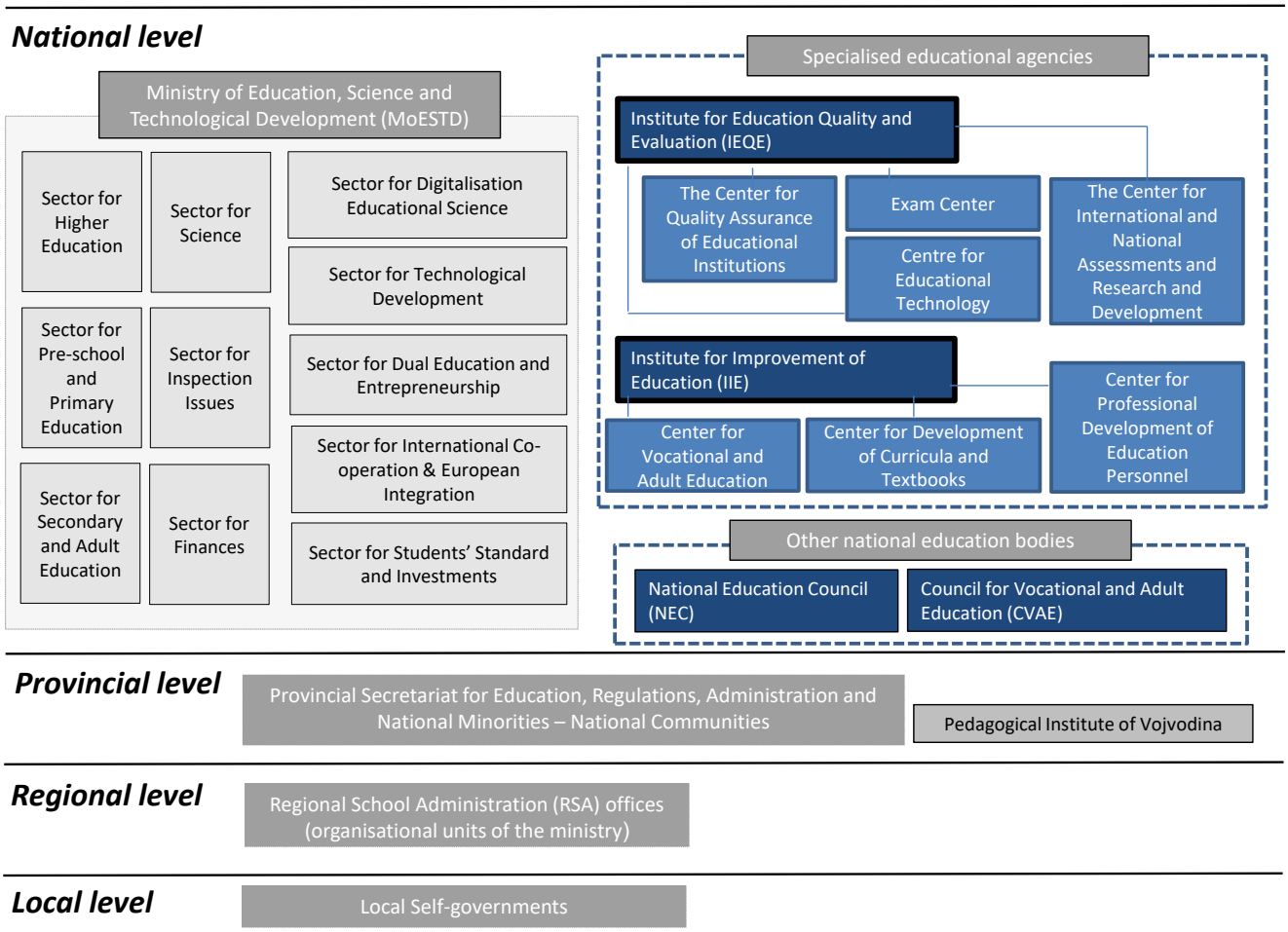
While Serbia's specialised education institutes have significant technical expertise, most do not have enough staff and are underfunded. For example, in 2017, only 15 of the 33 positions in the IEQE were filled (MoESTD, 2018[25]). In particular, very few personnel are skilled in quantitative research, 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

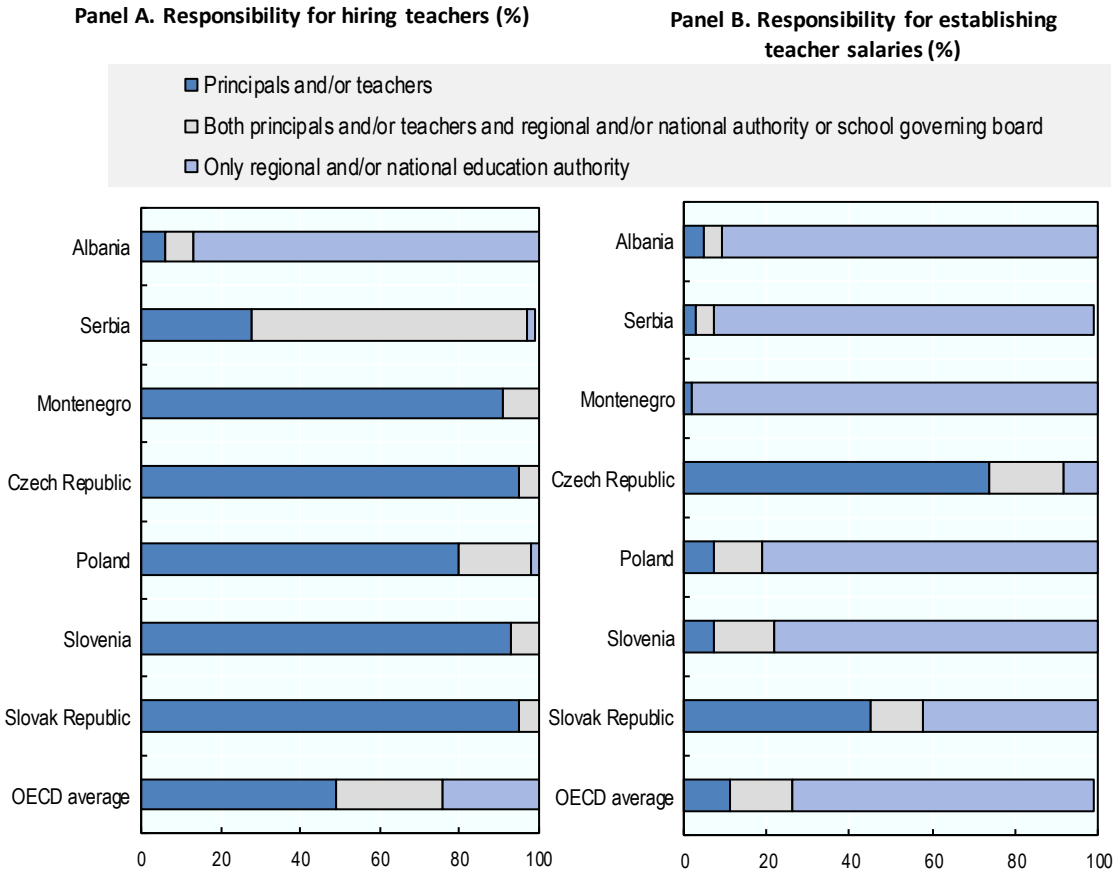
Although administrative management is mostly deconcentrated, decision-making power in education still lies at the central level. Local self-government plays a role in the oversight of schools through their representative on the school board. They are also responsible for funding continuous professional 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]).

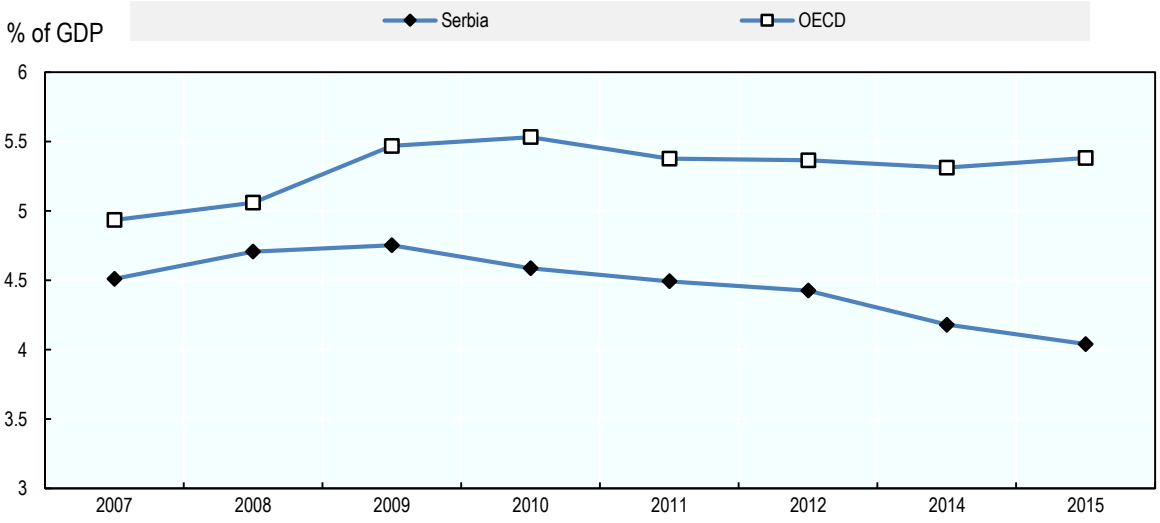
Funding the education system

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).

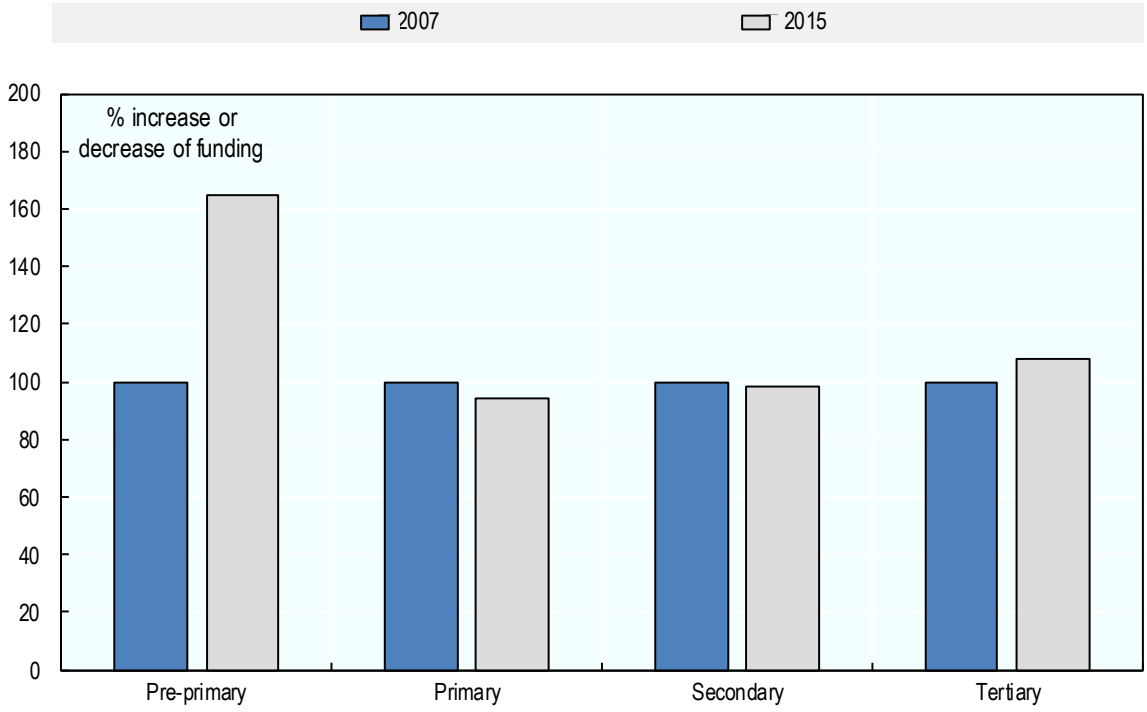
In terms of spending by education levels, per student funding in Serbia has decreased for primary (5.8%) and secondary education (1.7%) between 2007 and 2015 (see

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

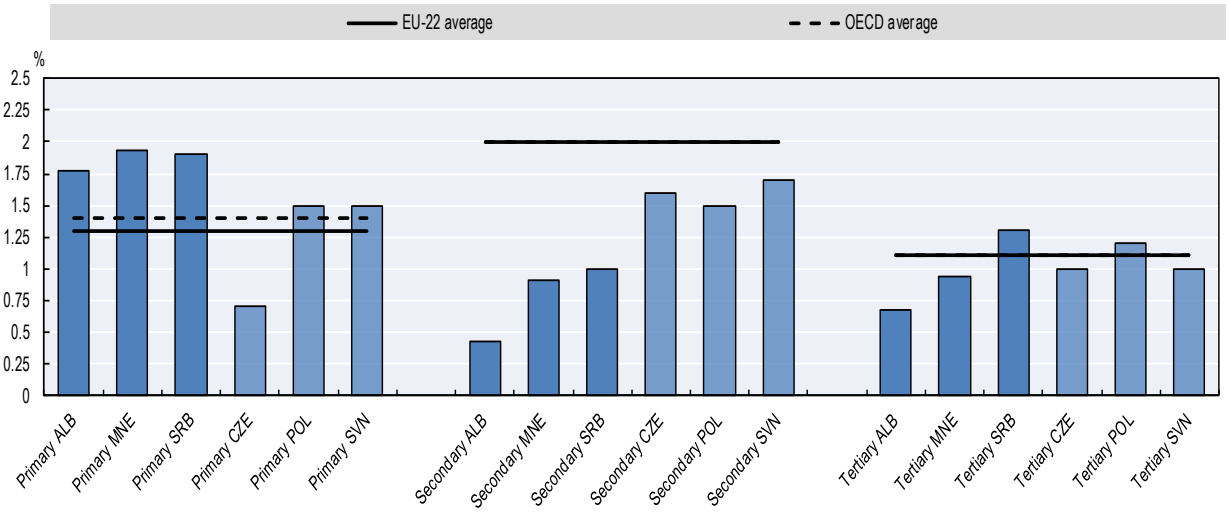


Source: UIS (2019[11]), *UNESCO Institute for Statistics,* http://data.uis.unesco.org/ (accessed on 14 June 2019).

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

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

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.

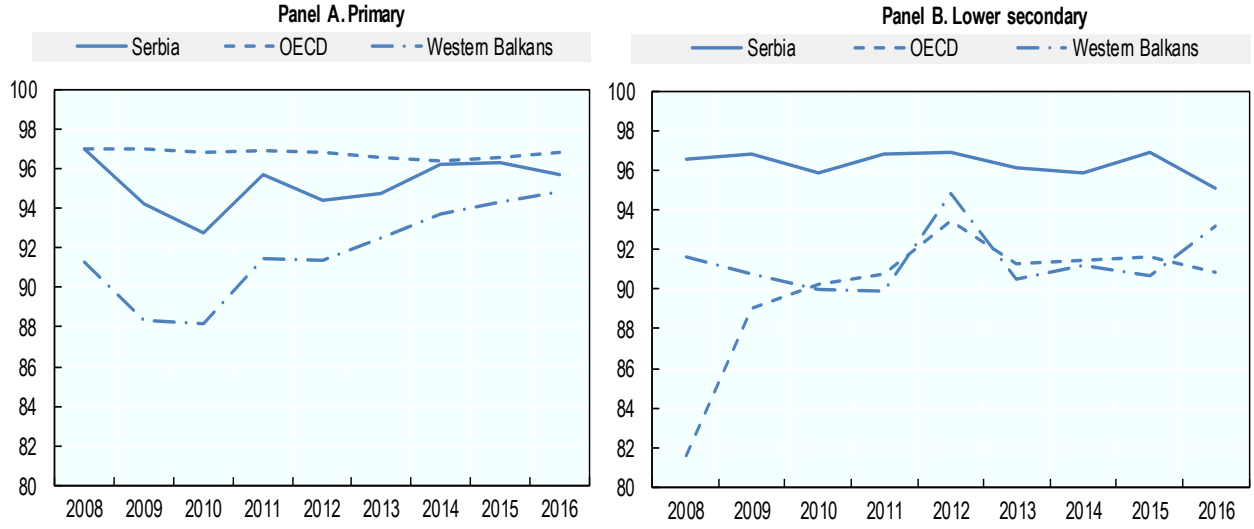
Participation

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]).

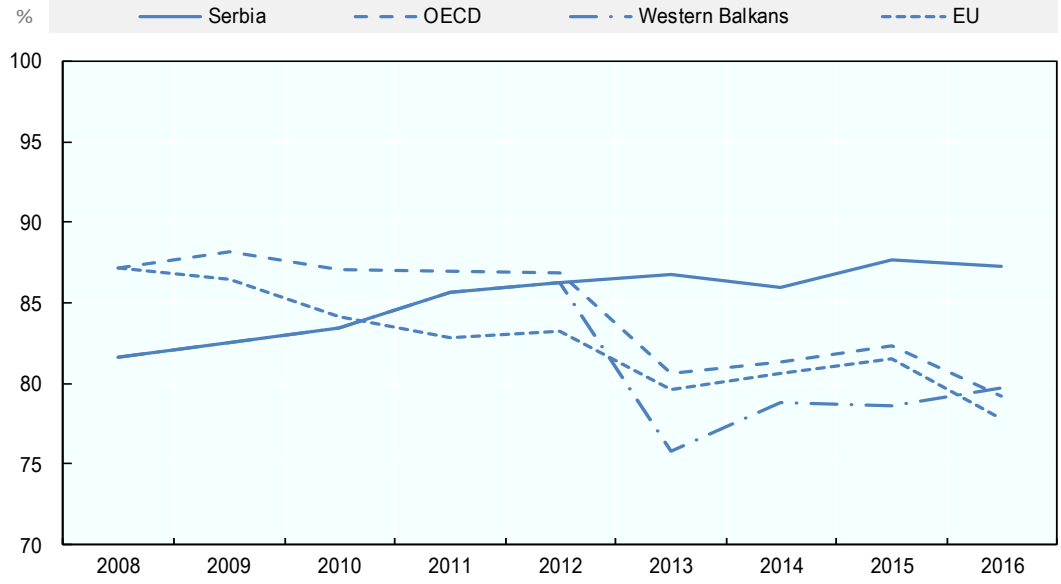
The majority of students in Serbia continue from lower secondary into upper secondary schools. As of 2016/17, the transition rate between these two levels was approximately 99% (Statistical Office of the Republic of Serbia, 2018[45]), similar to most EU and OECD countries. Participation in upper secondary 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

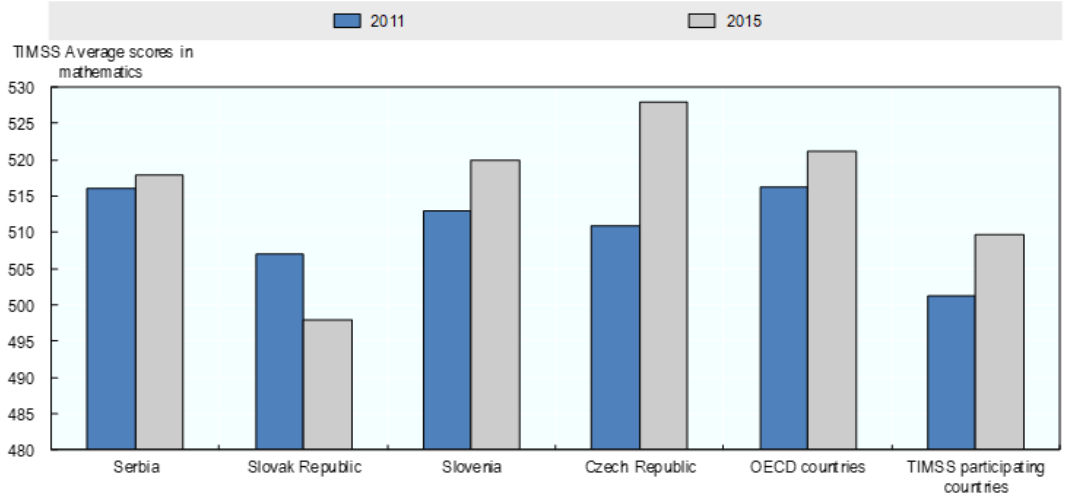
While the overall unemployment rate for people with tertiary education was 15.3% in 2015, the unemployment rate of recent graduates was as high as 42.4% (Eurostat, 2018[7]; European Commission, 2016[52]). Employers often report that graduates lack "soft skills" - including teamwork, decision-making, 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).

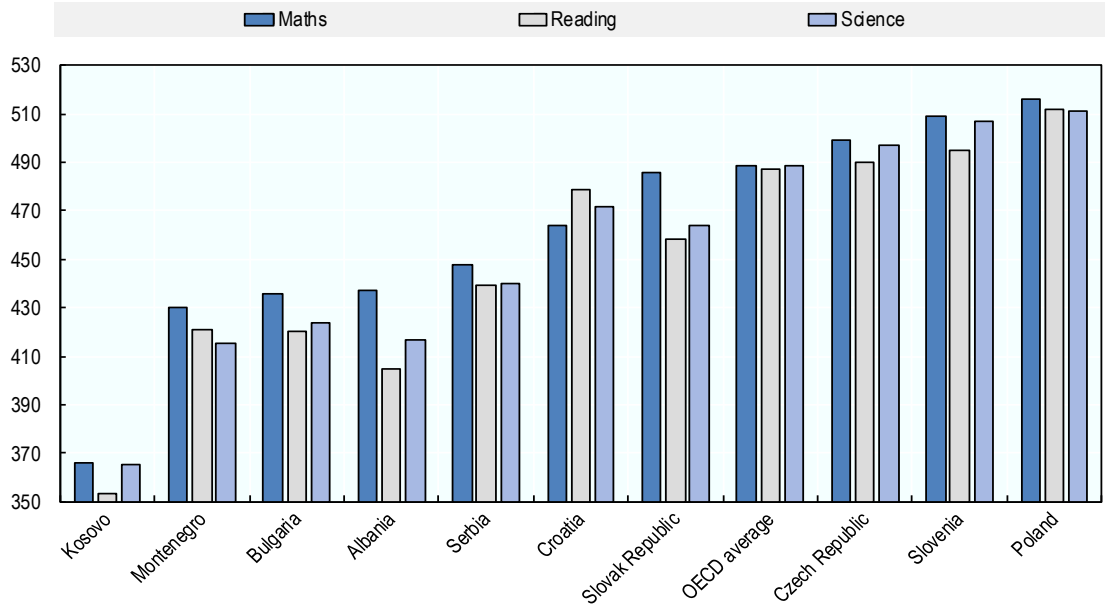
In general, Serbia's share of low performers (students who score below Level 2 on the PISA scale) has decreased across all PISA domains since 2006. The overall decrease in the share of low performers was particularly significant in reading, going from 51.7% in 2006 to 32.8% in 2009. However, recent results 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)

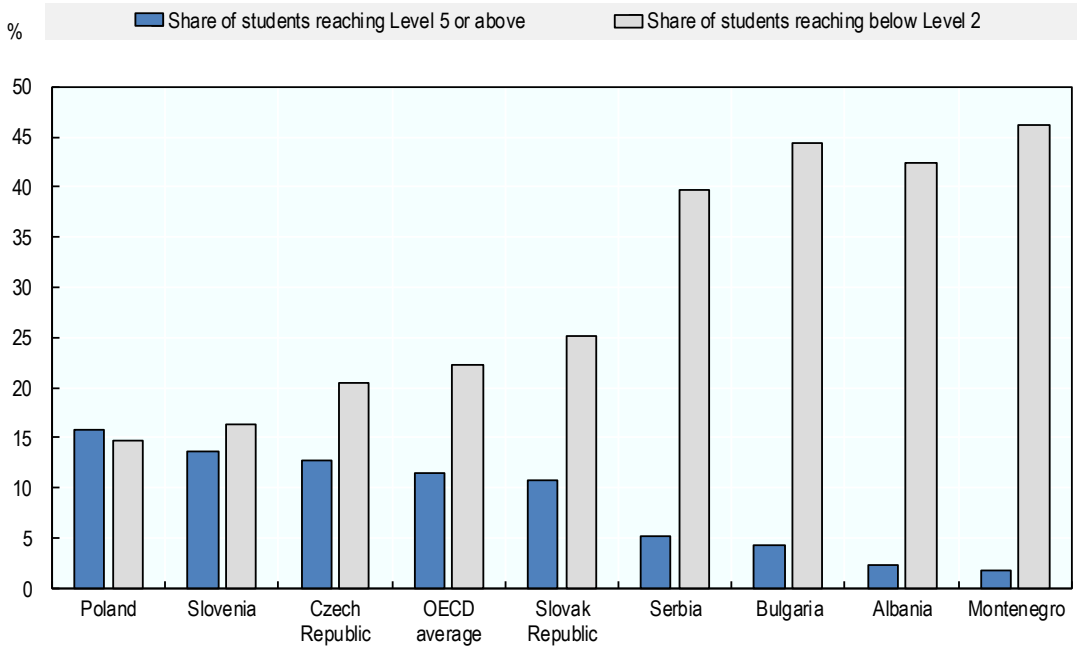
Note: Improvement in science scores was not statistically significant for science across the three cycles of the PISA survey.
Source: OECD (2019[57]), *PISA 2018 Results (Volume I): What Students Know and Can Do*, https://doi.org/10.1787/5f07c754-en.

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)



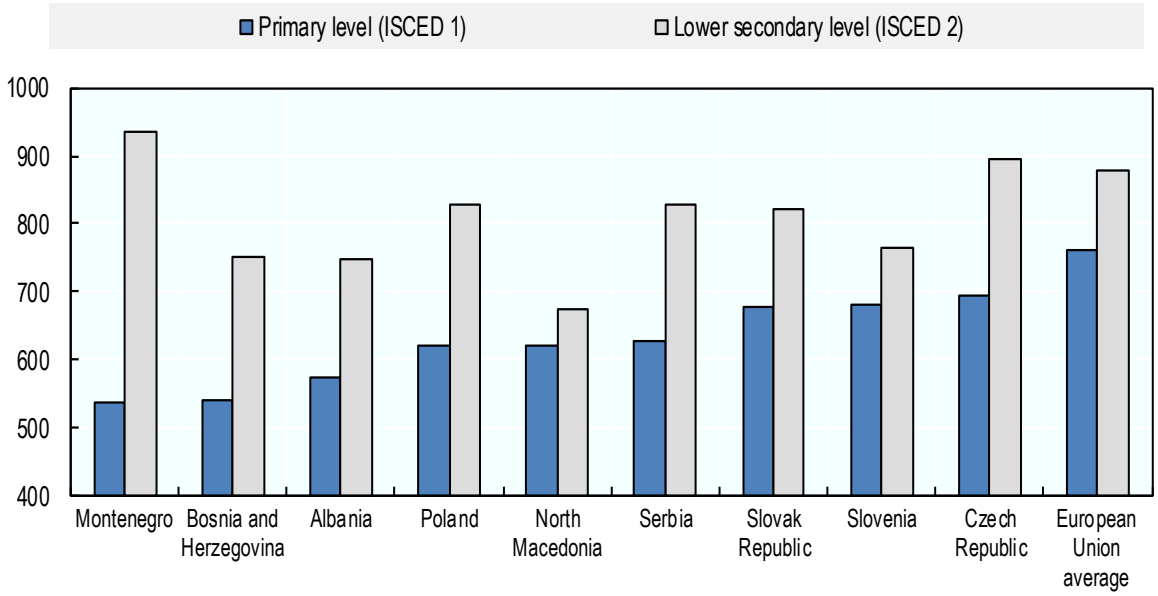
Source: OECD (2019[57]), *PISA 2018 Results (Volume I): What Students Know and Can Do*, https://doi.org/10.1787/5f07c754-en.

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 then 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

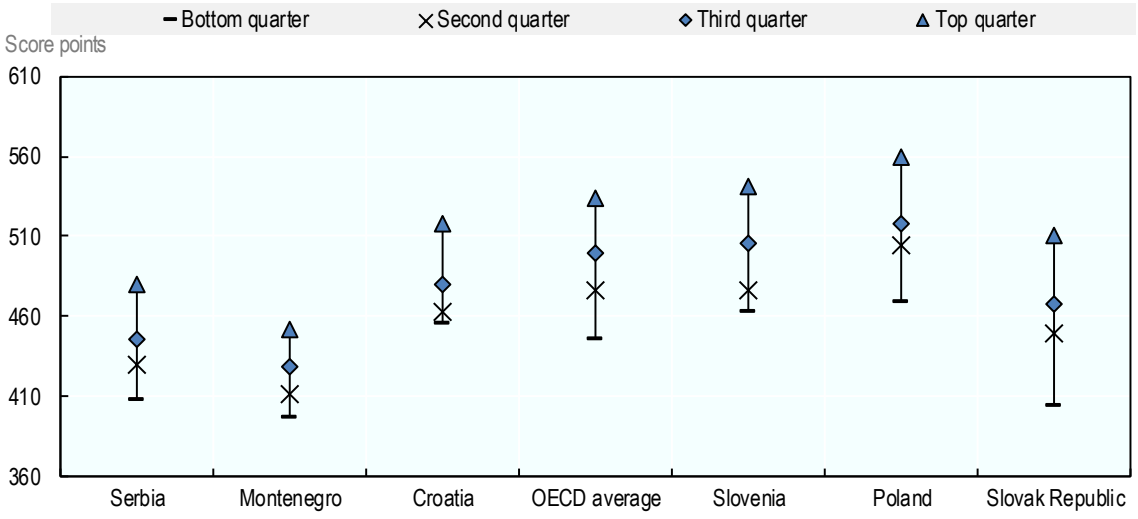
Participation in compulsory education in Serbia is virtually universal for students from all socio-economic backgrounds. However, disadvantaged students are much less likely to participate in non-compulsory levels. For example, only 9% of students from the poorest families enrolled in pre-primary education, 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
6	*Unemployment rates*		
	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			
10	*Net enrolment rates (2016)*		
	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			
13	*Ratio of students to teaching staff (2016)*		
	Primary education (ISCED 1)***	14.5	14.5
	Secondary education (ISCED 2 and 3)***	8.2	12.6
14	*Share of female teachers (2016)*		
	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	*Initial government funding per student in PPP$ constant (2015)*		
	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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Chapter 2. Improving the value of school-based assessments and central examinations for teaching and learning

This chapter looks at how the assessment system of Serbia measures and shapes student learning. Classroom assessments in Serbia are often summative and have high stakes for students. Developing the assessment literacy of teachers and ensuring a better balance between school-based formative and summative assessment can help shift attention from grades towards student learning. There is also a need to review the design of a new final examination (Matura) at the end of upper secondary education, especially the new system for admission into higher education. Finally, Serbia should strengthen the technical quality of the central examination at the end of basic education (Grade 8). These are essential to improving the quality of Serbia's exam system, creating a fairer basis for student selection and encouraging broader learning across the curriculum.

Introduction

The primary purpose of student assessment is to determine what students know and are capable of doing to help them advance their learning and make informed decisions to further their education. In Serbia, efforts are being made to reform school-based assessment practices and centralised examinations to better serve this primary purpose. For example, learning standards and new curricular plans and programmes are modernising teaching and learning expectations based on a competency-based approach. In addition, there are plans for a new central Matura examination at the end-of-upper-secondary education, a prerequisite to obtaining a secondary school completion certificate. Students' results in the Matura exam will also be the main criterion for selection in a new system of admissions into higher education.

These policy efforts are promising but challenges remain. Work is needed to improve the design and implementation of these reforms. For example, there is a need to ensure a better balance between school-based formative and summative assessment; whereas classroom assessments *for* learning are poorly understood, valued and practised, assessments *of* learning are very frequently practised and have high stakes for students. Shifting the attention of teachers and students from grades to learning will require a clear governmental mandate that redefines expectations of how classroom assessment ought to be practised. There is also a need for further reflection on the design and implementation of a new Matura at the end-of-upper-secondary education. While the current concept for Matura is generally well developed and establishes a firm foundation for the reform, there are several underdeveloped areas which require additional consideration. These include a lack of clarity in the new admission system into higher education institutions, the need to conduct a pilot study to review and complete Matura's examination model and the development of a realistic timeframe and organisational model for implementation. Another key issue identified by this review is the need to strengthen the technical quality and implementation of the central examination at the end of basic education (Grade 8).

Key features of an effective student assessment system

Student assessment refers to the processes and instruments used to evaluate student learning. These include assessment by teachers as part of school-based, classroom activities, such as daily observations and periodic quizzes, and through standardised examinations and assessments designed and graded outside schools.

Overall objectives and policy framework

At the centre of an effective policy framework for student assessment is the expectation that assessment supports student learning (OECD, 2013[1]). This expectation requires clear and widely understood national learning objectives. Assessment regulations must orient teachers, schools and assessment developers on how to use assessment to support learning goals.

To these ends, effective assessment policy frameworks encourage a balanced use of summative and formative assessments, as well as a variety of assessment types (e.g. teacher observations, written classroom tests and standardised instruments). These measures help to monitor a range of student competencies and provide students with an appropriate balance of support, feedback and recognition to encourage them to improve their learning. Finally, effective assessment frameworks also include assurance mechanisms to regulate the quality of assessment instruments, in particular central, standardised assessments.

The curriculum and learning standards communicate what students are expected to know and be able to do

Common expected learning outcomes against which students are assessed are important to determine their level of learning and how improvements can be made (OECD, 2013[1]). Expectations for student learning can be documented and explained in several ways. Many countries define them as part of national learning standards. Others integrate them into their national curriculum frameworks (OECD, 2013[1]).

While most reference standards are organised according to student grade level, some countries are beginning to organise them according to competency levels (e.g. beginner and advanced), each of which can span several grades (New Zealand Ministry of Education, 2007[2]). This configuration allows for more individualised student instruction but requires more training for teachers to properly understand and use the standards when assessing students.

Types and purposes of assessment

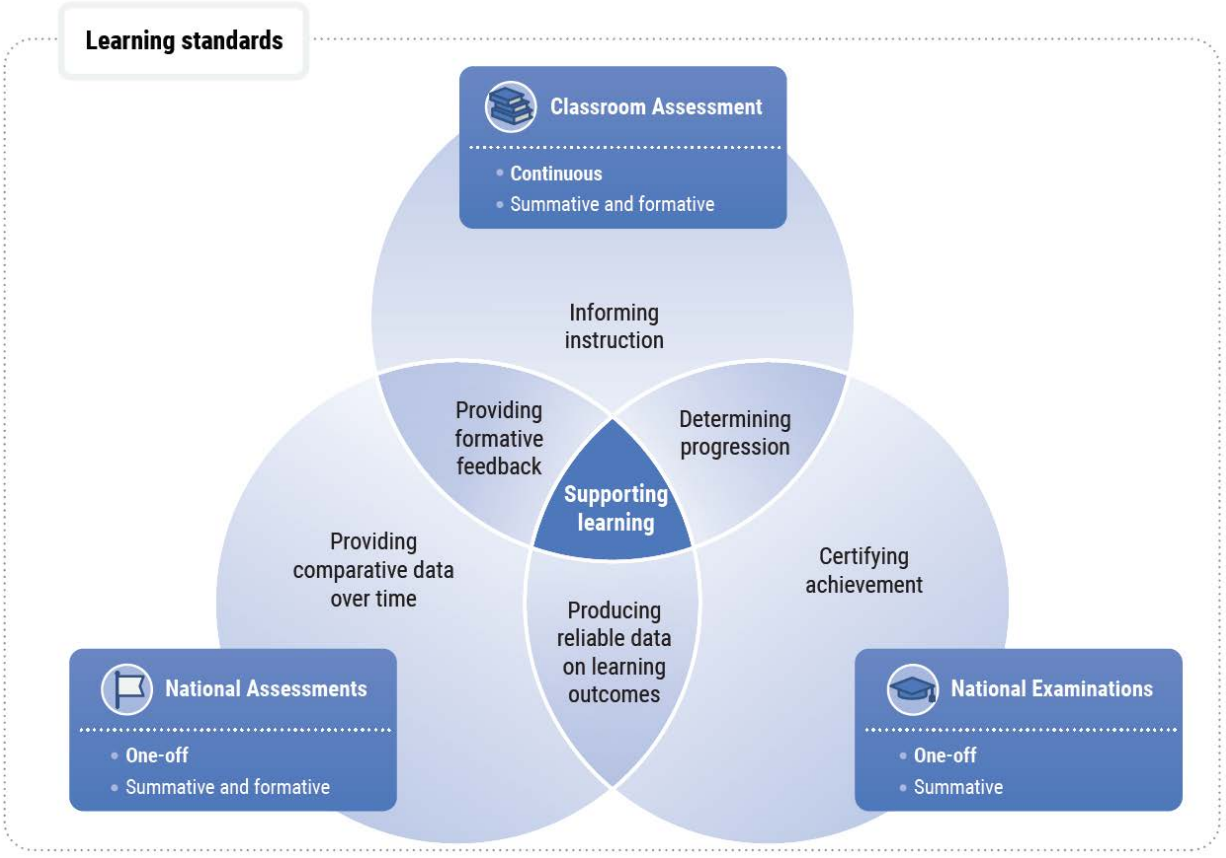
Assessments can generally be categorised into classroom assessments, national examinations and national assessments. Assessment has traditionally held a summative purpose, aiming to explain and document learning that has occurred. Many countries are now also emphasising the importance of formative assessment, which aims to understand learning as it occurs in order to inform and improve subsequent instruction and learning (see Box 2.1) (OECD, 2013[1]). Formative assessment is now recognised to be a key part of the teaching and learning process and has been shown to have one of the most significant positive impacts on student achievement among all educational policy interventions (Black and Wiliam, 1998[3]).

Box 2.1. Purposes of assessment

- **Summative assessment** – assessment of learning summarises learning that has taken place in order to record, mark or certify achievements.
- **Formative assessment** – assessment for learning identifies aspects of learning as they are still developing in order to shape instruction and improve subsequent learning. Formative assessment frequently takes place in the absence of marking. For example, a teacher might ask students questions at the end of the lesson to collect information on how far students have understood the content and use the information to plan future teaching.

Source: OECD (2013[1]), *Synergies for Better Learning: An International Perspective on Evaluation and Assessment,* https://dx.doi.org/10.1787/9789264190658-en.

Figure 2.1. Student assessment and learning



Classroom assessment

Among the different types of assessment, classroom assessment has the greatest impact on student learning (Absolum et al., 2009[4]). It supports learning by: regularly monitoring learning and progress; providing teachers with information to understand student learning needs and guide instruction; and helping students understand the next steps in their learning through the feedback their teachers provide.

Classroom assessments are administered by teachers in classrooms and can have both summative and formative purposes. They can be delivered in various formats, including closed multiple-choice questions, semi-constructed short-answer questions and open-ended responses such as essays or projects. Different assessment formats are needed for assessing different skills and subjects. In general, however, assessing complex competencies and higher-order skills requires the use of more open-ended assessment tasks.

In recent decades, as most OECD countries have adopted more competency-based curricula, there has been a growing interest in performance-based assessments such as experiments or projects. These types of assessments require students to mobilise a wider range of skills and knowledge, and demonstrate more complex competencies such as critical thinking and problem solving (OECD, 2013[1]). Encouraging and developing effective, reliable, performance-based assessment can be challenging. OECD countries that have tried to promote this kind of assessment have found that teachers have required far more support than initially envisaged.

Effective classroom assessment requires the development of teachers' assessment literacy

Assessment is now seen as an essential pedagogical skill. In order to use classroom assessment effectively, teachers need to understand how national learning expectations can be assessed – as well as the students' trajectory in reaching them – through a variety of assessments. Teachers need to know what makes for a quality assessment – validity, reliability, fairness – and how to judge if an assessment meets these standards (see Box 2.2). Feedback is important for students' future achievement and teachers need to be skilled in providing constructive and precise feedback.

Box 2.2. Key assessment terms

- **Validity** – focuses on how appropriate an assessment is in relation to its objectives. A valid assessment measures what students are expected to know and learn as set out in the national curriculum.
- **Reliability** – focuses on how consistent the assessment is measuring student learning. A reliable assessment produces similar results despite the context in which it is conducted, across different classrooms or schools for example. Reliable assessments provide comparable results.

Source: OECD (2013[1]), *Synergies for Better Learning: An International Perspective on Evaluation and Assessment*, https://dx.doi.org/10.1787/9789264190658-en.

Many OECD countries are investing increasingly in the development of teachers' assessment literacy, starting with initial teacher education. In the past, teachers' initial preparation in assessment has been primarily theoretical; countries are now trying to make it more practical, emphasising opportunities for hands-on learning, where teachers can develop and use different assessments for example. Countries encourage initial teacher education providers to make this shift by incorporating standards on assessment in programme accreditation requirements and in the expectations of new teachers listed in national teacher standards.

It is essential that teachers' initial preparation on assessment is strengthened through ongoing, in-school development. Changing the culture of assessment in schools – especially introducing more formative approaches and performance-based assessments, and using summative assessments more effectively – requires significant and sustained support for teachers. Continuous professional development, such as training on assessment and more collaborative opportunities in which teachers can share effective assessment approaches, provides vital encouragement. Pedagogical school leaders also play an essential role in establishing a collaborative culture of professional enquiry and learning on the subject of assessment.

Finally, countries need to invest significantly in practical resources to ensure that learning expectations defined in national documents become a central assessment reference for teachers and students in the classroom. These resources include rubrics that set out assessment criteria, assessment examples aligned to national standards and marked examples of student work. Increasingly, countries make these resources available online through interactive platforms that enable teachers to engage in developing standards, which

facilitates a greater feeling of ownership of the resources and makes it more likely that they will be used.

National examinations

National examinations are standardised assessments developed at the national or state level with formal consequences for students. The vast majority of OECD countries (31) now have exit examinations at the end of upper secondary education to certify student achievement and/or for selection into tertiary education, reflecting rising expectations in terms of student attainment and the importance of transparent systems for determining access to limited further education opportunities (see Figure 2.2). National examinations are becoming less common at other transition points as countries seek to remove barriers to progression and reduce early tracking. Among those OECD countries (approximately half) which continue to use national examinations to inform programme and/or school choice for entrants to upper secondary education, few rely solely or even primarily on the results of examinations to determine a student's next steps.

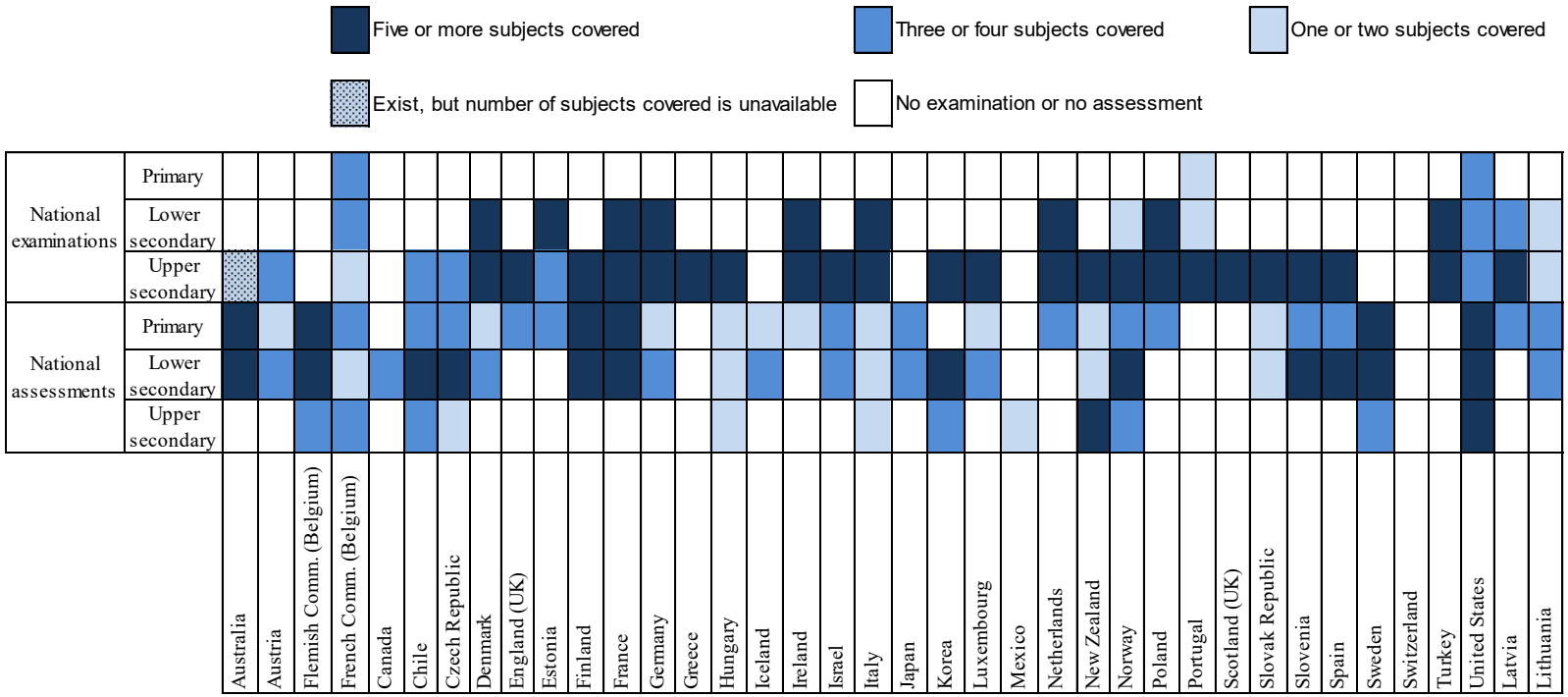
While classroom assessment is the most important assessment for learning, evidence shows that the pace of learning slows down without external benchmarks such as examinations. National examinations signal student achievement and in many countries carry high stakes for students' future education and career options, which can help to motivate students to apply themselves (Bishop, 1999[5]). They are also more reliable than classroom assessment and less susceptible to bias and other subjective pressures, making them a more objective and arguably fairer basis for taking decisions when opportunities are limited, such as access to university or high-demand schools.

However, there are limitations related to using examinations. For instance, they can only provide a limited snapshot of student learning based on performance in one-off, time-pressured exercises. To address this concern, most OECD countries complement examination data with classroom assessment information, teachers' views, student personal statements, interviews and extracurricular activities to determine educational pathways into upper secondary and tertiary education.

Another concern is that the high stakes of examinations can distort teaching and learning. If examinations are not aligned with the curriculum, teachers might feel compelled to dedicate excessive classroom time to examination preparation instead of following the curriculum. Similarly, students can spend significant time outside the classroom preparing for examinations through private tutoring. To avoid this situation, items on examinations must be a valid assessment of the curriculum's learning expectations and encourage high-quality learning across a range of competencies.

Most OECD countries are taking measures to address the negative impact that examination pressure can have on student well-being, attitudes and approaches to learning. For example, Korea has introduced a test-free semester system in lower secondary education with activities such as career development and physical education to develop students' life skills and reduce stress (OECD, 2016[6]).

Figure 2.2. National examinations and assessments in public school in OECD countries



Note: Number of subjects covered in the assessment framework (subjects may be tested on a rotation basis).
Data for the national examinations and assessments in Lithuania are drawn from authors' considerations based on OECD (2017[7]), *Education in Lithuania*, Reviews of National Policies for Education, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264281486-en.
Source: OECD (2015[8]), *Education at a Glance 2015: OECD Indicators*, http://dx.doi.org/10.1787/eag-2015-en.

National assessments

National assessments provide reliable information on student learning with no consequences for student progression. Across the OECD, the vast majority of countries (30) have national assessments to provide reliable data on student learning outcomes, comparative across different groups of students and over time (see Classroom assessment). The main purpose of a national assessment is system monitoring and, for this reason, they provide essential information for system evaluation (see Chapter 5).

Countries might also use national assessments for more explicit improvement purposes, such as to ensure that students are meeting national achievement standards and identify learning gaps needing further support. In these cases, providing detailed feedback to teachers and schools on common problems and effective responses is critical.

Many OECD countries also use national assessments for school accountability purposes, though there is considerable variation in how much weight is given to the data. This is because student learning is influenced by a wide range of factors beyond a school or teacher's influence – such as their prior learning, motivation, ability and family background (OECD, 2013[1]).

National assessment agencies

Developing high-quality national examinations and assessments requires a range of assessment expertise in fields such as psychometrics and statistics. Many OECD countries have created government agencies for examinations and assessments where this expertise is concentrated. Creating a separate organisation with stable funding and adequate resources also helps to ensure independence and integrity, which is especially important for high-stakes national examinations.

Student assessment in Serbia

Serbia is in the process of introducing major changes to student assessment both at the classroom level and nationally. Initiated in 2018, the roll-out of the new competency-based curriculum and subject- and grade-specific learning standards will help teachers better understand student learning levels and use that information in designing assessment and lesson plans. The introduction of a new centralised examination at the end of upper secondary education to certify completion of schooling and inform selection into tertiary education will also help improve the reliability and fairness of the exam at this important transition point. However, many gaps are yet to be addressed to ensure the success of these reforms. In particular, teachers' assessment capacity remains relatively weak, notably for formative assessment, and many elements of the new end-of-upper-secondary examination reform are yet to be determined.

Table 2.1. Student assessment in Serbia: Current practices and expected reforms

Type of student assessment	Guidelines documents	Standards	Body responsible	Process	Use
School-based summative assessment	Teaching and learning plans and programmes Rulebook on student assessment (for basic and upper secondary) Competency-based assessment in vocational education	Standards of student achievement Interdisciplinary competencies in LFES	Teachers	Grade 1: no summative assessment Grades 2-8: at least 8 numerical marks for each subject each year, and at least 4 marks for subjects taught once a week Grades 9-12: at least 6 numerical marks in each subject each year and at least 4 marks for subjects taught once a week	Grades 6-8: selection into upper secondary education Grades 9-12: selection into tertiary education
School-based formative assessment		Standards of student achievement Interdisciplinary competencies in LFES	Teachers	Grade 1: descriptive (qualitative) marks Initial (diagnostic) test	Initial test used for teaching planning
Central examination: end of basic education (Grade 8)	Rulebook on the final exam programme in basic education	Standards of student achievement	IEQE (Exam Centre) and MoESTD	Compulsory exam in three domains: Serbian language (or mother tongue), mathematics, and natural and social sciences (five subjects combined)	Requisite for basic education completion certificate Exam scores considered for selection into upper secondary
School-level examination: end of upper secondary education	Rulebook on the content and method of the Matura exam in *gymnasium* VET schools: internal school acts based on the law of secondary school		School	General test in Serbian language (or mother tongue) and either mathematics or foreign language, plus an individual essay in any subject	Exam is requisite for secondary education completion certificate

Note: IEQE: Institute for Education Quality and Evaluation; LFES: Law on the Foundations of Educational System; MoESTD: Ministry of Education, Science and Technological Development; VET: Vocational education and training.

Overall objectives and policy framework

The curriculum in most grades is not aligned with the learning standards

The Institute for Education Quality and Evaluation (IEQE) introduced learning standards for the end of lower secondary education (Grade 8) in 2010, followed by end of primary (Grade 4) in 2011 and end of upper secondary (Grade 12) in 2013. Primary and lower secondary are considered to be part of the same cycle in Serbia and commonly referred to as "primary education". These standards were Serbia's first attempt at introducing a competency-based approach to teaching and learning. Their design compares positively to standards in OECD countries such as New Zealand which have end-of-learning-cycle standards. Standards are designed for most subjects and include three performance levels for each competency: basic, intermediate and advanced. The end-of-lower-secondary standards are the reference document for the end-of-basic-education national examination at Grade 8.

However, a decade after the introduction of these learning standards, teaching practices in Serbia remain predominantly knowledge-based. While learning standards based on a new competency-based approach were fully introduced by 2013, the curriculum remained mostly and narrowly knowledge-based until 2017 when Serbia started rolling out the new competency-based curriculum aligned with learning standards. Thus, teachers tend to place little emphasis on how knowledge is applied or on higher-order cognitive processes. Moreover, there are no guidelines describing students' learning progression across a cycle, which is important to help teachers identify where individual students are in their learning and determine appropriate next steps. Without such guidance, teachers in Serbia are not able to use the learning standards in their classroom practices.

The curriculum framework is highly prescriptive, leaving little space for teachers to adapt teaching to the needs of their students

The curriculum in Serbia is relatively prescriptive compared to practices in OECD countries (OECD, 2013[9]). The curriculum framework in Serbia includes teaching plans that define the list of subjects (compulsory and elective) and pedagogical activities for each grade (e.g. regular, project-based, remedial, optional and outdoors lessons), as well as the yearly and weekly number of lessons per grade, subject and pedagogical activity. This leaves little space for teachers to adapt their teaching practices to the specific learning needs of students. Teachers met by the review team said that they felt the curriculum was too dense, leaving them limited time to review notions or competencies not achieved by some of their students. This curriculum overload is exacerbated by the relatively limited instruction time in Serbia compared to European countries (a 100 hours fewer in primary and 30 hours in lower secondary) (European Commission/EACEA/Eurydice, 2018[10]).

Serbia is introducing a new competency-based curriculum at all education levels

The ongoing curriculum reform addresses some of the issues stated above. The Institute for Improvement of Education (IIE) has developed a new competency-based curriculum and the roll-out started in 2018 with Grades 1, 5 and 9 (starting grade of each cycle). The curriculum includes learning outcomes for each grade which should help teachers better understand how their students may reach the end of cycle standards of learning. The reform also introduces transversal competencies such as problem solving and digital skills (see Box 2.3). The new curriculum includes didactic and methodological recommendations about student assessment. It distinguishes between formative and summative assessment, and underscores the desirability for teachers to provide continuous feedback to students on their progress, based on an initial diagnostic evaluation of the student's level.

The IIE is developing a training programme for teachers on the new curriculum with support from the European Union and the United Nations Children's Fund (UNICEF). The programme includes a three-day seminar to familiarise teachers with the new materials and approach to learning. The IIE also developed an e-learning platform with materials on the curriculum such as examples of lesson plans, activities and assessments. The IIE hopes to reach approximately 40 000 education professionals in primary and secondary education through this training by the end of 2019 (European Commission, 2016[11]). However, the IIE does not have the human capacity to provide more continuous support, such as mentoring teachers or monitoring implementation of the curriculum in schools. While some school advisors in the Regional School Authorities (RSAs) try to support teachers in implementing the new curriculum, they do not currently have the resources or a clear mandate to provide the needed assistance.

Box 2.3. Interdisciplinary (transversal) competencies in Serbia

According to Article 12 of the Law on the Foundation of Education System (LFES), interdisciplinary (transversal) competencies are a combination of knowledge, skills and attitudes relevant to different real-life contexts that require their functional application. These are also an integral part of the Rulebook on Competence Standards in General Subjects for the End of Secondary Education (2013). Interdisciplinary competencies are based on key competencies for lifelong learning, developed through the teaching of all subjects, applicable in different situations and contexts in solving various problems and tasks. They are required by all students for personal achievement and development, for inclusion in social trends and employment, and form the basis of lifelong learning.

Interdisciplinary competencies for the end of compulsory basic education are: 1) competency for learning; 2) responsible participation in a democratic society; 3) aesthetic competency; 4) communication; 5) responsible attitude towards the environment; 6) responsible attitude towards health; 7) entrepreneurship and orientation towards entrepreneurship; 8) working with data and information; 9) problem solving; 10) co-operation; 11) digital competency.

Interdisciplinary competencies for the end of secondary education are: 1) competencies for lifelong learning; 2) communication; 3) working with data and information; 4) digital competency; 5) problem solving; 6) co-operation; 7) responsible participation in a democratic society; 8) responsible attitude towards health; 9) responsible attitude towards the environment; 10) aesthetic competency; 11) entrepreneurship and entrepreneurial competency.

Sources: MoESTD (2019[12]), *Zakon o Osnovama Sistema Obrazovanja i Vaspitanja [Law on the Foundations of the Education System]*, Ministry of Education, Science and Technological Development, Belgrade; MoESTD (2013[13]), *O Opštim Standardima Postignuća za Kraj Opšteg Srednjeg Obrazovanja i Srednjeg Stručnog Obrazovanja u Delu Opšteobrazovnih Predmeta [Rulebook on Competence Standards in General Subjects for the End of Secondary Education]*, Ministry of Education, Science and Technological Development, Belgrade.

Classroom assessment

Teachers must assign at least 8 numerical marks per year in Grades 2-8 and at least 6 in upper secondary education

Students start receiving numerical marks as early as Grade 2 in Serbia. In basic education (Grades 2 to 8), teachers of subjects taught more than once per week must assign every student at least 4 numerical marks per semester for each subject. These marks are considered when computing a student's final mark at the end of each semester and year. In upper secondary education (Grades 9 to 12), teachers of subjects taught more than once per week must assign at least 3 numerical marks in each subject (see Table 2.1). The number of prescribed marks that teachers must give is relatively high compared to OECD countries (OECD, 2013[1]).

Students are marked using a five-point scale with five points being the highest mark. This practice, common among former socialist countries, is becoming rare among OECD countries that tend to have longer marking scales to allow for better differentiation of marks and a more precise description of performance levels (source). Students who receive a grade point average (GPA) of one out of five have to repeat the grade but this rarely happens

as teachers rarely give a mark below three. In 2017, only 1% of Grade 8 students had a GPA of 2 while virtually no students had a GPA of 1. About two-fifths of Grade 8 students had a GPA of 5 ("excellent"), 35% achieved "very good" and 21% achieved "good" (IEQE, 2017[14]).

Only descriptive feedback is used in Grade 1

In the first grade of primary, numerical marks have not been allowed since 2004. Students receive qualitative (descriptive) feedback only. However, teachers are given little support on how to implement this practice. Until 2018, there were no learning outcomes and performance levels for Grade 1 teachers could refer to in assessing the progress of their students. Moreover, until 2018, the school report card left no space for teachers to provide detailed feedback to students, which could make it seem less important. The report card has been changed in 2018 to allow teachers some space for descriptive feedback but this space is limited for each subject and does not allow for a detailed description of students' reached learning levels. Changes were also made to simplify information given to parents on the progress of their children. Still, it has been reported to the OECD review team that some teachers translate descriptors into marks under the pressure of parents, for example by using descriptive symbols that suggest a numerical equivalency.

National regulations define the criteria of classroom assessment and the type of assessments

National policies provide a framework that is relatively prescriptive in terms of student classroom practices. Indeed, the minimum number of assessments as well as the type of assessments and criteria to be used are defined nationally. For example, national policies state that the types of assessment a teacher can use include, among other things, oral and written tests, presentations and reports, group projects, peer or self-assessment and student portfolio.

A mark for student participation is included in the GPA

The rulebooks on classroom assessment mandate that the GPA of students from Grade 6 to 12 should take into account the marks of both students' academic performance and their class participation and engagement. This practice encourages using the GPA as a means to punish misbehaviour or students who do not engage in the classroom. Because of this, most OECD countries separate marking of student assessment from marking of classroom behaviour and participation (OECD, 2012[15]).

Classroom marks contribute to selection into upper secondary

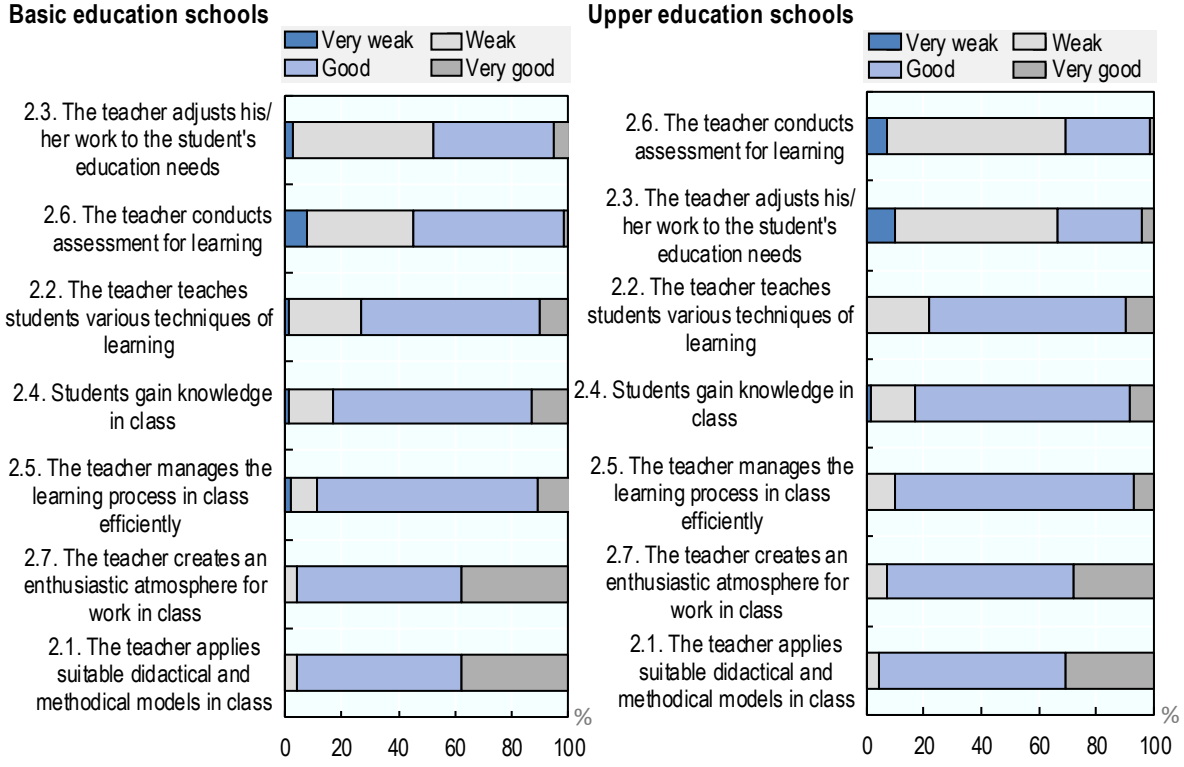
Students' GPA in Grades 6, 7 and 8 is considered alongside scores in the central examination at the end of primary for selection into upper secondary school. For students applying to general or vocational secondary schools (3 or 4 years), the "entrance score" consists of the weighted sum of the average school marks for Grades 6, 7 and 8 (60%) and the score in the end-of-primary examination (40%). At least 50 points is needed to enter a *gymnasium* or a 4-year vocational secondary school. Students who do not reach this threshold can enrol in a three-year vocational school.

Improving teachers' assessment literacy is a national priority for professional development in Serbia

Teachers' assessment literacy is relatively weak in Serbia. In 2017, external school evaluations' results showed that the use of assessment to inform learning (formative assessment) and adapting teaching to students need is weak or very weak in almost half of basic education schools and two-thirds of upper secondary schools (Figure 2.3). Teachers are aware that they need training on assessment. One-third of teachers surveyed by the IIE in 2017 reported needing professional development on student assessment (IIE, 2017[16]).

In response, the Ministry of Education, Science and Technological Development (hereafter referred to as the ministry) identified student assessment as a priority for teachers' professional development in Serbia for 2017-20; thus, all Serbian teachers are required to follow some training in this area over the three years. Student assessment is also addressed during the three-day training seminar being implemented to familiarise teachers with the new curriculum and approaches to learning. However, the take-up rate for professional development remains low, mostly because of financial constraints and the format of training provided (see Chapter 3). One-off seminars held outside of schools comprise the main mode of professional development in Serbia; they are not adequate to help teachers develop more effective assessment practices.

Figure 2.3. Results of external school evaluation for the school quality area "Teaching and Learning", 2017



Note: Ranked in descendant order of share of schools that scored weak by this indicator.
Source: IEQE (2017[17]), *Izveštaj o spoljašnjem vrednovanju kvaliteta rada obrazovno-vaspitnih ustanova u školskoj 2016/2017 [Report on External Evaluation of the Quality of Work of Educational Institutions in the 2016/2017 School Year]*, Institute for Education Quality and Evaluation.

Teachers are required to conduct a diagnostic test at the start of each school year

All teachers in Serbia must prepare and conduct a diagnostic test (called "initial test" in Serbia) to assess their students' acquired levels of achievement in particular subjects and topics at the start of the school year. The results are supposed to help teachers develop lesson plans adapted to the learning needs of their students. In the schools that the OECD visited, teachers and school managers were clearly aware of this requirement and reported that they were conducting this initial test yearly.

However, there are questions about the quality of this practice. Despite being a requirement, teachers receive very little guidance on how to design diagnostic tests and use the results to inform learning. There are, for instance, no national guidelines or manuals on how to develop an effective diagnostic test. Since 2010 the Exam Centre, an agency within the IEQE, has occasionally developed templates (e.g. examples of tests and marking schemes in mathematics and language) for some Grades (5, 7, 9 and 12). This was also done for lower Grades (1 to 4) from 2007 to 2012. However, as this is not part of the Exam Centre's regular programme of work and because there is no dedicated budget, these templates have not been developed systematically for all grades. The Exam Centre intends to conduct a system-level analysis of the results in initial tests at some point in the future.

National examinations

Students in Serbia take two high-stake examinations, one at the end of compulsory education (Grade 8) and one at the end of upper secondary education. The examination at the end of secondary education is currently the focus of a major reform.

A central examination certifies completion of compulsory education in Grade 8

All students completing Grade 8 of compulsory education take a compulsory and centrally designed final examination called the end-of-basic-education exam. In addition to assessing student achievement, this exam has two main purposes. It is a requisite to obtain the certificate of completion of compulsory education. The results are also used to inform the allocation of students into upper secondary schools, together with a student's secondary school application "wish list". Introduced for the first time in 2011, this exam marked a significant achievement, both in terms of establishing more reliable data on student learning outcomes in Serbia and of providing a more objective, fair and trusted basis for selection into secondary school.

The exam includes a test in mathematics, in Serbian (or a recognised minority) language and a "combined" test of social and natural sciences that includes five subjects (biology, chemistry, geography, history and physics). The combined test was introduced in 2014 in order to motivate students to apply themselves in more subjects during the final years of compulsory education. The exam can be adapted to better accommodate the needs of students with disabilities, for example by printing it in Braille. Students from national minorities educated in their mother tongue can opt to take the exam in their language of instruction (a range of eight languages). In the final exam of June 2018, 6.2% of the students took the test in a language other than Serbian. Offering the option to test in other languages is a legal requirement, even though some of the languages are taken by very few students (e.g. only eight students in 2017 took the test in Bulgarian). In 2017, a total of 63 111 students took the exam in Serbian at the June session (IEQE, 2017[14]).

Table 2.2. Examinations in Serbia

	End-of-basic-education examination (small Matura)	School-based examination at the end of upper secondary (until 2020 for gymnasium and four-year VET schools)	State Matura examination (planned for 2020)
Components	Mathematics; Serbian (or a recognised minority) language; combined test (biology, geography, chemistry, history and physics)	**Final exam - *Gymnasium*** • Written tests: Serbian or mother tongue language, mathematics or foreign language • Project assignment **Final exam - Vocational (four-year VET schools):** • Written test (Serbian or mother tongue language and an elected subject) • Practical assignment (including oral exam) **Final exam - Vocational (three-year VET schools):** • Practical assignment (including oral exam)	**General Matura** • Two compulsory tests (Serbian language and literature or a recognised minority language and mathematics, for all students with over two years of mathematics in upper secondary) • At least 1 elective test from a list of 13 electives subjects (biology, chemistry, history, foreign language, etc.) **Vocational (VET) Matura (four-year VET schools):** • Two compulsory general tests (Serbian language and literature or a recognised minority language and mathematics, for all students with over two years of mathematics in upper secondary)* • One compulsory vocational test: Professional test **Art Matura** • Two compulsory tests (Serbian language and literature or a recognised minority language and mathematics, for all students with over two years of mathematics in upper secondary) • Artistic test
Eligibility	Compulsory for students in Grade 8	Compulsory for students in Grade 12 (including general education and 4-year VET secondary schools) and in Grade 11 (3-year VET secondary schools)	Compulsory for students in Grade 12 (including 4-year VET secondary schools)
Item development	IEQE Exam Centre	Schools	IEQE Exam Centre and IIE Centre for Vocational Education and Adult Education for the professional test in VET Matura
Question format	Multiple-choice and open-ended questions	Multiple-choice and open-ended questions	Not yet determined
Marking	Maximum score on final exam is 40 (13 for mathematics and 13 Serbian language test, and 14 for combined test) Final examination score is added to the GPA for Grades 6, 7 and 8	Not standardised. Each school determines its marking system	Not yet determined
Marking	Teachers in the school	Teachers in the school	Not yet determined
Purpose	Certification and selection into upper secondary education	Certification of completion of upper secondary education	Certification of completion of upper secondary education and selection into tertiary education
Reporting	Accessible online on the ministry's official website with student ID and password	The final results are not publicly available	Not yet determined

* In addition to compulsory subjects, students may also take the Matura in elective subjects.
Source: MoESTD (2014[18]), *Pravilnik o organizaciji i sprovođenju ispita [Rulebook on the Organisation and Conduct of Examinations]*, Ministry of Education, Science and Technological Development, Belgrade.

The IEQE Exam Centre is responsible for test design

The Exam Centre is responsible for the design of the test and sets the assessment framework (specification grid), which defines the competencies to be measured and the type of questions to be included in the tests (World Bank, 2012[19]). The assessment framework is well-aligned with the end of cycle learning standards and levels of student achievement. Subject-specific working groups, which mainly include teachers from primary and secondary schools, university teachers and staff from the IEQE and IIE are responsible for writing the test items under the guidance and supervision of the exam centre's professional staff.

The end-of-basic-education exam includes multiple-choice and open-ended items of varying levels of difficulty

Each of the three tests includes 20 items distributed over three levels of difficulty: basic, intermediate and advanced. Each test has approximately the same balance between the different levels of difficulty. Most items are of the basic levels (around 9-10 items in each of the three tests). Moreover, the tests include a mix of multiple-choice questions and close-ended questions. In the Serbian language test, the majority of items are multiple-choice while in the mathematics test, open-ended items prevail. The "combined" test includes multiple choice, matching and open-ended items with short answers.

The end-of-basic-education exam is marked in schools but a rigorous supervision system is in place

Students take the final exam in their own schools in June, and exceptionally in August if they scored one or lower in at least one subject or were not able to take the exam in June due to ill health or another valid reason. The IEQE Exam Centre provides schools with guidance on how to prepare their students for the exam. For example, the Exam Centre organises information seminars for schools to explain the examination procedure. Additionally, a mock examination designed by the Exam Centre is carried out in April to familiarise students with the exam and to test out the procedures of administering it.

The tests are marked by teachers from the school organised in scoring commissions. The ministry appoints external supervisors (teachers from other schools) to monitor the conduct of exam classrooms and the work of test scoring commissions. Supervisors submit an electronic report to the Republic Commission, composed of representatives from national institutions such as the ministry and the IEQE, and to the RSA on the day of the exam. A randomly selected sample of tests is also reviewed at the district level (the district commission). Nationally, the Exam Centre selects a sample of schools and assesses the extent to which their school commissions followed prescribed procedures in administering and scoring the exam. The results of this analysis are presented to the ministry by request in the "Report on the results of the quality control of test scoring", which has not been made public.

Results of the end-of-basic-education exam are used to place students in upper secondary programmes

Results from the end-of-basic-education exam are combined with the student's GPA from lower secondary education (Grades 6, 7 and 8) to constitute the final score. The GPA accounts for 60% of this score while the mark from the exam itself accounts for 40%. The final score is then used along with students' wishes to define their placement in upper

secondary schools and programmes. Students applying to some specialised art schools might be required to take a school-specific entrance test in addition. However, these cases are relatively rare.

Final results at the level of individual schools are publicly available on the ministry's website. Aggregated results at the municipal, district and national levels are published in the IIE yearly reports. The results of individual students are not publicly available but can be accessed by pupils themselves by entering their personal six-figure code in the government's dedicated website or through their school information boards for enrolment in upper secondary education.

A school-based examination is used to certify completion of upper secondary education

At the moment, all students completing upper secondary education in academic, art or vocational schools take a school-based Matura exam which certifies completion of secondary education. For *gymnasium*, this school-based exam comprises two parts: a written exam and a graduation paper. The written exam includes a test and essay in Serbian language (or mother tongue) and literature, and a test in either mathematics or a foreign language, depending on the stream chosen by the student (social or natural sciences). The student can write the graduation paper on any subject they choose (see Table 2.2).

The exam is designed, administered and marked by schools with no oversight from the Exam Centre or the ministry. The lack of standardisation has resulted in great differences across schools in terms of content, implementation procedures and assessment criteria (Matura Working Group, 2017[20]). While students have to pass the school-based exam to qualify for tertiary education, the school-based exam does not serve the purpose of selection into tertiary education, which is determined by tertiary institutions.

Tertiary education institutions administer their own entrance examinations

Students who wish to enter tertiary education must apply to each faculty and/or institution separately and take the entrance examinations for the desired programmes. This system raises concerns of transparency, quality and equity. To increase chances of enrolment, students typically take admission exams at two or more tertiary institutions, which tends to be costly in particular for students living in remote or rural areas who need to travel to the university to take the test. Additionally, private tutoring has become a widespread and commonly accepted practice in preparation of admission exams in Serbia which adds to the cost burden from parents and students. These tutoring programmes are commonly offered by the tertiary institution itself which creates issues about the transparency and fairness of the entrance exam system (OECD, 2012[21]).

For these reasons, a major reform is being planned to replace the current system with a new, central and standardised final exam, to improve fairness and transparency.

A new central Matura exam is planned to certify completion of upper secondary school and determine selection into tertiary education

For the first time, Serbia is introducing a national examination at the end of upper secondary education called the State Matura that will serve both to certify completion of upper secondary education and to select and orient students into tertiary education programmes (see Table 2.2). This is consistent with trends in neighbouring countries and the OECD, where a majority of countries have centralised exams at the end of upper secondary

education that serve – either or (increasingly) both – a certification and selection role (OECD, 2017[22]). This major reform, currently developed with financial and technical support from the European Union, is scheduled to be rolled out in 2020. This is Serbia's second attempt at introducing a Matura exam. Earlier plans of a roll-out in the 2014/15 school year stalled due to a lack of consensus between stakeholders and funding.

In 2018, the Ministry of Education developed a concept note which spells out clearly the reasons for introducing the new Matura exam and the principles underpinning the proposed policies (see Box 2.4). The reform has two main goals. It is intended to strengthen the reliability of the final grades of upper secondary education by introducing a common, national examination that is standardised in design and delivery. This improved robustness will increase trust in the results and value in the certification they confer. Additionally, the reform seeks to improve the fairness and integrity of the process for selection into tertiary institutions, by creating a new centralised admission system that will process student preferences in relation to their results on the national examination and high school GPA as well as programme entry criteria. Importantly, universities will no longer be able to set their own admissions tests (except in a few specialised areas not covered by the Matura). The concept note also defines the lists of subjects to be tested in both general and vocational education programmes.

However, there are several areas in which plans for Matura remain underdeveloped and require additional consideration. The ministry has still to decide on the design and process of selection into tertiary education institution. Details of the examination model such as the items to be used and the marking scale are still to be determined. Finally, at the time of the review, plans for how the Matura will be administered were still being developed. With so many elements still to be decided, the timeline for implementation – which aims at full roll-out by 2021 – appears unrealistic.

Box 2.4. Serbia's new State Matura

Plans for a new central examination at the end of secondary education (Matura) have been in the making for several years. The European Union provided funding and technical support to the project in its early steps through an Instrument for Pre-Accession Assistance (IPA) project. In 2016, the ministry formed a working group that developed the concept of the new final exam at the end of secondary education. The working group included members of the Ministry of Education, Science and Technological Development, the IEQE, the National Education Council (NEC) and other governmental agencies, as well as representatives of higher education institutions and secondary school communities. The proposal of the working group was adopted by the ministry in 2017.

Under the new system, all students who complete general, vocational or artistic upper secondary education will take a compulsory, centrally designed, final exam. This exam will have a dual function: it will be a prerequisite to obtaining a secondary school completion certificate and scores will be incorporated in the tertiary education admissions system. The cut-off mark for passing the examination has yet to be defined.

There will be three different exams: the General Matura; the Vocational (VET) Matura; and the Art Matura. To obtain the certificate for their upper secondary studies, *gymnasium* students must take the General Matura, students in four-year professional schools the VET Matura, and students in art schools the Art Matura. Nevertheless, students in vocational and art schools are also allowed to also take the General Matura if they want to apply to university programmes that require a General Matura for admission.

The Matura exam will include a minimum of three tests: Serbian language or mother tongue (compulsory for all students), mathematics (compulsory for students with more than two years of mathematics in upper secondary) and at least one test in an elective subject chosen from a list of subjects. Students taking the General Matura will choose electives from general subjects such as biology, chemistry, geography, history, physics, eight languages of national minorities, and Serbian as a non-mother tongue. In addition to Serbian and mathematics, those taking the VET Matura have to sit a third compulsory exam that assesses professional knowledge and practical work in a VET subject. Similarly, the Art Matura will assess students' in art subjects. Students can take as many elective subject tests as they want, according to their plans for enrolment in higher education. Tests will be designed to measure achievement of learning standards at the end of secondary education. While learning standards exist for most subjects, they are yet to be developed for some elective subjects such as information science, music and psychology.

Results in the Matura exam and marks in upper secondary school classroom assessments (GPA) will be used alongside students' choices to determine admission into tertiary education. Out of a maximum of 100 points, students' GPA in Grades 10 to 12 will weigh 40 points and Matura results 60 points. Contrary to current practices, universities will no longer be allowed to set additional admission tests on subjects already covered by Matura. However, universities will be able to choose which Matura elective subjects to consider for admission into specific study programmes and the weight given to each of these subjects in the student's final application score. The universities will also be allowed to set additional specialised admission tests to cover specific subject areas not covered in the list of subjects included in the Matura, such as art, music, architecture, etc. Higher education institutions (HEIs) must publish information on their study programmes enrolment criteria two years in advance, to allow students and their schools enough time to select the exams they will take to prepare for them.

Sources: Matura Working Group (2017[20]), *Opšta, Stručna i Umetnička Matura i Završni Ispit u Srednjem Stručnom Obrazovanju [General, Professional and Art Matura and Final Examination in Secondary Education],* Ministry of Education, Science and Technological Development, Belgrade; European Commission (2015[23]), *Instrument for Pre-accession Assistance (IPA II) 2014-2020: Serbia European Integration Facility,* https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/pdf/serbia/ipa/2015/pf_01_european_integration_facility.pdf (accessed on 17 October 2019).

The IEQE Exam Centre is responsible for designing and administering both the end-of-basic-education exam and the new Matura exam

The IEQE Exam Centre's responsibilities have increased significantly over the past couple of years. From being responsible for only one examination – the end-of-basic-education exam – the Exam Centre is now responsible for two examinations and several large-scale student assessments. The centre is the main agency responsible for designing and administering the future Matura examination and the new national assessment of learning outcomes that will be introduced in 2020 (see Chapter 5). The Exam Centre has also

recently acquired responsibility for running the international student assessments that Serbia participates in – the Programme for International Student Assessment (PISA), Progress in International Reading Literacy Study (PIRLS) and Trends in International Mathematics and Science Study (TIMSS) – previously managed by the University of Belgrade (PISA) and the Independent Institute for Educational Research (TIMSS).

The financial, human and material capacities of the centre are, at their current level, insufficient to carry out all these tasks. With only 15 technical staff, the IEQE Exam Centre does not have the capacity to carry out all its planned activities, most of which have overlapping timelines. Moreover, the centre is missing some key technical profiles for designing the assessments. For example, it does not have psychometricians or statisticians on staff and relies on staff from other IEQE departments who have these profiles. The Exam Centre lacks the funds needed to carry these activities. Both attempts at introducing a national assessment and a Matura exam in the past have failed due to lack of sustainable funding. The centre does not have the adequate resources and capacity to administer a modern national examination such as the Matura. It has, for example, limited capacity for printing, packing and storing large examination papers in a safe manner.

Policy issues

As Serbia seeks to change the culture of education to become more learner-centred, it will need to ensure that student assessment practices, both in schools and nationally, reinforce this message. To do so, teachers will require much more support on how to assess student learning in relation to the new competency-based curriculum. The extensive use of simple summative tests and marks must give way to more meaningful assessments and more constructive feedback that provides each individual student with an understanding of where they are in their learning and how they can advance.

At the national level, small modifications to the end-of-basic-education exam – which is a strength of the Serbian assessment system – would further promote this culture change. This review proposes adjustments to the exam's design and administration that would help focus attention on competencies valued in the curriculum and also give direction in building greater public trust in the results. This will be important for the successful implementation of the new Matura exam at the end of secondary education. The latter is one of the most ambitious reforms on the education agenda in Serbia. If it succeeds, the reform will improve the integrity and equity of student selection into tertiary education and, through its rigour and reliability, create a positive backwash on learning during upper secondary schooling. This review provides recommendations on how this can be achieved.

Policy issue 2.1. Ensuring a better balance between formative and summative purposes in school-based assessment

In Serbia, there is a marked imbalance between school-based assessment *for* learning (formative assessment) and assessment *of* learning (summative assessment). On the one hand, summative assessments are frequently practised because it is compulsory for teachers to assign a minimum number of numerical marks to each student every year. School-based summative assessments also have high stakes for students, with a student's cumulative GPA significantly influencing their options at the upper secondary and tertiary levels. By contrast, formative assessment is underdeveloped, largely because summative assessment weighs so heavily, but also because the formative purposes of assessment are poorly understood, valued and practised. The only formative assessment practice mandated by law

is the initial diagnostic test that teachers must administer at the beginning of the school year. Even in this case, it is unclear whether teachers are using the results from the initial test to adapt their instructional practices and focus on individual student needs. This imbalance has negative consequences for student learning. It generates strong pressure for students and parents to focus on getting good marks rather than on authentic learning. Some teachers and schools respond to this pressure by inflating student grades.

The ministry, the IEQE and the IIE need to play a more active role in encouraging teachers and students – and parents and society at large – to focus more on learning and less on summative marks. The ministry should revise the assessment framework to redefine expectations about how classroom assessment ought to be practised, notably by extending the marking scheme and linking marks to performance levels. The IEQE and the IIE need to work together to provide teachers with adequate support to develop their assessment literacy, in particular in formative assessment.

Recommendation 2.1.1. Revise the student assessment framework to encourage a shift in focus from marks to learning

Serbia needs to revise its national framework for student assessment to ensure that teachers are given the space to use assessment in a more formative manner. Current policies for classroom assessment are relatively prescriptive and leave little space for teachers to implement formative assessment. The high frequency of summative numerical marks and the limited marking scale constrain teachers' capacity to use assessment to inform teaching and learning continuously. While the ministry has introduced a new competency-based curriculum and defined learning standards and levels of achievement for each cycle, teachers have received little guidance on how to use this new curriculum framework to assess their students' learning achievements. All teachers in the system need to understand what the new curriculum and standards mean in concrete terms in order to use it in their everyday assessment practices.

Define clearly the core principles of student assessment in Serbia

Introducing a new curriculum provides an opportunity to give renewed impetus to long-standing efforts to change the focus of student assessment in Serbia. The new curriculum resources already provide valuable orientation towards a more balanced approach – notably in terms of highlighting the central importance of formative feedback. This review also suggests corresponding amendments to rulebooks and legislation. However, transforming classroom assessment culture will require more direct communication efforts to help teachers and society understand the rationale for change and what is at stake. OECD countries use a variety of ways to communicate the fundamental purpose and principles of assessment, such as position papers and national guidelines. In Canada, the *Principles for Fair Student Assessment for Education in Canada* provides a good example of how a clear normative reference document can serve as a guide for both teachers and for those responsible for developing policies, handbooks and tests (see Box 2.5).

Box 2.5. The Principles for Fair Student Assessment for Education in Canada

The *Principles for Fair Student Assessment for Education in Canada* were developed by a working group and guided by a joint advisory committee representing the School Board Association and provincial and territorial ministries and departments of education. They came as a response to observed inadequate assessment practices in Canadian classrooms and aim to build consensus on what constitutes and guides a fair assessment of students. The principles are designed to guide the design and implementation of assessment in Canadian schools and ensure the fairness of practices. The text acts both as a set of parameters and a handbook for assessment. The principles are organised in two parts: the first part lists principles for classroom-based assessments in elementary and secondary schools; the second part focuses on standardised assessments developed externally (i.e. by departments of education, local school jurisdictions and others).

The list below summarises the principle and the following seven guidelines for "Developing and choosing methods of assessment" by teachers:

Assessment methods should be appropriate for and compatible with the purpose and context of the assessment

1. Assessment methods should be developed or chosen so that inferences drawn about the knowledge, skills, attitudes and behaviours possessed by each student are valid and not open to misinterpretation.
2. Assessment methods should be clearly related to the goals and objectives of instruction, and be compatible with the instructional approaches used.
3. When developing or choosing assessment methods, consideration should be given to the consequences of the decisions to be made in light of the obtained information.
4. More than one assessment method should be used to ensure comprehensive and consistent indications of student performance.
5. Assessment methods should be suited to the backgrounds and prior experiences of students.
6. Content and language that would generally be viewed as sensitive, sexist or offensive should be avoided.
7. Assessment instruments translated into a second language or transferred from another context or location should be accompanied by evidence that inferences

Source: Rogers, W. (1993[24]), "Principles for fair student assessment practices for education in Canada", https://doi.org/10.1177/082957358500900111.

How such principles are developed is as important as the final document. The training programme on the new curriculum provides a good forum to collect feedback from teachers on core concerns and misunderstandings that need to be addressed. Interviews with teachers, principals and parents conducted as part of this review suggest the value of including in the document:

- **A statement about what an effective system of student classroom assessment looks like** – including, as key messages, that student learning must be the central goal of the assessment practices, and that balance between formative and summative assessment is necessary to promote better student learning.
- **A statement on the importance of formative assessment as a pedagogical approach**, a description of different types of formative assessments (e.g. initial diagnostic test, frequent interactive checks of student understanding to identify learning needs and adapt teaching strategies, etc.) and an explanation of how results from formative assessments can be used to identify aspects of learning as it is developing in order to deepen and shape subsequent learning. This would provide a key reference for the formative assessment guidelines that this review recommends Serbia develop.
- **A description of summative assessment as a pedagogical approach**, of different summative assessments, and examples of how numerical marks can be linked to standards to ensure transparency in the evaluation criteria and provide substantive feedback to students.
- **A statement that assessment is a core pedagogical competency that all teachers need to master and seek continuously to develop**. It should also be stated that a teacher's professional assessment judgement should be respected and that teachers should have the professional discretion to adapt central guidelines to their classroom context. This statement should also be echoed in the teacher standards which should define the assessment literacy expected of teachers at different career stages (see Chapter 3).

Extend the marking scale to allow for a more refined description of students' abilities

To make marking more meaningful from an educational perspective, the ministry should consider replacing the traditional 1-5 scale used for reporting classroom outcomes with a longer common scale. Marking schemes vary across countries but most feature a greater number of categories than the five currently used in Serbia (European Commission, n.d.[25]). Examples include letter grades A-F with + and – qualifications and/or countries that use numerical grades ranging from 1-10 allowing for further discrimination, such as the example of Ontario (see Box 2.6). Having more available marks gives teachers more flexibility over how they report student results and relieves some of the pressure they might currently feel with so few marks from which to choose.

Box 2.6. Reporting scales in Ontario, Canada

In Ontario, Canada, a 6-point letter grade scale is used to report student achievement against provincial curriculum expectations in each subject or course in Grades 1 to 6 (see example below), and 6-point numeric scales are used for Grades 7 to 8 and Grades 9 to 12. Each point on the achievement scale is accompanied by a descriptor and aligns with a provincial standard level, which is the reporting scale used for province-wide student assessments. This information is included in student report cards to help parents and students understand students' results.

Letter Grade	Achievement of the Provincial Curriculum Expectations
A- to A+	The student has demonstrated the required knowledge and skills with a high degree of effectiveness. Achievement surpasses the provincial standard (Level 4)
B- to B+	The student has demonstrated the required knowledge and skills with considerable effectiveness. Achievement meets the provincial standard (Level 3)
C- to C+	The student has demonstrated the required knowledge and skills with some effectiveness. Achievement approaches the provincial standards (Level 2)
D- to D+	The student has demonstrated the required knowledge and skills with limited effectiveness. Achievement falls much below the provincial standards (Level 1)
R	The students has not demonstrated the required knowledge and skills. Extensive remediation is required.
I	Insufficient evidence to assign a letter grade

A four-point rating scale is also used to report on students' learning skills and work habits: E-excellent; G-good; S-satisfactory; and N-needs improvement.

Sources: The Star (2017[26]), "Report card, curriculum changes on the way in Ontario", https://thestar.com/news/queenspark/2017/09/06/report-card-curriculum-changes-on-the-way-in-ontario.html (accessed on 23 May 2019).; London Region MISA PNC (2011[27]), *Comment Framework: Progress Reports and Report Cards*, http://misalondon.ca/PDF/a&e/Comment_Framework_Feb_2011.pdf (accessed on 20 June 2019); Ontario Ministry of Education (2010[28]), *Growing Success: Assessment, Evaluation and Reporting in Ontario Schools*, http://edu.gov.on.ca/eng/policyfunding/growSuccess.pdf (accessed on 23 May 2019).

Link marks to performance levels and require teachers to provide descriptive feedback to students

Improving the learning value of classroom assessment requires making a series of changes to the way teachers are providing feedback to students. Currently, teachers assign numerical marks without being required to provide the rationale for their decisions or to explain to students how they can improve their future performance. For example, the student report card leaves little space for teachers to include written feedback to students. Given the misalignment between the curriculum in basic education and the learning standards, teachers are not in the habit of using the learning standards to design their assessment and provide feedback to students on their achievement level. The ministry should require teachers to provide descriptive feedback to students. It should also require this feedback be based on the performance levels and learning outcomes defined by the new curriculum. To encourage this practice, the ministry should consider:

- **Linking marks with achievement levels:** Linking the marking scale with the performance levels in an explicit manner will help teachers and students better appropriate the learning standards. It will also help teachers provide a fairer assessment of student learning. For example, OECD countries such as Australia,

Finland, France, Ireland and Israel use a combination of numerical marks and qualitative achievement levels in primary education (OECD, 2013[1]).

- **Giving teachers examples of what performance at each level means:** The IIE and IEQE Exam Centre should work together to collect examples of students' work at each performance level and make these available on the teacher e-learning platform. Examples need to be accompanied by commentary explaining how the student demonstrates a given level of achievement. These examples are important in helping teachers to understand different levels of performance and provide more reliable judgements and feedback on student learning achievement. For example, Ireland has made available on the curriculum website (curriculumonline.ie) examples of student work illustrating the three levels of achievements (at expectation, ahead of expectation or yet to meet expectation) for each learning outcome included in the curriculum. These examples can be easily accessed by teachers by clicking on a given learning outcome (NCCA, n.d.[29]).
- **Requiring teachers to record descriptive feedback for at least some assessments:** Teachers are required in Serbia to record the marks of students' assessments in their classroom records. They should be required for at least some marks to also include descriptive feedback and justification for the mark vis-à-vis performance levels. Such practice will help school advisors monitor the effective use of performance levels and provide teachers with feedback on how to improve. Teachers should, however, not be required to record such descriptive feedback for all marks as to avoid administrative burden.

Limit the frequency of summative numerical marks to create space for more formative dialogue

The ministry needs to revise the requirements related to summative assessment and marking to give teachers both more flexibility and more space to engage in formative practices. Specifically, the ministry should consider:

- **Ending numerical marking in the first cycle of basic education (Grades 1 to 4):** Instead, assessment judgements would take the form of descriptive feedback in relation to the learning standards. Using descriptive feedback will help focus the discussion between teachers, students and parents on whether students have mastered competencies and their learning progression rather than on grades. This reform will also help gradually change attitudes towards learning and instil in students at an early stage the value of learning for its own sake. Students will then carry with them this value into later stages of education. Ending numerical marks in early grades is a trend in most OECD countries (OECD, 2013[1]). Neighbouring Albania has also ended the use of numerical marks in the first three grades of primary, replacing them by qualitative descriptors aligned with the learning standards. The ministry will need to provide teachers and school principals with the tools to communicate this change to parents as past experience with similar initiatives in Serbia show they may be resistant to changes to the marking system.
- **Reducing the number of compulsory summative marks that teachers have to assign in each subject and each semester in the second cycle of basic education (Grades 5 to 8):** This will give teachers greater opportunity to engage in more formative practices and also more complex, longer-term assessment assignments such as individual or team projects. The latter are important under the new

curriculum, which places a stronger emphasis on student agency and the application of knowledge. Serbia should also consider introducing an upper limit to the number of summative assessments a teacher may assign. Teachers in some of the schools visited by the review team reported assigning double the number of assessments required by law.

- **Limit the number of grades where GPA contributes to the final scores of the certifications and admission systems:** Currently, all marks from lower secondary education (Grades 6 to 8) are included in the end of lower secondary aggregate GPA which contributes 60% of the final entrance score to upper secondary education. Similarly, all marks from Grades 9 to 12 will contribute 40% of the final score for upper secondary certification (school marks and Matura exam). This creates a backwash effect with teachers, students and parents focusing primarily on marks rather than learning. Instead, Serbia might consider only including the 2 final grades of lower secondary (Grades 7 and 8) in the end-of-basic-education examination final mark. Similarly, the concept note for the new Matura might be revised to include only the GPAs of Grades 11 and 12. Only including the final years of a given cycle is also a more accurate reflection of students' current development.

Recommendation 2.1.2. Strengthen the support provided to schools in conducting formative assessment

In a system such as the Serbian education system where summative assessment is so ingrained, a clear direction from the central government is needed to make sure that schools are effectively using assessment results to inform teaching and learning practices. With the new conceptual definitions and regulations described above, the practical support and guidance that schools and teachers receive from the centre about formative assessment need to be strengthened. The ministry will also need to give higher priority to developing training for teachers on how to use information from assessment to adapt their practices.

Strengthen the support provided by the IEQE Exam Centre in using diagnostic assessment (the initial test)

The initial test mandated at the beginning of the academic year is a positive feature of Serbia's assessment framework. Teachers can use this diagnostic assessment to adapt their teaching to students' needs, identify where students might need to go back over material from the previous year and develop a baseline for evaluating individual student progress throughout the year. However, teachers in Serbia need more support to make the most of this tool and truly embed this practice in their teaching. At the moment, while the Exam Centre has developed some templates for certain grades and subjects, most teachers are developing their own assessment tools without having clear guidance on how to design a test that effectively identifies students' knowledge and skill with respect to national expectations. The Exam Centre should scale up and ensure the sustainability of this initiative by making it part of its regular programme of work that reaches all schools in the system and a larger number of grades and subjects. This new regular programme should include the following activities:

- **Developing a standardised initial test for key transition grades in basic education:** The IEQE Exam Centre should develop nationally standardised initial tests for key transition grades. These tests need to be aligned with the learning standards and mapped against the performance level to help teachers understand

what students learnt in the previous cycle and their performance level at the start of the cycle. Having such a tool developed by the Exam Centre will help ensure the reliability of the initial test in key transition grades and provide teachers with an example of what they might develop themselves for other grades. The Exam Centre should consider a priority developing such a national initial test in Grade 1 (right after the mandatory preparatory year), to assess students' readiness to learn, and Grade 5 (start of lower secondary education) for mathematics and Serbian (or language of instruction) to inform teaching and learning in the 2 cycles of basic education. Teachers should also receive training on how to mark these initial tests and use the results. As is the case in France, schools should be instructed to share the results of this initial test and discuss them with parents to make sure that parents feel engaged and have calibrated expectations for their child's grades (see Box 2.7).

- **Creating a pool of initial test items mapped against the learning standards:** The IEQE's website currently allows users to access old copies of initial test questions. However, the roll-out of the new curriculum presents an opportunity to broaden the pool of available test items and also make examples of student answers and feedback templates available for all grades and subjects. In particular, the Exam Centre should map student initial test answers against the learning standards' performance levels. This could help teachers identify the level at which their students are performing at the start of the school year. The Exam Centre can first prioritise some core subjects, such as mathematics and Serbian, then gradually develop a comprehensive item bank. These materials should be added to the online e-learning platform currently being developed by the IIE and UNICEF and that this review suggests transforming into a one-stop-shop "school improvement hub" (see Chapter 4).
- **Giving teachers space in the curriculum to adapt teaching based on the initial test results:** Teachers should be given some flexibility to adapt the curriculum to the needs of their students based on the results of the initial test. The ministry might need to review the curriculum and pacing charts to make sure that teachers can go slower or faster on some competencies based on how their students perform in the initial tests.

Box 2.7. Diagnostic assessments in French primary schools

In **France** students who enter elementary school (*cours préparatoire*) are evaluated as part of a national diagnostic evaluation in French language and mathematics. The French language assessment focuses on basic literacy skills and knowledge, and evaluates a student's ability to communicate orally, their phonological awareness and their knowledge of the alphabet. In mathematics, the assessment focuses on counting and reading numbers up to ten. The evaluation is a written assessment, with each student receiving a booklet in which they respond to the questions. Teachers also receive a booklet that provides detailed guidance on how to administer the assessment to the whole class. Student booklets are collected at the end and evaluated by a student's classroom teacher.

The diagnostic assessment provides teachers with information so that they can adapt their teaching practices to students' needs. It also provides school inspectors with information to understand the needs of the schools within their district, enabling them to provide relevant support to the teaching staff. The results are also shared with parents, and together parents and the student's classroom teacher discuss how to best support the student's learning and development needs. Results are also anonymised at the school level and shared with the relevant district to provide direction for future professional development training for teachers.

Source: Ministère de l'Éducation nationale et de la Jeunesse (2018[30]), *Évaluations diagnostiques en CP [Diagnostic Evaluation in CP]*, http://eduscol.education.fr/cid119562/evaluation-diagnostique-en-cp.htm (accessed on 17 June 2019).

Provide guidelines and tools to encourage teachers' use of formative assessment

While the initial test is a good way to embed more formative student-centred approaches, teachers also need to be provided with a range of other resources if they are to enhance the learning value of assessment. This means guidance on how to integrate formative assessment approaches within their regular classroom activities – how to provide feedback in a way that is sensitive, constructive and motivational, but also how to engage students in setting and monitoring their own goals and in providing feedback on their peers (see Table 2.3 for an example of quality feedback from a tertiary education study). This also means introducing assessment requirements that encourage teachers to engage consistently in these approaches, such as the requirement that teachers work with students to develop a portfolio.

Student portfolios are selected collections of a student's work that demonstrate evidence of a student's progress in relation to learning goals. Using student portfolios helps students to see where they are in their learning by engaging them in their own assessment. The collection of student work contained in a portfolio can also act as a basis for more meaningful teacher-student-parent conversations about student progress and can encourage parents to be more involved in their children's education (Qvortrup and Keiding, 2015[31]). In Norway for example, teachers are expected to keep the documentation of their formative assessment of students so they can meet with pupils and their parents for a discussion of a student's progress every term (OECD, 2013[1]). In Serbia, portfolios could help teachers in shifting the discussion with students and parents away from marks and more on student learning.

Towards this end, the IIE should make sure that the following tools are available on the online teacher education platform:

- **Guidelines and examples on how to provide formative feedback to students:** The IIE should develop examples of good feedback that teachers can use to provide students with clear direction on how to improve. The IIE can learn from the experience of the National Council for Curriculum and Assessment (NCCA) in Ireland which has developed materials to help teachers and schools expand their assessment toolkit. For example, multimedia and materials such as samples of students' work with teacher commentary and classroom video footage are available in its Assessment for Learning website, that also includes checklists and reflection tools for teachers and other school staff to develop their assessment competencies (OECD, 2013[1]).

- **Guidelines and examples to encourage the use of student portfolios:** Student portfolios seem to be rarely used by teachers in Serbia. For example, none of the teachers interviewed by the review team use student portfolios in their classroom practices. The IIE and the IEQE Exam Centre need the resources to develop supporting tools that explain the purpose and use of portfolios and encourage teachers to make use of this assessment practice in their classrooms. Providing regular support and guidance to teachers on how to use student portfolios should also be part of the mandate of the new body of assessment coaches that this review recommends creating (see Recommendation 2.1.3).

Table 2.3. Examples of types of feedback

Feedback type	Example
Identifying errors	Underline or circle words, "?"
Explaining misunderstandings	This data is out of date… Don't forget… recent data shows…
Demonstrating correct practice	Inserting corrections, new sentence
Engaging students in thinking	Why?, Is this logical?, Does this follow? Is there an alternative interpretation?
Suggesting further study	"See…for information", "Try reading… to develop your thinking further".
Justifying marks	"I could not award a higher mark because of xxx". "This analysis made a strong contribution to your grade"
Suggesting approaches to future work	"In future assignments I recommend…" "Try to develop your…"
Aligning progress from previous attainment	"I can see how you have developed this…" "You have made progress here"

Source: Adapted from Orsmond, Paul; Merry, Stephen (2011[32]), "Feedback alignment: Effective and ineffective links between tutors' and students' understanding of coursework feedback", http://dx.doi.org/10.1080/02602930903201651.

Provide teachers with further training on differentiating teaching to adapt to students' learning levels

In addition to better understanding students' levels of learning through formative assessment, teachers need support to develop their capacity to use the information from assessments to adapt their lesson plans to the learning needs of students. This is an area where many teachers struggle in Serbia. In an IIE survey of teachers' professional development needs, more than half of surveyed teachers (57.3%) reported needing training in adapting teaching to students' needs (IIE, 2017[16]). Effective use of the initial test and other formative tools will hinge on teachers knowing what to do with the results. The IIE can, for example, work with the IEQE Exam Centre to identify the most common mistakes in the initial tests and provide teachers with examples of pedagogical strategies to deal with these common problems. The IIE also needs to ensure that pedagogues (pedagogical support staff in the schools) and psychologists are sufficiently trained in how to help teachers adapt their teaching practices or organise good remediation classes. In a growing number of OECD countries, school support staff are trained to work with teachers to design comprehensive approaches to support learning. For example, in Finland, the school support staff work with teachers at the beginning of the year to set a learning plan and meet regularly throughout the year to ensure that students' learning is supported through adequate interventions (Borgonovi, Ferrara and Maghnouj, 2018[33]).

Recommendation 2.1.3. Develop teachers' assessment literacy

Serbia recognises the urgency of improving teachers' assessment literacy and has made it a priority area of professional development for 2017-20. External school evaluations show that teachers struggle with assessing students learning in more than half of Serbia's schools (IEQE, 2017[17]). Strengthening teachers' assessment literacy is particularly urgent for "subject teachers" teaching in Grade 5 and above. These, for the most part, graduated in a field other than education and entered teaching with little or no training on pedagogical practices – including student assessment (see Chapter 3). Once in schools, training on assessment is relatively limited. In 2019, only 11 of the 398 programmes included in the IIE training catalogue were on assessment literacy. Their quality and practical value should be improved to make them both more relevant and attractive for teachers. While research shows that the most effective forms of professional development is embedded in teachers' regular work and are enquiry based, the majority of training provided in Serbia are seminar-based and last at most a day. The IIE and the ministry need to encourage more in-school training on assessment and develop peer learning by encouraging schools to share their experiences.

Moreover, take-up of professional development is particularly low in Serbia due to limited financial support and because there is limited data on the relevance and quality of training (see Chapter 3). If the ministry and the IIE want to improve take-up of training on assessment, financial support and incentives need to be provided to teachers. They also need to further develop the online teacher education platform set up as part of the curriculum roll-out process in order to make sure that teachers have access to tools and examples to guide their assessment practices.

Make sure that all in-service teachers have a minimum level of assessment competency

Teachers with important weaknesses regarding their assessment literacy should be provided with access to training to help them reach a minimum level of competency. Such training should be free and mandatory. To do so, school principals need to be given authority to require that teachers undertake training if regular appraisal shows that their knowledge and skills are lacking in this area (see Chapter 3). For this process to work, school principals need to be provided with guidelines and tools to appraise a teacher's assessment literacy. They also need to receive training on how to encourage a positive assessment culture in their school and develop teacher practice in this area (such as by developing a school assessment policy, making time for teachers to co-develop assessments and moderate marking, and providing guidance on how to engage parents and manage their expectations). Modules on a school leader's role in assessment should be included as part of their initial and in-service training, and the external inspection process should be used to reinforce good practice through the judgement and feedback given to schools (see Chapter 4).

Further develop in-school professional development and peer learning on assessment

The IIE should do more to promote in-school professional development on student assessment. At the moment, most government-sponsored training takes place in the form of short, one-off workshops (see Chapter 3). For example, the IIE is offering a training module on student assessment to about 18 000 teachers as part of the new curriculum reform roll-out. This training takes the form of single three-day seminars held outside of schools. It is not sufficient to change practice. Promoting ways to embed training on

assessment in schools is not only a much more effective approach to developing teachers' practices, as research on other countries has demonstrated (OECD, 2013[1]). It will also be important for engaging those teachers most in need of support, recognising that participation in external seminars tends to be self-selective, benefitting least those who are most resistant to change.

To develop in-school training and support on student assessment, the IIE and the ministry should consider the following strategies:

- **Provide grants to schools for in-school training on assessment:** Currently, most schools have to fundraise or find other means to fund training activities which creates a risk of inequality between schools in rich and poor areas. As discussed in Chapter 3, the ministry should provide schools with grants to access relevant training and also organise more in-school professional development activities, prioritising disadvantaged schools or schools with a large number of at-risk students. In order to ensure that some funds are used for training on assessment, part of the professional development grants can be earmarked for this area. For example, a small grant can be allocated to hiring coaches on student assessment to come to schools and help teachers understand how to provide constructive feedback, for example, or build a portfolio. Such a model was used by Norway in its Knowledge Promotion programme between 2006 to 2010 as part of Norway's national effort to improve the quality of classroom assessment (Nusche et al., 2011[34]).
- **Train teachers to become assessment champions:** The IIE should consider using a "train the trainer" model and prepare at least one teacher per school to serve as a school point of contact for questions related to student assessment. In the short term, they should prioritise schools that performed very low in the teaching and learning area at the last external school evaluation and gradually expand the model to all schools. This assessment champion would be tasked with organising in-school training and working with classroom or subject groups on such activities as joint assessment design and moderation. This role needs to be recognised in the revised career structure recommended by this review (see Chapter 3).
- **Encourage the use of assessment moderation as a form of professional development:** Moderation is a set of measures that seek to improve the consistency of marking, for example through teachers reviewing or cross-marking each other's assessment within a school. Moderation can also contribute to building a shared understanding of marking criteria or standards (Timperley et al., 2007[35]). To encourage schools to set up moderation processes, the IIE can make sure that it is part of the mandate of the assessment expert to ensure that moderation activities are effectively taking place. The external school evaluation should review the quality of this moderation during the school visit and provide schools with recommendations if the quality is not satisfactory.
- **Make peer-learning on student assessment a key component of the SHARE project:** SHARE is a peer-learning initiative that pairs high-performing schools with those that performed poorly in the external school evaluation (see Chapters 3 and 4). As part of the SHARE project this review recommends expanding, the external school evaluation should be used to identify schools where student assessment practices are particularly weak and match them with schools that demonstrated good teaching and learning practices. Teachers from the weaker school can work with colleagues from the higher performing school to design better

assessment tools. Teachers can also work together across the two schools to set joint moderation committees and exchange practices on marking and good written feedback.

Encourage teachers to share examples of good assessments through an online e-learning platform

The online teacher education platform developed by the IIE in collaboration with UNICEF includes some modules on student assessment as well as some materials (e.g. exercises, templates) linked to this training module. As discussed in Chapter 3, the IIE should develop this platform as a national repository of teaching and learning resources which all teachers are encouraged to draw upon. In the area of student assessment, the platform should include instruments developed centrally by the IEQE Exam Centre and the IIE, such as initial test templates and marking grids aligned with the learning levels in the curriculum. It should also give teachers the opportunity to upload examples of student assessment and create a forum where teachers can exchange ideas and experiences. The IIE should ensure the quality of the material uploaded to the platform by hiring and training moderators (see Chapter 3).

Improve initial teacher education in assessment

This review recommends that the ministry plays a more active role in monitoring the quality of initial teacher education programmes by setting programme-specific accreditation criteria and developing guidelines for the design of initial teacher education programmes (see Chapter 3). These criteria and guidelines should cover teacher preparation on student assessment and specify the expected outcomes in assessment literacy at the end of initial teacher education, aligned with the teach standards for novice teachers this review recommends that Serbia develops (see Chapter 3). In developing these criteria, the ministry could look at the example of New South Wales, Australia, and its assessment literacy competencies for novice teachers (see Box 2.8). These standards were defined following a review in 2013 of teachers' learning gaps in assessment at the end of initial teacher education, and accredit and keep providers accountable for the quality of their assessment training. Moreover, candidates' assessment literacy should be tested in the certification and selection examination this review recommends introducing at the end of initial teacher education (see Chapter 3).

Box 2.8. BOSTES' key elements of assessment knowledge, skills and understanding for beginning teachers

In 2013, the Board of Studies, Teaching and Educational Standards (BOSTES) (now the New South Wales Education Standards Authority) conducted a study to determine how the state's initial teacher education programmes were covering student assessment and reviewed the research literature identifying gaps in teachers' student assessment competencies in Australia. The board then established 24 key elements of assessment knowledge, skills and understanding or competencies that beginning teachers should develop in their initial teacher education programmes. These elements provided a framework for assessment content that initial education programme providers are now expected to cover in their programmes.

Below is a selection from the 24 key elements of knowledge, skills and understanding that the board determined new teachers needed to develop in their initial teacher education programmes on classroom assessment. These key elements expand on the Australian professional standards for graduate teachers, which set out what new teachers should know and be able to do in relation to assessment. They emphasise, in particular, that new teachers need to be able to conduct assessments appropriate to the state's school curriculum.

- Beginning teachers need to understand how teaching, learning, assessment, feedback and reporting can be aligned and integrated in practice.
- Beginning teachers need to know the purposes of summative and formative assessment and how the two can be brought together. They need to know how to incorporate both purposes for assessment into teaching and learning programmes.
- Beginning teachers should have a working knowledge of the vocabulary of assessment. They should understand and be able to apply concepts of validity and reliability to the development of their own assessment activities and tasks and to broader measures such as examinations and standardised testing programmes.
- Beginning teachers should understand the importance of developing criteria for judging different levels of performance in response to assessment activities or tasks.
- Beginning teachers need to be able to formulate questions to help them analyse student performance for feedback to students and, just as importantly, to feed forward into their teaching.
- Beginning teachers should know about ways that the reliability of their judgements can be improved, for example through moderation.

Source: BOSTES (2016[36]), *Board of Studies Teaching and Educational Standards New South Wales*, www.boardofstudies.nsw.edu.au (accessed on 24 June 2019).

Policy issue 2.2. Planning for the successful implementation of a new final examination (Matura) at the interface of upper secondary and tertiary education

The plan to introduce a new final examination (Matura) at the interface of secondary and tertiary education is a vital reform that promises to enhance fairness, transparency and efficiency in how decisions are taken at this critical juncture in a student's education and life (see Box 2.4). Introducing the national Matura will improve the reliability of students' results that determine upper secondary school certification and selection into tertiary education. The associated introduction of a new centralised tertiary admissions system will allocate places based on student choice and merit in a way that is rational and impartial. Drawing on results from the curriculum-based Matura instead of tests administered by tertiary institutions will improve transparency, limit the need for tutoring and help ensure students have an equal chance of access to places and scholarships, regardless of their socio-economic background or where they live. For all these reasons and more, this review supports the planned reforms and underscores the importance of preparing carefully for their implementation. With less than two years to go until the first cohort of students is intended to take the Matura, many aspects of the design are yet to be defined. For example, the ministry and the Exam Centre are still to decide how the centralised admission system will work and how the exam will be administered and marked. These are critical elements, and the roll-out of the Matura can only begin once they have been determined and piloted. While it is important to move forward quickly, the introduction of a Matura has already been delayed once and it is disconcerting that there are discussions of rethinking some key

decisions, such as ending additional tertiary admissions tests. Serbia needs to set a more reasonable date for introducing the Matura if its implementation is to be a success and its results trusted and accepted by all key stakeholders.

Recommendation 2.2.1. Develop the concept of the new system of student admissions into tertiary education

The lack of a clear explanation of how students will be allocated to tertiary programmes is a major gap in the current Matura concept. Thus far, the design of the new certification and selection function has focused primarily on the Matura exams but it does not provide enough clarity about the new system for student admissions into tertiary education which is a crucial component of the reform. It is understood that the admissions system will consider students' wishes, their achievement scores (i.e. Matura exam scores and school GPA) and the list of available places in study programmes. Tertiary institutions will also be asked to set and publish the requirements for entry to different programmes and the weight given to different elements of a student's results. Serbia should define how these variables will be taken into account to allocate students to university programmes, as this will have implications both for the Matura exam (e.g. the list of subjects, the marking scale, etc.) and how the exam is administered, marked and reported upon. The ministry also needs to decide whether to introduce a common admission system (CAS), as recommended by this review, or continue with the current proposal to let the admissions process be managed by each tertiary institution.

Develop a common admission system

The most recent plan communicated to the review team leaves the decision of admission to each individual university. Each institution would establish an internal commission to rank applicants based on Matura and GPA results, then decide who to admit. Such a model would not help address two major issues with the current system of student admission into universities: inefficiency and lack of transparency. The concept note for the Matura rightly includes transparency as a key principle of the new system. However, the current proposal of granting universities the authority to manage admissions would not give the ministry any means to ensure the fairness and integrity of the selection process. It also does not address the need for greater efficiency in how students are allocated to solve the major mismatch between demand and supply of university programmes in Serbia. A decentralised admissions system operated by individual tertiary institutions with no co-ordination, such as the one currently discussed in Serbia, does not allow for finding the best match between students' wishes and performance and the availability of seats in a university programme.

The ministry should instead consider introducing and implementing a common admission system (CAS). CAS is a special type of centralised university admission system that automatically allocates students to available places in study programmes according to rule-driven mathematical algorithms (Bethell and Zabulionis, 2014[37]). A well-designed CAS guarantees the transparency of the admission process as well as the efficiency in terms of avoiding under/over-subscription and maximising the chances of all places being filled (see Box 2.9 on the Irish CAS). Serbia's CAS should take into account the principles that have already been established as guiding tenants of the new system: applicants' wishes of study programmes, university programmes' entry requirements and applicants' achievement scores. This implies the following with respect to the design of the CAS:

- **Fairness of the selection process:** All applicants should be treated fairly and placement should be based on merit. To ensure this principle is followed, the

Matura, an un-biased external assessment, should be the main measure used to rank students. The ministry should also correct for perceived disadvantages by providing some applicants with additional points (i.e. bonuses). For example, the ministry may consider giving special educational needs (SEN) students bonuses. In Tajikistan, bonuses are added for candidates with disabilities (Bethell and Zabulionis, 2014[37]).

- **Transparency of process and criteria:** The CAS's rules and processes need to be clear for all stakeholders including applicants, universities and upper secondary schools. To do this, the CAS should provide applicants with information that allows them to see why they were awarded a particular "wish" and denied "higher wishes". The ministry should include brochures detailing the selection process in simple and accessible terms on the CAS online platform. For example, the Central Application Office in Ireland has on its website a visual diagram detailing the key stages of the selection process (see Box 2.9). Current plans of requiring universities to disclose programmes' eligibility criteria at least two years in advance is a very positive aspect of the Matura concept, as it will allow students and schools to prepare accordingly.
- **A unique offer is provided to students based on their wishes and abilities:** The CAS should provide candidates with a unique offer. This means that the algorithm behind the CAS should result in a finite and unique solution to the problem of matching student wishes with available places. To do so, the CAS should have a comprehensive list of all available university programmes and their eligibility criteria (e.g. how subjects are weighted in the Matura). The number of ranked wishes that a student can make should also reflect this principle. While the number of wishes allowed varies considerably across OECD countries with a CAS (from two in Canada to no maximum number of applications in France, Italy and New Zealand), these design choices are aimed at finding the optimal solution that matches students with an offer (OECD, 2018[38]). In Serbia, a large number of student preferences (e.g. at least ten or more) should be allowed in order to maximise students' opportunities for enrolment and the chance of all available places being filled.
- **Timeliness:** The CAS should provide all students with an initial offer in two weeks. This would enable Serbia to organise a second and third round of placements, once students have accepted or refused the initial offer. Delays and unpredictability may reduce trust in the system.

Box 2.9. The Central Application Office in Ireland

The Central Application Office (CAO) was established in 2014, with the purpose of assisting students with their applications to bachelor's programmes in Irish higher education institutions (HEIs). Students apply for almost all full-time bachelor's programmes through the central office. The office is responsible for processing applications and recording acceptances, while HEIs retain the function of making final decisions on admissions. The central office provides a handbook that lists all the study programmes on offer (including the minimum entry requirements for each one) and gives information to students on how to apply.

The admission process includes five stages:

- **Stage 1:** Students first register on the central office system and provide details of qualifications.
- **Stage 2:** Students are then invited to enter and rank ten bachelor's programmes of their choice and ten short-cycle tertiary programmes.
- **Stage 3:** The central office system takes into account students' choices and their assessment results including the Leaving Certificate Examination and rank them based on merit for each programme they applied to and are eligible for.
- **Stage 4:** The HEIs instruct the central office about how many offers to make based on available seats. Students receive one offer and must accept, defer or decline it.
- **Stage 5:** If an applicant does not receive an offer in the first round, they may receive an offer in subsequent rounds. There are three rounds of offers.

Sources: CAO (2019[39]), *The CAO Handbook 2019*, http://www2.cao.ie/handbook/handbook2019/hb.pdf (accessed on 24 June 2019); CAO (CAO, n.d.[40]), *The CAO: A Guide for Parents and Guardians*, http://www2.cao.ie/downloads/documents/CAOparentsguide.pdf (accessed on 24 June 2019).

Use the CAS to allocate scholarships based on merit and resources

The CAS should be used to centralise the distribution of state scholarships based on criteria of merit (e.g. scores in the Matura) and socio-economic background. Candidates for the tertiary programme should be asked to provide two separate lists of wishes, one with scholarship and one without. Such a model has been used in many countries with a CAS such as Georgia and Tajikistan as it allows for greater flexibility and fairness in the distribution of state scholarships.

Recommendation 2.2.2. Review and complete the Matura's examination model

While the concept note for the new Matura clearly defines some aspects of the examination model, such as the list of subjects that students can take and their weights, other important aspects are still being discussed. The Matura concept needs to be completed to include clear instructions on how the Matura tests will be scored and how the results will be reported to the public. The type of items to be used also should be agreed upon. Moreover, the ministry and the IEQE should consider reviewing current plans for making mathematics compulsory for only those who took more than two years of mathematics in upper secondary schools. Rather, the Matura should require minimum numeracy skills for a student's certification of

completion of upper secondary, with the responsibility placed on the ministry and schools to ensure that all students have adequate time in the curriculum to study toward this goal.

Make mathematics compulsory for all students and assess it using a dual-level exam

In the current design of the Matura, mathematics is not a compulsory subject for students who took less than two years of mathematics in upper secondary education. This is the case for students enrolled in art schools (Music and Ballet) and those philological gymnasium– currently around 1 150 students per year – who are not expected to be assessed on their numeracy skills. However, Serbia is currently reviewing the curriculum of gymnasium and mathematics will become a mandatory subject. The planned changes are in line with trends in OECD countries where mathematical literacy, alongside reading and writing, are considered to be some of the core competencies that students should acquire at school. They are not only essential for life and work, but they also provide the foundations for other domains such as the humanities and sciences. For this reason, most OECD countries make it compulsory for students to study mathematics until the end of upper secondary education and many OECD countries assess mathematics externally as a compulsory subject in national examinations (OECD, 2015[8]). The ministry and the IEQE should review the current design of the Matura with a view to moving in this direction. Specifically, they should consider:

- **Introducing a dual-level exam for mathematics**: It is recommended that students' numeracy competencies be assessed using a dual-level exam (e.g. different tests covering different ranges of mathematics ability). This will help ensure that all students at the end of upper secondary have attained basic functional numeracy competencies while allowing students with the knowledge and competencies in more advanced mathematics to be assessed on these. Serbia can thus have one test covering the minimum numeracy competencies that all students should have achieved by the end of their schooling while a second test would assess more advanced levels of mathematics. The IEQE can learn from the experience of many OECD countries with similar models such as Ireland, the Netherlands and Norway (see Box 2.10).
- **Giving students the choice to choose their test**: This is important to give all students a fair chance to demonstrate their numeracy aptitudes and enter the faculty of their liking. For example, students with less than two years of mathematics in upper secondary should still be given the option of taking the more advanced test should they want to. Similarly, students not wishing to enter a university science programme or those with weaker numeracy skills from any upper secondary track should be allowed to take the test of basic mathematics competency.

Box 2.10. Setting mathematics examinations at different levels in Ireland, the Netherlands and Norway

In **Ireland**, the Leaving Certificate Examinations, the final examinations taken at the end of the secondary school system, are available at two levels – ordinary and higher-level in a variety of subjects including English language, natural sciences, humanities and the arts. In addition, the examinations for Irish language and mathematics are also available at the foundation level. Students can take a combination of higher-level and ordinary-level examinations.

To certify school completion, students must pass examinations at any level in five subjects. Students who meet this criterion can also access post-secondary non-tertiary courses that usually last one year and in many cases provide access to higher education institutions.

In the **Netherlands**, the *voorbereidend wetenschappelijk onderwijs* (VWO), meaning "preparatory scientific education" in Dutch, is an upper secondary programme available in the country designed for students who want to continue their studies at university. Mathematics is a compulsory subject for the four subject clusters in the programme. Students take the programme's mathematics test at three different levels called A, B or C, depending on their track (economics and society, culture and society, science and technology).

The *Vitnemål fra den Videregående Skole* (Certificate of Upper Secondary Education) in **Norway** certifies completion of upper secondary general programmes. Mathematics is a compulsory subject for certification and is considered at a different level of complexity depending on the general education track. For example, students in social science studies take "Mathematics S" courses while natural science and mathematical students take "Mathematics R" with a stronger focus on pure mathematics and a small amount of probability. The Mathematic R test is taken at the end of the course and is divided into two parts. The first part of the paper consists of two exercises which must be answered and handed in after two hours of the examination. Then, in the second part, students must complete five exercises and hand them in after the five hours have elapsed (counting from the beginning of the exam).

Sources: Department of Education and Skills (2018[41]), *The Education System, Ireland,* www.education.ie/en/The-Education-System/ (accessed on 1 October 2019); Ofqual (2012[42]), *International Comparison in Senior Secondary Assessment: Full Report*, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/372211/2012-06-12-international-comparisons-in-senior-secondary-assessment.pdf (accessed on 17 October 2019).

Use a combination of multiple-choice and constructed-response items

It is not clear what combination of item types will be used in the Matura. Similar to current practices at the end-of-basic-education examination, Serbia should use a combination of multiple-choice items and open-ended items. The item type should be suitable for assessing the breadth and depth of the curriculum. Open-ended questions or constructed responses items that call for extended written responses (e.g. essays) are best suited for assessing higher-order competencies (Ku, 2009[43]). Choice of item types should also be informed by capacities to mark and process results in a reliable manner. Multiple-choice items tend to be the most reliable as they leave little space to the marker's interpretation.

Define Matura scoring, scaling and reporting procedures

The Matura concept is unclear about the procedures for scoring, scaling and reporting student results. These need to be precisely defined and agreed upon as part of the exam concept. The IEQE will need to define the following:

- **The scoring scale:** The score scale should be defined so the CAS can easily rank students based on their performance. This will require a somewhat long and quasi-continuous scale to allow for sufficient discrimination of students' performance.
- **A threshold for certification:** The IEQE should define the minimum score needed to pass the Matura and receive the certificate of completion of upper secondary studies. This threshold should ensure that students who pass the Matura have attained the "basic level" as defined in end-of-upper-secondary learning standards. It also should be tested to make sure that it is accessible to most students.
- **Map scores against criterion-referenced achievement levels**: Score points need to be mapped against the achievement levels defined in end-of-upper-secondary learning standards. Both the specific score point and the achievement level need to be reported on a student's Matura result bulletin. This will allow the user of these bulletins (e.g. students, parents, employers and upper secondary schools) to understand the student's performance at a more granular level.

Recommendation 2.2.3. Set up sustainable administrative and IT systems to implement the Matura

Designing and implementing the administrative processes needed for both the Matura and CAS are yet to be discussed and agreed upon. For example, the information technology (IT) system used for both the Matura and the CAS has still not been determined. These processes need to be sustainable over time to avoid losing the public's trust in the quality of the Matura. To ensure this sustainability, the IEQE needs to identify the right actors to carry out the administrative tasks needed to implement the Matura and ensure that they are sufficiently trained. They also need to secure central government funding for the Matura beyond 2021.

Assign responsibilities and secure capacity for the Matura's key administrative tasks

The ministry will need to identify the agencies and actors that will be responsible for key implementation tasks. The IEQE Exam Centre should be the lead agency responsible for the overall Matura process, including administration of the CAS. The implementation of administrative tasks might be distributed as follows (see Table 2.4):

- **The Exam Centre:** In addition to being responsible for the overall quality of the Matura, the Exam Centre should be in charge of defining the examination standards that will guide development and marking. It would be responsible for checking the quality of items by testing them and for auditing the marking by checking the quality of sample copies. The Exam Centre should have a secure space for test production (i.e. printing, packing and storing) and develop a process for the distribution of tests to test-taking centres. The centre will need additional human and material resources to carry out these tasks (see Recommendation 2.2.4).

- **Regional exam centres:** In contrast to the end-of-basic-education exam, which is currently administered and marked by in-school commissions, the Matura's administration and marking will need to carried out by independent commissions outside of the school that report directly to the Exam Centre. Serbia can learn from the experience of neighbouring Albania which set up five regional exam centres under the authority of the national exam centre responsible for administering the State Matura locally and marking it (see Box 2.11). These regional exam centres are run by permanent staff of the exam centre but include mostly teachers trained in marking the exam.
- **Certified teachers:** The Exam Centre will need to train and certify teachers to participate in the subject working groups in charge of test design as well as those working in the regional exam centres to mark Matura tests. The Exam Centre should define a code of professional ethics describing the standards of integrity, professionalism and confidentiality that certified teachers should follow. These roles should also be recognised in the teacher career structure (see Chapter 3).

Table 2.4. Suggested responsibilities for key administrative tasks for the new Matura

	The IEQE Exam Centre	Teachers' working groups	Regional exam centres	Candidate's school
Overall responsibility for Matura and quality control	●			
Items design	●	●		
Test production				
Registration of candidates				●
Test administration			●	
Test marking and moderation	●		●	
Dissemination of results	●			
Addressing students' appeals against results	●			
Exporting data into CAS	●			

Box 2.11. The administration of the State Matura in Albania

The creation of a centralised system for the design, administration and evaluation of examinations was an important change brought by the State Matura reform from 2006 in Albania. Before that, exams were drafted by the Ministry and administered and corrected by the schools' academic staff.

Albania has now set up five regional exam centres in order to locally administer and mark the State Matura. The national exam centre, ESC (Educational Service Centre), oversees the examination but is not responsible for training and certifying teachers who will mark the exam when questions cannot be evaluated using technology. Evaluation of tests is carried out in six assessment centres with appropriate and safe environments. The centres are selected by the ESC and approved by an order of the Minister of Education and Sports.

Source: OECD (forthcoming[44]), *OECD Reviews of Evaluation and Assessment in Education: Albania*, OECD Reviews of Evaluation and Assessment in Education, OECD Publishing, Paris.

Develop an integrated IT system for the Matura

The information system currently used for the central exam at the end of basic education should serve as the basis to develop the new IT system for the Matura. Serbia already has a basic CAS system in place for placing students in upper secondary schools. This system needs to be reviewed and further developed to accommodate the specificities of the Matura process, which include more subjects and electives than the end-of-basic-education exam. The IT platform will need to be capable of processing the Matura exam data and the CAS. A list of modules that such an IT platform needs to include is provided in Table 2.5.

Table 2.5. Suggested list of modules to include in an IT system

	List of modules to be developed
Matura examination processes	• registration of candidates • allocation of candidates to examination centres/rooms/seats • production of administrative protocols (e.g. printing requirements, packing lists, candidate attendance lists, production of control barcodes, etc.) • processing of candidate responses (objective items) and entry of candidate scores (examiner marked) • processing of candidate scores (scaling etc.) • issue (publication) of results for individual applicants • statistical analysis and reporting
CAS	• registration of all available places on all HEI courses with their characteristics (e.g. state-paid and candidate-paid places) and entry requirements (including any "weighting" of scores by subject) • registration of all examination candidates and applicants with their characteristics and, most importantly, their HEI wish lists • algorithm for matching applicant wishes and scores with HEI places • issue (publication) of places awarded for individual applicants • possibility to run a second round of CAS to fill unfilled places

The ministry should also consider building the IT system in such a way that it would allow Serbia to move towards computer-based assessment (CBA) in the near future without having to rebuild a new IT system. While a fully digital Matura is not feasible in the short run, this should be considered in the medium term as it would allow for increased security, faster marking and allow the use of more refined testing instruments such as adaptive testing.

Ensure the sustainability of the new Matura over the long term

Once the new Matura model is introduced, it becomes an ongoing commitment that will require predictable and adequate funding to cover the human, technical and physical resources required for its effective implementation. At the moment, only the concept-design and early implementation phases are funded (up to 2020). The Serbian government needs to guarantee recurrent funding for the Matura for at least the coming ten years. This is key to building trust among universities and school actors that will need to adapt to a new exam and tertiary admission system. This funding should be adequate to cover all core costs.

A thorough review is required of the Exam Centre's staffing and technical and physical so that it is able to meet its responsibilities for the new Matura. These are barely adequate for its current roles. A range of additional capacities is likely to be required to meet the demands of the Matura system. This will certainly involve increasing the number of staff, as well as strengthening specialised profiles in statistical and psychometric analysis.

Judging from the experience of countries that have introduced similar systems in recent years, significant investment is also likely to be needed in terms of accommodation and equipment. A good approximate reference for development costs comes from World Bank projects to establish national exam centres. For example, the cost of setting up an exam centre in Tajikistan responsible for developing and administering a new national examination similar to the Matura was USD 6.1 million (World Bank, 2013[45]).

Recommendation 2.2.4. Set a realistic timeframe for implementation and build public understanding of and support for the new system

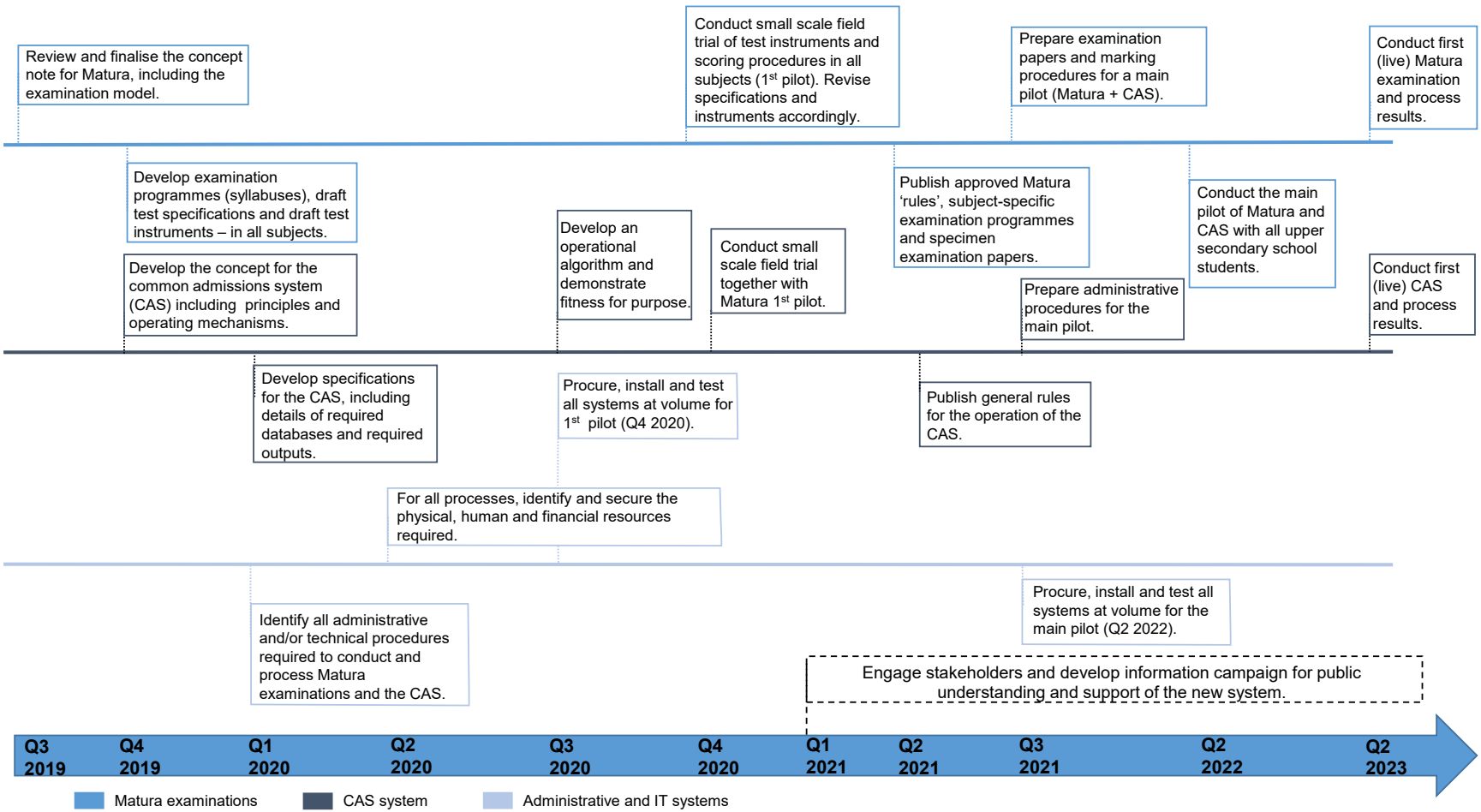
While the ministry aims to have the first Matura exam in June 2021, many gaps in the design of the Matura need to be addressed before this begins. Most importantly, how results of the Matura will be used to allocate students to tertiary programme needs to be agreed upon and the IT system administering the Matura and the CAS need to be secured. This will make the 2021 deadline difficult to meet without risks of jeopardising the quality of the assessment and its administration. It is therefore important that the ministry revise the timeline to leave sufficient time for addressing the gaps in the design discussed in this policy issue. The revised timeline should also leave sufficient time for proper piloting and revisions and for establishing an effective communication campaign.

Delay the implementation of the Matura by two years to leave sufficient time for an effective roll-out

Given the amount of work that is still ahead, the target date for introducing the Matura and CAS systems by 2021 appears overly ambitious and should be reconsidered. The ministry and the IEQE are yet to finalise the concept notes for the Matura and tertiary admission system, define the administrative procedures and run pilots (see Figure 2.4). All these steps require time to be successfully executed and are not feasible within a year and a half timeframe. International experience shows that the design and implementation of a high-stakes examination at the end of upper secondary education takes at least five years. In Slovenia, the development and implementation of a new Matura exam took approximately six years (1989-95). In Tajikistan, the development and implementation of a unified examination system and CAS took approximately eight years (2006-14) from the formation of the initial concept to the first full roll-out of the examination (World Bank, 2015[46]; 2016[47]).

Serbia should change the law in order to delay the final introduction of the Matura by at least two years so that the new target date for the full-scale implementation of Matura is set for 2023. This revised timeline will give the ministry and IEQE time to complete the Matura and CAS designs and test them by end of 2020. In parallel, an information campaign targeting students in first and second years of upper secondary education needs to be organised to explain the new model. The following two years should be dedicated to setting up administrative and IT systems and revising the Matura and CAS in light of the pilot's results.

Figure 2.4. Steps needed to implement a new examination and suggested timeline



Conduct two robust pilot studies before full-scale implementation

Pilot studies are a central feature of education assessment reforms as the quality of instruments and administrative processes can only be fully checked when tested in conditions as close as possible to the full roll-out plan (OECD, 2013[1]; van Teijlingen and Hundley, 2002[48]). Current plans for the Matura include a two-stage pilot. The Matura exam would be piloted in about 40% of schools to test the exam instruments and the administration process. Based on the results, a revised version of the Matura would then be piloted in all upper secondary schools with the participation of all students. This plan of a two-stage pilot is sound and should be implemented: indeed, a two-stage pilot allows for testing both the Matura exam itself (twice) as well as the administration of the exam and the tertiary admission system in conditions similar to those of the real test. Delaying the implementation of the Matura as recommended above is necessary to run such pilots and revise the tools and processes accordingly.

In the hypothetical undesirable scenario in which the launch of the Matura is not delayed until 2023 and thus there is no time for a two-stage pilot study, the key principle to keep in mind is that the Matura exam should be piloted *at least once* and revised based on the results *before* full-scale implementation begins.

Develop an information campaign and engage stakeholders in the design and implementation of the Matura

The Matura concept note was developed in a participatory manner through a working group that included national and provincial level governmental agencies, representatives from higher education institutions, teachers, councils in the field of education and school communities. This principle of collaboration needs to be continued as the reform enters the delicate phase of clarifying the test design and deciding on the tertiary admission system. For example, university professors involved formerly in the design of university entrance tests should be involved in the working group tasked with writing the Matura tests. This would help to build trust and buy-in, which also ensuring continuity and relevance for university programmes. Representatives from upper secondary schools and universities should also be involved in developing the new CAS model recommended by this review. Universities can also engage in the process of monitoring and evaluating the implementation of the Matura exam.

In addition, consulting key stakeholders in the design of the Matura, the ministry and the IEQE need to set up a communication strategy to make sure that students, parents, schools and universities understand and accept the reform. There is at the moment high levels of uncertainty and doubt among stakeholders about the Matura and planned changes to tertiary admissions. For example, while some of the schools visited by the review team were already preparing their students for the new Matura based on the information received from the ministry, others were doubting that the Matura would enter into effect and some were unsure whether mathematics would be a required subject for their students. To build support and prepare key stakeholders, the ministry should consider the following actions:

- **Set up a communications team or unit** in charge of translating these reforms into clear messages to be disseminated through materials for students, parents and school staff, and through communication media such as television, social media, Internet and printed media (e.g. newspapers, magazines). The communication team within the Ministry of Education in France, for example, has created clear

information materials on the reform of France's academic qualification exam, the baccalaureate (*baccalauréat*) (see Box 2.12).

- **Create a website** dedicated to the Matura reform that provides information on the Matura and allows the public to ask questions and request information. In 2017, England in the United Kingdom dedicated a website to guide students, parents and school staff through the first reformed General Certificate of School Education (GCSE) (see Box 2.12).

Box 2.12. Examples of communication strategies on exam reforms in England and France

France is undergoing a reform of its academic qualification exam, which students are required to take in order to graduate from high school and access tertiary education. The new *baccalauréat*, as it is called, will have its first session in 2021 and therefore the government has already started communicating on the terms of the reform. The Ministry of Education in France released a set of informative documents – which can be accessed online – containing key information on the new exam explained through infographics and clear messages in order to facilitate the understanding of the reform's key components and timeline. A good example is the press kit available for download on the government's website. One of the infographics available in the press kit translates into clear steps a student's path from the beginning of high school to the new *baccalauréat* exam.

In **England**, a reform has been implemented to modify the country's General Certificate of Secondary Education (GCSE). The first reformed General Certificate of Secondary Education – an academic qualification taken in a number of subjects by pupils in secondary education – was introduced in 2017 in English language, English literature and mathematics. Some of the main features of the new exams are: a new marking scale from 1 to 9, 9 being the top grade; more demanding content developed by the government and exam boards; and courses designed over two years of study, with students taking all their exams in one period at the end of their course.

As one of the biggest reforms in England, the government has massively invested in publicity and a communication campaign to inform on its main points and engage stakeholders. In 2017 for example, England's Office of Qualifications and Examinations Regulation - the exams regulator - stated it was essential that major changes were communicated to a wide audience as independent research carried on their behalf showed that public understanding of the new marking system and other reforms related to the exam had increased since the first campaign. The Office and the Department for Education in England have set the communication campaign around original films, printed materials and social media advertising. They have developed online material, including a website and a page in the Office's blog to inform the public on the progress of the reform and address their questions. The pages available on line inform the public on how the exam will look like, with updated information about the reform, including its main features and following steps.

Sources: Ministère de l'Éducation nationale et de la Jeunesse (2018[49]), Communication en conseil des ministres : la réforme du baccalauréat [Communication at the Council of Ministers: the reform of the Baccalauréat], www.education.gouv.fr/cid126564/communication-en-conseil-des-ministres-la-reforme-du-baccalaureat.html (accessed on 31 May 2019); UK Government Department for Education (2018[50]), *Get the Facts: GCSE Reform*, www.gov.uk/government/publications/get-the-facts-gcse-and-a-level-reform/get-the-facts-gcse-reform (accessed on 31 May 2019); The Independent (2017[51]), "Government to spend half a million pounds explaining confusing GCSE exam reforms", www.independent.co.uk/news/education/education-news/gcse-exam-results-government-watchdog-ofqual-500000-half-million-explain-confusing-education-a7861586.html (accessed on 3 June 2019).

Policy issue 2.3. Strengthening the technical quality of the central examination at the end of basic education

The central examination that students take at the end of basic education (Grade 8) is a policy instrument that, since its creation in 2011, has effectively served its dual purpose: it certifies students' completion of basic education and provides the scores which are used in their automatic placement into general secondary and VET schools – taking into account their "wish list" of desired schools. However, almost a decade after its introduction, the exam would benefit from some refinement in terms of both its design and administration. Regarding design, the exam can be reviewed to assess a wider range of competencies in line with the recent curriculum reform. The exam's administration in schools should also be strengthened to improve the reliability of results and the public's trust in them. Building confidence in the quality and integrity of the "small" Matura will be important for gaining support for the crucial reforms of examinations at the end of upper secondary school.

Recommendation 2.3.1. Develop the exam to measure a wider range of competencies and levels of achievement

While the design of the Grade 8 exam is largely fit for purpose, it could be improved to assess a wider range of competencies that are included in end-of-basic-education learning standards. There is also scope to extend the number of items and the marking scale to enable more refined discrimination of achievement levels. Despite the Exam Centre's efforts to include more diverse item types that assess more complex and higher-order outcomes, the end-of-basic-education exam remains largely a knowledge-based instrument which tests mostly lower and intermediate learning outcomes. It focuses primarily on the reproduction of facts and the use of routine cognitive procedures, and the more complex problem-solving tasks that are included tend to be limited to familiar contexts which reduces their level of difficulty. The exam also makes little attempt to assess the transversal competencies that are emphasised in the learning standards. While the Exam Centre will need to allocate its resources with the Matura as a priority, some limited adjustments to the Grade 8 exam could help to develop item-writing and other skills that will be important for the quality of the exam in Grade 12.

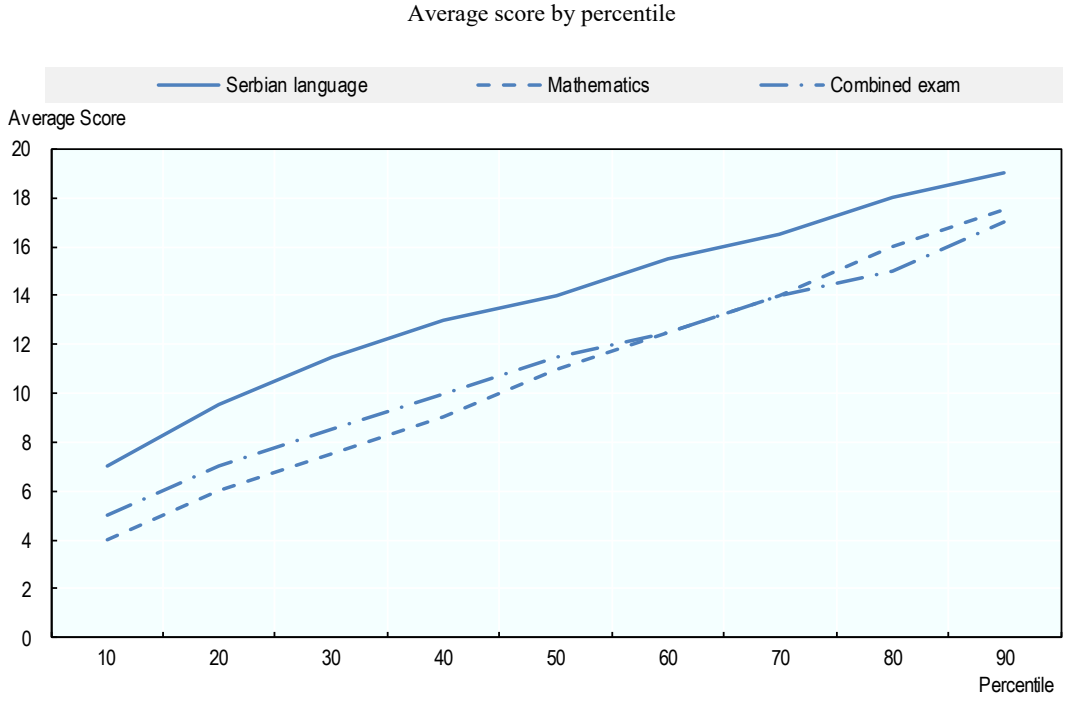
Increase the number of questions in exam tests to allow for more space to measure advanced competencies

With only 20 items per test, there is little space in the exam for testing competencies across the ability range, especially advanced ones. Each test includes seven items of "basic level" competencies, nine of "medium level" and only four questions of "advanced level" competencies. The exam is thus not discriminating enough for higher levels of ability. This is very apparent when looking at students results. For example, about 40% of the students who took the Serbian language exam in 2017 scored 15 or more points out of a maximum of 20 points (see Figure 2.5) (IEQE, 2017[14]). The Exam Centre should consider increasing the number of items for the advanced level of competencies and increase the overall number of items above the current arbitrary number of 20.

The recommended increase in items can be achieved without lengthening the test-taking time and without forcing students to rush to respond to an excessive number of questions. The time spent per question in Serbia's end-of-basic-education exam is longer than common assessment practices internationally. Students have 2 hours (120 minutes) to respond to each 20-question test; this means that that students have, on average, 6 minutes

per question, which is more time than in most other countries with similar exams, such as Singapore. For example, in Singapore's Primary School Leaving Examination (PSLE), the first part of the mathematics test includes a total of 30 multiple-choice and short-response questions. Students are allowed 1 hour to complete the first part of the test which means an allowance of about 1.3 minutes per question. Similarly, the science test in the examination includes 40 questions (28 multiple-choice and 12 open-ended) and 1 hour and 45 minutes to answer, thus students have on average 2.6 minutes per question to answer this test (Singapore Examinations and Assessment Board, 2019[52]).

Figure 2.5. Distribution of students' scores by test subjects, 2016-17



Source: IEQE (2017[14]), *Izveštaj o Rezultatima Završnog Ispita na Kraju Osnovnog Obrazovanja i Vaspitanja u Školskoj 2016/2017 [Results of Primary School Final Examination 2016-2017]*.

Revise the scoring system using a longer score scale and allow for partial credits

Introducing more tasks, including complex tasks, will require adjustments in the scoring system. Currently, the results in all exam tests are graded on a 0-20 scale with a general rule that each task carries 1 point. While partial credits are allowed (half a point), they are rarely used which limits the tests' capacity to assess partial achievement. The Exam Centre should revise the scoring system to allow and support the use of a wider range of partial points, at least for items using complex multiple-choice in constructed-response formats. For example, mathematics tasks requiring multiple steps or constructed tasks involving the use of 2 or more skills could be marked using a range of points for full and partial credit (e.g. 0, 1 point, 2 points). This more complex scoring rule would improve the technical quality of the exam because it would better measure students' ability to solve specific problems (distinguishing between students who can solve part or parts of a problem and those who cannot solve the problem in any part). Additionally, the 20-points scale could be lengthened to allow for more refined discrimination of students' result.

Improve item-writing capacity among associate teachers and within the IEQE

The ministry needs to invest in improving the capacity of test writers if more complex items are to be introduced as recommended above. At present, Serbian teachers who are contracted by the Exam Centre as associates to write items on specific subjects are generally better at writing simple questions that require students to memorise content information than at writing items that require higher-order thinking. This is due to the limited training provided to item-writers and overall lack of familiarity with competency-based curriculum and assessment.

To address this issue, the Exam Centre should provide teachers participating in the item-writing commissions with training on how to assess higher-order competencies and write constructed test items. The Exam Centre can, for example, invite experts from other European countries with experience in assessing higher-order competencies such as Austria and Denmark (OECD, 2013[1]). This exposure to competency-based assessment will not only improve the quality of test items but also teachers' classroom assessment practices.

Replace the combined test with subject-specific assessment instruments

Introducing the combined test in 2014 was a positive step because it enabled the assessment of a slightly larger breadth of the curriculum. Teachers also informed the review team that the test also led to students paying attention to a larger set of subjects during the final years of basic education. Analysis performed for this review suggests that the test is a good measure of a student's overall cognitive ability, as shown by the strong correlation between a student's results in the combined test and results in the mathematics and Serbian language tests (see Table 2.6). However, the combined test is a relatively weak measure of subject-specific competencies. With only four items per subject, the combined test is not a valid measure of the level of student achievement in any of its five component sub-domains (biology, chemistry, geography, history and physics). The test merely assesses basic knowledge of each subject.

The Exam Centre should consider replacing the combined test with more valid assessments of student competencies in different subject areas. For example, the combined test could be replaced by two separate tests: a test of natural sciences (biology, chemistry and physics) and a combined test of history and geography. Alternatively, Serbia may consider introducing a natural sciences test and a foreign language test, as both science, technology, engineering and mathematics (STEM) and foreign language are priority areas in Serbia's education strategy.

Table 2.6. Final examination for school year 2017/18: Descriptive statistics and correlation coefficients between tests included in the exam

	Language (Serbian)	Mathematics	Combined test
Number of test-takers (students)	65 129	65 129	65 129
Mean score	11.99 (60%)	10.04 (50.2%)	12.60 (63%)
Standard deviation	4.17	4.31	4.17
Correlation (r) with language (Serbian)	..	0.730	**0.708**
Correlation (r) with mathematics	0.730	..	**0.729**
Correlation (r) with combined test	0.708	0.729	..

Notes: .. : Not available.
The table does not show data for students who passed the final exam in their mother tongue.
Correlation coefficients for language (Serbian) and mathematics are based on Grade 8 school marks in the corresponding subject. The correlation for the combined test is based on the average Grade 8 score across 5 subjects: biology, chemistry, geography, history and physics.
Source: IEQE (2018[53]), *OECD Review of Evaluation and Assessment: Country Background Report for Serbia,* Institute for Education Quality and Evaluation.

Create a new school-based project aimed at assessing interdisciplinary competencies

The end-of-basic-education exam does not at present measure the transversal competencies included in the curriculum. Learning from the experience of many OECD and neighbouring countries, the Exam Centre should strongly consider introducing a mandatory project-based assessment to test students' transversal competencies such as communication or collaborative problem solving. Project-based assignments are long-term, in-depth projects that students complete within their school by applying skills they learnt throughout the grades prior to the examination in a practical manner (Kaldi, Filippatou and Govaris, 2011[54]; Blumenfeld et al., 1991[55]).

The Exam Centre should consider the following in designing the project-based assignment:

- **Ensure comparability of the test:** While students and schools should be given some flexibility designing the project assignment, the Exam Centre needs to provide clear guidelines to ensure comparability of results. These guidelines should define the competencies that the student will be assessed against (see Box 2.13 for an example from the United Kingdom) and define a list of topics that students and schools can choose from. The Exam Centre could also review a randomly selected sample of project assignments to ensure quality.
- **Make it part of the student's final score:** To make the project more relevant for all actors, marks in this project should be made part of the final graduation score used for student selection into upper secondary schools. For example, the project-based assignment could account for 10 points out of the total 100 points of

the final graduation score. This could be achieved by reducing the weighting of the student GPA to 50 points (instead of 60) while leaving the weighting of the aggregate written examination score at 40 points.

Box 2.13. Project assignments in England, Northern Ireland and Wales

In England, Northern Ireland and Wales (United Kingdom), students completing their A Levels at the end of upper secondary can also produce an optional "extended project". The extended project provides students with the opportunity to develop and demonstrate their project management skills and extended writing.

- **Subjects**: the extended project can be completed in one or more of the student's study areas and/or areas of interest related to a student's main study programme, in agreement with their examination centre (often their school). Examples of acceptable titles for extended projects are available online.
- **Outcome:** a design, performance, report, dissertation or artefact.
- **Assessment:** the extended project is internally assessed by a candidate's examination centre. Candidates must produce a written log verified by a supervisor, a written report, supplementary evidence and a presentation.

Students are assessed against four objectives. Each objective has contributed a specific weight to the student's overall mark:

1. **Manage** – identify, design, plan and complete the individual project or task within a group project, applying organisation skills and strategies to meet stated objectives. Contributes 15%-25% to the final mark.
2. **Use resources** – obtain and select information from a range of sources, analyse data, apply relevantly and demonstrate understanding of any appropriate linkages, connections and complexities of their topic. Contributes 15%-25% to the final mark.
3. **Develop and realise** – select and use a range of skills, including new technologies, to solve problems, to take decisions critically, creatively and flexibly, and to achieve planned outcomes. Contributes 35%-45% to the final mark.
4. **Review** – evaluate outcomes including own learning and performance. Select and use a range of communication skills and media to convey and present outcomes and conclusions. Contributes 15%-25% to the final mark.

Marking grids are provided to demonstrate student performance at three levels for each assessment outcome and how marks may be allocated.

- **Learning hours**: 120 hours in total. Approximately 50 hours of taught time and 70 hours preparing for assessment.
- **Grades**: A*-E.

Source: UCAS (n.d.[56]) *Extended Project Qualification (EPQ)*, https://qips.ucas.com/qip/extended-project-qualification-epq (accessed on 14 January 2019).

Recommendation 2.3.2. Build public confidence in the examination system

The procedures that the IEQE Exam Centre has put in place to guarantee the correct implementation of the exam seem generally well-designed and adequate. External supervisors monitor the test administration in schools and checks are performed at the local and national levels to ensure there were no irregularities in test administration and scoring. However, the Exam Centre regularly finds evidence of malpractice in some schools. Some schools are not implementing the test administration procedures as they should be and some school staff deliberately cheat by giving their students the right answers. While this problem is not widespread according to analysis by the Exam Centre, it leads many parents and students to mistrust the end-of-basic-education exam results. The ministry and the Exam Centre should address these concerns by strengthening the administration procedures and providing more information to the public on how the exam is run. These measures to improve public trust in the exam will help likewise to build confidence in the government's capacity to administer the new Matura.

Continue to develop and use control measures to improve security and accountability of implementation

While instances of irregularity are rare, there are still measures that the Exam Centre and the ministry can take to strengthen the administration of the exam and prevent cheating. The following measures should be considered:

- **Appoint exam supervisors from other municipalities:** At the moment, exam supervisors come from other schools in the same municipality which means that they might have pre-existing personal or professional relations with the staff and students of the schools they are supervising. To avoid any appearance of bias, the ministry should instead bring in teachers from other municipalities to serve as supervisors.
- **Introduce greater penalties for malpractice:** Organised cheating in a national high-stakes examination is considered in most countries a serious offence with severe consequences. In England for example, for the 2018 summer exam series (GCSE, AS and A level examinations), 620 penalties were issued to 475 members of school or college staff (e.g. teachers and invigilators). The sanctions ranged from written warnings, requirement for training or mentoring, to suspensions from involvement in exams and even teaching depending on the category and impact of the malpractice (Ofqual, 2018[57]). Conversely in Serbia, instances of cheating by school staff are rarely punished. For example, it was reported to the review team that a school principal who provided the answer key to students taking the test received only a small fine. The ministry needs to make sure that school principals or teachers caught cheating are fined and barred from public service to deter others, signalling the seriousness of this offence.
- **Increase the scale of checks made on the marking process by the district commission**. Specifically, the ministry should increase the number of schools from which tests are checked and make sure these are done as soon as possible after the marking process.
- **Introduce targeted reviews for schools where past irregularities were observed:** Schools flagged by the Exam Centre's annual analysis as having abnormal results (e.g. schools with uniformly high results in the exam) should be

the target of stronger surveillance during the following exam year. For example, students from these schools can be sent to take the test in other schools.

Communicate the strengths and problems in implementing the exam

The end-of-basic-education exam has a reputation for not being very fair and transparent. In fact, many parents and students believe that cheating is widespread despite very little evidence that this is the case. The ministry and Exam Centre need to make more information available to educate the public and raise awareness of the improvement, ensuring a fair and transparent administration of the exam as well as the real extent of irregularities and how they are handled.

- **Make the Exam Centre's annual summary analysis on the exam' quality control public:** Such a measure would help increase public accountability of schools. It will also help show to the public that organised cheating is, in fact, rare and thus help improve trust in the exam.
- **Provide more public information in advance of each session:** the ministry should make available on its website information targeted at the general public on the exam's procedures and the measures taken to ensure integrity. Schools should also be provided with guidance and resources to use for communicating with students and parents. In addition, there is the need for a more proactive approach to briefing the media so that coverage of the exam is constructive and keeps actors accountable. On its webpage, the Ministry of Education in France made available a list of questions and answers about the *baccalauréat* 2019 almost a year before it took place. Among the data available, the public – in particular, students – can find information on the progress of exams, the correction process, the communication of results, etc. (Ministère de l'Éducation nationale et de la Jeunesse, 2018[58]).

Table of recommendations

Policy issue	Recommendations	Actions
2.1. Ensuring a better balance between formative and summative purposes in school-based assessment	2.1.1. Revise the student assessment framework to encourage a shift in focus from marks to learning	Define clearly the core principles of student assessment in Serbia
		Extend the marking scale to allow for a more refined description of students' abilities
		Link marks to performance levels and require teachers to provide descriptive feedback to students
		Limit the frequency of summative numerical marks to create space for more formative dialogue
	2.1.2. Strengthen the support provided to schools in conducting formative assessment	Strengthen the support provided by the IEQE Exam Centre in using diagnostic assessment (the initial test)
		Provide guidelines and tools to encourage teachers' use of formative assessment
		Provide teachers with further training on differentiating teaching to adapt to students' learning levels
	2.1.3. Develop teacher's assessment literacy	Make sure that all in-service teachers have a minimum level of assessment competency
		Further develop in-school professional development and peer-learning on assessment
		Encourage teachers to share examples of good assessments through an online e-learning platform
		Improve initial teacher education in assessment
2.2. Planning for the successful implementation of a new final examination (Matura) at the interface of upper secondary and tertiary education	2.2.1. Develop the concept of the new system of student admissions into tertiary education	Develop a common admission system
		Use the CAS to allocate scholarships based on merit and resources
	2.2.2. Review and complete the Matura's examination model	Make mathematics compulsory for all students and assess it using a dual-level exam
		Use a combination of multiple-choice and constructed-response items
		Define Matura scoring, scaling and reporting procedures
	2.2.3. Set up sustainable administrative and IT systems to implement the Matura	Assign responsibilities and secure capacity for the Matura's key administrative tasks
		Develop an integrated IT system for the Matura
		Ensure the sustainability of the new Matura over the long term
	2.2.4. Set a realistic timeframe for implementation and build public understanding of and support for the new system	Delay the implementation of the Matura by two years to leave sufficient time for an effective roll-out
		Conduct two robust pilot studies before full-scale implementation
		Develop an information campaign and engage stakeholders in the design and implementation of the Matura
2.3. Strengthening the technical quality of the central examination at the end of basic education	2.3.1. Develop the exam to measure a wider range of competencies and levels of achievement	Increase the number of questions in exam tests to allow for more space to measure advanced competencies
		Revise the scoring system using a longer score scale and allow for partial credits
		Improve item-writing capacity among associate teachers and within the IEQE
		Replace the combined test with subject-specific assessment instruments
		Create a new school-based project aimed at assessing interdisciplinary competencies
	2.3.2. Build public confidence in the examination system	Continue to develop and use control measures to improve security and accountability of implementation
		Communicate the strengths and problems in implementing the exam

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Chapter 3. Promoting and supporting good teaching

This chapter looks at how Serbia evaluates teaching practice and supports teachers' improvement through its teacher appraisal system. While Serbia has a merit-based career structure for teachers, the use of appraisal to inform promotion and other teacher policies remains underdeveloped. Revising teacher standards and ensuring those who appraise teachers are well-trained professionals can help enhance the formative function of teacher appraisal. Moreover, offering a competitive and progressive salary that recognises professional growth can help incentivise teachers to develop and take on new responsibilities. Finally, Serbia should improve the selection and initial preparation of new teachers to help promote and support good teaching.

Introduction

Teacher appraisal can be an important lever for improving teaching practice. A well-balanced appraisal system will encourage teachers to continuously develop and grow as professionals by providing regular feedback that connects teacher development goals with relevant training and support. By serving as a selection tool for career advancement, it can also motivate teachers to develop new skills and take on new responsibilities. It can also help accelerate system-wide improvement by directing experienced teachers towards mentorship and leadership roles. While Serbia has taken important steps in recent years to professionalise the teaching workforce, notably through the introduction of a merit-based career structure, the use of teacher appraisal to inform promotion and other teacher policies remains underdeveloped compared to OECD and neighbouring countries. Schools receive no guidance on how to use teacher appraisal to encourage professional development and the merit-based career structure does not bring gains in terms of salary and professional recognition, weakening its potential to incentivise teachers to develop and take on new roles.

This chapter examines how Serbia can make fuller use of appraisal to strengthen the teaching profession and improve teaching quality. It argues that the country should focus on ensuring that teachers are provided with the right incentives to develop their practice and seek higher levels of professional responsibility as a priority. This can be done by revising Serbia's teacher standards to clarify different teacher roles and by ensuring those who appraise teachers for promotion are well-trained professionals with the right skills, adequate time and independence. This chapter also looks at ways to enhance the formative function of appraisal. It highlights the need to provide school principals, pedagogues and psychologists with much more support on how to meaningfully evaluate teaching practice and give feedback, in conjunction with more investment in school-based professional learning activities. Finally, ways to enhance the selection and initial preparation of new teachers are examined, both with a view to attracting more talented young people into the profession and to addressing existing misalignments between initial teacher preparation and classroom needs.

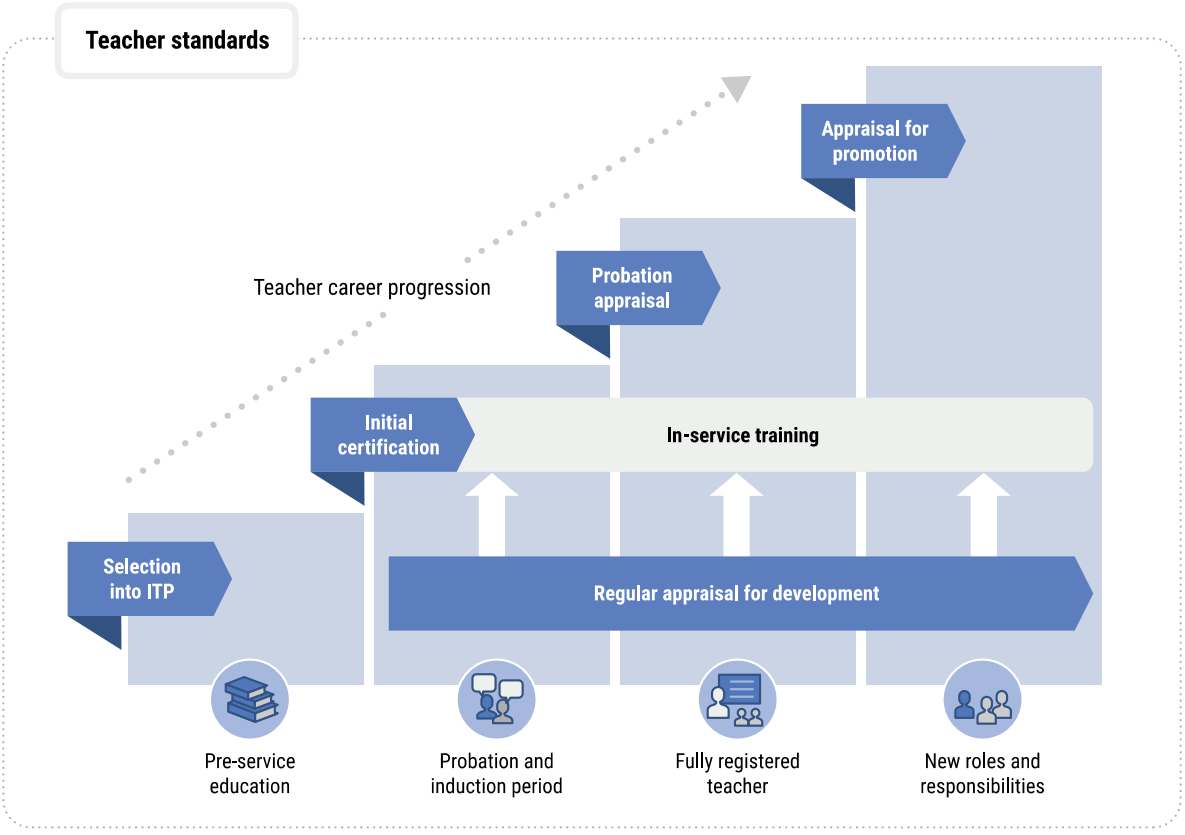
Several structural issues related to the teaching profession will need to be tackled if this vision for teacher development and professional empowerment is to take effect. Importantly, teachers need to be offered a competitive and progressive salary that recognises growth in competencies and responsibilities. Serbia also needs to consider options to reduce the number of teachers with part-time positions or working across multiple schools while at the same time creating more space for recruiting young talent into the profession. Given current fiscal constraints, this will require measures both to reduce the size of the teaching workforce and to make more strategic use of resources, such as scholarships, to bridge gaps in supply and demand. Serbia will not be able to make the most of a well-designed teacher appraisal system if these structural issues are not addressed.

Key features of an effective appraisal system

Teacher appraisal refers to how teachers are assessed and given feedback on their performance and competencies. An effective appraisal system focuses on how well teachers are supporting the learning of all students. It provides teachers with support and incentives to continually develop their teaching competencies and assume roles that contribute to the development of the teaching profession overall. When used in this way, appraisal can positively influence teachers' attitudes, motivation and classroom practices and, through

this, help to improve students' learning outcomes (OECD, 2013[1]). Countries combine different types of appraisal at different moments of a teacher's career to inform ongoing learning, professional development and career progression (see Figure 3.1).

Figure 3.1. Types of teacher appraisal



Note: ITP: Initial Training Programme

Teacher standards

Standards provide a common reference point for teacher policies, including appraisal

A growing number of OECD countries have developed teacher standards to inform teacher policy and practices. Teacher standards describe what "good" teaching is and how it is demonstrated. They are used to align key teacher policies such as initial teacher education, certification and recertification, career progression, professional development and teacher appraisal. Teacher standards are an essential part of an effective teacher appraisal system as they provide a common reference point for both teachers and evaluators that establish clear expectations, encourage consistent judgement and focus appraisal on the key aspects of teaching that matter for learning (Santiago et al., 2013[2]).

Teacher standards typically include a general profile setting out expected teacher competencies. Some also include specialised profiles for particular types of teachers such as for more experienced teachers as part of a differentiated career path, or for teachers of

different educational levels or subjects (Santiago et al., 2013[2]). Effective teacher standards are aligned with national education priorities, learning standards and curricula to ensure that teachers develop teaching competencies that will support national learning goals (Louden, 2000[3]). They are developed through broad consultation and grounded in national and international evidence of the teaching approaches shown to have the greatest impact on student learning.

Initial teacher preparation

Select candidates with strong academic skills and motivation to teach

Selecting teacher candidate with strong academic skills and the motivation to teach is key to ensure quality learning and teaching in schools. This influences how teachers are recruited both into initial teacher education programmes and into the teaching profession. A recognised feature of the world's highest-performing education systems is setting a high bar for entry into initial teacher education, with places accorded only to the most able school graduates (Barber and Mourshed, 2007[4]). One way to support this is by setting a minimum threshold on the national school graduation or tertiary entry examinations.

Set a rigorous certification process at the end of teacher education to ensure the selection of qualified new teachers

Initial certification at the end of teacher education serves as a gatekeeper to ensure those who enter the profession have acquired the basic competencies required for good teaching. In most OECD countries, initial certification requires successful completion of teacher education programmes which provide at least a bachelor's level qualification and increasingly a qualification at master's level. However, many OECD countries require in addition that prospective teachers pass an external qualification or licensing examination, which can help to ensure fairness and consistency for selection and guarantee basic standards (OECD, 2014[5]). This is particularly important in countries where teaching is a "career-based" public service and lifetime employment is largely guaranteed, and where quality assurance in the tertiary sector is weak. Since an examination cannot recognise all the attributes that are important for teaching, countries with examinations often complement them with other forms of assessment such as interviews, which can capture motivation and socio-emotional skills. Finally, in most countries, full certification as a teacher depends on successfully passing a probation appraisal, where teachers can better demonstrate the attitudinal dimensions of good teaching.

Types of teacher appraisal

A probation period and appraisal provide new teachers with essential support in their first year(s) on the job

The first years of teaching are critical to building the foundations of good teaching practices. Most OECD countries set probation periods combining mentorship, classroom observations and formative feedback to ensure that new teachers are provided with support to develop their teaching practice (OECD, 2014[5]). Regular appraisal and feedback to teachers are key components of the probation period. In countries where the latter are not part of the probation period, retention rates of new teachers are often lower (OECD, 2017[6]).

In about half of OECD countries, successfully passing an appraisal at the end of the probation period is a requirement to become a fully certified teacher (see Figure 3.2 Probation appraisals help to ensure that decisions on full certification are based on an evaluation of all the key competencies for teaching. Appraisal by the school leadership team, the school board or the teacher's mentor is the most common approach to full certification. These in-school actors can observe a trainee teacher's practice throughout the year, providing a fuller picture of their readiness to enter the profession. In some countries, the probation appraisal also includes an external evaluator (OECD, 2013[1]). An external dimension for the probation appraisal is particularly important in education systems where the school leadership might lack capacity to make a valid and objective judgement about a teacher's competencies.

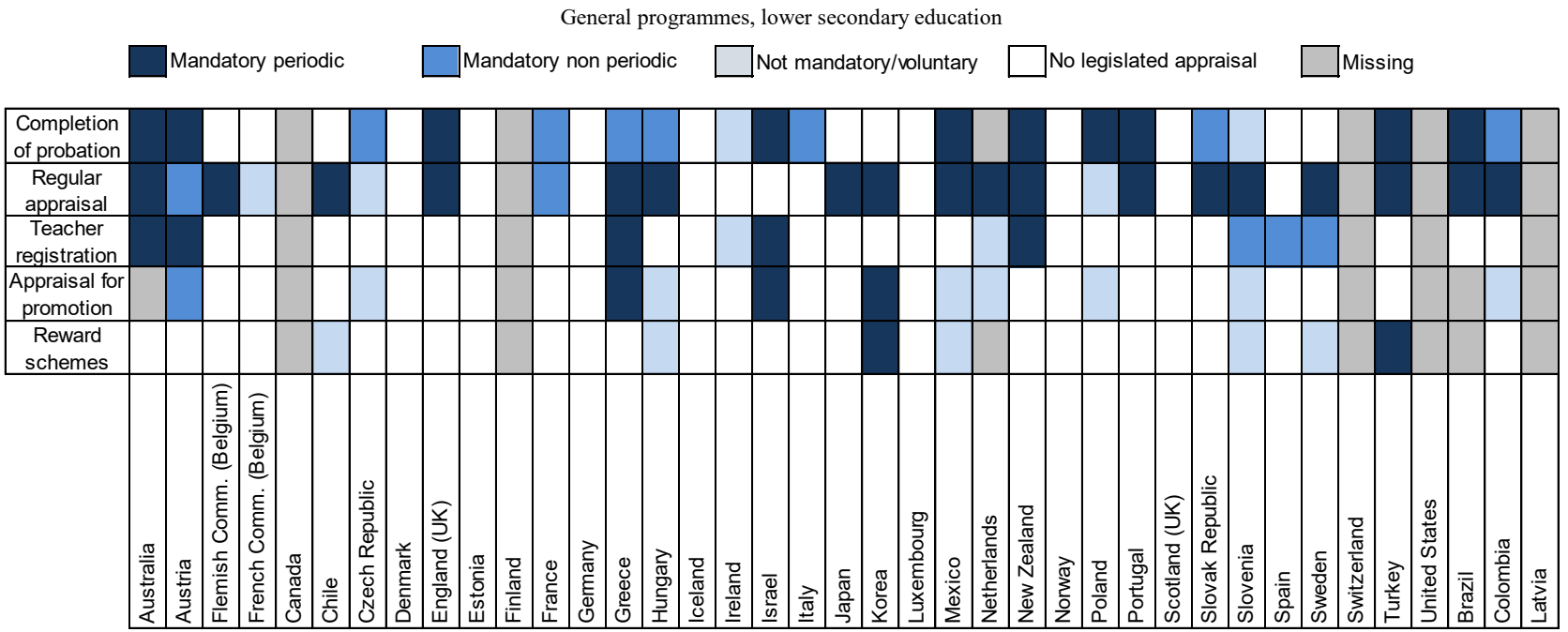
Regularly appraising teachers provides meaningful feedback and informs classroom practices

Regularly appraising teachers to provide feedback on their professional practices is a common component of teacher appraisal in the majority of OECD countries (see Figure 3.2). Regular appraisal is primarily developmental, identifying a teacher's strengths and their learning needs. It draws on information from classroom observations to provide specific feedback to support teachers' continued professional growth (OECD, 2013[1]). Some OECD countries also use teachers' self-evaluation and their teaching portfolio as part of regular appraisal, as they encourage self-reflection and provide a range of evidence on a teacher's practices and needs for professional development (OECD, 2015[7]).

In most OECD countries, the regular appraisal of teachers is led by the school leadership team because they can develop a more accurate understanding of a teacher's practice, based on multiple observations throughout the year. Since the leadership team is familiar to the teacher, this is also likely to create a more informal setting for appraisal to encourage open and honest feedback (OECD, 2013[1]).

The formative value of regular appraisal is strengthened when the findings are used to inform decisions on teachers' professional development. In many countries, the school leader or leadership team is expected to work with teachers to establish individualised development plans, which define the type of activities a teacher will undertake to improve specific areas of practice. Such plans are most effective when they connect individual goals with school priorities for teacher development, as this helps to encourage teacher collaboration and peer-learning (Goe, Biggers and Croft, 2012[8]).

Figure 3.2. Types of teacher appraisals in OECD countries, 2015



Source: OECD (2015[7]), *Education at a Glance 2015: OECD Indicators*, https://dx.doi.org/10.1787/eag-2015-en.

Appraisal for promotion informs teachers' career progression and rewards performance

An increasing number of OECD countries are setting merit-based career structures to reward and encourage teachers to develop higher levels of competency and take on differentiated teaching roles. External appraisal is often used in countries that introduced a merit-based career structure to inform teacher career advancement. This appraisal is often voluntary, at the request of a teacher, and is led by an evaluator external to the school to ensure integrity and transparency. This type of appraisal evaluates teachers' capacity to take on further responsibilities and rewards effective teaching (OECD, 2013[1]). Recognising and rewarding good teaching is important to ensure a motivated teaching profession. It also helps to make the best use of teachers' talent, by providing opportunities for career growth and retaining talented teachers (OECD, 2014[9]).

Some education systems require teachers to go through an appraisal process to be re-certified as a teacher every couple of years. This recertification process helps make sure that teachers are periodically appraised by an external appraising body even if they are not applying for promotion (Kitchen et al., 2017[10]).

The teaching profession in Serbia

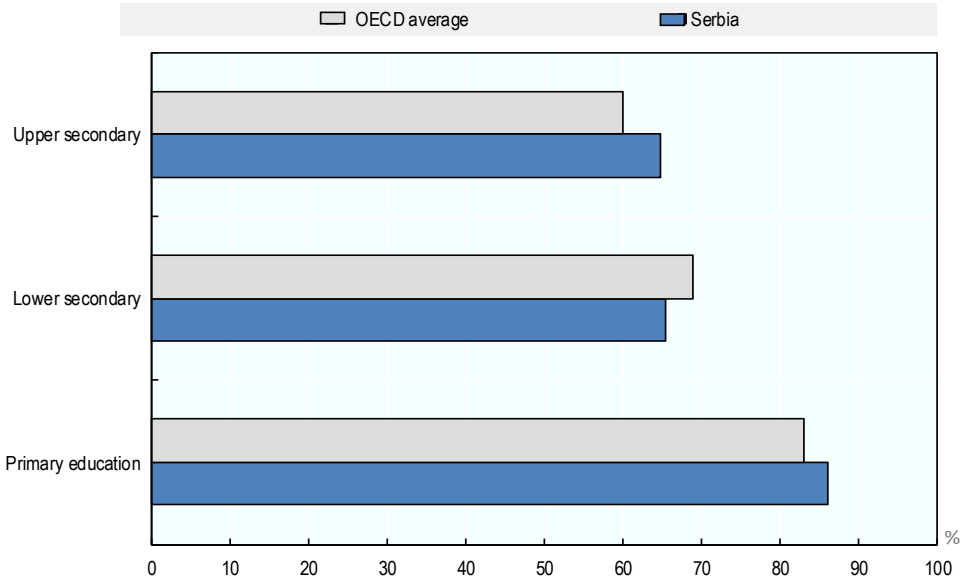
Over the past 15 years, Serbia has introduced several reforms intended to increase the attractiveness of the teaching profession and encourage teachers to develop their competencies. Flagship policies include the roll-out in 2004 of a merit-based career structure, the adoption of teacher standards in 2011, and in 2013, the master's in education programme for teachers in lower and upper secondary schools. However, these reforms have yet to catalyse real change in teaching practice or teachers' professional growth. Many of the barriers to reform are structural. Teachers have no financial incentives to apply for higher teaching roles and teachers' salaries overall are low when compared with teacher pay internationally or other professions nationally. Relatively low pay is one factor limiting Serbia's ability to attract and retain talented young people in the teaching profession, as is the high-level of teacher unemployment and the increasing number of teachers working only part-time.

The teaching workforce

The teaching workforce in Serbia is relatively old and mostly female

As is the case in most OECD and European countries, Serbia has an ageing teaching workforce. Over a third of teachers are above 50 years old in Serbia, compared to 40% on average across the OECD. Mid-career teachers in their forties with still many years of service ahead represent a third of the teaching workforce (OECD, 2018[11]; Skočajić, 2017[12]). While older teachers are perceived to have relatively good content knowledge, their pedagogical approaches have been slow to change and are seen to be out-of-synch with modern student-centred practices. The feminisation of the teaching workforce is also pronounced in Serbia, where women represent two-thirds of the workforce in both basic education and upper secondary (UIS, 2019[13]). The OECD average in 2016 was of 83% of female teachers in primary education, 69% in lower secondary education and 60% in upper secondary (see Figure 3.3) (OECD, 2019[14]).

Figure 3.3. Female teachers as percentage of all teachers by education level



Sources: OECD (2019[14]), *OECD Statistics*, https://stats.oecd.org/Index.aspx?DataSetCode=EAG_PERS_SHARE_AGE (accessed on 23 May 2019); Eurostat (2019[15]), *Education and Training (database)*, https://ec.europa.eu/eurostat/data/database (accessed on 2 September 2019).

The size of the teaching workforce has remained stable despite a declining student population

Over the past decade, the number of teachers in Serbian public schools increased by 9% in basic schools and by 8% in secondary schools, while the number of students decreased by a similar proportion. However, the increasing number of teachers now only working part-time means that the overall student-teacher ratio has remained relatively stable (Figure 3.4).

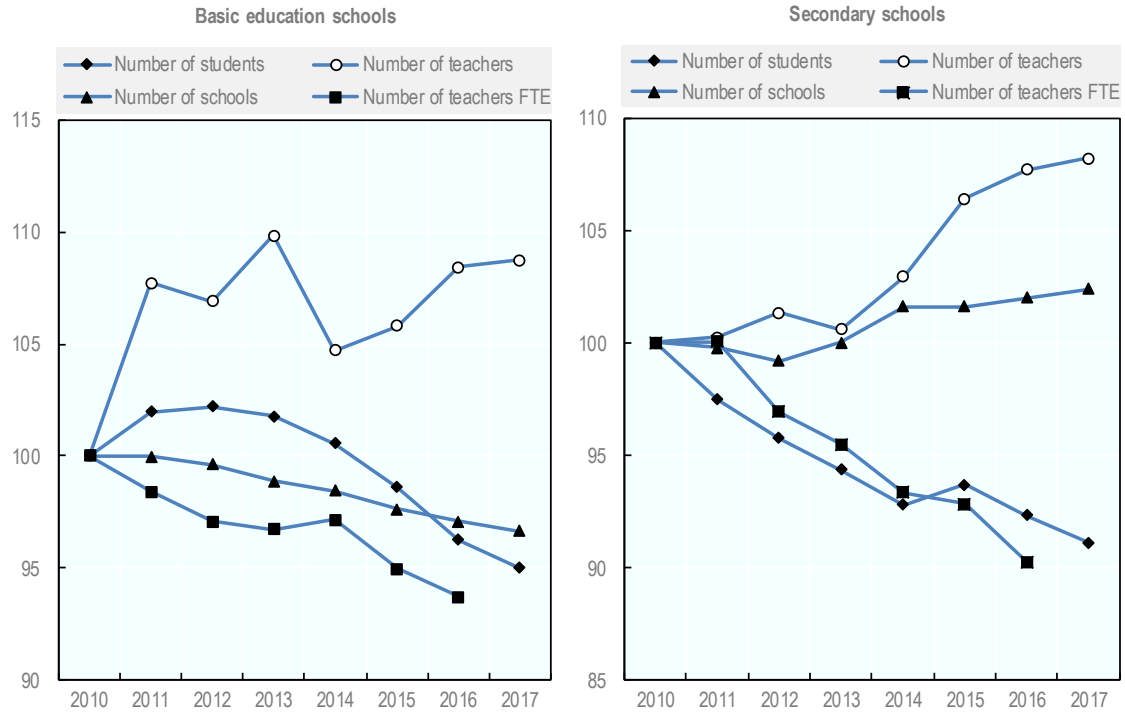
While Serbia introduced in 2009 a rule indexing school funding to class size and reviewed the network of upper secondary schools, these measures have not decreased the number of teachers on the payroll. The Ministry of Education, Science and Technological Development (hereby, the ministry) is currently working with the municipalities to come up with a proposal for reorganising the network of basic education schools but it is unclear if this proposal will lead to a decrease in the number of teachers on the payroll.

Teacher unions and the ministry have agreed to give priority hire to unemployed teachers when posts become available, limiting the space for newly graduated teachers to enter the workforce. A recent freeze in hiring public servants as part of the restructuring programme agreed with the International Monetary Fund (IMF) has further reduced the openings available.

While there are many teachers unemployed or in part-time employment, shortages persist in some subjects. In particular, the education system is facing difficulties attracting and retaining teachers in some science, technology, engineering and mathematics (STEM) subjects, such as mathematics and physics, and in foreign languages, partly because salaries are more attractive in the private sector (FREN, n.d.[16]).

Figure 3.4. Trends in numbers of students, teachers and schools in Serbia, 2010-17

2010=100



FTE: Full-time equivalent.
Source: UIS (2019[13]), *UNESCO Institute for Statistics*, http://data.uis.unesco.org/ (accessed on 1 February 2018); Statistical Office of the Republic of Serbia (2018[17]), Statistics on Education, www.stat.gov.rs/en-us/oblasti/obrazovanje/, (accessed on 1 February 2018).

The teacher council plays an important role in school management

The teacher council, which includes all teachers, pedagogues and psychologists in a school, plays a significant role in school management and instruction. The council's mandate includes, among other things, collegially agreeing on the annual school professional development plan and timetable and adopting annual reports on student outcomes and the school self-evaluation. The council also reviews a teacher's request for promotion and needs to validate the request for it to move forward to the next phase of appraisal. This latter practice is very uncommon among OECD countries as it is difficult to make sure that such practice is un-biased (OECD, 2013[1]).

Teacher salaries and career progression

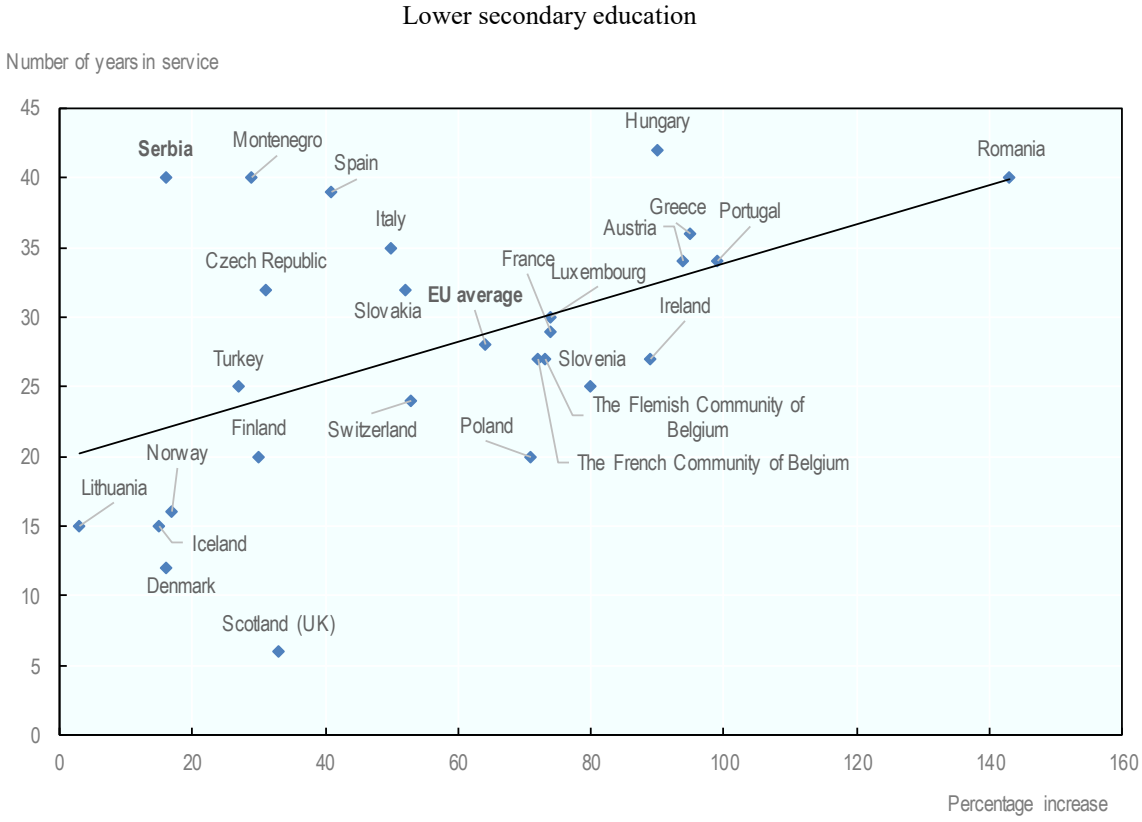
Teacher salaries are relatively low and flat compared to international and national benchmarks

Teachers' salaries in Serbia are relatively low compared to other Western Balkan countries. For example, a teacher's maximum annual basic gross statutory salary in Serbia in 2014 was 149.3% of the gross domestic product (GDP) per capita in primary education compared to 225.3% in North Macedonia and 193.8% in Montenegro in 2015 (European Commission/EACEA/Eurydice, 2016[18]). Comparing pay nationally, teachers' salaries are

slightly below the average salary of public servants. Teachers' average net monthly earning is EUR 439 while the average monthly net salary in the public sector is EUR 467 in Serbia (Statistical Office of the Republic of Serbia, 2018[19]). In 2017, the government increased all public servants' salaries by up to 10%, including those of teachers and teachers' salaries were again increased in 2019 by 9% (USPRV, 2017[20]; Danas, 2018[21]). Notwithstanding these increases, teacher salaries continue to be lower than those of other tertiary-educated workers.

Salary progression is relatively flat in Serbia compared to other European countries, which may further limit the attractiveness of the profession. Salary increases by 0.4% every year, as is the case for all public service positions. Teachers can also receive salary supplements ranging from 3% to 10% of the statutory salary if they have a doctorate degree, teach in remote areas or multi-grade classes, or work in special educational needs (SEN) schools. However, there is no additional increase related to teacher performance and responsibilities; salary increases are based solely on years of experience. This results in a 16% increase between the minimum and maximum salary on average for primary and upper secondary teachers and also for those at the lower secondary level, one of the smallest increases among European countries. On average across European countries, salary increases by 62% in primary education, 64% in lower secondary and 66% in upper secondary (European Commission/EACEA/Eurydice, 2018[22]). Moreover, it takes 40 years for a male teacher and 35 years for a female teacher in Serbia to reach the top of the salary scale, one of the longest durations in Europe and OECD countries. In comparison, it takes on average 28 years for teachers in Europe to achieve the maximum salary (see Figure 3.5) (European Commission/EACEA/Eurydice, 2018[22]).

Figure 3.5. Percentage change between minimum and maximum statutory salaries in Europe and the required years of service necessary to reach the maximum salary, 2017



Source: European Commission/EACEA/Eurydice (2018[22]), *Education and Training Teachers' and School Heads' Salaries and Allowances 2016/17*, http://dx.doi.org/10.2797/24212.

Serbia has a merit-based career ladder but teachers lack incentives to move up

In 2004, Serbia introduced a merit-based career structure, which includes five career levels marked by increasing pedagogical leadership responsibility (see Table 3.1). Progress to the next level is based on an initial referral by the school's teacher council and an appraisal of the teacher by an education advisor from the Regional School Authority (RSA). These reforms have helped bring Serbia closer to best practice in European Union (EU) and OECD countries, where the establishment of a performance-based career path with clear growth opportunities has been central to efforts to develop teaching as a high-skilled, high-status profession (OECD, 2019[23]).

However, so far, the career structure appears to have had limited impact on teachers and teaching in Serbia. The lack of financial incentives and the complexity of the promotion process discourages many teachers from applying to higher career levels. In 2018, there were only 450 pedagogical advisors, 55 independent pedagogical advisors, 10 higher pedagogical advisors and 1 senior pedagogical advisors out of a workforce of 75 000 teachers (Danas, 2018[24]). The original plan when the new structure was introduced was to have a progressive salary scale linked to a teacher's career level, but this proposal was never implemented. Another impediment is the heavy process for applying for promotion, which requires teachers to keep track of every professional development training, external curriculum activity or project they have undertaken and submit all these

documents to the advisor for review. Teachers met by the review team reported this administrative burden deters many from applying to a higher teaching position.

Teachers who have moved up express concerns that the roles and responsibilities of each level are not clearly defined. While the career structure lists roles that teachers at advanced levels can play in their school and across the education system, it is ultimately left to the school principal to define a teacher's role. Pedagogical advisors met by the review reported observing no evolution in their responsibilities after reaching at this level.

Table 3.1. Teacher career structure in Serbia

	Responsibilities
Novice teacher	Responsibilities are not defined in the career structure.
Teacher	Responsibilities are not defined in the career structure.
Pedagogical advisor	Advises colleagues on how to improve their teaching; participates in preparation of the school development plan and other programmes; contributes to school self-evaluation; monitors teaching and learning in the school.
Independent pedagogical advisor	Mentors novice teachers and students from teaching faculties during their practical stage; co-ordinates the teacher team in charge of presenting and sharing best practices and innovation with teachers in the school; participates in regular teacher appraisal, works with local self-government to ensure that the planned continuing professional development (CPD) meets the needs of teachers.
Higher pedagogical advisor	Collaborates with school administration to define the CPD programme for the school; does research on issues related to the field of education; works with Institute for Improvement of Education (IIE) and Institute for Education Quality and Evaluation (IEQE) teams to evaluate the quality of education.
Senior pedagogical advisor	Trains contractors and programme implementers; elaborates and conducts national and regional training; provides advisory support to the ministry in developing reforms.

Source: MoESTD (2019[25]), *OECD Review of Evaluation and Assessment: Country Background Report for Serbia,* Ministry of Education, Science and Technological Development, Belgrade.

Initial teacher education and continuous professional development

There is no selection for entry into initial teacher education

Criteria for entry into initial teacher education in Serbia are not selective; almost all applicants to teacher faculties are admitted. According to the latest available national data, 86% of candidates were accepted in faculties of education in 2011 compared to 17% in Singapore which has one of the most selective initial teacher education models (World Bank, 2012[26]). Acceptance rates in some teacher faculties in Serbia are almost 100% and many universities still struggle to fill available places. For example, in 2017, only 82% of the seats at the University of Belgrade faculty of education were filled (University of Belgrade, 2017[27]). Tuition fees deter many students from applying. In some faculties, only the scholarship-funded spots are filled. Moreover, the recent hiring freeze of new teachers in public education means that the majority of graduates are not able to find a position. Some of those who do find employment are hired on short-term contracts to help with remedial classes. This uncertainty of employment may discourage talented and motivated students to choose the teaching profession.

Improving the quality of initial teacher education is a priority for the Ministry of Education

Serbia offers different initial teacher education programmes, depending on whether the student is preparing to teach Grades 1 to 4 (classroom teachers) or Grades 5 to 12 (subject teachers). However, both classroom and subject teachers must have a master's degree.

Initial education for prospective classroom teachers is provided by the faculties of education at one of the six state-funded universities (University of Belgrade, Novi Sad, Kragujevac, Nis and Novi Pazar) in the form of a four-year Bachelor of Education programme and a one year Master's programme. While the content of training varies somewhat between faculties, it often includes mandatory modules on pedagogy and school management as well as a practicum. The duration and organisation of this practicum vary between faculties.

Most subject teachers follow a concurrent bachelor's programme (a bachelor's degree in the subject field or a teaching degree, e.g. Teacher of Serbian Language), which requires taking 30 European Credit Transfer and Accumulation System (ECTS) credits in psychology and pedagogy in addition to courses in their subject area. They must also take a six ECTS credit school practicum. Since 2013, the University of Belgrade has also offered a master's in education for students wanting to pursue a teaching career after having gained a bachelor's in a different domain (consecutive model). The main target group has thus far been teachers of vocational education and training (VET) subjects who have not had any pedagogy, psychology and didactics subjects at bachelor's level. This master's programme was funded by the European Union to improve the quality of the initial training of subject teachers. Another master's programme for subject teachers has since been opened by the University of Kragujevac. However, the majority of subject teachers continue to graduate from concurrent programmes.

The ministry considers improving the quality of initial teacher education a priority, in particular for prospective subject teachers. There are indeed serious concerns about the quality of existing programmes (Kovacs Cerovic, Radišić and Stankovic, 2015[28]). One relates to the tertiary accreditation system in Serbia, which uses similar criteria for all programmes and thus does not serve to control the specific quality requirements of initial teacher education. While Serbia has teacher standards, they do not set specific requirements for teacher graduates nor do they appear to be used as a reference for the design or quality assurance of an initial teacher programme (European Commission, 2016[29]). The Commission for Accreditation and Quality Assurance also has limited resources to organise follow-up accreditations (OECD, 2012[30]). As a result of this limited guidance and oversight, the quality of the 36 ECTS teacher-training electives varies significantly between faculties. For example, it was reported to the OECD review team that in some faculties, courses in clinical psychology are offered as part of the 36 ECTS electives instead of developmental psychology. Moreover, the length and content of the school practicum vary markedly between faculties and some do not offer one at all, leaving some teacher graduates without any practical training (Kovacs Cerovic, Radišić and Stankovic, 2015[28]). The Ministry of Education is considering a reform of the tertiary accreditation system to improve quality control. This will include a review of current policies to accredit faculties that provide courses in teaching.

Continuous professional development is primarily provided through seminars outside of the school

The Institute for Improvement of Education (IIE) is responsible for selecting and accrediting professional development providers based on government priorities, the teacher standards and the training needs expressed by teachers in the self-assessment surveys. The IIE establishes an independent accreditation commission for this purpose, which is charged with reviewing and accrediting training programmes over a period of three years. Teachers in Serbia are required to complete 100 credit points of professional development over 5 years (1h of training = 1 point). At least 30 credits need to be in the priority policy areas

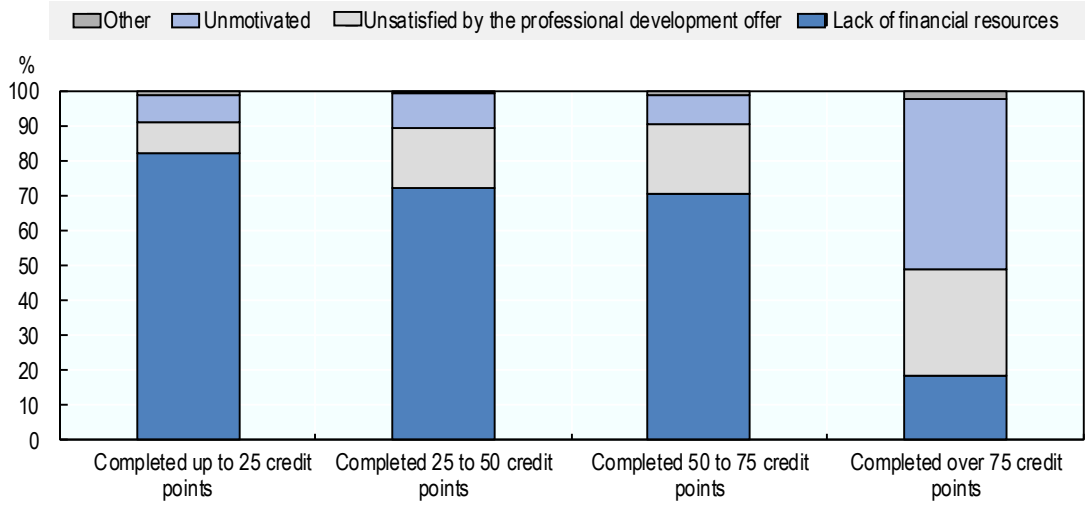
for training, which the ministry defines every 3 years. For 2017-20, these priority areas are individualised teaching, student assessment, use of textbooks and didactic materials, promoting a non-violent learning environment, and safety training. Schools are required to set a continuous professional development plan and organise 44 hours of training for teachers in the institution each year; however, many schools do not comply with this requirement (MoESTD, 2019[25]).

Continuous professional development programmes are financed either by the ministry for the priority areas, or local authorities and the school for other activities. Teachers also have some out-of-pocket spending to cover the costs of training and transportation when these are not covered by the school or the ministry. Serbia has a higher percentage (47%) of teachers reporting having paid for at least some of their professional development activities in 2013 in the OECD Teaching and Learning International Survey (TALIS) than the OECD average (34%) (OECD, 2014[9]).

Despite this legal requirement, the take-up of professional development programmes remains low. In 2017, less than half of teachers had achieved 80 credit points over the past 5 years (Politika, 2016[31]). The main reason reported by teachers for not completing the 100-credit requirement is the lack of financial support. The lack of satisfaction with the professional development offer is also a key reason for the low take-up rate (see Figure 3). While the main form of professional development in Serbia is seminars provided outside of schools, an internal study by the IIE showed that, as in other countries, teachers value programmes based on in-school peer-learning and research more than seminars organised externally (IIE, 2017[32]).

Figure 3.6. Percentage of mandatory training completed

Share of surveyed teachers reporting not having completed a percentage of the mandatory 100 credit points of professional development, by reasons for non-completion



Source: IIE (2017[32]), *Izveštaj: Ispitivanje Potreba za Stručnim Usavršavnjem [Report: Examining the Needs for Professional Improvement]*, Institute for Improvement of Education.

Teacher appraisal in Serbia

Teacher appraisal in Serbia is relatively underdeveloped compared to OECD and other Western Balkan countries. School principals and pedagogues are required to carry out regular appraisals of teachers but there is no national guidance to ensure the quality of this process and encourage meaningful feedback. Moreover, while Serbia has an official external appraisal process for teacher promotion as part of the merit-based career structure, this is rarely carried out in practice as few teachers apply for promotion. External appraisers (the school advisors) also do not have adequate time or training to evaluate teachers effectively.

Table 3.2. Types of teacher appraisal in Serbia

Types of appraisal	Reference standards	Body responsible	Guideline documents	Process	Frequency	Use
Initial certification	Teacher standards	Universities	Law on foundations of the education system	Students need to show successful completion of a master's degree (300 ECTS credits plus 36 ECTS pedagogical and classroom practice credits)	End of university studies	Qualify to become trainee teacher in a school
Probation appraisal		The school commission	Rulebook on licensing of teachers and professional associates	Trainee teachers present their teaching portfolio and teach a model class in front of the commission	End of the probation period	Allows registration for the certification examination
		The certification examination commission	Rulebook on licensing of teachers and professional associates	Candidates prepare a written class plan, teach a class in front of the commission, present how they would resolve a pedagogical situation and answer questions about the education system legal framework	End of the probation period	Successful candidates become fully registered teachers
Regular appraisal		School principal, school pedagogue and psychologist	There are no national guidelines	Schools develop their own classroom observation plan, which often includes details on the frequency, goals and how observation plans and feedback from external evaluation are used	Left to the discretion of schools	Classroom observation is supposed to provide feedback to teachers on the quality of their practice
Appraisal for promotion		School subject council and teacher council, advisor	Rulebook on continuing professional development and advancement of teachers and professional associates	Subject and teacher councils review a teacher's request for promotion. If both councils agree, a request is sent to the Regional School Authority to conduct an unannounced appraisal by an advisor	At the request of the teacher	Gain a new title within the teacher career structure. Very few teachers apply in practice
Appraisal for reward		No system of appraisal for reward in place				

Source: MoESTD (2019[25]), *OECD Review of Evaluation and Assessment: Country Background Report for Serbia*, Ministry of Education, Science and Technological Development, Belgrade.

Standards of teacher competencies inform professional development

The introduction in 2011 of teacher standards marked an important step in the further professionalisation of teaching in Serbia. These standards are used as a reference for teacher appraisal and for accrediting training programmes, helping to provide more focus and consistency to teacher professional development. The standards cover key competencies

that are related to four domains: i) subject knowledge; ii) teaching and learning; iii) student development and support; and iv) communication and co-operation.

However, there are some notable challenges with Serbia's standards of teacher competencies as currently designed. Importantly, these are not used to accredit initial teacher education. In addition, contrary to practices in OECD countries, the standards do not differentiate competencies expected at the different stages of a teachers' career. This lack of precision limits the extent to which the standards can be used effectively to steer teacher policies and practices. The standards also focus almost exclusively on classroom practices, while responsibilities at the school level (i.e. involvement in school planning, collaboration with other teachers, mentorship, etc.) are not covered.

Quality of initial certification varies between faculties

As is the case in most OECD countries, universities in Serbia are responsible for the initial certification of teachers at the end of their initial teacher education. However, as mentioned above, weak quality assurance processes mean there are limited mechanisms to ensure that novice teachers have acquired the necessary competencies to teach. Teachers need to have completed 300 ECTS credits (master's level or equivalent) to be certified but there are no common criteria specifying the type and content of assessments to be used to determine whether teachers meet basic teaching requirements (European Commission, 2016[29]). This is in part because of the lack of specific expected competencies for a novice teacher. These are absent from the teacher standards and there are no other national guidelines on certification requirements.

Teachers must complete a probation period and pass an examination to be fully certified

The probation period in Serbia lasts between one to two years at the end of which the novice teacher takes the confirmation examination to become a licensed teacher. During the probation period, the novice teacher is supposed to receive guidance and feedback from a mentor appointed by the school principal. Teacher-mentors are required by law to have at least five years of teaching experience and have a higher teacher position in the merit-based career structure. Novice teachers and mentors are required to observe 12 hours of each other's classes. Throughout the probation period, mentors are supposed to provide recommendations for improving teaching and classroom management. Written feedback is included in the novice teacher's portfolio alongside his or her self-evaluation and records of classroom observations. While this mentorship system compares positively in many respects to probation periods in most OECD countries, it is not always implemented and the quality of mentorship varies between schools. Less than half of novice teachers in Serbia perceived that the mentorship was useful to improve their teaching competencies (Rajović and Radulović, 2012[33]; Rajović and Radulović, 2010[34]). In some cases, teachers are not informed of the mentorship programme or the name of their assigned mentor (Rajović and Radulović, 2012[33]; Rajović and Radulović, 2010[34]).

Probation appraisal in Serbia includes two steps. At the end of the probation period, a school commission, including the school principal, the pedagogue, the psychologist and a teacher from the same subject field as the novice teacher, reviews the teacher's portfolio. The teacher is also asked to teach a class in front of the school commission. Teachers who receive a positive opinion from the school commission are invited to take the examination which includes: providing a written plan to address a teaching problem; teaching a class in front of the commission; a discussion about the class that the candidate delivered; and

sufficient knowledge about the legal framework of the education system. The examination commission is appointed by the minister and includes professors of didactics from the faculties of education, school advisors and legal experts from the ministry.

Quality of regular appraisal varies between schools

According to the school quality standards, school principals in Serbia are responsible for overseeing the quality of teaching and learning in their school. Most school principals include a classroom observation plan in their school plan, detailing the frequency and criteria for observing learning and teaching practices. All the schools visited by the OECD review team had established a classroom observation plan. In most schools visited, the pedagogue (and sometimes the school psychologist) was in charge of setting this observation plan and observing classroom practices to provide feedback to teachers. Classroom observations by principals appear rare. The sample of classroom observation plans looked at by the review team included grids with indicators to appraise the teacher against the teacher standards. These indicators differed between schools. In some plans, the time of the visits was pre-established but not in all. None of the plans included guidelines about providing feedback to teachers or follow-up support.

School principals and pedagogues receive little guidance and support on how to conduct a meaningful teacher appraisal. There are no national guidelines defining the purpose and process of teacher appraisal and no common tools such as descriptors that appraisers can use as a reference point. School principals do not currently receive any training in instructional leadership, such as observing teaching and learning practices and providing feedback to teachers. While a new training programme is being introduced to prepare school principals to take the re-licensing examination, the limited duration of this training (from 2 to 13 days depending on work experience and qualification level, plus 9 additional days of online training) makes it insufficient to cover the practical aspects of appraisal. Moreover, there is no requirement for school principals and pedagogues to undertake training and the professional development offer is very limited.

The regular appraisal of teachers is supposed to inform their individual professional development plan and also feed into discussions on the school professional development plan. However, teachers interviewed by the review team reported that professional development is decided collegially by the teacher council. There is also no feedback loop between the results of regular appraisal in schools and the professional development programmes offered by the IIE.

Promotion appraisal by advisors is not based on teacher standards

To be promoted to one of the four higher levels of teaching, a candidate must submit a formal request to the school. This request is first reviewed by the teacher council, which needs to issue a positive opinion for the application to move forward. An educational advisor from the Regional School Authority (RSA) then conducts two days of appraisal based primarily on classroom observations and a review of the candidate's documents such as lesson plans, teacher portfolio, documented examples of extracurricular activities, research papers written by the teacher, etc. If the application receives a positive opinion from the teacher council and the advisor, the school principal approves the application.

The limited number of advisors and lack of training and guidelines hinder the quality of this process of external appraisal for promotion. There are about 100 advisors serving 2 000 schools across Serbia. Advisors are responsible for external school evaluation and school supervision, in addition to the appraisal of teachers for promotion. Over the past

five years, advisors have focused primarily on external school evaluation leaving aside their other responsibilities. Moreover, advisors do not receive adequate training or guidelines on how to carry out classroom observation as part of a promotion appraisal. While a grid for classroom observation has been developed for school external evaluation, it is unclear if it is also used for external appraisal. As no reference document defines the competencies of different teacher titles, there are no common criteria to assess whether a teacher has the skills and knowledge for the position to which they are applying.

Appraisal for reward

Schools can choose to provide small rewards and bonuses to teachers from their own budget. There are however no national guidelines on the criteria to be considered for these rewards. Some municipalities also provide grants to teachers whose students qualify for the Olympiads academic competitions.

Policy issues

Serbia has introduced major reforms over the past decade aimed at shifting the culture of teaching and learning in schools to be more learner-centred. These reforms, which included the introduction of new learning standards and a competency-based curriculum, require an important and sustained investment in improving teachers' competencies. To achieve this goal, Serbia needs to revise the teacher career structure to make sure that teachers' performance is adequately rewarded and that they are provided with incentives and opportunities to improve their competencies throughout their career. This will require making better use of appraisal to inform decisions about selection into the profession and promotion and to identify adequate professional development opportunities.

Policy issue 3.1. Providing teachers with stronger encouragement and incentives to develop their practices and seek higher responsibilities

Serbia was one of the first countries in the Western Balkans to set up a merit-based career structure. However, some important gaps in the design still limit its potential to effectively reward performance and provide teachers with incentives to update their skills, knowledge and practice. Teachers receive no guidance on the type of competencies they need to demonstrate in order to advance in their career and teachers' salary increases are based mainly on years of experience and not performance or level of responsibility. Thus, more than a decade since the introduction of the merit-based career structure, very few teachers have applied for promotions. Serbia needs to revise the promotion process to make sure it adequately rewards good teaching practices and encourages teachers to develop professionally throughout their career. This will help improve teacher motivation and teaching quality in the education system and, as a result, student learning.

Recommendation 3.1.1. Make sure that expectations and responsibilities at each level in the career structure are well defined and clear for teachers

Contrary to practices in an increasing number of OECD countries, the teacher standards in Serbia do not define specific competencies required in each level of the career structure (Santiago et al., 2013[2]). Such differentiated competencies are necessary to set expectations for how teachers develop their teaching practices and guide a fair and transparent promotion process. Moreover, the role and responsibilities defined by the career structure seem to contradict current practices in most schools. For instance, subject teachers within

a school decide on professional development instead of the independent pedagogical advisors as suggested by the career structure. Principals continue to appoint mentors among teachers of the same subject regardless of title. Clarifying expectations and making sure there is strong ownership among teachers and other school practitioners will be key for effectively implementing the career structure.

Revise teacher standards and define competencies needed to move up levels

The standards need to be revised to define the competencies teachers need to acquire and demonstrate to move up the career path. In their current form, the standards do not set an expectation of continuous development and improvement throughout a teacher's career. They define general competencies expected from all teachers regardless of teacher position with no mention of the career structure. For example, while teachers are expected to play an increasingly important role in shaping teaching and learning practices in their school and region as they move up the career ladder, competencies related to co-ordinating and supporting the work of other teachers are not mentioned. The career structure defines the roles but not the skills, behaviour and knowledge that a teacher needs to demonstrate to be granted higher responsibilities. Serbia can learn from the recent experience of neighbouring North Macedonia in developing differentiated competencies by level in the teaching career. The Ministry of Education in North Macedonia developed teacher standards detailing the competencies expected at different levels, including descriptors and illustrations of competencies by teaching practices (see Box 3.1).

Box 3.1. Differentiated teacher competencies in the North Macedonian teacher standards

In 2016, the Bureau for Development of Education of the Republic of North Macedonia (BDE), with technical and financial support from the United States Agency for International Development (USAID), developed a proposal for a merit-based career structure with different career levels and based on clearly defined teacher standards. It aimed to encourage and reward increasing levels of teaching competency with opportunities to take on new roles and responsibilities. The plans for a 2016 merit-based career structure are a major step towards creating a profession supported and incentivised to grow professionally. However, this proposal is yet to be implemented.

The 2016 teacher standards differentiate between a set values and core professional competencies expected from all teachers and competencies expected from teachers at different levels in the career structure such as teacher-mentors and teacher-advisors. The professional values include: lifelong learning; professional integrity and commitment to the teaching profession; co-operation; equality, inclusion and social justice among others. As for the core competencies expected from all teachers, they refer to the following main areas (each containing subareas):

1. knowledge of the subject and the educational system
2. teaching and learning
3. creating a stimulating learning environment
4. social and educational inclusion
5. communication and co-operation with the family and community.

Teacher-mentor competencies build on core competencies and place a stronger emphasis on those related to the promotion of education in the school as a whole. The teacher-mentor, for example, should have skills and abilities directed at increasing the effectiveness of the work of the school and the achievement of its objectives.

Teacher-advisor competencies build on both core professional teacher competencies and those of teacher-mentors. The teacher-advisor should demonstrate leadership aptitudes both in classroom practices but also as a key agent in the promotion of quality educational work at the school and regional levels.

To become teacher-mentors or advisors, teachers need to demonstrate that they have the competencies required for these positions and go through an appraisal process (see table below).

	Teacher-mentor	Teacher-advisor
Responsibilities	Provides guidance and assistance to novice teachers and helps them prepare for the teacher confirmation examination. Also provides support to other teachers. Appraises the novice teacher regularly and provides feedback.	Co-ordinates teacher networks. Monitors and appraises students from teacher education programme during their practicum. Contributes to school self-evaluation and school planning.
Requirement to reach this career level	External appraisal by BDE advisor or VETC advisor.	External appraisal by BDE advisor or VETC advisor.

VETC = vocational education and training centre.

Source: MCEC (2016[35]), *Teacher Core Professional Competences and Standards,* Macedonian Civic Education Center.

Identify opportunities for teachers to develop the competencies needed to advance in their career

Once the competencies by level are defined in the standards, it will be important to make sure that teachers are given adequate opportunities to develop these through professional development. Teachers and school principals need to be provided with clear guidance about how different training programmes can help them to deepen their knowledge and skills in a given area. At present, the professional development list prepared by the IIE does not specify the competencies targeted by each accredited programme. To better direct teachers towards professional development opportunities that will help them advance their careers, the IIE should consider:

- **Clearly identifying the competency targeted by each accredited professional development programme based on the revised standards**. The accreditation commission should use the revised teacher standards as the main reference document in accrediting programmes. The online catalogue of programmes needs to specify clearly the targeted competency from the revised standard and the teaching level this applies to.
- **Providing school principals, pedagogues and psychologists with clear guidelines on how to help teachers set personal development plans** so that training is oriented towards helping teachers acquire the competencies needed to

achieve their career goals. This is, for example, the direction Estonia took to encourage better alignment between professional development and their new career structure and improve ownership of the latter among teachers and schools (Ministry of Education and Research, 2015[36]).

Box 3.2. Competency-based career structure and professional development in Estonia

In 2013, Estonia introduced a new system of teacher professional development requirements in association with a new career structure. Its main aim is to serve as a reference for teachers' competency development. There are four career grades, which reflect different levels of professional competency and experience: teacher (pre-primary); teacher (primary and secondary); senior teacher; and master teacher.

The career structure is associated with a set of teacher professional standards, which define the competencies for each career stage. Teachers can apply to any of the levels twice a year (April and November). The certification procedure involves two stages: i) an evaluation of a set of documents submitted by the candidate; and ii) an interview. The certification procedure is undertaken by a three-member committee.

The requirement for teachers to undertake professional development (160 hours every 5 years), which was established in 2000, has been discontinued. The objective is to move to a system whereby teachers have the incentive to undertake professional development to gain the competencies needed to access higher stages of the teaching career and perform new roles at schools.

While teachers ultimately choose the professional development activities they undertake, school directors guide this choice and validate those professional development activities which are partially or fully publicly funded. The teacher establishes a professional development plan which, in part, takes into account the school development plan.

Information about available professional development programmes is typically provided by municipalities and school management. Schools and teachers can select professional development from central programmes provided free of charge and from other providers, using individual budgets for professional development.

Source: Santiago, P. et al. (2016[37]), *OECD Reviews of School Resources: Estonia 2016*, https://doi.org/10.1787/9789264251731-en.

Involve teachers and the school community in these revisions and make sure that all teachers are aware of the new standards

The ministry should take active steps to build ownership of the revised standards among the teaching profession and make sure that they are well accepted as the guiding document of teacher policies and practices. Similarly to what was done when the learning standards and the new curriculum were developed, the ministry should continue to consult with teachers, school principals and parents through their representatives in working groups and the National Education Council. There are also many experiences internationally from which the ministry might learn. Australia offers an informative example of how one country sought to solicit extensive teacher input and feedback from teachers in developing teacher standards. In addition to consulting teachers nationwide, the ministry might involve a team of teachers directly in drafting the revised standards, to further build ownership and

enhance their practical value. The Mexican experience, where a small group comprising teachers, principals and researchers was created to draft the standards, provides an example of how experts and practitioners with different profiles might be combined in a multi-disciplinary team (see Box 3.3).

Box 3.3. Consulting and involving teachers in developing teacher standards

Many countries use extensive consultations with teachers, subnational governments and academics to build teachers' support for new standards. In **Australia**, teachers have been consulted numerous times on their teacher standards. The consultation process for the 2009 update of the standards involved the participation of federal, state and territorial government experts, regulatory authorities, teachers' unions, schools and teachers. More than 120 proposals were received and considered in the process of drafting the new standards. The draft standards were piloted across all Australian states, with around 6 000 teachers and principals from hundreds of schools.

Some countries also involve teachers directly in drafting the standards to help gain teacher support and to ensure that the standards reflect teaching practice. **Mexico** developed draft standards using a 16-member team from 9 states. There were four in-service teachers, two experts in pedagogical technology, two senior officials from local Teacher Resource Centres (*Centros de Maestros*), one primary school principal, three experts with a background in lifelong learning activities at the state level, one academic specialised in teacher education and three staff members from the education ministry's General Directorate for Continuous In-service Teacher Training.

Source: Centre of Study for Policies and Practices in Education (CEPPE), Chile (2013[38]), "Learning Standards, Teaching Standards and Standards for School Principals: A Comparative Study", https://doi.org/10.1787/5k3tsjqtp90v-en.

Recommendation 3.1.2. Revise the appraisal for promotion procedure to ensure fairness and independence

The teacher appraisal for promotion procedure in Serbia does not allow for a more consistent and transparent assessment of teachers' competencies. Advisors' lack of training in appraisal and the absence of common tools to appraise teachers are significant gaps in the promotion process. Moreover, professional bodies such as the teacher council play an important role in teacher promotion without having a mandate for teacher appraisal.

Develop guidelines and tools for external appraisal by education advisors

As the ministry revises the teacher standards, it will also need to provide advisors with more tools and guidelines on how to assess teacher performance against these. At the moment, advisors do not receive detailed guidelines on how to conduct an appraisal for promotion. Such guidance is necessary to ensure the fairness of the promotion process by making sure that all teachers are appraised against similar criteria. The ministry needs to develop clear guidelines on how to conduct classroom observations and the interview with the appraised teacher. Such guidelines should provide advisors with a detailed description of how to conduct classroom observations and interview the appraised teacher.

Moreover, developing tools such as indicators and descriptors is necessary to make the appraisal for promotion operational and ensure that judgements are valid and reliable.

Many OECD countries have drawn on the four-point performance scale in the Danielson's Framework for Teaching to develop such instruments (Danielson, 2007[39]). For example, Chile set out in its Good Teaching Framework indicators (criteria teachers need to be evaluated against) and descriptors of good practices in relation to four levels of performance (outstanding, competent, basic and unsatisfactory) (see Box 3.4). The development of such descriptors in Serbia would not only help advisors make a sound professional judgement about teachers' competencies but also help teachers reflect more meaningfully on their own performance (see Policy issue 3.2).

Box 3.4. Performance levels and criteria in Chile's Good Teaching Framework

The Good Teaching Framework that guides appraisal in **Chile** set out four domains of teacher responsibilities: preparation for teaching; creation of an environment favouring the learning process; teaching that allows the learning process of all students; and professional responsibilities. Each domain is linked to a specific set of criteria that teachers should meet and descriptors that provide examples of how teachers can demonstrate their abilities in a given area:

Domains	Criteria (the teacher should be prepared to:)	Examples of descriptors
A- Preparation for teaching	A.1. Master the subjects taught and the national curricular framework. A.2. Know the characteristics, knowledge and experiences of his/her students. A.3. Master the didactics of the subjects or disciplines taught by him/her A.4. Organise objectives and content that are consistent with the curricular framework and the characteristics of particular students. A.5. Use assessment strategies that are consistent with the learning objectives, the subject taught and the national curricular framework and that will allow all students to show what they have learnt.	Descriptors for criterion A1. The teacher: - knows and understands the core principles and concepts involved in the subject(s) or discipline(s) taught by him/her. - knows the different perspectives and new developments in the subject(s) or discipline(s) taught by him/her. - understands the relationship between the contents taught by him/her and the contents taught in other subject(s) or discipline(s). - masters the principles of the curricular framework and the focus of the subsector taught by him/her.

Four levels are used to describe teacher performance against the standards – outstanding, proficient, basic and poor. Examples of performance at each level are provided for each descriptor. The table below sets out the performance levels for Descriptor A.1.1. – "The teacher knows and understands the core principles and concepts involved in the subject(s) or discipline(s) taught by him/her":

Outstanding	The teacher shows a wide knowledge of the contents taught by him/her and establishes connections between such contents and the different aspects of his/her subject or discipline and reality, showing a permanent updating of such knowledge.
Competent	The teacher shows a strong knowledge of the contents taught by him/her and established connections between such contents and the different aspects of his/her subject by relating them to reality.
Basic	The teacher shows a basic knowledge of the contents taught by him/her, but is unable to establish connections with other aspects, or relate them to reality.
Unsatisfactory	The teacher makes mistakes regarding the contents of the subject taught by him/her, and/or is unable to be aware of the mistakes made by the students.

Source: Santiago, P. et al. (2013[2]), *Teacher Evaluation in Chile 2013*, http://dx.doi.org/10.1787/9789264172616-en.

Make external appraisal for promotion the central duty of advisors and ensure that they have the capacity to carry it out

As more teachers are encouraged to apply for promotion as a result of the changes to the career structure and promotion process recommended by this review, the ministry will need to make sure that advisors have the time and skills to visit teachers and conduct an effective appraisal. Currently, this would not be possible as advisors' time is mostly taken up with external school evaluations. Many teachers met by the review team had never received an external appraisal by an advisor. As further discussed in Chapter 4, the role of advisors in external school evaluation should be revised and reduced to avoid conflict of interest between the evaluation and support role. Their main functions should instead be to conduct the external appraisal of teachers seeking promotion. To ensure fairness, this role should be carried out by advisors from a different RSA than the one attached to the teacher's school in order to avoid conflict of interest. Advisors from the school's RSA would focus on providing follow-up support to low-performing schools (see Chapter 4).

This will require improving the advisors' capacity to make a fair and reliable judgement about teachers' competencies. Advisors should receive additional training on how to conduct teacher appraisal and in particular how to assess teaching and learning practices in the classroom. Advisors in Serbia currently receive training from the Institute for Education Quality and Education (IEQE) to conduct external school evaluation, which covers classroom observations of teaching and learning practices. However, this is not sufficient in term of scope and depth. Advisors require training specific to teacher appraisal for promotion. This training should cover not only how to conduct the appraisal process and form a judgement about teachers' competency but also how to provide feedback to teachers and to school principals on how to help teachers improve.

Revise the roles of the school principal and teacher council in the promotion process

The teacher council plays a disproportionate role in the appraisal process compared to most other OECD and European countries. While peer evaluators may be involved in the regular appraisal of their colleagues in some OECD countries, it is very unusual that they provide an opinion on the promotion of a colleague (OECD, 2013[1]). This is because of the difficulty of ensuring the objectivity and fairness of such practice, which is critical to maintaining a high-stakes decision. It may indeed lead to rewarding loyalty to the teacher council instead of competency.

The ministry should consider replacing the role of the teacher council with input from the school principal and the pedagogue. School principals and pedagogues are responsible in Serbia for classroom observation and regular teacher appraisal and are therefore best positioned to provide a professional judgement about a teacher's readiness to take on a new role. As discussed in Policy issue 3.2, both school principals, pedagogues and psychologists would benefit from improved training and additional support to ensure that regular appraisal provides more meaningful information about teachers' competencies.

Recommendation 3.1.3. Strengthen the link between teacher performance and reward

The lack of financial incentives limits the number of teachers applying for higher positions in Serbia. Keeping salary progression purely based on years of experience signals that quality of teaching and good performance are not rewarded (OECD, 2005[40]). Serbia needs

to make sure that there is a decent salary increase between levels of the teaching career structure. The ministry might also explore additional ways to make sure that good teaching performance is recognised and valued. Such policies will encourage teachers to develop as professionals and progressively contribute to increasing teachers' motivation and job satisfaction (OECD, 2005[40]).

Link the career structure to the pay scale

Contrary to most OECD countries where salary increase is an integral part of the merit-based career structure, teachers' salaries in Serbia increase based only on years of experience. This partly explains the low numbers of teachers seeking promotion. The ministry is aware of this issue and has announced that it will align salary increases with the career structure for teachers as part of a broader reform of the salary structure in the public service. However, the teacher unions are opposing this reform, as they believe that the salary increase is minimal and well below that provided to other public servants, in particular in the health sector. The ministry should make sure that the salary is progressive enough to reward performance and that the starting salary is sufficient to attract and retain talented teachers. Many OECD countries have also faced a similar trade-off between increasing the base salary and allowing for greater salary progression. Countries with a demographic decline such as Serbia tend to focus more on salary progression to reward and incentivise teachers already in the profession (OECD, 2019[23]). However, given the very low average salary in Serbia, the ministry might need to consider an increase to the base salary as well in order to compete with the private sector.

Develop other forms of recognition

Beyond salary increase, other forms of external recognition can help motivate teachers to improve their practices and provide a signal as to what the Serbian education system expects of its teachers. For instance, the ministry and the IIE can consider:

- **Publicly recognising exceptional teachers** who have demonstrated outstanding ability to inspire and engage their students and improve their learning. For example, many OECD countries such as Ireland or the United States give a "teacher of the year" award every year to celebrate talented and dedicated teachers. The National Teacher Awards in Ireland celebrates outstanding contributions by teachers who go "beyond the classroom to establish a lasting impact in their students' lives". Such awards can have different prize categories based on the national teacher standards and the priorities outlined in the National Education Strategy. For example, it can include an award for "most promising new teachers" for novice teachers who demonstrate exceptional competencies during their probation period. To give more visibility to the ministry's priority of improving classroom assessment practices, a teacher award might also be given to teachers who show "outstanding commitment to inclusive and student-led assessment practices".
- **Giving schools a small grant they can distribute to teachers as a reward for good performance**. While school principals can be given some discretion on how these funds are allocated, they also need to be provided with guidelines on the criteria that might be used. This is important to ensure bonus schemes reinforce the teaching practices Serbia values. For example, the "encourage more teacher co-operation" criteria might include teachers who contribute to improving teaching and learning at the school level either through their involvement in subject groups, the school self-evaluation team or other peer-learning groups. The guidelines

should also clarify how teacher success in improving student learning might be measured. At present, some municipalities award teachers bonuses on the basis of student success in Olympiads. This sends the wrong message to the teaching profession by encouraging a narrow focus on a few high performing advantaged students rather than the learning of all students. Alternative criteria might include progress in raising outcomes for disadvantaged students or improving school performance as a whole in national examinations.

Policy issue 3.2. Improving the developmental value of regular in-school appraisal

Schools in Serbia are given a lot of flexibility in how they organise and use the results of teacher regular appraisal. Each school sets up a classroom observation plan as part of its annual plan and a school professional development plan. However, as there is no national framework for teacher regular appraisal defining the desired purpose and good practices, the quality of regular appraisal varies significantly between schools. School principals and pedagogues' limited training on appraisal also contributes to the lack of consistency in the quality of regular appraisal across schools. The IIE needs to provide schools with clearer directions on how to meaningfully implement and use regular teacher appraisal. It should also provide more opportunities for training in this area.

Recommendation 3.2.1. Develop clear guidelines and tools for in-school appraisal

There is currently no national framework defining the purpose of in-school appraisal and guiding practices across schools. In the absence of such a framework, schools develop their own appraisal processes and tools, often without a clear sense of purpose or suitable methods. As a result, plans vary significantly between schools in terms of quality. For instance, in most of the classroom observation plans seen by the review team, no mention is made of teacher professional development or feedback to teachers. Developing national guidelines and tools is necessary to help schools put in place reliable and valid teacher appraisal processes and help build the professional capacity to take greater ownership and leadership of teacher development in the future.

Clearly articulate the purpose of in-school regular appraisal

The IIE needs to develop national guidelines for in-school appraisal that clearly define the purpose of the practice. In many OECD countries, in-school teacher appraisal by the school principal or peers is used to identify individual teachers' professional development goals and needs, and to feed into school planning for external and in-school teacher (OECD, 2013[1]). Establishing a close connection between in-school teacher appraisal and professional development is important, both because regular, informal observations provide a valuable source of information about teachers' development needs, and because it ensures appraisal has an active function rather than serving as just a formal obligation (Goe, Biggers and Croft, 2012[8]). While teachers in Serbia are expected to have an individual professional development plan and schools are expected to set a school professional development plan, there are no national guidelines on how to use appraisal to inform these two plans. Moreover, school staff provide an opinion about teachers' career promotion that is not informed by evidence from the in-school appraisal process. The in-school appraisal process in Serbia could be improved by specifying three main purposes:

- **Set up individual teacher professional development plans**. The regular appraisal should identify teachers' level of competencies against the revised teacher

standards suggested by this review. Based on the results of the regular appraisal, and with the help of the school pedagogue and school principal, the appraised teacher would define a professional development plan identifying the key areas for improvement and opportunities to develop competencies. This development plan should be perceived as a continuous process and updated regularly based on appraisal results and evolving teacher and school goals (Goe, Biggers and Croft, 2012[8]).

- **Develop a school-wide development plan.** Regular teacher appraisal results should feed into the overall school self-evaluation process to identify priority areas for school-wide professional development. Establishing school-wide plans is important both to foster a culture of collaboration and peer learning among teachers and to generate a sense of shared commitment to the school and its values and goals.
- **Inform school principals' decision to validate a promotion appraisal.** That school principals contribute to decisions on promotion is a positive feature of appraisal for promotion in Serbia. The school principal's opinion is indeed an important part of the external evaluation process as it provides a more complete view of the appraised teacher's performance over time. In OECD countries that have developed a strong professional corps of school leaders, appraisal for promotion is almost exclusively carried out by school principals (OECD, 2013[1]). While Serbia is still far from able to adopt fully a similar model, school principals' opinion about the teachers' readiness to move up the career ladder needs to be based on sound evidence about their competencies. It thus needs to reference results of regular appraisals explicitly.

Develop clear guidelines on how to undertake in-school appraisals

While it is important to give schools some flexibility to design a regular appraisal process that responds to the needs of their teachers, it is also important to provide them with clear direction as to what good appraisal is and how to make sure that it helps teacher develop and grow as professionals. To do so, the IIE should provide schools with detailed guidelines that describe the following:

- **The frequency and steps to follow:** Appraisal should be built around a series of meaningful, simple steps that need to be clear for teachers, school principals and pedagogues. Ideally, this would start with the teacher's self-assessment of his/her performance and goals, and be built around ongoing, relatively informal review of and feedback on a teacher's teaching practices throughout the year by the principal, pedagogue or higher pedagogical advisor. A final discussion with the teacher at the end of the year provides an opportunity to jointly take stock of achievements and challenges, and develop development goals for the following year.
- **The sources of evidence to be used:** While most schools in Serbia organise classroom observations by the pedagogue and the school principal, they do not seem to use other sources of evidence about teachers' competencies, such as surveys, teacher self-assessment and teacher portfolios. Triangulating different sources of evidence is essential to have a complete picture of a teacher's strengths and development needs (Goe, Biggers and Croft, 2012[8]). Each source provides different information as detailed in Table 3.3.
- **National classroom observation guidelines:** The IEQE should provide schools with clear direction on how to conduct a classroom observation that generates

meaningful information about teaching and learning. Classroom observation is indeed the only direct measure of teaching practices and is, therefore, a key source to identify how teachers can improve their practices (Goe, Biggers and Croft, 2012[8]). Effective classroom observation focuses primarily on observing how teachers interact with students in the classroom as part of the teaching and learning process (OECD, 2013[41]).

- **Discussion guidelines:** The IIE should provide school principals and pedagogues with guidelines on how to conduct the discussion with teachers and provide them with meaningful feedback. The discussion should help orient teachers towards adequate professional development opportunities and provide them with concrete examples of how to improve their practices (Goe, Biggers and Croft, 2012[8]).

Table 3.3. The different sources of evidence to be used in regular appraisal

Classroom observation	**Classroom observation is used to gather direct evidence of teacher-student interaction, and the learning environment. Other factors of quality teaching and learning can be observed indirectly through checking documents such as the lesson plan and samples of student work.** **Effective classroom observation needs to have systematic processes of data collection and analysis to ensure comparability of results.**
Students and parents' surveys	Surveys provide information regarding students and parents perception of teachers' practice. These surveys allow for these two groups to share their vision on a teacher's quality based on their interaction with them. Moreover, research shows that surveys of students and parents on their views of the quality of teaching provide valuable information about some aspects of teaching such as a teacher's capacity to provide instructional and emotional support to students.
Teacher portfolio	The use of portfolios allows teachers to provide meaningful information related to what they believe best represents their practice. Portfolios require teachers to reflect on various aspects of their practice, and that reflection can be used for both teacher learning and appraisal. An effective teacher portfolio should include examples of instructional data about student learning, teaching challenges and reflections on practice, in order to enable teachers to have meaningful conversations with school principals, coaches and mentors about specific needs in professional development.
Teacher self-assessment	Teacher self-appraisal allows teachers to express their own views about their performance, and reflect on different factors (personal, organisational and institutional) that had an impact on their teaching.
Discussion between appraiser and teacher	It is through discussing and reflecting on appraisal results that appraisal supports professional learning. The discussion between the appraiser and the appraised teacher should be intentionally focused on how to improve teaching and offer recommendations for change in practice. It should also orient the appraised teacher towards adequate professional learning opportunities.

Sources: Goe, L., K. Biggers and A. Croft (2012[8]), *Linking Teacher Evaluation to Professional Development: Focusing on Improving Teaching and Learning,* https://gtlcenter.org/sites/default/files/docs/LinkingTeacherEval.pdf (accessed on 21 October 2019); OECD (2013[1]); *Synergies for Better Learning: An International Perspective on Evaluation and Assessment,* https://dx.doi.org/10.1787/9789264190658-en; UKEssays (2016[42]), *Definition and Overview of Classroom Observation,* www.ukessays.com/essays/education/definition-and-overview-of-classroom-observation-education-essay.php (accessed on 24 May 2019).

Provide tools to schools to make a reliable judgement about teachers' competencies and identify opportunities for development

School principals and pedagogues also need to have reliable tools to evaluate teachers' competencies and provide meaningful feedback to teachers about how they can improve their practices. Such standard tools are particularly important in Serbia where in-school capacity for appraisal remains low. The IIE should consider providing schools with:

- **Clear qualitative descriptors of what good teaching looks like**: Descriptors provide concrete examples of how a teacher might demonstrate the competencies included in teacher standards (OECD, 2013[1]). This helps teachers better understand expectations and guides school principals and pedagogues in forming a judgement about teachers' competencies. An increasing number of countries also provide videos that illustrate different competencies and how they relate to effective teaching and learning. In Australia for example, short videos of classroom practices illustrate the key competencies included in the teacher standards (Australian Institute for Teaching and School Leadership, 2017[43])
- **Teacher appraisal grids:** The IIE could also develop a grid to help school principals and pedagogues make an informed judgement. The grid would include qualitative scores for each indicator from the teacher standards, such as "fully achieved", "in process of achievement", "not at all achieved". The grid should include space for the evaluator to describe why a score is given, using the teacher standards and descriptors as a reference point.
- **Appraisal feedback templates:** Besides providing feedback face-to-face during a structured discussion, teachers should also be given written feedback. This feedback should clearly identify strengths and areas where further development is needed, as well as suggesting ways to improve. The IIE should develop a feedback template with clear headings and prompts. This will help school principals and pedagogues provide meaningful comments to teachers. Written feedback is important as it can be used as a reference by teachers and schools to track progress. It can also inform a decision on a teacher's promotion.
- **Tools to identify opportunities for professional development that correspond to the needs of teachers:** In the short term, the IIE should clearly label the competencies targeted by each approved training programme and encourage school principals and pedagogues to use the catalogue of professional development programmes in their feedback to teachers. Over the medium term, the IIE can invest in tools that automatically suggest possible professional development opportunities based on appraisal results. Some education systems are for instance experimenting with an electronic feedback template, linked to the professional development platform, to suggest to appraisers professional development tools and programmes for their teachers. Learning Sciences International, a United States-based firm, developed the iObservation tool which directly links appraisal scores with professional development resources such as books or curriculum materials (Goe, Biggers and Croft, 2012[8]).

Recommendation 3.2.2. Invest in developing in-school capacity for appraisal

In-school capacity for reviewing teaching practices and providing feedback for development is relatively limited in Serbia. School principals and pedagogues receive little to no training on how to appraise teachers and provide constructive feedback on teaching

practices. There was no initial training for new principals until very recently and the new programme is limited in scope and length. Pedagogues' initial training is almost exclusively theoretical and based largely on outdated views of pedagogy and education. There is no mandatory continuous professional development for school principals and pedagogues. This lack of training undermines the legitimacy and value of the appraisal process. Teachers sometimes perceive classroom observation by the school principal as a control mechanism instead of a formative process.

Moreover, teachers themselves may struggle to reflect critically on their practices and identify their own development needs. This is particularly apparent when comparing the areas for improvement identified by the external school evaluation with those identified by teachers in a survey carried out by the IIE in 2017. The external school evaluation identifies teaching and learning as the area of school practice where most schools struggle. Indeed, the latest national report on school external evaluation shows that teachers in a majority of Serbian basic education schools are unable to adapt their teaching to the needs of students. The external evaluation also finds that teachers' capacity to use assessment for learning is weak in almost half of the evaluated schools (IEQE, 2017[44]). However, teachers surveyed by the IIE prioritise other areas for development and ranked student assessment as low in the areas where they need urgent training (IIE, 2017[32]).

Develop school principals' and pedagogues' capacity for regular appraisal and feedback

In the immediate term, Serbia should invest in improving the appraisal capacity of pedagogues and school principals already in service. Including appraisal and feedback as competencies reviewed by the school principal appraisal process can be an effective way to encourage school principals to improve in these key components of their school instructional leadership role. School principals and pedagogues also need to be given opportunities to develop their appraisal competencies. Such opportunities could include:

- **A practical training programme as part of the licensing process:** Candidates for the position of school principal should be required to take a course on how to appraise teachers. This course should cover the practical questions of appraisal such as how to conduct a classroom observation and provide meaningful feedback to teachers.
- **Peer learning and coaching opportunities:** School advisors can pair up school principals struggling with teacher appraisal with more experienced ones in their region to promote peer learning. Advisors can target this type of support at principals in schools that did not meet the school quality indicator "6.2: The school shall have a functioning system in place for monitoring and evaluating the quality of performance" during the external school evaluation.
- **Exchanging good practices and materials on an online platform:** As recommended in Chapter 4 of this report, the ministry should create an online platform for school improvement where schools can access among other things examples of good classroom observation plans and download templates for teacher appraisal.

Over the medium term, Serbia should introduce an initial training programme for school principals and revise that of pedagogues to focus more on the instructional leadership competencies that are part of their role (see Chapter 4). This would require stronger oversight over university programmes and developing standards for both professions of

school principals and pedagogues. Once the revised teacher standards are introduced, the ministry should consider opening training opportunities and coaching to higher pedagogical advisors and involve them more actively in regular appraisal.

Develop teachers' capacity to reflect critically on their training needs

The IIE has developed a self-appraisal tool that teachers can use to reflect on their practices and identify their training needs. However, this tool is not systematically used. Self-appraisal allows teachers to play a more active role in their professional development by reflecting on their teaching practice, the personal organisational and institutional factors that may influence this practice, as well as their competencies and those they would like to develop. Self-appraisal can also encourage teachers to set their own professional development goals and objectives for their teaching (OECD, 2013[1]). To encourage better use of the self-appraisal tool, the IIE should consider:

- **Encouraging school principals and pedagogues to use the self-appraisal tool as a basis for discussions with teachers.** In the appraisal discussion guidelines recommended by this chapter, the IIE should include clear prompts for in-school appraisers to reference self-appraisal in their discussion with teachers. Effective self-appraisal gives a perspective of a teacher's practice that is complementary to classroom observation and helps to ensure feedback addresses teacher perceptions and other important subjective elements.
- **Providing training to teachers on how to reflect on their own competencies.** The IIE could also provide a training module on self-appraisal for teachers. This training would explain to teachers why self-appraisal matters and how it can be helpful in developing their teaching practices and sense of self-efficacy.

Policy issue 3.3. Making sure that professional development opportunities meet the needs of teachers

Improving the teacher appraisal system needs to go hand in hand with improving the quality of continuous professional development. Without a link to adequate professional development opportunities, the regular appraisal process is not sufficient to enhance teaching performance and risks being perceived as a meaningless exercise by teachers (Danielson, 2007[39]). In Serbia, take-up of professional development is very limited compared to OECD countries (OECD, 2014[9]). This is in part because teachers and schools lack financial resources to access training, and also the result of some dissatisfaction with the current offer of training programmes. Professional development is mainly provided outside of schools in seminars or workshops which are known to have limited impact on the improvement of teaching and learning (OECD, 2014[9]; Goe, Biggers and Croft, 2012[8]). The professional development offered to teachers does not seem to focus on some key skills gaps, such as the use of learning standards. A study of teachers' views in Serbia has indeed shown that teachers consider the introduction of learning standards as meaningless and ignore these standards in their daily practice (IIE, 2017[32]). To make sure that teachers are provided with authentic opportunities to learn and develop their competencies, the IIE needs to improve the content of training provided by linking it more systematically to teacher appraisal results. It also needs to improve the way this training is delivered by focusing more on in-school training and peer learning.

Recommendation 3.3.1. Use information from appraisal to identify teacher development needs

Teachers' continuous professional development in Serbia tends to be only loosely linked to the results of regular teacher appraisal. As there are no national guidelines, results of in-school appraisal are not always used to determine teachers' professional development needs. For example, teachers met by the review team reported that choice of professional development programmes is mostly decided collegially by the teacher council. There is also no expectation that teachers address the gaps in skills and knowledge identified by the appraisal process through professional development. In addition, the supply of professional development programmes does not systematically reflect the needs in training identified by the appraisal process. The IIE commission in charge of accrediting training programmes does not use results of appraisal as a source of information to determine focus areas. The IIE needs to make better use of information from the teacher appraisal system to improve the quality of the professional development programmes that it offers and ensure that serious weaknesses in teaching practice do not go unaddressed. Including clearer professional development requirements in individual teacher plans as recommended above would help to ensure that teachers make the most of training programmes available.

Systematically collect information about teachers' development needs

To make sure that the supply of professional development opportunities meets teachers' training needs, the IIE should develop a systematic process to collect information about the major gaps in knowledge and skills across schools. The agency surveyed 3 499 teachers and 217 principals in 2017 to better understand their professional development needs and get their feedback on the quality of training provided. However, the IIE is not planning to use such surveys regularly due to limited funding. The IIE needs to be provided with the funds to develop systematic ways to collect information about teachers' professional development needs:

- **Asking advisors, school principals, psychologists and pedagogues to regularly fill in a simple questionnaire about training priorities identified in their schools:** As the main people responsible for appraisal in Serbia, advisors, school principals, psychologists and pedagogues are best positioned to understand the recurring needs in training at a school level (principals and pedagogues) or a region level (advisors). The IIE should make the most of this knowledge by requiring that they fill in a simple annual questionnaire identifying the gaps in teachers' competencies they encountered. This questionnaire should map the needs against the teacher standards and national priorities. Such practice would also improve school principals and pedagogues' capacity to reflect in a systematic manner and develop a common understanding of the training needs in their school.
- **Triangulating results of appraisals with evidence from national assessments and external school evaluation**: The IIE should make use of the depth of information included in the national report on external school evaluation to identify the priority areas for training. The external school evaluation report developed by the IEQE for the 2015-17 cycle of evaluation provides information about the areas of teaching and learning most in need of improvement. For example, teachers in almost half of the schools evaluated in 2017 had difficulties adapting teaching to students' needs and using formative assessment. This information should be used to decide what topic should be a priority for training. In the medium term, the IIE should also use the national student assessment currently developed to identify the

gaps in student learning and make sure that teachers are provided with opportunities to improve their teaching in these areas.

Make sure that major gaps in competencies are effectively addressed

It is important that major gaps in teachers' competencies that directly affect student learning be systematically addressed through mandatory training. To do so, school principals should be given the authority to require teachers who do not meet the satisfactory benchmark in some key indicators undertake training in these areas. In Chile, for example, teachers who obtain a "basic" or "poor" rating in appraisal are required to set and follow a professional development plan to improve their competencies (Santiago et al., 2013[2]). For such a system to work, it is primordial that schools are provided with standardised tools and guidelines to appraise teachers. It is also recommended that training in those key competency areas be free of charge for both the school and teachers so that schools in poor areas are not disadvantaged.

Recommendation 3.3.2. Develop in-school professional development opportunities and peer learning

In-school professional development, in particular when collaborative and based on peer-leaning, is recognised as more effective than out-of-school training such as seminars. In-school training relates more closely to teachers' actual classroom environment and can thus better target the needs of a particular school. Peer-learning activities among teachers of the same school or a broader network are especially helpful, both in terms of encouraging continuous learning and in terms of developing teacher confidence and agency (Schleicher, 2016[45]; OECD, 2013[1]). In Serbia, there is an emerging culture of in-school collaboration and peer learning between teachers. For example, recent studies have shown that teachers strongly value collaboration and peer learning with other teachers in the school and feel that they contribute better to their professional development than out-of-school seminars (IIE, 2017[32]). All schools have teacher councils and subject groups that play an important role in defining the school professional development plan. The joint United Nations Children's Fund (UNICEF) and IEQE SHARE project, which promotes classroom observation by peers, is also a good example of this developing culture of collaboration and peer learning (UNICEF, n.d.[46]). However, several hurdles limit the transformation of this emerging practice into a lever for systemic change. Lack of funding for in-school professional development and limited national guidance for schools on how to organise such training are some of the main constraints.

Secure resources for in-school professional development

Providing schools with grants to organise in-school professional development activities is necessary to encourage collaborative learning between teachers. Most Serbian schools currently lack such resources. Local governments are responsible for funding continuous professional development; however, the resources available are relatively limited and vary across localities (MoESTD, 2019[25]). Many schools have to fundraise or find other means to fund professional development activities, which creates inequity between those in rich and poor areas. As part of the national school improvement strategy recommended by this report (see Chapter 4), the ministry should allocate funds directly to schools to organise professional development activities. In return, the external school evaluation should check that professional development programmes and peer-learning activities are effectively organised and that they respond to the needs of teachers (see Chapter 4).

Develop schools' capacity for collaborative professional learning

In order to promote collaboration and peer learning in and between schools, it will be important that the IIE provides guidance and training to schools on the type of activities to implement. The IIE should build on the strong presence of teacher councils and subject groups in schools to develop a culture of meaningful collaborative learning. To do so the IIE should consider:

- **Using a train-the-trainer model:** The IIE should consider training one teacher per subject group in each school in how to conduct classroom observations, provide feedback and work collectively to improve lesson plans. The trained teachers would then be responsible for co-ordinating peer-learning activities in their subject group. The IIE could also follow the example of Georgia and focus first on some priority subjects such as mathematics. The Ministry of Education in Georgia trained facilitators in primary schools between 2011 and 2017 to co-ordinate the work of teacher learning circles in their schools (OECD, 2019[47]). As the experience of Georgia shows, such models are most effective when trainers are carefully selected and receive sustained technical support. In Georgia, selected facilitators received training as well as guidelines and templates to use for peer-learning activities.
- **Encouraging the use of peer learning:** Schools would also benefit from receiving guidelines about the most effective methods of training such as content-based collaborative inquiry, resources to put such training in place, as well as a list of programme providers that can help schools set up this training (Kedzior and Fifield, 2004[48]).
- **Expanding the SHARE programme:** The IIE should expand the SHARE project, piloted by UNICEF and the IEQE in 20 schools, and make it available for all schools. As in the pilot programme, results of school evaluation should be used to determine schools not meeting minimum quality standards and match them with schools that demonstrate good teaching and learning practices. In the medium term, such peer learning between schools could also be offered to schools performing at the mid-level that want to improve their practices.

Develop online tools to foster peer learning and collaboration between schools

With the help of UNICEF, the IIE is starting to develop an e-learning platform for teachers as part of ongoing training for the new curriculum reform. This e-learning platform contains training material and aims to provide a depository of lesson plans prepared by training instructors and teachers. This positive initiative could be developed further by allowing teachers to upload and share lesson plans and assessment examples. It also needs to be sustained beyond the context of the current curriculum reform. To do so, the IIE should secure long-term funding for the maintenance and development of the platform over time. It will also need to think of options to ensure that the material shared on the platform meet minimum quality requirements. For example, this can be done by encouraging peer-reviewing of materials uploaded to the platform. In Moscow, Russian Federation, for example, teachers upload their lesson plans to a municipal platform and these materials are reviewed by moderators before being made visible on the platform (Mos.ru, 2016[49]).

Policy issue 3.4. Preparing and selecting a new generation of teachers

The ministry needs to make sure that it is hiring talented new teachers who are prepared in new teaching approaches that align with the curriculum (i.e. learner-centred, competency-based and inclusive education). Countries with strong education systems invest significantly in making sure they attract and select talented and motivated candidates into the teaching profession and provide them with adequate training to develop the competencies required to be effective teachers (Schleicher, 2015[50]). Serbia is still far from having a quality initial teacher preparation model that trains, selects and supports new teachers meaningfully. While the quality of initial teacher education in universities is good at developing subject knowledge and traditional teaching practices, there are deficiencies in terms of developing modern pedagogical skills. Once in school, novice teachers do not always have access to adequate feedback and opportunities to develop their practices. The limited posts available for new graduates is also holding back efforts to renew teaching practices. The education system is currently not hiring new teachers, which both limits the renewal of ideas and methods and creates a risk of shortages in the future as the teaching workforce ages.

Recommendation 3.4.1. Select and provide in-school support to motivated and talented new teachers

The Ministry of Education is aware that it needs to address the quality of initial teacher education and select into the profession candidates that have met minimum standards of competencies. It is indeed common knowledge in Serbia that many subject teachers enter the classroom without having had any training in pedagogy or having been in a classroom as part of a teaching practicum. The content taught in the faculties of education is often outdated and not aligned with the student-centred approach of the new curriculum (European Commission, 2016[29]). The lack of quality standards in teacher education content and certification also creates heterogeneity between programmes and universities. The ministry needs to improve the quality assurance of teacher education programmes and ensure that selection into the teaching profession is fair and based on teachers' competencies.

Significantly strengthen quality assurance for initial teacher preparation programmes

Quality assurance in initial teacher education programmes in Serbia is relatively less rigorous than in most OECD and EU countries. Accreditation criteria are not specific to the teacher education programme and thus cannot serve as guidelines for making sure that teacher education programmes meet minimum quality. The only requirement specific to initial teacher education programme is that of providing an in-school practicum. The accreditation commission also lacks the resources to organise follow-ups and check that essential requirements, such as a high-quality, well-integrated practicum, are in place. If new graduates are to drive improvements in schooling, then teacher education will need to become more selective and of higher quality. Steps that Serbia might take include:

- **Setting programme-specific accreditation criteria:** The ministry should consider setting accreditation criteria specific to initial teacher education programmes and similar to models Australia and some states in the United States, with accreditation criteria specific to initial teacher education programmes, in addition to the general criteria applicable to all tertiary programmes (OECD, 2019[51]). These should be

developed in line with the revised teacher standards and expectations for novice teachers.

- **Developing guidelines that set out the requirements for different programme types**, including the design and duration of the practicum. Research shows that a good practicum focuses on the active participation of the trainee teacher in both classroom teaching and broader school practices including observing peers' classes and participating in school self-evaluation (OECD, 2019[51]).
- **Limiting the number of state-funded places available in initial teacher programmes**. The ministry needs to make sure that the number of scholarships available for teacher education reflects more closely projections of needs in the teaching profession for the coming years. This is particularly important in Serbia given the demographic decline and the need to reduce the overall supply of teachers, alongside evidence of growing shortages of teachers in some subjects.
- **Setting minimum entry requirements**. As the ministry is introducing a centralised selection system into higher education using the new State Matura, it can set minimum scores in Serbian language and mathematics for entry into teacher education programmes. Such practice in place in some high-performing education systems such as Finland and Korea helps make sure that candidates attained basic level of competencies before entering initial teacher education programmes. This is particularly important given that most students entering teacher education programme were among the low performers in upper secondary education.

This review recommends that Serbia undertakes an in-depth review of initial teacher programmes to examine the feasibility of these and other options.

Introduce a certification and selection examination at the end of initial teacher education

These reforms to initial teacher preparation will take time. In the immediate term, the ministry should consider introducing a national qualification examination at the end of initial teacher education to ensure that candidates have met the minimum requirements to become a teacher. In OECD countries with similar practices, qualification examinations include an assessment of teachers' subject knowledge, pedagogy and basic numeracy and literacy skills (Hobson et al., 2010[52]). For example, prospective teachers in Germany have to pass the Second State Examination after initial teacher education (see Box 3.5). The content of this national qualification examination should be informed by the competencies expected of a novice teacher in the revised teacher standards recommended by this review. Moreover, as Serbia is facing an oversupply of teachers, the ministry should consider introducing quotas by subjects so that the threshold to pass the exam would vary depending on available openings.

Introducing a national qualification examination will also put pressure on universities to adapt their programmes to meet the standards of the qualification examination. For example, faculties training subject teachers must make sure that the courses in pedagogy and psychology they provide prepare their students adequately to take the qualification examination. Making universities' pass rates in the national examination public will also help inform the choices of students and further incentivise universities to invest in the quality of their training.

Box 3.5. The Second State Examination in Germany

Following the completion of initial teacher education (a consecutive three-year bachelor's and two-year masters' degree, concluded by the First State Examination) and of the preparatory service (that consists of teaching practicum and attending teachers' seminars), prospective teachers must pass the Second State Examination (*Staatsexamination*). The Second State Examination has to be taken before a state examination board or a state examination commission.

Although the content varies across *Länder*, the Second State Examination usually consists of four parts (some states only have three components to the examination). The first part consists of the majority of *Länder* submitting a major written paper relating to educational theory, pedagogic psychology or the didactics of one of the subjects studied. Second, prospective teachers have to pass an oral practical teaching examination involving demonstration lessons in the chosen subjects. The third part consists of an examination on basic questions of educational theory, educational and civil service legislation and school administration, and occasionally on sociological aspects of school education. The fourth part consists of an examination on didactic and methodological issues in the subjects studied. It generally includes a written thesis, an oral assessment and a demonstration/evaluation of teaching skills. Nearly all teachers pass this examination. The weighting of each component of the Second State Examination varies across the *Länder*. The second *Staatsexamination* is a prerequisite for but not a guarantee of permanent employment in the state school sector.

For alternative routes into teaching, candidates must have a master's degree, which must include "at least two teaching-related subjects", and complete the preparatory service and Second State Examination or a state-approved equivalent.

Sources: NCEE (2019[53]), *Germany: Teacher and Principal Quality*, http://ncee.org/what-we-do/center-on-international-education-benchmarking/top-performing-countries/germany-overview/germany-teacher-and-principal-quality-2/ (accessed on 17 October 2019); Eurodyce (2019[54]), *Initial Education for Teachers Working in Early Childhood and School Education*, https://eacea.ec.europa.eu/national-policies/eurydice/content/initial-education-teachers-working-early-childhood-and-school-education-30_en (accessed on 24 May 2019); Krueger, M. (2017[55]), *Teacher Education in Germany*, http://entep.unibuc.eu/wp-content/uploads/2017/07/NAT_REPORTS_KRUEGER.pdf (accessed on 17 October 2019).

Develop the mentorship programme of novice teachers

Mentorship programmes are an effective way to help new teachers develop their classroom practices, build their confidence and learn from their more experienced peers (OECD, 2010[56]). They are particularly important in countries like Serbia where the quality of initial teacher education varies a lot between faculties and where opportunities for practical training are limited. Serbia has a mentorship programme targeting novice teachers, which is positive. However, mentors in charge of providing support to teachers receive no training on how to observe classroom practice and provide feedback to mentees. The guidelines for mentorship have also not been updated since 2007 and are thus not aligned with more recent reforms such as the introduction of teacher standards. In the immediate term, the IIE should consider:

- **Introducing mandatory training for all appointed mentors** on how to conduct classroom observation, provide feedback, help teachers develop a professional

development plan and form an informed judgement about the novice teacher's readiness to apply for full certification.

- **Updating the mentoring manual:** Once Serbia introduces teacher standards for novice teachers, it will be important to make sure that mentors are provided with clear guidelines on how to help mentees move from novice to confirmed teachers by updating the 2007 manual. The new manual should include classroom observation descriptors and templates as well as guidelines on how to provide constructive feedback to teachers.
- **Creating a network of teacher-mentors that work with several schools**. Giving the demographic changes in Serbia, there will not be a need for teacher-mentors in every school. Mentors can thus be assigned across several schools and work in a network to exchange ideas and practices. The RSAs can co-ordinate this as part of their role in ensuring quality in schools.
- **Checking that schools are effectively offering quality mentorship to novice teachers:** The external school evaluation should check if schools are providing novice teachers with adequate support (i.e. availability of a mentor and quality of the mentorship provided). Issues related to mentorship should trigger follow-up from the RSA.

Over the medium term, and in order to further professionalise this key function, only teachers qualified as pedagogical advisors should be appointed as mentors. School principals and pedagogues should review the quality of mentorship provided as part of the regular appraisal process.

Box 3.6. Mentorship programmes in OECD countries

In **Finland**, a pilot induction programme called *Osaava Verme* (Expert Peer Group Mentoring) was launched in 2008. This programme consists of monthly meetings for teams of new teachers facilitated by experienced and trained teachers and supported by the expertise of eight teacher preparation institutions.

In **Queensland (Australia)**, the Mentoring Beginning Teachers (MBT) programme aims to support beginning teachers with mentorship and their schools with increased funding. Beginning teachers are selected for the programme according to the following criteria:

- be provisionally registered with the Queensland College of Teachers
- have worked for less than 200 days
- be employed permanently or on a term-long temporary contract in a Queensland state school.

Principals are given the flexibility to decide the mentoring arrangements of beginning teachers according to their school contexts. Annual evaluations of the programme are conducted to ensure schools are properly supporting their beginning teachers.

In **Ireland**, mentoring is an important part of the National Induction Programme for Teachers. In the framework of this programme, trained Professional Support Teams (PST) and mentors provide personal, professional and pedagogical support to newly qualified teachers during their first year. PSTs are fully certified teachers with a minimum of five years of teaching experience that are nominated by the schools.

In **New Zealand**, mentoring is part of the induction programme for provisionally certified teachers and aims to provide them with the guidance of an experienced, fully certificated colleague who has received training to give constructive feedback. Although induction and mentoring programmes may differ from one setting to another, essential components must be developed and these are explained in a set of guidelines.

Sources: Driskell, N. (2015[57]), *Global Perspectives: Mentoring and Support for New Teachers in Ontario and Finland*, http://ncee.org/2015/09/global-perspectives-mentoring-and-support-for-new-teachers-in-ontario-and-finland/ (accessed on 26 August 2019); Queensland Government (2019[58]), *Mentoring Beginning Teachers*, https://education.qld.gov.au/about-us/budgets-funding-grants/grants/state-schools/core-funding/mentoring-beginning-teachers (accessed on 26 July 2019); NIPT (2019[59]), *About NIPT*, http://teacherinduction.ie/en/about/about-nipt (accessed on 26 July 2019); The Teaching Council of New Zealand (2019[60]), *Induction and Mentoring*, https://teachingcouncil.nz/content/induction-and-mentoring (accessed on 26 July 2019).

Further improve the probation appraisal process

The probation appraisal process in Serbia seems, in theory, effective at reviewing teacher competencies. It can, however, be improved to focus more in practice on teachers' development throughout the probation year and their aptitudes to become fully certified teachers. It currently includes both an in-school appraisal by a commission, including both school leadership and peers, and an oral examination and interview with a national commission. The in-school component is very much aligned with practices in OECD countries. School commissions are expected to review teachers' competencies by looking at their work throughout the probation year and should technically rely on the mentors' report. However, it was reported to the review team that this is not done systematically as

some teachers do not have mentors. As recommended above, creating a network of teacher-mentors would help increase coverage and provide every novice teacher with the support needed. In addition, novice teachers should not be appointed to schools that cannot secure a mentor.

The external appraisal process should be revisited to focus more on reviewing teachers' interactions with students and their capacity to deliver quality teaching and learning. Similar to other steps in the teacher career structure and given the high stakes that probation appraisal carries for a teacher's career, consideration should be given to involving advisors in the probation decision to ensure a fair external judgement of teachers' practices in the classroom. As discussed above, this will need to be accompanied by a reinforcement of the advisors' capacity to carry appraisals (see Recommendation 3.1.2).

In the medium term, once the mentorship model is fully implemented and advisors' capacity to carry probation appraisal is improved, Serbia should consider replacing the oral examination by a simple validation of the school commission and advisors' reports by the national commission. In fact, regular appraisal and an appraisal visit by an advisor are more reliable processes to review a novice teacher's readiness to be fully certified. The final decision for full certification would be made by the advisor considering input from the teacher's mentor, school principal and pedagogue.

Recommendation 3.4.2. Revise the allocation of human resources to make sure that new teachers are hired

As Serbia faces the problem of general oversupply of teachers, the country has almost completely stopped recruiting new teachers. Recruiting young new teachers helps renew ideas and practices in education systems (OECD, 2019[23]). In Serbia, recruiting new teachers is necessary to increase the qualification levels of the teaching workforce. Teachers recruited before 2009 in Serbia, which constitute the majority of teachers currently in schools, have only completed a three-year teacher education programme. The lack of young people entering the profession may also lead to future shortages of teachers (OECD, 2019[23]). The freeze in public service hires has exacerbated the issue even further. The ministry prioritises recruitment of licensed teachers without a posting over new teachers. The ministry needs to set up a strategy to address the oversupply of teachers and allow the recruitment of new teachers. Appraisal can be used within such a strategy to manage the numbers of new teachers licensed, orient experienced teachers towards other positions and help inform the scheme for early retirement Serbia should consider introducing.

Help teachers transition to other positions or early retirement

Serbia needs to reduce the number of teachers already employed to leave space for new teachers to enter the workforce. Most OECD countries facing an acute student decline would set up strategies to make sure that teachers can transition out of the teaching profession in addition to reducing hiring of new teachers (Shewbridge et al., 2016[61]). For example, the ministry could consider the following strategies:

- **Incentivising teachers' early retirement:** It is a common practice in education systems with an oversupply of teachers to provide teachers with the possibility of retiring early with some form of financial compensation (OECD, 2019[23]). Planning for such a scheme requires a careful projection of human resource needs over several years to avoid future shortages. In Serbia, special attention will need to be given to managing supply in subjects where there are already shortages, such

as mathematics and foreign language, and to retaining experienced teachers who have demonstrated the motivation and skills to reach senior and higher pedagogical advisor level. There are experiences from other countries, such as Lithuania and the United States, that Serbia might look to when considering an early retirement scheme.

- **Encouraging teachers to take on other positions in the education system:** While Serbia has an oversupply of teachers, it does not have enough support staff to help address learning and teaching needs at the school level. Pedagogical support personnel represent only 3.6% of overall school staff personnel at the lower secondary level. This is well below levels in other European and OECD countries such as Poland (7.5%) or Estonia (9.2%) (OECD, 2014[9]). The ministry should create opportunities for teachers to retrain to become pedagogues. An external appraisal process led by advisors should be set up to assess whether a teacher has met the requirement to become a pedagogue. Such policy would help bring more people with practical teaching experience into the pedagogue profession, which tends to have many staff members with little or no teaching experience.
- **Providing re-qualification and internship opportunities:** The ministry could also fund opportunities for teachers to learn new skills and acquire qualifications in other professions. A pilot internship programme in Lithuania has shown positive results in teachers' motivation and re-orientation (see Box 3.7).

Box 3.7. Teachers internship programmes and re-qualification funds in Lithuania

As in many OECD countries, Lithuania faces an oversupply of teachers due to the demography decline in the student population. Lithuanian authorities have recognised the need to facilitate the transition of teachers out of the profession and training and attracting new young teacher as a priority to reduce teacher surplus while ensuring that there are no future shortages.

Lithuania set up a policy to incentivise teachers to transition to other jobs. The Ministry of Education and Science is piloting an internship programme for teachers, allowing them to undertake an internship outside the school sector once every eight years. The pilot experimented with different internship durations, from three months to one year. Some participants returned to their schools re-invigorated and with new ideas, while others left the teaching profession following the internship, which was seen as a positive result in the context of teacher oversupply.

The Ministry of Education and Science is also currently developing a re-qualification fund to help teachers transfer to other employment sectors using EU structural funds. The work to develop the allocation mechanism for this fund is underway.

Source: Shewbridge, C. et al. (2016[62]), *OECD Reviews of School Resources: Lithuania 2016*, https://doi.org/10.1787/9789264252547-en.

Use scholarships and other incentives to attract more teachers to specific subject areas

While Serbia has an oversupply of teachers overall, shortages continue in some subjects such as foreign languages, mathematics and physics, and where private-sector jobs requiring skills in these areas tend to be more attractive financially and professionally.

The ministry can use different types of incentives to attract and retain teachers in specific subjects, including:

- **Using scholarship funded seats to better control supply and anticipate needs**: The ministry should make sure that more scholarships are available for students in these subjects compared to others. These scholarships should be tied to the condition that students enter the teaching profession for a minimum number of years.
- **Developing a fast track in the teaching career structure or alternative pathways into the profession:** The ministry can also explore introducing some flexibility and career incentives to retain talented teachers of foreign languages, mathematics and physics. It can, for instance, set up a competitive fast track to access higher levels in the career structure – and the added remuneration and benefits associated with them – more quickly than in the regular promotion model. The ministry can also create alternative entry points for talented mid-career professionals from the private sector to become independent or higher pedagogical advisors in subjects where there are shortages. External appraisal by advisors is important for these alternative career structures to select the right candidates and ensure they receive adequate training.

Table of recommendations

Policy issue	Recommendations	Actions
3.1. Providing teachers with stronger encouragement and incentives to develop their practices and seek higher responsibilities	3.1.1. Make sure that expectations and responsibilities at each level in the career structure are well defined and clear for teachers	Revise teacher standards and define competencies needed to move up levels
		Identify opportunities for teachers to develop the competencies needed to advance in their career
		Involve teachers and the school community in these revisions and make sure that all teachers are aware of the new standards
	3.1.2. Revise the appraisal procedure for promotion to ensure fairness and independence	Develop guidelines and tools for external appraisal by education advisors
		Make external appraisal for promotion the central duty of advisors and ensure that they have the capacity to carry it out
		Revise the roles of the school principal and teacher council in the promotion process
	3.1.3. Strengthen the link between teacher performance and reward	Link the career structure to the pay scale
		Develop other forms of recognition
3.2. Improving the developmental value of regular in-school appraisal	3.2.1. Develop clear guidelines and tools for in-school appraisal	Clearly articulate the purpose of in-school regular appraisal
		Develop clear guidelines on how to undertake in-school appraisals
		Provide tools to schools to make a reliable judgement about teachers' competencies and identify opportunities for development
	3.2.2. Invest in developing in-school capacity for appraisal	Develop school principals' and pedagogues' capacity for regular appraisal and feedback
		Develop teachers' capacity to reflect critically on their training needs
3.3. Making sure that professional development opportunities meet the needs of teachers	3.3.1. Use information from appraisal to identify teacher development needs	Systematically collect information about teachers' development needs
		Make sure that major gaps in competencies are effectively addressed
	3.3.2. Develop in-school professional development opportunities and peer learning	Secure resources for in-school professional development
		Develop schools' capacity for collaborative professional learning
		Develop online tools to foster peer learning and collaboration between schools
3.4. Preparing and selecting a new generation of teachers	3.4.1. Select and provide in-school support to motivated and talented new teachers	Significantly strengthen quality assurance for initial teacher preparation programmes
		Introduce a certification and selection examination at the end of initial teacher education
		Develop the mentorship programme of novice teachers
		Further improve the probation appraisal process
	3.4.2. Revise the allocation of human resources to make sure that new teachers are hired	Help teachers transition to other positions or early retirement
		Use scholarships and other incentives to attract more teachers to specific subject areas

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Chapter 4. Developing schools' capacity for improvement

This chapter looks at how Serbia can align school evaluation with its core purposes of accountability and improvement. Serbia has one of the most advanced external school evaluation systems in the Western Balkans and school self-evaluation is required on an annual basis. However, major gaps in these processes prevent the country from making the most of school evaluation to improve teaching and learning. In particular, schools receive a limited amount of technical follow-up and evaluation reports are commonly perceived as summative rather than formative. These gaps are exacerbated because school leaders often lack the capacity to use evaluation exercises to develop and implement improvement efforts on their own. Serbia needs to strengthen external and self-evaluation processes and embed these in a larger framework for school improvement.

Introduction

School evaluation serves the dual purpose of helping schools improve their practices and keeping them accountable for the quality of their work. Serbia has made a strong push in the past two decades to develop both an external school evaluation system and school self-evaluation. The former, modelled on long-standing inspectorates in Europe, has some of the elements of a good evaluation system including development-oriented indicators, use of diverse sources of information and data, and a focus on helping schools improve their practices. School self-evaluation is also a requirement and virtually all schools in Serbia reflect yearly on their practices to inform planning.

However, some major gaps remain and prevent Serbia from making the most of its school evaluation system to help schools improve their teaching and learning practices. While the external system compares positively on paper to evaluation systems in OECD countries, it has not been appropriated by schools. This is partly due to a limited technical follow-up, helping schools make the most of school evaluation and the summative nature of school evaluation reports and feedback. Additionally, schools lack the capacity to make the most of external and self-evaluations to inform improvement. This is due to a lack of focus on training and hiring competent instructional leaders as school principals but also to the lack of external financial and technical support provided to schools.

For Serbia to make the most of improvements in its school evaluation system, it needs to make sure that it is fully embedded in a larger framework of school improvement focused on building in-school agency for change and adapting external support to the needs of schools. Such effort is necessary if Serbia is to meet the ambitious goals it sets for its education system.

Key features of an effective school evaluation system

In most OECD countries, school evaluations ensure compliance with rules and procedures, and focus increasingly on school quality and improvement (see Figure 4.1). Another recent trend has been the development of school self-evaluation, which has become a central mechanism for encouraging school-led improvement and objective setting. Internationally, strengthened systems for external and school-level monitoring and evaluation are seen as essential complements to the increasing decentralisation of education systems to ensure local and school accountability for education quality.

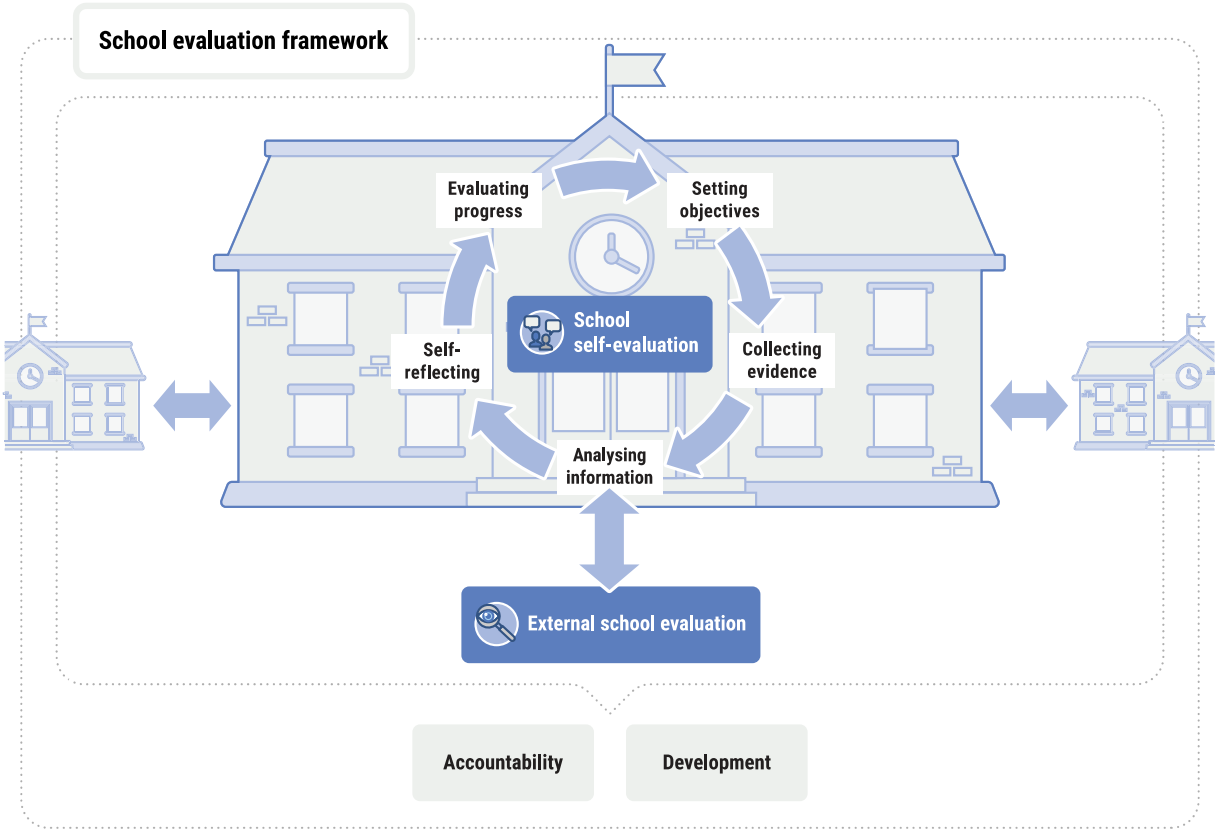
Frameworks for school evaluation ensure transparency, consistency and focus on key aspects of the school environment

Frameworks for school evaluation should align with the broader aims of an education system. They should ensure that schools create an environment where all students can thrive and achieve national learning standards. As well as ensuring compliance with rules and procedures, effective frameworks focus on the aspects of the school environment that are most important for students' learning and development. These include the quality of teaching and learning, teacher development support, and the quality of instructional leadership (OECD, 2013[1]). Most frameworks also use a measure of students' educational outcomes and progress according to national learning standards, such as assessments results or teachers' reports.

A number of OECD countries have developed a national vision of a good school (OECD, 2013[1]). The vision guides evaluation, helping to focus on the ultimate purpose of ensuring

that every school is good. Visions are often framed around learners, setting out how a good school supports their intellectual, emotional and social development.

Figure 4.1. School evaluation



Countries' external evaluations balance accountability and improvement

The vast majority of OECD countries have external school evaluation (see Figure 4.2). Schools tend to be evaluated on a cyclical basis, most commonly every three to five years (OECD, 2015[2]). Within the broad purpose of evaluating school performance, some countries emphasise accountability for teaching quality and learning outcomes. In these countries, national assessment data, school ratings and the publication of evaluation reports play an important role. In contrast, in countries that place greater emphasis on improvement, evaluations tend to focus more on support and feedback to schools. They also place a strong emphasis on helping schools develop their own internal evaluation and improvement processes.

Evaluations aim to establish a school-wide perspective on teaching and learning

Administrative information for compliance reporting is a standard source of information for evaluations, although it is now collected digitally in most countries (OECD, 2015[2]). This frees up time during school visits to collect evidence of school quality. Most evaluations are based on a school visit over multiple days. Visits frequently include classroom observations. Unlike for teacher appraisal, these observations do not evaluate

individual teachers but rather aim to cover a sample of classes across different subjects and grades to establish a view of teaching and learning across the school. Inspectors also undertake interviews with school staff, students and sometimes collect the views of parents. Since much of this information is qualitative and subjective, making it difficult to evaluate reliably, countries develop significant guidance such as rubrics for classroom observations to ensure fairness and consistency.

Many countries have created school inspectorates in central government

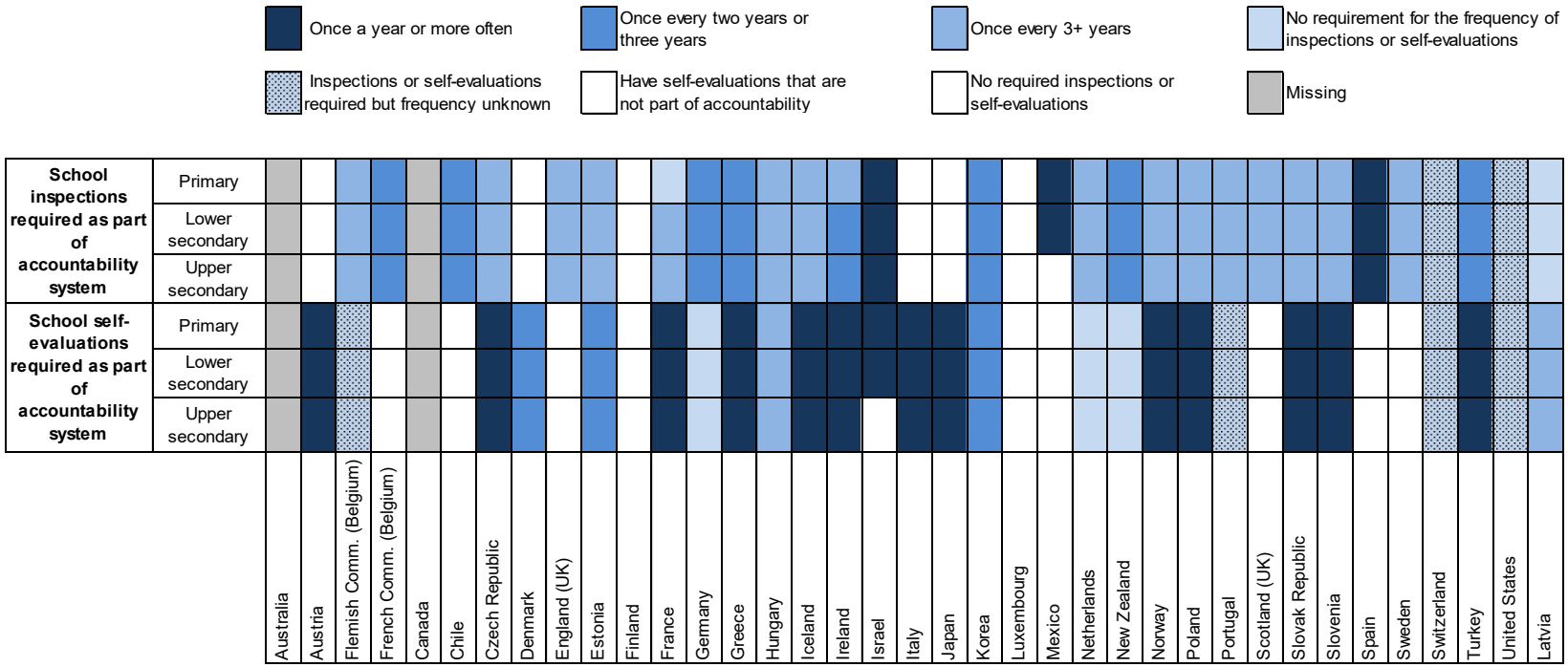
External evaluations are led by national education authorities, frequently from central government (OECD, 2013[1]). Across Europe, most countries have created an inspectorate that is affiliated to but frequently independent of government. This arrangement ensures integrity and enables the inspectorate to develop the significant professional expertise necessary for effective evaluation. School inspectors may be permanent staff or accredited experts contracted to undertake evaluations. The latter provides flexibility for countries, enabling them to meet the schedule of school evaluations and draw on a range of experience, without the costs of maintaining a large permanent staff. Inspectors across OECD countries are generally expected to have significant experience in the teaching profession.

The consequences of evaluations vary according to their purpose

To serve improvement purposes, evaluations must provide schools with clear, specific feedback in the school evaluation report, which helps them understand what is good in the school and what they can do to improve. To follow up and ensure that recommendations are implemented, countries often require schools to use evaluation results in their development plans. In some countries, local authorities also support evaluation follow-up and school improvement. Around half of OECD countries use evaluation results to target low-performing schools for more frequent evaluations (OECD, 2015[2]).

In most countries, evaluations also result in a rating that highlights excellent, satisfactory or underperforming schools. To support accountability, most OECD countries publish evaluation reports (OECD, 2015[2]). Public evaluation reports can generate healthy competition between schools and are an important source of information for students and parents in systems with school choice. However, publishing reports also risks distorting school-level practices such as encouraging an excessive focus on assessment results or preparation for evaluations. Evaluation frameworks must therefore emphasise the quality of school-level processes and an inclusive vision of learning, where all students, regardless of ability or background, are supported to do their best. Evaluation systems that emphasise decontextualised outcome data such as assessment results are likely to unfairly penalise schools where students come from less advantaged backgrounds since socio-economic background is the most influential factor associated with educational outcomes (OECD, 2016[3]).

Figure 4.2. School evaluation in OECD countries



Source: OECD (2015[2]), *Education at a Glance 2015: OECD Indicators*, https://dx.doi.org/10.1787/eag-2015-en.

Self-evaluation is an internal tool for improvement

Most OECD countries require schools to undertake self-evaluations annually or every two years (see Figure 4.2). Self-evaluations encourage reflection, goal-setting and inform school development plans (OECD, 2013[1]). To be an effective source of school-led improvement, many countries encourage schools to appropriate self-evaluation as an internal tool for improvement rather than an externally imposed requirement. In some countries, schools develop their own frameworks for self-evaluation. In others, they use a common framework with external evaluation but have the discretion to add or adapt indicators to reflect their context and priorities.

The relationship between external and internal evaluations varies across countries. In general, as systems mature, greater emphasis is placed on self-evaluation while external evaluation is scaled back. Most OECD countries now use the results from self-evaluations to feed external evaluations with, for example, inspectors reviewing self-evaluation results as part of external evaluations. However, the relationship is also shaped by the degree of school autonomy – in centralised systems, external evaluations continue to have a more dominant role, while the reverse is true for systems that emphasise greater school autonomy.

Effective self-evaluation requires strong school-level capacity

Effective self-evaluation requires strong leadership and strong processes for monitoring, evaluating and setting objectives (SICI, 2003[4]). Many OECD countries highlight that developing this capacity in schools is a challenge. This makes specific training for principals and teachers in self-evaluation – using evaluation results, classroom and peer observations, analysis of data and developing improvement plans – important (OECD, 2013[1]). Other supports include guidelines on undertaking self-evaluations and suggested indicators for self-evaluations.

While a principal's leadership plays a critical role in self-evaluation, creating teams to share self-evaluation roles is also important. The most effective self-evaluation teams involve a range of staff members who are respected by their colleagues and have a clear vision of how self-evaluation can support school improvement. To support collective learning, the self-evaluation team should engage the whole school community in developing a plan for school improvement. This process should include students, who have a unique perspective on how their schools and classrooms can be improved (Rudduck, 2007[5]). The views of students and their parents also help to understand how the school environment impacts student well-being and their overall development. This is important for evaluating achievement of a national vision focused on learners.

Data systems provide important input for evaluation

Administrative school data – like the number of students, their background and teacher information – provides important contextual information for internal and external evaluators. Increasingly, countries use information systems that collect information from schools for multiple purposes including evaluation and policymaking.

Most countries also collect information about school outcomes. Standardised assessments and national examinations provide comparative information about learning to national standards. Some countries also use this information to identify schools at risk of low performance and target external evaluations (European Commission/EACEA/Eurydice, 2015[6]). However, since assessment results do not provide a full picture of a school, they

are often complemented by other information such as student retention and progression rates, student background, school financial information and previous evaluation results. A number of countries use this data to develop composite indicators of school performance that frequently inform evaluation and support school accountability.

Principals must be able to lead school improvement

Strong school leadership is essential for effective school self-evaluation and school improvement more generally. Principals support evaluation and improvement through a number of leadership roles: defining the school's goals, observing instruction, supporting teachers' professional development and collaborating with teachers to improve instruction (Schleicher, 2015[7]). This diversity points to a major shift in their role in recent years, with principals increasingly leading instructional improvement.

Principals need a deep understanding of teaching and learning, and strong leadership skills to become instructional leaders

Most principals bring significant experience in the teaching profession – among the countries participating in the OECD Teaching and Learning International Survey (TALIS), the average principal has 21 years of teaching experience. Teaching experience alone, however, is not sufficient and the ability to demonstrate strong leadership of the school community is particularly important. Nearly 80% of principals in TALIS participating countries reported that they received training in instructional leadership either before or after taking up their position, or both (OECD, 2014[8]).

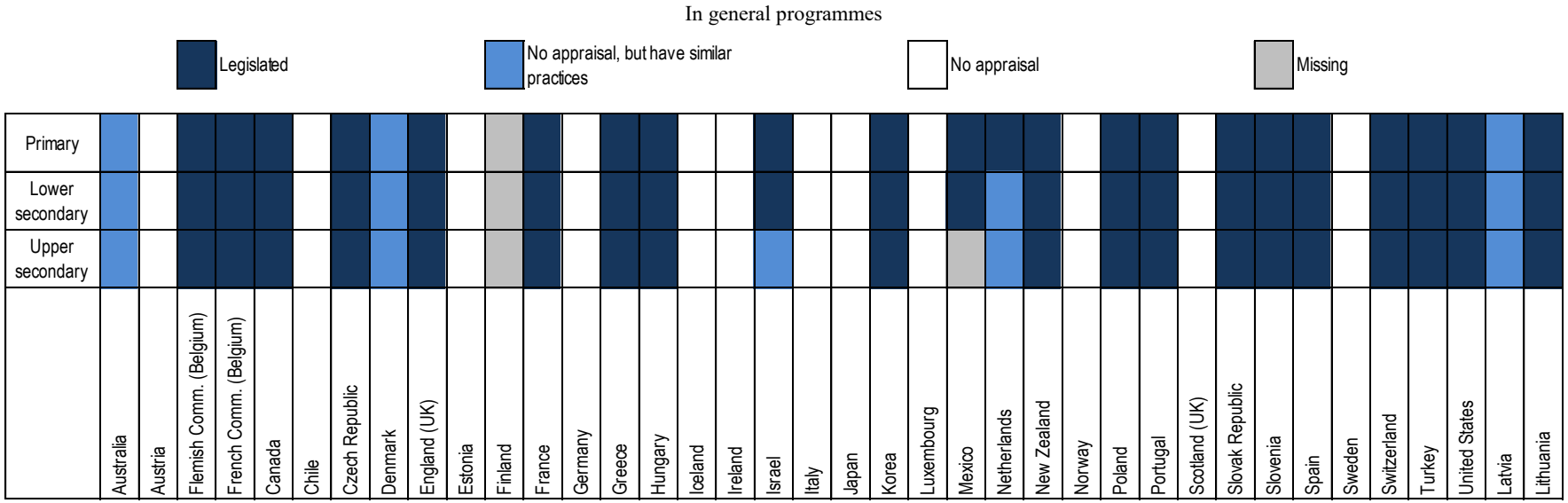
Principals' initial training must be complemented by opportunities for continued professional development once in post. One of the most effective types is collaborative professional learning activities, where principals work together to examine practices and acquire new knowledge (DuFour, 2004[9]). In countries where international assessment results suggest that learning levels are high, such as Australia, the Netherlands and Singapore, more than 80% of principals reported participating in these kinds of activities in the last 12 months (OECD, 2014[8]).

Professionalising school leadership – standards, selection and appraisal

Given the important role that principals occupy, OECD countries are taking steps to professionalise the role. A number of countries have developed professional principal standards that set out what a school leader is expected to know and be able to do. Principal standards should include how principals are expected to contribute to self-evaluation and improvement. Similar to teachers, principal standards guide the recruitment of principals, their training and appraisal.

Around half of OECD countries have legislated appraisal of school leaders (see Figure 4.3) (OECD, 2015[2]). These kinds of appraisals hold principals accountable for their leadership of the school, but also provide them with valuable professional feedback and support in their demanding role. Responsibility for principal appraisal varies. In some countries, it is led by central authorities, such as the school inspectorate or the same body that undertakes external teacher appraisals. In others, it is the responsibility of a school-level body, such as the school board. While the latter provides the opportunity to ensure that appraisal closely reflects the school context, boards need significant support to appraise principals competently and fairly.

Figure 4.3. Existence of school leader appraisal in OECD countries, 2015



Note: Data for Lithuania are drawn from European Commission/EACEA/Eurydice (2015[6]).
Sources: OECD (2015[2]), *Education at a Glance 2015: OECD Indicators*, http://dx.doi.org/10.1787/eag-2015-en; European Commission/EACEA/Eurydice (2015[6]), *Assuring Quality in Education: Policies and Approaches to School Evaluation in Europe*, https://publications.europa.eu/en/publication-detail/-/publication/4a2443a7-7bac-11e5-9fae-01aa75ed71a1/language-en.

School governance in Serbia

Schools in Serbia have some autonomy in how they allocate their budget and manage instruction compared to OECD countries. On paper, the school board plays an important role in overseeing the quality of the school and the school principal is responsible for both managerial and instructional leadership. However, while there has been progress in making appointments more merit-based, the capacity of school leaders remains limited. School principals and school boards receive very little training and technical guidance on how to steer school improvement or provide oversight. Schools also receive very little public funding to implement improvement plans. As a result, most schools rely on external impetus and support if they are to change the quality of their practices in a meaningful way.

School principals in Serbia receive very limited training in their core areas of responsibility

School principals in Serbia are required to have a master's degree and some teaching experience (at least eight years) (European Commission/EACEA/Eurydice, 2018[10]; OECD, 2014[8]). However, in contrast to practices in OECD countries, there are no mandatory initial education requirements for school principals in Serbia. The majority (50.7%) of school principals in Serbia who participated in TALIS[1] reported having never received any formal training in school administration or participated in a principal training course, compared to only 15% across OECD countries. Until 2018, there were no mandatory requirements for in-service professional development either and principals had to find and pay for their own training. The Ministry of Education, Science and Technological Development (hereafter the ministry) introduced in 2018 some training preparation for the certification exam as described below but this training remains of limited scope and length. A large majority (70%) of school principals participating in TALIS 2013 reported that the cost of training was the main barrier to their participation, compared to less than 30% across OECD countries on average. As a consequence, more than 60% of school principals in Serbia have never benefitted from in-service training in instructional leadership (e.g. school self-evaluation, goal-setting, monitoring of teaching and learning and planning) (OECD, 2014[8]).

In recent years, the ministry has taken some important steps to try to improve access to leadership training for school principals. Most significantly, in 2016, Serbia launched a master's programme in school leadership as part of an EU-funded project. The programme is currently offered by two universities (University of Kragujevac and University of Novi Sad) and targets teachers wanting to move into a school principal role as well as principals already in service. While the programme was tuition-free during the time of the EU project in the school year 2016/17, students now have to pay, which has limited take-up – the number of students dropped from 55 in the school year of 2016/17 to 10 in 2018/19. Moreover, this master's programme is not part of the eligibility requirements for becoming a school principal, which also contributes to the low take-up rate.

Serbia has taken action to reduce the politicisation of school principal appointment and dismissal

School principals in Serbia are appointed for four years. Prior to 2017, they were selected by the school board based on a recommendation from the teacher council. While school boards should theoretically base their decision on the competency standards for school principals introduced in 2013, it is unclear whether these standards are systematically used.

School boards received no training or guidance on how to ensure the integrity of the process and are susceptible to political interference from local authorities. This resulted in many principals being appointed based on political affiliation and personal relationship with school staff or local government rather than on merit, creating concerns that some school principals were more focused on serving the interests of individuals rather than the broader interests of students and the school as a whole. In 2017, the ministry changed the selection process in an attempt to increase transparency and independence. According to the new process, the school board appoints a selection commission comprising teachers and administrative staff. The commission reviews all candidates' applications and prepares a selection report with its opinion on each candidate together with their documentation. The commission is required to take into account the latest regular appraisal results for candidates who have already worked as school principals and reference the competency standards. The school board then creates a list of pre-selected candidates based on the commissions' report and submits it to the minister, who makes the final selection decision.

The ministry introduced a certification programme for school principals

In 2018, as part of efforts to professionalise the school leadership role and reduce political influence, the ministry introduced for the first time a certification process for all in-service school principals and a mandatory training programme to prepare them to take the certification assessment. A national commission interviews each candidate for two hours. The interview includes an oral presentation by the candidate on the key findings from a research project on educational practice that they undertook and a discussion of the candidate's leadership competencies based on the school principal standards. A portfolio of work is also submitted to the commission in advance. School principals are required to pass the certification assessment to continue serving as school principals in Serbian public schools.

School advisors are responsible for regularly appraising school principals but this is a rare occurrence

School advisors from the Regional School Authorities (RSAs) are responsible for regularly appraising school principals to help them improve their practices. However, this process of "regular supervision" is rarely carried out. School advisors have little time to dedicate to the regular supervision of school staff, as they are also responsible for carrying out the external school evaluation. The rulebook on regular supervision sets the broad areas the school advisor should look at during regular supervision. However, these guidelines do not differentiate between teacher and school principal supervision and thus do not take into account the specific competencies needed for each of the two functions.

The external school evaluation team evaluates some aspects of school principals' leadership capacity as part of the overall external evaluation process. The external evaluation looks at the school principals' capacity to encourage innovation in the school, appraise teachers and provide them with feedback, and organise professional development for school staff. According to the school quality standards, school principals are expected to plan their own professional development activities based on the result of the external evaluation. The external school evaluation report does not provide the school principal with recommendations for improvement.

The school boards lack the capacity to play a steering role in school governance

School boards in Serbia are responsible for monitoring the quality of school management. Each school board includes nine members appointed by their respective professional body or council for four years, comprising three school employee representatives, three parents and three members chosen by the local self-government. In vocational education and training (VET) schools, the three members delegated by local self-government must be a so-called social partner (e.g. companies, associations of employers, unions, etc.). The school board adopts the school programme, development plan and annual work plan. It is also responsible for validating the school budget proposal that will be submitted to and validated by the RSA. Finally, since the reform of school principal appointment, the board makes a pre-selection of candidates to lead the school and submits this proposal to the minister for a final decision. Despite these extensive responsibilities, the members of school boards receive no training on how to carry out their role. There are also no guidelines or manuals for school boards to follow.

The number of school support staff in Serbian schools is limited

School principals in Serbia can rely on some administrative and pedagogical leadership support from school support staff and deputy principals depending on the size and needs of the school. There are different profiles of experts and associate staff who support Serbian schools through a variety of tasks. These include, among other things, supporting child development and well-being, providing professional support to educators, teachers and school principals, and promoting inclusive policies within the school. In particular, experts and associates are often: school psychologists, who provide students with counselling and help school staff address behavioural issues; special educational needs (SEN) specialists – commonly referred to in Serbia as "defectologists" – who work in special schools and are responsible for diagnosing students with SEN, teaching and identifying adequate learning supports; and, school pedagogues, who are primarily responsible for supporting teaching and learning. However, these profiles are rarely present in a school at the same time. For example, the majority of basic education schools with eight to 23 classes can only hire one school support staff. Most schools have either a pedagogue or a school psychologist who helps the school principal in leading the school self-evaluation, setting the classroom observation plans for regular appraisal and defining the school development plan. In some large schools, principals might also have a deputy responsible for overseeing administrative tasks.

School evaluation in Serbia

Serbia has put in place a strong framework for school evaluation. The country has a comprehensive set of school quality standards that are development-oriented and draw upon the experience of long-established European inspection systems. All schools have now undergone a first cycle of external evaluations and a new cycle will start in the school year 2019/20, drawing on a framework that has been refined based on experience. School self-evaluation is also relatively well established, with schools required to evaluate their practices yearly and use the information in their planning. However, some significant obstacles stand in the way of this evaluation framework becoming a vehicle for school improvement. The governance arrangements for school evaluation are fragmented, which weakens accountability. The developmental impact of evaluation is hindered by several factors, in particular, weak national capacity to provide constructive feedback and support

to schools and the limited understanding within schools on how to undertake a meaningful self-evaluation for improvement purposes.

Table 4.1. Types of school evaluation in Serbia

Types of school evaluation	Reference standards	Body responsible	Guideline document	Process	Frequency	Use
External school evaluation	Schools quality standards	IEQE – Institute for Education Quality and Evaluation (guidelines, tools, training) Advisors (implementation)	Rulebook on Evaluating Quality of Institutions and the Rulebook on Quality Standards	The external evaluation team visits the school and conducts classroom observation, reviews school material and interviews school staff, students and parents.	Every five years	Schools develop an action plan to implement recommendations of evaluation. Advisors follow up within six months to check implementation.
School self-evaluation		School self-evaluation team is usually led by the school pedagogue or psychologist	Manual for school self-evaluation	The school sets up a team of at least five school staff members to evaluate the school's quality.	Once a year	Schools are expected to use school self-evaluation results to draft their school development plan.
Audit	Law on Education Inspection (2018)	Education inspectors	Law on Inspection	Education inspectors visit schools to check that processes comply with the law.	Once a year for the regular visit; extraordinary visit (upon request)	Schools are given an inspection report and need to comply with the recommendation. A follow-up visit is organised.

Source: MoESTD (2018[11]), *OECD Review of Evaluation and Assessment: Country Background Report for Serbia*, Ministry of Education, Science and Technological Development.

Serbia's school quality standards are a strength of the school evaluation system

Serbia introduced school quality standards for the first time in 2012. The standards were inspired by the Dutch School Quality Standards and compare favourably to those used in OECD countries. They focus on seven domains of quality (programming, planning and reporting; teaching and learning; student learning outcomes; student support; ethos; school organisation and management; school resources) and had a strong focus on teaching and learning. These school quality standards were the key reference document for external school evaluation in Serbia and were also used by schools in their self-evaluation processes.

In 2018, the Institute for Education Quality and Evaluation (IEQE) revised and further improved the standards, taking into account lessons from the first cycle of external school evaluations (2012-17). In particular, the number of quality domains was reduced from seven to six with the aim to focus more centrally on the quality of learning and teaching in the classroom. For example, the list of standards under the "teaching and learning" quality area was condensed and descriptive indicators were added to place teaching at the centre of this goal. The language of the standards was also improved by specifying which actors'

behaviours or outcomes would be looked at for each indicator (e.g. teachers, school principal, students, etc.).

The external school evaluation has a limited impact on improving quality in schools

Responsibility for external school evaluation is split between the IEQE and the ministry of education

Contrary to practices in most OECD countries, where one institution usually has clear responsibility for school evaluation (OECD, 2013[1]), responsibility in Serbia is split between the IEQE's Centre for Quality Assurance of Educational Institutions and the ministry through its RSAs. The Centre for Quality Assurance is responsible for setting school quality standards, designing the evaluation process, developing guidelines and training school evaluators. However, evaluators do not report to the IEQE. At present, most are taken from the body of advisors based in the RSAs accountable only to the ministry through the Department for Co-ordination of Regional School Authorities. Advisors do not report to the IEQE and the latter has a limited mandate for monitoring the quality of the evaluation process.

The external evaluation process is well-designed and focuses on practices which are linked to student learning

Until 2019, the external school evaluation focused on ten core school quality standards. These core standards had corresponding indicators and were well aligned with factors associated with improving student learning in schools, such as classroom teaching practices and school instructional leadership (e.g. school planning and monitoring of learning progress at the school level). The evaluation team could also include five additional indicators from other standards to focus on during the school visit. These were selected based on the school's profile and development plan. Schools were evaluated every 5 years by an evaluation team of advisors from the 17 Regional School Authorities.

The external evaluation process was revised in 2019. Schools are now evaluated against all quality standards, each of which is associated with several indicators (indicators in total). This change goes in the opposite direction of trends observed in OECD countries, which try to limit school evaluation to a core set of indicators. The evaluation cycle was also lengthened to every six years instead of five. However, external evaluations may occur more frequently at the request of the school administration or ministry. In addition, schools that receive the lowest level of quality (Level 1) are evaluated again after 3 years.

124 24 advisors who conduct the evaluations come mostly from the school's own RSA but advisors from other RSAs or evaluators from the IEQE may join the evaluation team if capacity in the school's RSA is limited. Before visiting the schools, the evaluating team collects and reviews school records such as the school self-evaluation report, the school programme, the school annual work plan, the school development plans and previous reports from advisors. During the school visit, which lasts at least two days, the evaluation team meets with the school principal and interviews the school support staff, teachers, students and parents. The team also observes teaching and learning practice in the classroom (at least 40% of teachers need to be observed for at least 20 minutes each).

Feedback to schools is descriptive and provides little guidance on what schools can do to improve

At the end of the visit, the evaluation team briefs the school principal orally about the results. They also produce a written report summarising the key findings on each standard, as well as providing an overall score. The report is shared with the RSA and the ministry of education. School principals are required to brief school staff and parents on the results and data from the report is publicly available in a registry on the ministry's website.

Schools are given a numerical score from one to four for each indicator, whereby four signals that an indicator has been fully achieved. A judgement of how a school performs against a particular standard is then determined by averaging the indicator scores for that standard. This contributes to the school's overall score (grade). To receive an overall grade of 4 (very good), schools need to have scored a Level 4 for more than 50% of the standards and the rest must have a score of Level 3. In 2017, under the previous scoring system, 60% of the evaluated basic education schools received a score of 3 (good school), about a fifth (22%) received a score of 4 (very good) while 2% received the lowest score of 1 (very weak) (IEQE, 2017[12]).

The written report is mostly descriptive and does not include recommendations for improvement. The evaluation team provides a summary of key findings for each of the evaluated standards but does not indicate how the school can address specific issues in each domain. Rather, schools are expected to use the evaluation results to develop their own goals and improvement plans but not all schools have the capacity or support to do this. Moreover, schools also tend to focus on the overall evaluation grade rather than the domain-specific description of issues. For example, some of the schools visited by the review team could cite their overall grade but were not able to list the key strengths and issues identified by the external evaluation. Reasons for this could be related to the school's lack of capacity to digest and use evaluation results or that the report itself did not clearly present information about the school's strengths and weaknesses.

The advisors evaluating schools are often the same persons in charge of follow-up advice and support

Following the external evaluation, schools are required to set up a school improvement plan to address the key issues raised. This plan is sent to the RSA advisors who performed the external school evaluation for review and validation. The same advisors are likewise given the responsibility of helping schools implement their action plans. This dual mandate puts at risk the transparency and independence of the evaluation process. Providing technical support and advice to the school requires building strong and close relationships with the school staff. This may interfere with the neutrality of the external evaluation.

The ministry is introducing new follow-up processes to improve the evaluation's developmental and accountability goals

Currently, external school evaluation does not trigger additional financial and technical support for schools that performed badly ("weak" or "very weak" schools). To help address this gap, the United Nations Children's Fund (UNICEF) and the IEQE piloted in 2015-17 a peer-learning scheme called SHARE. The SHARE project pairs high performing schools (grade of four) with low-performing schools (grades of one and two) as a means to help improve practices in the lowest-performing schools (see Box 4.7). The ministry intends to scale up the project with the new round of school evaluation. In the new cycle, the ministry

is also planning to make school principals more accountable for evaluation results. Notably, principals in schools that receive the lowest grade of one in two consecutive school evaluations can be dismissed from their position.

The number of advisors is insufficient to carry out all of the responsibilities of this function

The number of school advisors in Serbia is insufficient to undertake all the tasks for which they are responsible. There are 100 advisors across the 17 RSAs covering over 1 700 basic education and upper secondary schools. The freeze in hiring in the Serbian public sector is such that many RSAs do not have enough advisors to carry out external school evaluations and thus rely on advisors from other RSAs. For instance, the RSA of Novi Sad has 6 advisors covering 19 municipalities. This has implications for the quality and depth of school evaluations as well as for the advisors' many other tasks. In addition to the external school evaluation, advisors are responsible for following up with schools on the implementation of the school development plan, teachers' regular appraisal and appraisal for promotion as well as school principals' and pedagogues' appraisal. Due to limited human resources, advisors have had difficulties in carrying out their appraisal and school development follow-up roles since the introduction of the external school evaluation process in 2013, which takes up most of their time. In some cases, staff from the IEQE joins the evaluation teams when the number of advisors is not sufficient.

To address this shortage, the ministry recently contracted 200 teachers to take part in the new cycle of external school evaluations starting in 2018 to help assess teaching and learning. These teachers will receive training from the IEQE and will first join school visits as observers before contributing as evaluators under the supervision of advisors. This new policy aims to free up some of the advisors' time to carry out their other responsibilities.

The advisors receive some training to carry out external school evaluations

As is the case in most European countries, advisors in Serbia are former teachers, school principals or pedagogues with a minimum of eight years of experience in schools. Advisors received two weeks of training organised by the IEQE in collaboration with the Standing International Conference of Inspectorates (SICI), association of national and regional inspectorates of education in Europe, and the Dutch Inspectorate in 2013 when the new school evaluation process was first introduced. The length of this training is well below that of inspectors in most European countries, which varies from several months to one year (European Commission/EACEA/Eurydice, 2015[6]). This training focused on familiarising advisors with the school evaluation process, including how to conduct the school visit and observe teaching and learning in the classroom, and was part of their licensing process as external evaluators. The IEQE organises co-ordination meetings with all advisors twice a year to discuss ongoing evaluation and ensure harmonisation of practices. Advisors also receive training on new reforms such as the ongoing curriculum reform.

The IEQE produces a detailed analysis of school quality in Serbia based on evaluation results

The IEQE publishes an annual report summarising the key findings from external school evaluations. These reports provide valuable information about how schools in Serbia perform against school quality standards. They identify the key challenges that schools face in providing quality education and information is disaggregated by level of education,

school administration and quality domains. Education actors met by the review team both in the ministry and in the regions (RSAs) and schools were aware of the main challenges identified by the reports. However, it is unclear to what extent recommendations from this annual report are used to inform policy development by the ministry (see Chapter 5).

School self-evaluation is mandated by law but it is unclear if it is meaningfully implemented in Serbian schools

Schools are required to carry a self-evaluation yearly

All schools in Serbia must conduct yearly self-evaluations. According to PISA 2012, 96% of students in Serbia are in schools whose principals reported that self-evaluations are being carried out compared to 87% on average across OECD countries (OECD, 2013[13]). Schools are mandated to carry out school self-evaluations at least once a year and over a five-year period to have evaluated all seven (now six) areas of quality in the school quality standards. Schools are expected to form a school self-evaluation team of at least five members, including teachers, school administration staff (e.g. the school principal, pedagogue or deputy school principal) and representatives of the parents and students' councils. The team has been put in charge of reviewing school practices and performance in relation to the identified quality areas and drafting the school evaluation report. Schools are required to share the report with the teachers' council, parents' council and the school board, as well as with any other interested party.

Schools receive very little guidance and training on how to carry out self-evaluations

School principals and other staff receive no mandatory training in school evaluation as part of their initial training or while in service. In contrast, in most OECD countries, principals' initial training includes modules on school self-evaluation and planning (OECD, 2013[1]). The IEQE's Centre for Quality Assurance of Educational Institutions is responsible for developing and providing training on school self-evaluation upon request from schools. However, because of limited financial and human resources, such training is rarely carried out and must be paid for by the school.

Schools receive very limited external guidance on how to conduct self-evaluations and what indicators to use to assess and compare their performance. While the IEQE's Centre for Quality Assurance of Educational Institutions has a mandate to develop guidelines and tools for self-evaluation, it has not done so for almost a decade. According to representatives from the IEQE, this is because the centre's limited resources are dedicated almost entirely to supporting external school evaluation. Therefore, the school self-evaluation manual developed by the ministry in 2005 in collaboration with the British Council has never been updated to reflect the new school quality standards. It is also unclear to what extent this manual is used by schools to inform their evaluation practices. For example, none of the schools met by the review team referred to the manual or even seemed aware of its existence. Moreover, while the external school evaluation team checks whether the school carries school self-evaluation, it does not systematically monitor the quality of these among the school quality standard indicators.

The use of external school evaluation to inform in-school planning and external monitoring and accountability is limited

Results of school self-evaluation are not systematically used to inform in-school practices. While national regulations require schools to draft and update their three- to five-year school development plan based on the results of school self-evaluation, this does not appear to be happening in many schools. However, a school's self-evaluation is one of the sources of evidence used to inform the external school evaluation results (MoESTD, 2019[14]).

Serbia has a separate process for checking schools' compliance with legal requirements carried out by audit inspectors at the municipal level

In Serbia, municipal inspectors (hereafter referred to as audit inspectors) are responsible for checking schools' compliance with laws and regulations related to school safety, inclusion and access for all children and labour laws. Inspectors audit schools at least once a year and check a list of documents requested from the school. These include documents from the school councils and professional bodies such as the teacher council. The audit team provides the school principal with the audit report, including the conclusions and measures that need to be implemented by the school within 15 days after the school visit. Inspectors can also carry out exceptional audits when problems are reported in a given school by teachers, parents, students or the school principal.

The law on inspections (audits) was changed in 2018 to simplify the process and make the most of available human resources. Audits will be carried out in some schools only based on an initial risk assessment, the criteria of which are yet to be determined. Municipalities will also be able to ask inspectors from other municipalities to join the audit team. There are very limited links between the audit carried out by the inspectors and the external school evaluation carried out by the RSA. Inspectors reported to the OECD review team that in some cases advisors are invited to join the audit teams but this is not consistently done.

Standardised data on school outcomes is very limited

Schools in Serbia have very limited tools to compare their practices and results to those of other schools in similar contexts. The main tool used by schools to understand how their learning outcomes compare to that of other schools is the end-of-primary exam report from the IEQE, which compares each school's results to that of other schools with a similar profile. However, upper secondary schools do not have any standard measure of their students' learning outcomes. Both basic education schools and upper secondary schools do not receive comparative information about enrolment, completion, drop-out and inclusion levels. Moreover, external evaluation reports include a school context section that describes the school's socioeconomic context, student population and geographical location. However, these reports do not systematically use standardised data to describe school context nor do they give comparative benchmarks, such as schools in similar contexts or national averages.

Policy issues

Serbia has some of the foundational processes and practices of a strong school evaluation system. It has comprehensive school quality standards focused on the indicators that are most related to improvement in teaching and learning, its external school evaluation process is overall well-designed and schools carry self-evaluations annually using the school quality standards as a reference point. However, external and self-evaluations have,

so far, a limited impact on school improvement. The external school evaluation process continues to be perceived mostly as a summative process rather than formative. This is due to both the lack of clear recommendations for improvement feedback from the inspection visit and the limited follow-up and technical support provided to schools. Similarly, while most schools carry school self-evaluations, these processes remain disconnected from the process of school planning and improvement. Serbia needs to improve the developmental aspect of both external and self-evaluation processes and provide schools with the necessary capacity and training to make the most of evaluation results. To do so, the improvement of the school evaluation process recommended by this review should be embedded in the larger context of a school improvement strategy.

Policy issue 4.1: Develop external evaluation into a meaningful process for school improvement

On paper, Serbia has one of the most advanced external school evaluation systems in the Western Balkans. The evaluation process developed with the help of SICI and the Dutch Inspectorate reflects many of the features of mature systems in OECD countries. It has a clear reference framework focused on school quality indicators that cover important practices related to effective teaching and learning. The evaluation process itself triangulates various sources of evidence, such as classroom observation, stakeholder interviews and reviews of school documents. However, despite these strong design features, the practice of external school evaluation in Serbia remains somewhat peripheral to policymaking and important reforms, such as the new curriculum or new national assessment of student learning outcomes. The process has also done little to trigger improvements within schools, in part because of the perception of the process as a purely summative exercise and the lack of quality feedback, but also because of limited school resources and capacity, combined with a lack of external technical and expert support.

Serbia is about to start a second round of external school evaluations (2019-24) and is introducing changes to key aspects of the process. The quality standards were refined in 2018 based on feedback from advisors and other external evaluators following the first round of evaluation. A new core of licensed teacher-evaluators has been created to help advisors carry out the evaluations and address the shortage of qualified staff. These licensed teacher-evaluators assist advisors and accompany them in school visits. However, these changes, while important, are not sufficient to address the disconnect between school evaluation and improvement. Moreover, some of the changes, such as the increase in the number of standards, go in the opposite direction of current trends in mature school evaluation systems and risk overburdening schools by making the process more of an administrative check rather than a focused evaluation on key factors of school quality. If external evaluation is to serve as a real catalyst for change in school practice and policy, not only will the independence and authority of the IEQE need to be reinforced, both the capacity and expectation for schools to act upon evaluation results will need to be strengthened significantly.

Recommendation 4.1.1: Institutionalise and invest in capacity for external evaluation

Responsibility for external school evaluation in Serbia is divided between the IEQE, a semi-independent agency which develops evaluation resources, and the advisors in RSAs, who are responsible for implementation. This leads to a situation in which there is no entity leading external evaluation and ensuring its overall quality and effectiveness. Moreover,

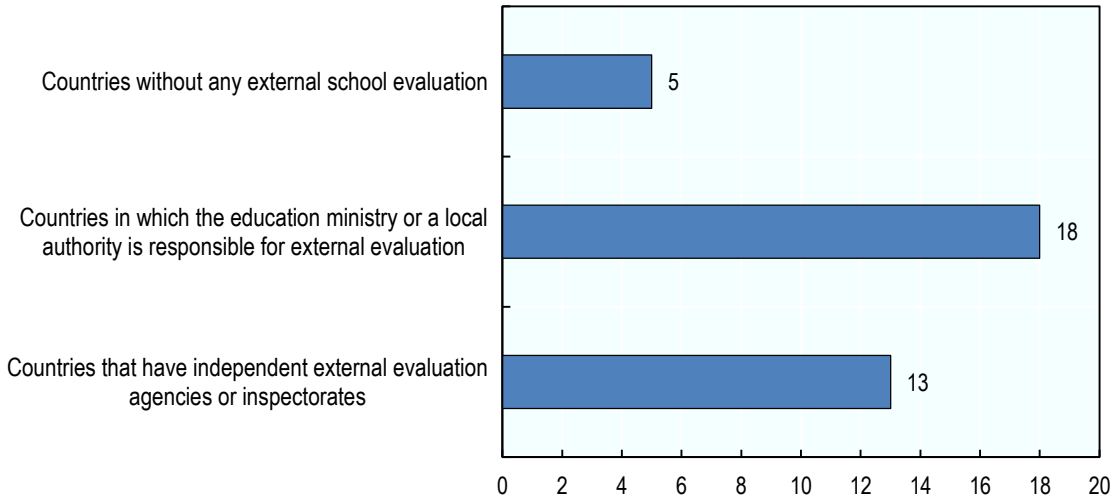
advisors have overlapping, conflicting responsibilities and limited capacities to carry out all their duties. An agency with full responsibility for external school evaluation and for reviewing the staffing of the evaluation team to ensure its independence must be created to give external evaluation more visibility and influence, and improve confidence in the process. The consolidation of responsibility for school evaluation within a dedicated institution will also free up school advisors' time to focus on providing support to school development and improvement.

Create an independent national institution in charge of external evaluation

Creating an independent agency responsible for overseeing and implementing external school evaluation in Serbia would help to strengthen the integrity of the evaluation process and provide a more independent perspective on the effectiveness of national policies. Across OECD countries, a growing number of countries (13 out of 36) have set up independent external evaluation agencies or inspectorates responsible for the whole school evaluation process (see Figure 4.4). The Centre for Quality Assurance of Educational Institutions should become the sole authority responsible for school evaluation in Serbia. The centre, originally created with this intent in mind, has thus far focused mostly on the development of tools and guidelines. Its mandate should be expanded to include selecting and providing continuous training to the evaluation teams that will carry out the school visits. The evaluators should be accountable directly to the Centre for Quality Assurance of Educational Institutions. Serbia can learn from the experience of Romania, for example, which set up an independent agency responsible for external school evaluation in 2005. The Romanian Agency for Quality Assurance in Pre-University Education (ARACIP) is responsible for developing the tools for evaluation and selecting and training evaluators. The agency was also successful in ensuring the independence of its evaluation and thus gradually building trust in the fairness of its evaluation among schools (see Box 4.1).

Serbia should also consider making the Centre for Quality Assurance an agency independent from the IEQE and the ministry, and, at a minimum, make sure that it has its own dedicated, sustainable funding stream to carry out its mission. This includes funding to develop and refine the tools (e.g. school quality standards, evaluation grids, feedback template, etc.) and to provide training to evaluation teams. Currently, the centre's budget falls under the overall budget of the IEQE, which is also responsible for carrying out other significant reforms, such as the introduction of the new end-of-upper-secondary examination (Matura) and a new national assessment. The lack of a dedicated budget line for school evaluation risks perpetuating the current situation of chronic underfunding, as other urgent reforms may take budgetary priority. Establishing the centre as an independent entity would create pressure for adequate funds, but also elevate school evaluation as a core function within the education system and give its leadership more voice in policy discussions.

Figure 4.4. Number of OECD countries by type of school evaluation agency



Source: OECD (2013[1]), *Synergies for Better Learning: An International Perspective on Evaluation and Assessment,* http://dx.doi.org/10.1787/9789264190658-en.

Box 4.1. The Romanian Agency for Quality Assurance in Pre-University Education (ARACIP)

The Romanian Agency for Quality Assurance in Pre-University Education (hereafter the agency) was created in 2005 by the Quality Assurance Law, which provided the basis for the current school evaluation system in Romania. The agency is a permanent external school evaluation body, separate from the Ministry of National Education and Scientific Research (MNESR), with its own legal status and budget.

The agency's main function is external evaluation and it is responsible for developing national quality standards and performance indicators. After an evaluation, the agency advises the ministry of education whether a school should be granted provisional authorisation, initial accreditation or recurrent evaluation.

Other than external evaluation, the agency also provides guidelines and a template model for school self-evaluation and makes recommendations to the government on issues of quality education. The agency publishes an annual activity report and releases another on the state of quality in education at the national level every four years.

As in other European countries, the agency works with evaluators with significant teaching experience to carry out their external evaluations. Candidates must have experience in the evaluation domain and, once selected, must follow an 89-hour training programme in order to assume their positions.

Source: Romanian Agency for Quality Assurance in Pre-University Education (n.d.[15]), *Country Profile Romania,* http://www.sici-inspectorates.eu/getattachment/1cbc0561-c91b-4c71-a71c-6b9369ecad61 (accessed on 7 June 2019); Kitchen, H. et al. (2017[16]), *Romania 2017,* https://doi.org/10.1787/9789264274051-en; European Commission/EACEA/Eurydice (2015[6]), *Assuring Quality in Education: Policies and Approaches to School Evaluation in Europe,* http://dx.doi.org/10.2797/678.

Develop a wider pool of licensed external evaluators

The persons in charge of evaluating schools should not be the same individuals responsible for helping schools implement the recommendations or for providing other forms of ongoing technical support to school staff. This creates a conflict of interest and undermines the credibility of the evaluation process. Moreover, it has shown to be very difficult for the advisors to carry out both sets of responsibilities given their limited numbers (100 advisors across 17 RSAs). Instead of relying on the advisors from a school's RSA to carry out school evaluations, the Centre for Quality Assurance should train, certify and contract individuals of various profiles to join the evaluation team. This is a common practice in many well-established evaluation agencies in OECD countries, such as Ofsted in England, United Kingdom, the Swedish Schools Inspectorate and the Dutch Inspectorate of Education (European Commission/EACEA/Eurydice, 2015[6]; DICE, 2015[17]).

In Serbia, the evaluation team could draw upon:

- **Contracted teachers and principals:** Serbia should further develop the practice of contracting teachers for external school evaluation. It should make sure that selected teachers go through a certification process to ensure they are qualified for the role and should extend this scheme to school principals. It is common across European and OECD countries for inspection teams to include school principals and teachers from other schools who have been trained and licensed as evaluators (OECD, 2013[1]). This new responsibility should be recognised in the teacher career structure.
- **Experts:** The Centre for School Quality Assurance should also consider contracting experts or researchers in specific fields in which certified teachers, school principals and advisors lack the expertise to assess the quality of school practice. Such fields include health, nutrition, violence prevention or inclusive education. Experts should be invited to join the external evaluation team on specific occasions, depending on the focus of the evaluation.
- **Audit inspectors:** As argued below, this review recommends that the school audit carried out by municipal inspectors be integrated more fully within the external evaluation process. Thus, inspectors would join the external evaluation team if an initial review of school documents shows a risk of noncompliance with regulations.

Selecting and training new evaluators in sufficient number may take some time and would require additional funds. As this new pool of licensed evaluators is being introduced, the centre should immediately stop using advisors from the same RSA as the school being evaluated and rely instead on advisors from other RSAs to carry out school evaluations. This is important to ensure the independence of the evaluation process. However, as their role in teacher appraisal for promotion and advice to school increases in the medium term, advisors will not have time to dedicate to external evaluations and their participation should thus become the exception rather than the rule.

Streamline the regular audit and better integrate within the external school evaluation

The audit process needs to be streamlined to avoid overburdening schools. The current practice of having two separate procedures is both costly for Serbia, as there are not enough audit inspectors to visit all schools, and creates an unnecessary burden on schools, which need to prepare one set of documents annually for municipal inspection and a different set

of documents for the external evaluation every five years. Most importantly, the audit processes do not inform the external school evaluation process and function almost completely in parallel. To make the most of the available human resources of audit inspectors, this review recommends that:

- **Document checks are streamlined:** It is very uncommon in OECD countries to check compliance with regulations during an audit visit. In a 2011 survey of audit practices, no OECD countries had regular school visits as the main means to check compliance. The majority of countries require schools to send relevant documents to the auditing agency or the inspection agency, with some countries, such as the Slovak Republic, having set up a follow-up inspection process if initial document checks show discrepancies. A growing number of countries have introduced e-platforms to simplify the submission of documents from schools (OECD, 2013[1]).
- **Regular audits carried out annually by audit inspectors should be discontinued**. Schools should be asked to upload all relevant documents online to a platform managed by the Centre for Quality Assurance of Educational Institutions. Information from these documents should be reviewed both by audit inspectors at the municipal level to determine if schools are at risk of noncompliance and by the school evaluation team in preparation of the school visit. Schools should only be asked to update documents when necessary, instead of annually for every document.
- **Audit inspectors visit schools when issues are identified:** If major risks of noncompliance were determined by reviewing the material uploaded by the school or in the event of complaints from school staff, parents or students, audit inspectors would visit the school to check the situation and draft a report on the necessary measures to be taken. Thus, the school audit visit would become the exception instead of the rule. This will free up inspectors' time to contribute more actively to the external school evaluation.
- **Audit inspectors are trained and asked to join external evaluation teams:** As the number of school audits per year will be reduced to a minimum, inspectors can join external school evaluation teams on school visits to review administrative and regulatory compliance. Audit inspectors will also need to receive the same training given to advisors and contracted teachers in order to join school visit teams in addition to their training on school audits.

Recommendation 4.1.2: Review how evaluation results are reported and used to support school improvement

If school evaluation is to help lead to improvement, schools need to have the capacity and incentives to take action in response to the issues identified. They also need to receive clear guidance from evaluators on where and how they might improve. At present, the feedback provided to schools is limited to numerical scores (grades) and a description of performance against each indicator. Given the limited human and financial resources available, external follow-up support from advisors is very rare, even for schools identified as "weak" or "very weak". This means that schools are left very much on their own to determine what they can do to improve. The quality of the six school-improvement plans the review team examined was extremely variable. While some plans were very detailed and listed concrete actions to be taken by the school, others were quite general and would not provide adequate direction

to school actors on how to improve the quality of their practices. The ministry of education, the Centre for Quality Assurance and the Institute for Improvement of Education (IIE) need to provide schools with more useful feedback as well as more support to plan and implement change in response to evaluation results. They also need to provide appropriate support and accountability structure to schools, in particular to those that do not meet the minimum level of quality.

Revise the school report template to include recommendations for improvement

The written school report on the results of the external evaluation does not include recommendations for improvement. While this model of reporting with no explicit recommendations is common in some OECD countries, such as the Netherlands, and leaves schools the freedom to choose how to address the identified issues, it is not effective in contexts with limited in-school capacity for analysis and planning and resources for improvement, such as in Serbia. Additionally, the review team observed that schools visited tended to focus more on the overall numerical score (grade) rather than their strengths and weaknesses. To shift this focus and help schools use the feedback from external evaluation for improving their practices, the Centre for Quality Assurance should consider revising the school report template as follows:

- **Introduce a one-page summary of the report**: This one-pager should include the identified strengths and main recommendations for improvement. Recommendations should be as precise as possible and focus on areas under the direct control of the school. The centre can look at the example of Education Scotland's inspection reports, which combine a detailed report summarising key findings for each core indicator and a brief note summarising the main strengths and recommendations for improvement (see Box 4.2).
- **Replace numerical scores with qualitative descriptors**: At present, the written report only includes numerical scores (grades). This practice reinforces a summative view of the evaluation and focuses schools on the overall score rather than the quality of the underlying practices across core areas of their work. Introducing descriptors (e.g. very good, good, weak, and very weak) and examples of practices that illustrate the judgement will give the score more meaning and help inform the next steps.
- **Include contextualised performance data with benchmarks:** Providing schools with data and benchmarks is useful to anchor the report in evidence and give schools materials for their own self-reflection on their practices. This includes quantitative data such as student learning outcomes and soft "data" like surveys and interviews (NCSL, n.d.[18]). The written report should, for example, include school performance data such as students' average marks in the end-of-basic-education exam and new State Matura (examination at the end of upper secondary) as well as completion and enrolment rates. This data should be contextualised by including the average performance of schools with similar socio-economic background. Similar to the Scottish example (see Box 4.2), an annex can be added with the aggregated results of student, parent and staff surveys.

Box 4.2. School inspection reports in Scotland

Education Scotland, the agency under the Scottish government charged with supporting quality and improvement in national education, publishes three types of school inspection reports for each of the evaluated schools.

The summarised inspection findings

The summarised version of the report provides brief contextual information about the inspected school and its main findings. It presents the inspection's conclusions and some recommendations based on core indicators and a summary of evaluation results regarding each theme covered by the referred indicator. The school's evaluation result (for each indicator) is given under a qualitative descriptor format ranging from "very weak" to "very good".

The inspection report

The inspection report is relatively short and addresses students' parents or carers. It states the school's strengths followed by the school's areas for improvement in bullet point format. The last page is reserved for a table presenting the descriptive evaluation (from "very weak" to "very good") of the quality indicators used to evaluate the school.

The additional inspection evidence

This evidence report serves to inform the public of the methodology used to carry the evaluation process. It presents the questionnaire given to parents/carers, school partners, staff pupil support, staff school support, staff teachers and young people (actors can vary according to the education level being evaluated). A summary of the answers given to each question is also presented. Answers are portrayed in percentages and are also shown in the form of graphs in order to facilitate its visualisation and understanding.

Source: Education Scotland (2019[19]), *Reports*, https://education.gov.scot/reports-by-date (accessed on 7 May 2019).

Develop the school boards' capacity to monitor the quality of school planning and programmes

The school board is responsible for validating the school action plan that school principals are required to develop, with input from the school community following an external evaluation. This role should help keep school staff accountable for implementing the recommendations of the external evaluation. However, in practice, the school boards' function in Serbia is limited to a mere administrative check that an action plan has been developed, instead of a genuine review of its quality. School board members receive no guidance from central authorities or the RSAs on how to evaluate the quality of a school plan or monitor its implementation.

The Centre for School Quality Assurance can take several actions to help school boards take on a more active role in monitoring the quality of action plans and supporting school improvement. The centre can provide school boards with examples of good action plans to help guide their judgement. The centre also needs to make training available to school boards on school management and planning to help them with their monitoring role (e.g. school funding, the planning cycle, etc.) and encourage school boards to take up this

training. This can be done by sending letters to newly elected school board members detailing the training available. In many OECD countries such as Estonia, training on school management is available for both school leadership and school boards which are tasked with overseeing the schools (European Commission/EACEA/Eurydice, 2015[6]). Most importantly, Serbia will need to make sure that school principals are adequately prepared in how to plan for school improvement and how to engage and motivate the school community behind collective follow-up actions. This needs to be reflected in their initial training and through continuous training (see Recommendation 4.2.2.).

Introduce a risk-based approach to follow-up support

Given the limited human and financial resources at both the national and regional levels, the ministry needs to focus its technical and financial support on schools that did not meet the minimum level of quality during the external evaluation, i.e. schools that received a score of "weak" or "very weak". This is particularly important to ensure more equity in the system as schools with low quality tend to be schools in more disadvantaged areas. In Serbia for example, between-school difference in socio-economic background explains about 40% of the variation in low performance in mathematics, suggesting significant concentrations of low performers in particular schools (OECD, 2016[20]). To do so, the ministry should consider:

- **Focusing advisors' follow-up on the schools evaluated as "weak" or "very weak" in the external evaluation:** As advisors will not be responsible for evaluating schools in their own region, there will be fewer risks of conflict of interest. They will also gradually be less involved in external evaluation, freeing up time they can use to help schools develop and implement their action plan. Given their limited number, advisors should focus on schools that scored "weak" or "very weak" on their region's last evaluation. Advisors should work with these school to develop an action plan that addresses key areas of improvement. They should identify needs for training and external support the schools will require for this (i.e. coaching opportunities, participation in peer learning, etc.). Advisors should also make sure that these schools have the necessary budget to implement the improvement plan. To carry out this function effectively, the ministry and the IIE should make sure that advisors have easy access to the most up-to-date information about available training opportunities and funding sources.
- **Making sure that low-performing schools receive the financial resources needed to improve:** As part of the national school improvement strategy recommended by this report (see Policy issue 4.3), the ministry needs to make sure that low-performing schools have access to additional financial and technical support to improve their quality. This support can be in-kind through participation in peer-learning programmes facilitated by the Centre for School Quality Assurance or additional financial resources or grants targeted at professional development.

Implement the differentiated approach to school evaluation to incentivise and reward improvement, including in high-performing schools

The Centre for School Quality Assurance has introduced a differentiated approach to school evaluation in the revised process for school evaluation introduced in 2019. The new process requires schools with very weak performance to be evaluated again after three years. This can help make sure that Serbia's weakest schools are closely monitored and given the opportunity to demonstrate improvement. A similar approach is used in a growing number

of European countries which are introducing a risk-based approach to external evaluation, by which schools that are at risk of not meeting minimum quality standards are evaluated more frequently than others (Gray, 2014[21]). For example, Ofsted, the inspection agency in England, requires schools that received a "required improvement" mark during the regular inspection to undertake a new inspection two years after the original inspection (Gray, 2014[21]). This change is positive and should thus be continued and implemented.

The compressed timeline for low-performing schools will also help incentivise schools to show progress to obtain a higher score and improve their reputation in the local community. The experience of the Netherlands shows that schools that receive a "weak" score prefer to have a short cycle of evaluation to demonstrate their progress and discard the "weak school" label (see Box 4.3). The new differentiated approach should also target high-performing schools. Schools that performed "good" or "very good" in the evaluation should be rewarded by a longer evaluation cycle (every five years for example). This differentiated approach gives high-performing schools public recognition for their practices and shows trust in their ability to drive their own improvement agenda without close external monitoring.

Box 4.3. A risk-based approach to school evaluation in the Netherlands

A risk-based approach to school evaluation in the Netherlands

The school evaluation system in the Netherlands relies on the availability of a rich set of data on schools and mechanisms for monitoring, collecting and analysing school performance. The agency responsible for external school evaluations in the Netherlands is the Dutch Inspectorate of Education. The inspectorate uses a highly developed process to conduct evaluations and its approaches are constantly revised to meet emerging needs. For example, in 2008, the Dutch Inspectorate introduced a risk-based approach to school evaluation. Schools identified as "at risk" of underperformance are evaluated more comprehensively and with more frequency than those that perform well by comparison. In this model, schools are classified into two different categories:

- **"At-risk" schools** are identified based on a variety of data including school-level student performance data, documents sent by schools to the inspectorate as well as "failure signals", such as media news and external complaints. Every school goes through the risk-analysis process. If risks are identified, the inspectorate must conduct a follow-up inspection. This inspection is based on a framework of quality criteria covering key aspects of pedagogical and organisational processes that may have an impact on students' outcomes. Schools must then develop an action plan and programme for improvement. A quality inspection is carried to assess the completion of the improvement process which leads to a final inspection report responsible for assigning the school to a different inspection regime.
- **Schools "to be trusted"** have reached basic quality after the risk-based inspection. Under this classification, schools are visited only once every four years for a "basic inspection". This kind of inspection checks, for example, legal compliance and special needs provision but does not evaluate the whole set of aspects that impact the teaching-learning process of a school. The difference in this approach is that it relies on publicly available information, instead of a school's own evaluation documents.

There are indications that the risk-based approach reduces the number of schools providing a weak or unsatisfactory quality of education in the country. Since the introduction of the risk-based approach, the inspectorate has reported that between 2009 and 2012, the proportion of weak schools decreased from 7.4% to 2.9%, and from 10.9% to 9.4% in primary and secondary education respectively. Studies confirm that there is indeed a positive impact of risk-based inspections on weak and unsatisfactory schools; however, doubts remain about the nature of the impact on other schools (i.e. impact on preventing new schools from entering the weak and unsatisfactory categories).

Source: Nusche, D. et al. (2012[22]), *OECD Reviews of Evaluation and Assessment in Education: Netherlands 2014*, http://dx.doi.org/10.1787/9789264211940-en.

Focus school principals' accountability on their leadership role rather than the schools' overall performance

Serbia is considering introducing new measures to make school principals accountable for following up on the results of evaluation, with the possibility of removing a principal in "very weak" schools that do not show improvement in two consecutive external evaluations. There are many risks associated with this approach. Most notably, school principals might be unfairly made accountable for factors outside of their control. For example, lack of funding is often a strong factor in a school's inability to improve. Rather than making school principals accountable for their schools' overall outcomes, Serbia may consider instead developing school principals' accountability for demonstrating good leadership competencies. School principals that have strong administrative and instructional leadership capacities are important for improving the quality of school practices (Pont, Nusche and Moorman, 2008[23]). Leadership competencies should be part of the core areas evaluated during the external school evaluation and school principals with weak or very weak leadership competencies should receive coaching and support (see Recommendation 4.2.2). If no improvement is observed over several evaluation cycles, the ministry can put in place a process for changing the principal in the school.

Policy issue 4.2: Support schools to develop a culture of self-evaluation and learning

While school self-evaluation has been mandatory in Serbia for almost two decades, it has not yet led to the development of a culture of continuous learning and improvement in schools. This is in large part because of the limited guidance and support that schools receive on how to engage in meaningful self-evaluation, as well as the limited instructional leadership capacity in schools and lack of financial resources to implement improvement activities. While there was a strong push in the early 2000s to develop school capacity to reflect on quality and use such analysis to inform planning, this effort has been more or less stopped as resources at the IEQE and IIE were directed towards other policies, such as external school evaluation and teacher professional development. The Centre for Quality Assurance in Education Institutions should provide schools with clearer guidance, tools and training opportunities on how to establish effective school self-evaluation and planning processes. School leadership in schools needs also to be developed and school principals provided with more feedback on how to improve their leadership competencies.

Recommendation 4.2.1: Provide schools with guidance on how to evaluate quality and use the results to inform development plans

Schools in Serbia have some autonomy and flexibility in terms of how they carry out self-evaluations and use the results to inform their planning and day-to-day practices. Schools set their own annual self-evaluation plan and determine the domains to be evaluated. While all schools must base their self-evaluation on the same standards and indicators, they can choose to develop additional indicators for this process. This is positive, as research shows that effective school self-evaluation needs to be appropriated and adapted by schools to fit their distinct needs and aspirations (OECD, 2013[1]). However, as the capacity for self-evaluation and planning in most schools is low, more national guidance and support is needed regarding what schools can do in practical terms to kick-start a meaningful reflection on quality. The limited national guidance on how to conduct effective school self-evaluation and use the results to inform planning leads to the varying and low quality of self-evaluation across schools. It also limits the extent to which the results of self-evaluation can contribute to improving school quality. For example, Education Scotland, the external evaluation body in Scotland, has set up a central web-based resource to help schools improve their self-evaluation capacity. Its package of resources, known as *Journey to Excellence*, is constantly growing. It provides guidance for improvement in school planning and examples of school quality indicators (OECD, 2013[1]). The Centre for Quality Assurance of Educational Institutions should provide schools with clearer direction as to what a quality learning and school environment look likes, give them the tools to evaluate their practices in relation to standards and benchmarks, and make sure that school self-evaluation is truly embedded in schools' improvement culture.

Create a new self-evaluation manual and encourage schools to use it

The 2005 manual of self-evaluation provides comprehensive guidelines to schools on how to conduct a meaningful self-evaluation. It includes a simple definition of what self-evaluation is and how it can be used to inform school planning. It lists the indicators that schools can use to evaluate their practices and provides a clear description of what schools need to demonstrate in order to score 4 (highest level on the scoring scale) and 2 (weak). It also provides templates for teacher and student surveys and scoring grids for each quality area. However, this manual is outdated and does not reflect the new school quality standards introduced in 2011 and updated in 2018, nor does it reference the National Education Strategy and key reform priorities, such as improving the quality of professional development. As such, schools do not use this manual in their self-evaluation practices. The Centre for School Quality Assurance should create a new manual as follows:

- **Review schools' experience with self-evaluation:** The centre should lead a review to understand how schools are using self-evaluation and what practical changes to the self-evaluation manual and process would help make it more useful for them. This could be done by sending schools a short survey about their practices and sending a team of experts to observe the school self-evaluation process in a sample of schools. In the Netherlands, although there is no mandatory requirement for school self-evaluation, it is the responsibility of the Dutch Inspectorate of Education to evaluate a school's internal quality care policy, which includes self-evaluation processes if these are in place (OECD, 2013[1]).
- **Provide schools with a list of simple prompting questions:** Research and experience suggests that self-evaluations should aim to answer simple questions focused on improving teaching and learning, such as: "how good is our school?";

"how can we make it better?"; "are teachers' skills being put to good use?"; and "how good is learning and teaching in our school?" (Riley and MacBeath, 2000[24]). The new manual should include a shortlist of such prompting questions to focus school evaluation on essential elements of school practice.

- **Get rid of numerical scores and highlight core quality areas to evaluate:** Getting rid of numerical marks will help shift school actors' focus from the score (grade) to the quality of practices. It will also diminish the perception of stakes that some schools may associate with the mandated school self-evaluation. The manual should include the six core key indicators used in the external school evaluation. These indicators, which focus mostly on teaching and learning practices as well as school planning, measure the most important elements related to school quality. The updated manual should include indicator descriptors for each, as well as benchmarks of quality.

The Centre for School Quality Assurance should also play an active role in encouraging schools to use the manual to inform their self-evaluation practices. The centre can, for instance, distribute copies of the newly revised manual to every school in Serbia. It should also ask advisors in RSAs to use the manual as a reference point in discussion with schools about their improvement plans.

Provide schools with indicators and tools to measure their performance against some key national targets

The Centre for School Quality Assurance should work with the data analysis team in the ministry to provide schools with contextualised benchmarks of schools' performance on key indicators such as enrolment and completion rate by different student categories (i.e. gender, socio-economic background, ethnic group, SEN). Standard measures of school quality help schools understand how their practices and results compare to that of other schools and national goals (OECD, 2013[1]). Without such information, self-evaluation is limited to a reflection about practices compared to the school quality standard, with no sense of how the school compares in practice to the average Serbian school or schools facing similar contexts.

This will most likely take time as the data analysis team is currently underfunded and understaffed and will require an improvement of its capacity to provide reliable data to schools (see Chapter 5). In the medium term, the centre should also make sure that contextualised benchmark results of the school Matura exam (the planned end-of-upper-secondary-school exit exam) and the national assessment are provided to schools. This data should be granular enough to allow schools to compare their students. These contextualised indicators should also be used in the external school evaluation, which currently lacks standardised measures of student learning outcomes.

Ensure that schools have access to training and technical support

The Centre for School Quality Assurance should provide opportunities for schools to learn about how they can improve their self-evaluation process. While this is already part of its mandate, the centre has not been able to provide training on school self-evaluation for over a decade. The centre should be provided with sufficient funding and human resources to ensure that schools have access to the technical support that they need. Countries that succeed in developing a real culture of self-improvement in schools, such as Scotland, have heavily invested in providing schools with sufficient technical support (OECD, 2013[1]).

This technical support should combine both seminars to explain self-evaluation and why it matters, and continuous support through coaching:

- **Training seminars:** In collaboration with the IIE, the Centre for School Quality Assurance should make sure that school principals, teachers and pedagogues have the opportunity to improve their understanding and practice of key elements of school self-evaluation, such as collecting evidence, analysing information and providing recommendations for improvement. These seminars should be included in the IIE training catalogue and their design should be informed by needs in training identified during the external evaluation.
- **Coaching by a licensed evaluator:** School self-evaluation teams should be given the opportunity to request the technical support of a coach in carrying out their self-evaluation. For example, in Poland, schools can request support for school self-evaluation from coaches at the teacher education and counselling centres. Similarly, in Belgium (German-speaking Community), schools can request support and coaching services on self-evaluation free of charge from the school development council within the ministry of education (European Commission/EACEA/Eurydice, 2015[6]). These coaches could be drawn from the external evaluators licensed by the Centre for School Quality Assurance (e.g. teachers or school principals) and trained in how to provide support for school self-evaluation. Such coaching could also be made mandatory for schools that did not meet the quality standards in the area of school planning in the external evaluation.

Given limited resources, the Centre for School Quality Assurance should prioritise providing the training programmes discussed above to schools identified as weak by the external school evaluation. This should be part of the support package provided to low-performing schools as part of the school improvement strategy (see Recommendation 4.1.2).

Encourage peer learning and sharing of experiences in self-evaluation

Schools need more opportunities to learn from each other's experience in implementing self-evaluation activities. Disseminating good practices – for engaging the whole school, undertaking classroom observations or analysing data for example – provides schools with inspiration about how they can improve their own practices. Highlighting good practices also provides important recognition to encourage schools to improve. To support this, the centre should create an online platform where schools can exchange templates for surveys and other instruments for collecting evidence. The external evaluation team can be tasked to identify good practices and produce short video interviews with the school self-evaluation teams to explain how and why the process was successful and what other schools can learn from it. Locally, the RSAs can also pair up schools in the same region based on identified needs to share experiences and foster peer learning.

Review schools' capacity for improvement through the external school evaluation

The external school evaluation in Serbia does not assess the school's capacity to set a meaningful self-evaluation process. The school quality standards do not include an indicator of the quality of self-evaluation. This is a lost opportunity to signal to schools the importance of school self-evaluation and ensure that a self-reflection process is used to inform school policies and practices. In a growing number of OECD countries, the school's capacity to self-reflect on its practices to continuously improve is a central piece of external

school evaluation. In New Zealand, for example, the Education Review Office evaluates schools' self-evaluation capacity, describing a school with "very good" self-evaluation capacity as a school that convincingly demonstrates a rigorous culture of self-review and critical reflection to sustain positive performance and continuous improvement (OECD, 2013[1]). Nationally, the 2018 quality standards for pre-school institutions are a good example to follow. The pre-school standards include an indicator of self-evaluation and improvement culture: "Standard 3.4: The institution is a place of continuous change, learning and development". The Centre for School Quality Assurance should adapt the school quality standards to include a core indicator on self-evaluation (see Box 4.4). In the medium term, once schools have developed a stronger capacity for improvement, school self-evaluation should become the main source of information for the external school evaluation (OECD, 2013[1]).

Box 4.4. Indicators used for reviewing the quality of self-evaluation carried out by schools

In **New Zealand**, the Education Review Office (ERO) adopted an evaluation approach based on schools' self-evaluations and performance in 2009. An important aspect the office takes into account when deciding on the frequency under which a school is going to be reviewed is based on a school self-evaluation capacity.

The quality of school self-review is evaluated by the office as part of its reviews of individual schools. In schools where self-reviews are well established, the office simply confirms and validates the results of the evaluation. As for schools where self-reviews are considered less well established, the external review team needs to carry a further investigation into school quality. The office assesses schools' capacity for self-evaluation based on the following indicators:

- evaluation leadership
- a learning-oriented community of professionals that demonstrates agency in using evaluation for improvement in practice and outcomes
- opportunity to develop technical evaluation expertise (including access to external expertise)
- access to, and use of, appropriate tools and methods
- systems, processes and resources that support purposeful data gathering, knowledge building and decision-making.

In **Portugal**, school inspection carried by the General Inspectorate of Education also covers the evaluation of school self-evaluation. The criteria used to assess self-evaluation and improvement include:

- coherence between self-evaluation and action for improvement
- use of results of the external evaluation in the preparation of improvement plans
- involvement and participation of the educational community in the self-evaluation
- continuity and scope of self-evaluation
- impact of self-evaluation in planning, organisation and professional practices.

Sources: OECD (2013[1]), *Synergies for Better Learning: An International Perspective on Evaluation and Assessment*, https://doi.org/10.1787/9789264190658-en; Nusche, D. et al. (Nusche et al., 2012[22]), *OECD Reviews of Evaluation and Assessment in Education: New Zealand 2011*, http://dx.doi.org/10.1787/9789264116917-en; Education Review Office (2016[25]), *School Evaluation Indicators: Effective Practice for Improvement and Learner Success.*

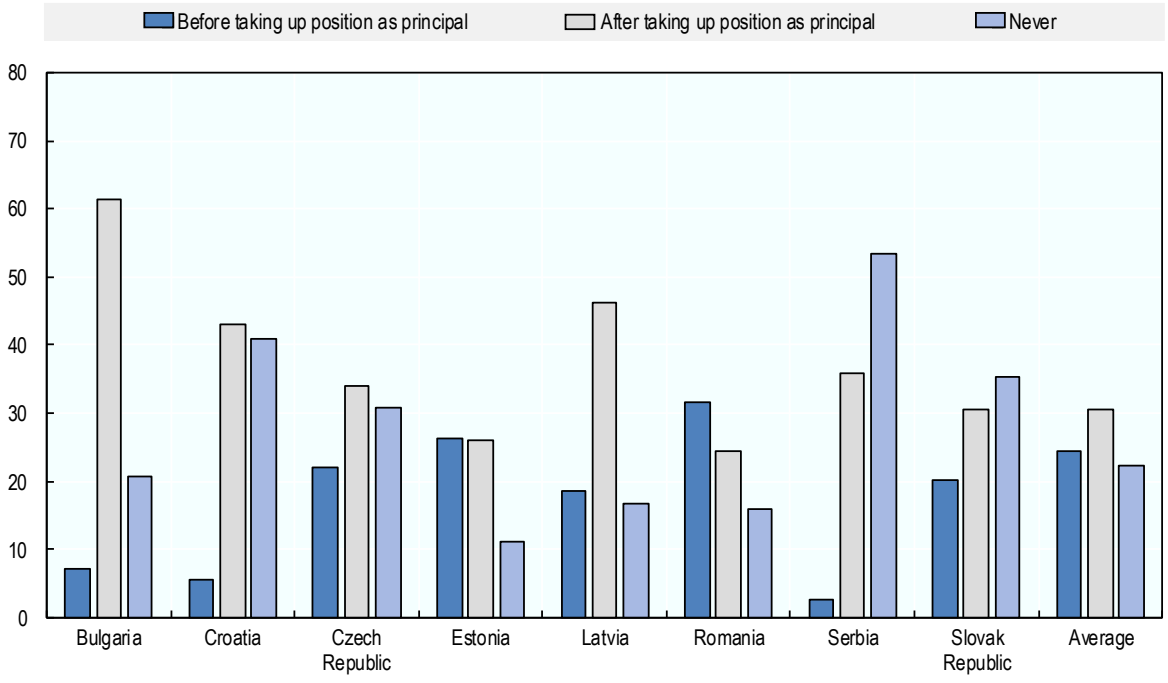
Recommendation 4.2.2: Develop school leadership for improving the quality of their schools

The effectiveness of any evaluation, internal or external, depends largely on the ability of schools to act upon the results. In Serbia, this will require more attention to developing overall leadership capacity. The ministry has already taken important steps to strengthen the professional independence of principals and make them more accountable for school quality. The appointment of school principals is now based on a review of competency and all principals already in service are required to take a certification examination by 2021. New principals must acquire their certification in the two years following first appointment in schools. However, school principals' instructional leadership skills, such as setting a vision for the school and monitoring progress towards achieving this vision, remain low. The majority of school principals in Serbia never received any training in instructional leadership before or after becoming school principals (see Figure 4.5). Indeed, monitoring and planning are the main areas where school principals reported needing training in an IIE survey in 2017 (IIE, 2018[26]).

Improving school principals' initial and continuous professional development is thus important to make sure that Serbian schools are able to act upon the recommendation of the school self-evaluation. Moreover, school principals are given very little external support to develop their competencies and performance once they are on the job. While advisors are responsible for conducting regular school principals' appraisal (so-called "regular supervisions" in Serbia), these are rarely conducted due to their limited numbers.

Figure 4.5. School principals' access to formal training on instructional leadership

Percentage of lower secondary education principals who report that an instructional leadership training or course was included in their formal education



Note: Average in this figure corresponds to the participating countries in OECD TALIS 2013.
Source: OECD (2014[8]), *TALIS 2013 Results: An International Perspective on Teaching and Learning*, https://dx.doi.org/10.1787/9789264196261-en.

Set up a leadership academy in charge of school principals' training

The master's degree in leadership introduced in 2016 in the Universities of Kragujevac and Novi Sad is a step in the right direction towards improving school principals' preparedness for the job. However, the lack of public funding for this programme and the fact that participation is not taken into account in selecting and appointing school principals limit its appeal and have led to low take-up rates in recent years. Moreover, ways to ensure the quality and relevance of this master's programme remain limited. To improve school principal competencies, the ministry should consider focusing as a priority on providing free and mandatory training for new principals based on the competency standards for school principals:

- **Introducing free and mandatory initial education**: To improve school principal's leadership capacity, the IIE should consider providing free mandatory practical training for all newly certified school principals. It is common practice among European and OECD countries to provide initial training to school principals on their key responsibilities. For example, in the TALIS 2013 survey, 70% of school principals in Finland and 60% in Poland reported having received training on school administration prior to taking up their position as school principal (OECD, 2014[8]). This is done either through bachelor's or master's programmes before selection or more commonly through specialised training once the candidate has been selected to be a school principal. The initial education should

be of sufficient length to cover all areas of responsibility of school leadership and provide school leaders with practical training in some key areas. Twenty-one European countries require specific training before or after the appointment of a school principal, with the length of this initial training varying to a great extent among them (European Commission/EACEA/Eurydice, 2013[27]). For example, in the Czech Republic and France, headship training takes place after the appointment, with a duration of 100 hours for the former and of 1 year for the latter (European Commission/EACEA/Eurydice, 2013[27]).

- **Introducing a mentorship programme for new school principals:** School principals with experience can serve as mentors to new principals and provide support and guidance on how to meaningfully undertake instructional leadership duties and provide regular feedback. Similar to teacher mentors, school principals' mentorship role should be recognised and compensated and selected mentors adequately trained on how to provide guidance and feedback. In Estonia, coaches are selected among school principals with at least five years of experience. They also need to demonstrate a high level of motivation and pass a mandatory training course on communication, needs analysis, coaching and feedback skills (European Commission, 2017[28]).

To drive these changes and improve school principals' professional ownership of the new competency standards, the ministry should consider setting up a new school leadership academy (either an independent agency under the authority of the ministry or affiliated to a public university) in charge of school principals' initial training, certification, continuous professional development and research to improve leadership practices. This academy will help give more visibility to school leadership and strengthen the professionalisation of school principals. Many OECD countries such as Austria, Ireland and Slovenia have set up similar leadership academies (see Box 4.5). The school leadership academy should also develop training and resources for school principals working in a school cluster with one or several satellite schools. Making sure that school principals are able to lead a school cluster with multiple locations, often in isolated rural areas, is important given that 10% of students in Serbia attend satellite schools in basic education.

Box 4.5. School leadership academies in Austria, Ireland and Slovenia

In **Austria**, the Leadership Academy founded in 2004, provides training to improve the qualifications of executive-level personnel in schools, targeting leaders, directors and managers of and within educational institutions in the country. The training focuses on several elements of leadership, including leadership for learning, dialogue, shared leadership, innovation and the capacity to improve the quality of education.

Every year a new "generation" participates in a series of four three-day fora and works toward meeting certain certification criteria to be admitted into the Leadership Academy network. These criteria range from participating in the four fora to leading a participative development project in their home educational institution. The programme has been noted for its high degree of engagement among participants and its positive impact on leadership practice, particularly in the areas of providing direction, demonstrating strength of character and community-building and creating a culture of achievement.

In **Ireland**, The Centre for School Leadership (CSL) was established in 2015 under a partnership between the Department of Education and Skills (DES), the Irish Primary Principals' Network and the National Association of Principals and Deputy Principals. Among its functions, the centre supports, leads, co-ordinates and delivers leadership professional development programmes for primary and post-primary schools, which includes a programme for newly appointed principals, coaching for active principals and others. Additionally, the centre was to develop a strategic framework for a continuum of leadership professional development and a quality assurance framework for its provision, as well as to advise DES on leadership professional development policy.

In **Slovenia**, the National School of Leadership in Education (NSLE) was established in 1995 and is dedicated to the training of headteachers and their professional development in the country. Its initial head teacher training equips participants with leadership and management skills and contributes to their personal and organisational efficiency. All Slovenian head teachers are required to participate in such training. Participants in the one-year programme include recently appointed principals or aspiring candidates. The training is implemented in small groups and consists of six modules: i) introductory module; ii) organisational theory and leadership; iii) planning and decision-making; iv) head teachers' skills; v) human resources; and vi) legislation. The national school issues its call for applications for the programme once a year. The school also provides support for head teachers in their first year in position by offering a mentoring programme.

Sources: Pont, B., D. Nusche and H. Moorman (2008[23]), *Improving School Leadership, Volume 1: Policy and Practice*, https://doi.org/10.1787/9789264044715-en; BMBWF (2018[29]), Leadership Academy, https://www.leadershipacademy.at/, (accessed on 20 June 2019); Schratz, M. and M. Hartmann (2009[30]), *Innovation an Schulen durch Professionalisierung von Führungskräften [Innovation in Schools Professionalisation of Leaders]*, https://www.leadershipacademy.at/downloads/LEA_Kurzfassung_Studie.pdf, (accessed on 20 June 2019); Fitzpatrick Associates (2018[31]), *School Leadership in Ireland and the Centre for School Leadership: Research and Evaluation,* https://cslireland.ie/images/downloads/Final_CSL_Research_and_Evaluation_Final_Report__Feb_2018_.pdf, (accessed on 20 June 2019); European Commission (2017[28]), *Teachers and School Leaders in Schools as Learning Organisations: Guiding Principles for Policy Development in School Education*, https://ec.europa.eu/education/sites/education/files/teachers-school-leaders-wg-0917_en.pdf, (accessed on 20 June 2019); NSLE (n.d.[32]), *The National School of Leadership in Education*, http://en.solazaravnatelje.si/index.html, (accessed on 20 June 2019)..

Use the external school evaluation to provide formative feedback to school principals

Advisors rarely appraise school principals in practice as their time is mostly spent on external school evaluations. Even though advisors should gradually stop being involved in the external evaluation (see Recommendation 4.1.1.), they will need to prioritise other tasks such as providing technical support to "weak" schools for which their geographic proximity and relationship with schools is more strategically needed. Rather than relying on regular supervision to provide feedback to school principals on their performance, Serbia should make use of the external evaluation process to identify leadership capacity gaps and recommend professional development opportunities. Many OECD countries use external school evaluation to appraise school principals in a formative manner (OECD, 2013[1]). For example, Austria relies solely on external school evaluation to assess the quality of school leadership. Other countries, such as the Czech Republic, Poland or Sweden make use of both the individual appraisal process and external evaluation to better identify school leaders' areas of strengths and weaknesses and recommend adequate professional development (OECD, 2013[1]). The Centre for School Quality Assurance should include school leadership capacity as a core indicator for the external evaluation and ensure that school principals are provided with feedback on their leadership capacity at the end of the evaluation visit.

The centre should also consider setting up a process that triggers a more in-depth appraisal by licensed evaluators if the school leadership in the school is identified as "weak" or "very weak". In this case, the appraisal should focus on identifying areas where more support is needed and point the principal towards professional development opportunities.

Policy issue 4.3: Put school improvement at the centre of the National Education Strategy

For school evaluation to contribute meaningfully to the improvement of students' learning nationwide, it needs to be part of a broader national effort to build schools' agency for learning and improvement by aligning external support, funding, and monitoring and accountability systems. In Serbia, policies for school improvement are carried out by separate agencies with limited co-ordination and follow-through at the local and school levels. In addition, while schools in Serbia have a fair amount of flexibility in how they allocate human and financial resources, they are not able to make the most of this autonomy to improve their performance due to chronic underfunding and limited support to build their capacity to self-reflect and lead change.

Recommendation 4.3.1: Develop a national strategy for school improvement

While a lot has been done in Serbia to help improve school quality, these policies have been for the most part fragmented and, in some cases, only partially implemented. For example, the master's programme on school leadership, a promising policy for professionalising the school principal role, had a low take-up due to limited funding and articulation with school principals' recruitment and accountability processes. The Ministry needs to create a national framework for school improvement to make sure that there is much more coherence and continuity in the design and implementation of policies related to school improvement. This national framework should build on ongoing initiatives and programmes such as the SHARE peer-learning project to help schools develop a stronger culture of improvement. Research shows that effective school improvement policies focus

primarily on building in-school capacity and agency for improvement by creating a culture of collaboration and developing support systems and networks for learning, elevating the role of school leaders and monitoring improvement in schools to orient and guide policies and practices (Fullan, 1992[33]).

Put school improvement at the centre of the National Education Strategy

The ministry needs to put developing school agency for improvement at the centre of the new Education Strategy 2020-30 currently being developed (see Chapter 5). The strategy should clearly state the role that schools and school actors should play in improving the quality of education in Serbia and the type of national-level support that will be provided to schools to help them improve. Particular attention should be given to transforming the roles of school principal, deputy principal and pedagogue into a professional leadership team with clearly defined responsibilities and capacity to drive improvement in schools. For example, the Costa Rican strategy for school improvement, Quality Schools as the Axis of Costa Rican Education, focused on developing school leadership capacity and ensuring that school leaders have the agency to act and innovate in their schools (Consejo Superior de Educación, 2008[34]). For a school-centred education policy to work, it needs to be accompanied by an action plan with budgeted programmes and projects (see Chapter 5). This action plan should group policies on professional learning and development for school staff such as the development of a school leadership academy and a mentorship programme for school leaders as well as policies for developing school-level data to help schools monitor progress and the reinforcement of school evaluation policies discussed in this chapter. Each project should be costed and assigned a budget to ensure sustainability of implementation over time and accountability of the ministry and other agencies.

Set up a school improvement hub

The ministry, the IIE and the IEQE should work together to develop one unique platform for all resources for school improvement. This can be done by transforming the IIE's National Learning Portal for Education (e-learning platform for teachers) into a hub of resources for schools. Such a "hub" would make it easier for schools to access the tools and training needed to improve their practices and will gradually help to create a better understanding among school actors of the interlinkage between school evaluation, school planning and teaching and learning practices. For example, Education Scotland has set up a platform called the "National Improvement Hub" where school actors can access examples of classroom practices with proven positive impact on student learning, materials and templates to develop effective self-evaluation processes as well as summaries of recent research evidence on what works to improve teaching and learning (see Box 4.6). Serbia should set up a similar platform including the e-materials recommended by this review, such as the IIE's teacher e-learning platform, materials and examples of student assessment, the school self-evaluation manual and templates as well as briefings about research.

Box 4.6. National school improvement hub in Scotland, United Kingdom

The Scottish government has an online platform for collaboration and sharing school-level good practices called the National Improvement Hub. The hub includes research articles on what works in schools, official documents and guidelines such as the school evaluation framework, teaching and assessment resources, exemplars of good practices selected by school practitioners. School staff is encouraged to use the hub and give feedback for improvement, as well as to participate in occasional workshops, organised both on line and at various locations across Scotland.

Effective practices on teaching and learning are compiled into the "teaching toolkit" for teachers to use as reference material in designing their classroom practice. The practices in the toolkit focus on issues most schools in Scotland face such as extending school time, peer tutoring, school uniform, etc. For each practice, the toolkit identifies its impact as measured by impact evaluations and its cost.

Source: Education Scotland (2019[35]), *National Improvement Hub,* https://education.gov.scot/improvement (accessed on 27 May 2019).

Strengthen and expand school networks for quality improvement

School peer-learning networks provide school practitioners with the space to learn from other schools' practices, and discuss and solve common challenges (Pont, Nusche and Moorman, 2008[23]). Many OECD countries are actively resourcing and encouraging school actors to take part in peer-learning networks as a way to help spread tested and proven good school practices across the education system (OECD, 2015[36]). While Serbia has already some experience setting up school networks through the SHARE programme (see Box 4.7), this only covers a limited number of schools. The ministry should task the RSAs with encouraging schools under their responsibility to collaborate and exchange ideas. This can be done, for instance, by creating regular events for school principals to meet and discuss current issues, and by encouraging school staff to visit other schools to observe teaching and learning practices. The SHARE programme should also be continued and systematically implemented for schools scoring "weak" or "very weak" in the external evaluation, counting on strong co-ordination and support coming from the national level.

Box 4.7. The SHARE programme

The SHARE project, a joint project of UNICEF, the ministry of education, the Centre for Education Policy (a research centre) and Institute for Education Quality and Evaluation (IEQE), is the first initiative in Serbia aiming to create learning communities and peer learning between schools. SHARE aims to improve the quality of education by developing horizontal learning between schools and developing schools' and teachers' agency to learn and lead change in the education system. The initial phase of the project took place between 2015 and 2017 with 20 schools, 1 080 teachers and 12 665 students participating across Serbia. The project paired 10 schools that performed very well in the external school evaluation (score of 4), known as "model schools", with 10 schools that performed weakly (score of 2 or 1), known as "SHARE schools".

The project used a reflective approach combining classroom observation and feedback on observed practice. Following the selection of participating schools, classroom visitations are planned to support reflective practice. During this step, teachers, school principals and support staff from the SHARE schools observed between 10 to 15 hours of teaching at the model schools.

Based on a pairing system, the majority of discussions between schools focused on classroom management, lesson planning, teaching techniques, student support, teamwork and preparing for external evaluation. To give constructive feedback during these peer-to-peer sessions, staff in the model schools received training on how to articulate, document and share their success with their paired schools. During the final school visits, SHARE schools were also given the opportunity to present their experience and examples of best practices, thus motivating self-reflection.

The SHARE project initiated and established mutual exchange of knowledge and best practices between schools. It provided schools with hands-on experience through its peer-to-peer learning component. In addition, as a way to enhance the sustainability and long-term benefits of the project, a learning portal was created and shared amongst educators in Serbia. Moreover, 100 practitioners were trained to provide support for quality improvement in low-performing schools, creating a network of facilitators who have been integrated into the ministry of education as educational advisors linked to school administrations around the country.

The first phase of the project had a positive impact on the 20 participating schools and show scope for growth and scaling up. A majority of participating schools have seen an improvement in six out of seven areas of quality measured by the external school evaluation. This improvement was mostly seen in the areas of teaching and learning, school ethos and organisation of work and leadership. More broadly, the project introduced participating staff to the concept of horizontal learning and encouraged teachers to work together without the fear of being judged by their peers. It also allowed them to practice new teaching methods and play a more active role in shaping their classroom and school practices.

Sources: UNICEF (n.d.[37]), *Dare to Share: Empowering Teachers to be the Change in the Classroom*; European Commission (2017[38]), *Networks for Learning and Development across School Education,* https://www.schooleducationgateway.eu/downloads/Governance/2018-wgs5-networks-learning_en.pdf (accessed on 10 June 2019).

Recommendation 4.3.2: Make sure that schools are provided with sufficient financial resources to implement their improvement plans

Underfunding – in particular for professional development activities – severely constrains Serbian schools' capacity to implement improvement plans. Central government does not provide funding for professional development and some municipalities allocate very little funds for professional development (see Chapter 1). Serbia has thus a high level of school principals and teachers' out-of-pocket spending on professional development as shown by the OECD TALIS survey (OECD, 2014[8]). More broadly, while schools in Serbia have some autonomy in managing their budget, they are limited in their use of this autonomy due to lack of funding. Indeed, they rarely have enough funding to implement their school development plan without help from parents, non-governmental organisation or the private sector. For example, many school principals met by the review team reported having to fundraise or collect contributions from parents to implement activities in their school development plan. This creates risks of inequity as schools in more affluent areas have better opportunities to leverage funds. Providing schools with sufficient financial resources and support to use these resources should be a central component of the school improvement strategy recommended in this review. A central targeted grant for school improvement should be put in place to help schools, in particular those that are struggling to implement their improvement plans. Regular funding of schools can also be used more efficiently to make sure that schools, in particular those in disadvantaged areas have sufficient resources to provide quality learning to their students. Currently, Serbia has no financing scheme to address the needs of low-performing schools.

Review schools' funding mechanisms to make sure that funds are distributed equitably

The ministry has considered introducing a per-capita funding formula for schools; however, after more than a decade of debate on this issue, the policy has never been formally implemented. Serbia needs a plan to ensure that funds are distributed to schools equitably and efficiently. A more efficient allocation of school funding will help Serbia invest more in school improvement activities such as training programmes for teachers and school leadership staff (World Bank, 2012[39]). Most OECD countries have introduced funding formulas to ensure that school funding is responsive to schools' contexts and needs (OECD, 2017[40]). Similar to practices in OECD countries, the per-capita funding formula should take into account schools' socio-economic context to ensure that those in socioeconomically disadvantaged areas are provided with sufficient resources to meet the needs of their students.

Provide central grants to schools to implement their school development plans

To implement their development plan activities, schools in Serbia receive funds from the local authorities for professional development activities or raise funds from the local community, businesses or donor organisations. Such a system leaves many schools with very limited funds to invest in improving their practices. The ministry should consider allocating a central grant to schools for implementing their school development plan. Priority should be given to schools that performed poorly in the external evaluation and schools in low socio-economic areas. Many OECD countries, such as England, do provide discretionary funds to schools to invest in improvement activities based on the schools' performance and socio-economic background (see Box 4.8). These funds are usually accompanied by external support and monitoring to guide schools in using the funds to

develop effective strategies in improving student learning. In Serbia, advisors should be responsible for this follow-up and monitoring function as recommended above (see Recommendation 4.1.1.).

Box 4.8. Pupil premium in England, United Kingdom

In England (United Kingdom), the Department for Education has established an additional funding scheme provided to schools attending disadvantaged students (pupil premium). Pupil premium funds are provided on a per-student basis and schools have autonomy on how these resources are spent. Schools are expected to spend these resources on strategies that better support learning for disadvantaged students and close the achievement gap between disadvantaged and advantaged students. Since 2012, schools are required to publish online information about how the pupil premium is used and the interventions they are implementing to address the needs of disadvantaged students as well as the impact they are having.

Schools receiving the pupil premium are required to monitor and report the achievement of all students and to report specifically the achievement of disadvantaged students. Ofsted, the English inspection agency, monitors closely the attainment and progress of disadvantaged students and how schools are addressing the needs of disadvantaged students. If the inspection identifies issues regarding the provision for disadvantaged students, then a more thorough review (the pupil premium review) is conducted. The purpose of this review is to help schools to improve their pupil premium strategy so that they "spend funding on approaches shown to be effective in improving the achievement of disadvantaged pupils". The Department for Education uses information reported by schools to highlight and reward those schools reaching good results for disadvantaged students.

Source: OECD (2017[40]), *The Funding of School Education: Connecting Resources and Learning*, https://doi.org/10.1787/9789264276147-en.

Table of recommendations

Policy issue	Recommendations	Actions
4.1. Develop external evaluation into a meaningful process for school improvement	4.1.2. Institutionalise and invest in capacity for external evaluation	Create an independent national institution in charge of external evaluation
		Develop a wider pool of licensed external evaluators
		Streamline the regular audit and integrate better within the external school evaluation
	4.1.2. Review how evaluation results are reported and used to support school improvement	Revise the school report template to include recommendations for improvement
		Develop the school boards' capacity to monitor the quality of school planning and programmes
		Introduce a risk-based approach to follow-up support
		Implement the differentiated approach to school evaluation to incentivise and reward improvement, including in high-performing schools
		Focus school principals' accountability on their leadership role rather than the schools' overall performance
4.2. Support schools to develop a culture of self-evaluation and learning	4.2.1. Provide schools with guidance on how to evaluate quality and use the results to inform development plans	Create a new self-evaluation manual and encourage schools to use it
		Provide schools with indicators and tools to measure their performance against some key national targets
		Ensure that schools have access to training and technical support
		Encourage peer learning and sharing of experiences in self-evaluation
		Review schools' capacity for improvement through the external school evaluation
	4.2.2. Develop school leadership for improving the quality of their schools	Set up a leadership academy in charge of school principals' training
		Use the external school evaluation to provide formative feedback to school principals
4.3. Put school improvement at the centre of the National Education Strategy	4.3.1. Develop a national strategy for school improvement	Put school improvement at the centre of the National Education Strategy
		Set up a school improvement hub
		Strengthen and expand school networks for quality improvement
	4.3.2. Make sure that schools are provided with sufficient financial resources to implement their improvement plans	Review schools' funding mechanisms to make sure that funds are distributed equitably
		Provide central grants to schools to implement their school development plans

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Note

[1] Serbia did not participate in the last cycle of TALIS in 2018.

Chapter 5. Building stronger foundations to evaluate national education performance

Serbia has established some of the basic components of system evaluation. However, the lack of a national assessment of student learning and a fully functioning education management information system (EMIS) system leaves Serbia without an adequate evidence base to guide and monitor policy reforms, making it difficult to understand the main issues stalling educational improvement. This chapter recommends that Serbia focus its new post-2020 education strategy on key national priorities that can improve teaching and learning. In particular, the country should carefully design and implement the new national assessment and encourage policymakers to access and interpret administrative and assessment data when developing education policies. This can help Serbia address systemic issues and lead to a better understanding of where and why students are falling behind in their learning, despite high levels of school participation.

Introduction

System evaluation is central to improving educational performance. It holds the government and other stakeholders accountable for meeting national goals and provides information that can help develop effective policies. Serbia has established some of the basic components of system evaluation. For example, a national education strategy provides a reference for planning and the Ministry of Education, Science and Technological Development (hereafter the ministry) works with external partners, such as universities, to conduct research and evaluations. There is some capacity within the ministry and technical agencies to identify national education challenges and evaluate policies. However, Serbia generally struggles to make information about public sector performance widely available (OECD, 2017[1]). In the education system, this is partly because of important gaps in the evaluation infrastructure. Specifically, lack of a national assessment of student learning and a fully functioning EMIS system leaves Serbia without an adequate evidence base to guide and monitor policy reforms, making it difficult to understand the main issues stalling educational improvement.

This chapter recommends several measures that can help Serbia build stronger foundations for system evaluation. This will be crucial as Serbia works towards developing its new post-2020 education strategy. In particular, it is important that Serbia carefully design and implement its new national assessment, which can provide valuable information about the extent to which students are meeting national learning standards. Encouraging policymakers to access and interpret administrative and assessment data when developing education policies can help further address systemic issues and lead to a better understanding of where and why students are falling behind in their learning, despite high levels of school participation. Aligning these reforms can help the Serbian education system improve from a good regional performer to an excellent one.

Key features of effective system evaluation

System evaluation refers to the processes that countries use to monitor and evaluate the performance of their education systems (OECD, 2013[2]). A strong evaluation system serves two main functions: to hold the education system, and the actors within it, accountable for achieving their stated objectives; and, by generating and using evaluation information in the policymaking process, to improve policies and, ultimately, education outcomes (see Figure 5.1). System evaluation has gained increasing importance in recent decades across the public sector, in part because of growing pressure on governments to demonstrate the results of public investment and improve efficiency and effectiveness (Schick, 2003[3]).

In the education sector, countries use information from a range of sources to monitor and evaluate quality and track progress towards national objectives (see Figure 5.1). As well as collecting rich data, education systems also require "feedback loops" so that information is fed back into the policymaking process (OECD, 2017[4]). This ensures goals and policies are informed by evidence, helping to create an open and continuous cycle of organisational learning. At the same time, in order to provide public accountability, governments need to set clear responsibilities – to determine which actors should be accountable and for what – and make information available in timely and relevant forms for public debate and scrutiny. All of this constitutes a significant task, which is why effective system evaluation requires central government to work across wider networks (Burns and Köster, 2016[5]). In many OECD countries, independent government agencies, such as national audit offices,

evaluation agencies, the research community and subnational governments, play a key role in generating and exploiting available information.

A national vision and goals provide standards for system evaluation

Like other aspects of evaluation, system evaluation must be anchored in national vision and/or goals, which provide the standards against which performance can be evaluated. In many countries, these are set out in an education strategy that spans several years. An important complement to national vision and goals are targets and indicators. Indicators are the quantitative or qualitative variables that help to monitor progress (World Bank, 2004[6]). Indicator frameworks combine inputs like government spending, outputs like teacher recruitment and outcomes like student learning. While outcomes are notoriously difficult to measure, they are a feature of frameworks in most OECD countries because they measure the final results that a system is trying to achieve (OECD, 2009[7]). Goals also need to balance the outcomes a system wants to achieve, with indicators for the internal processes and capacity throughout the system that are required to achieve these outcomes (Kaplan and Norton, 1992[8]).

Reporting against national goals supports accountability

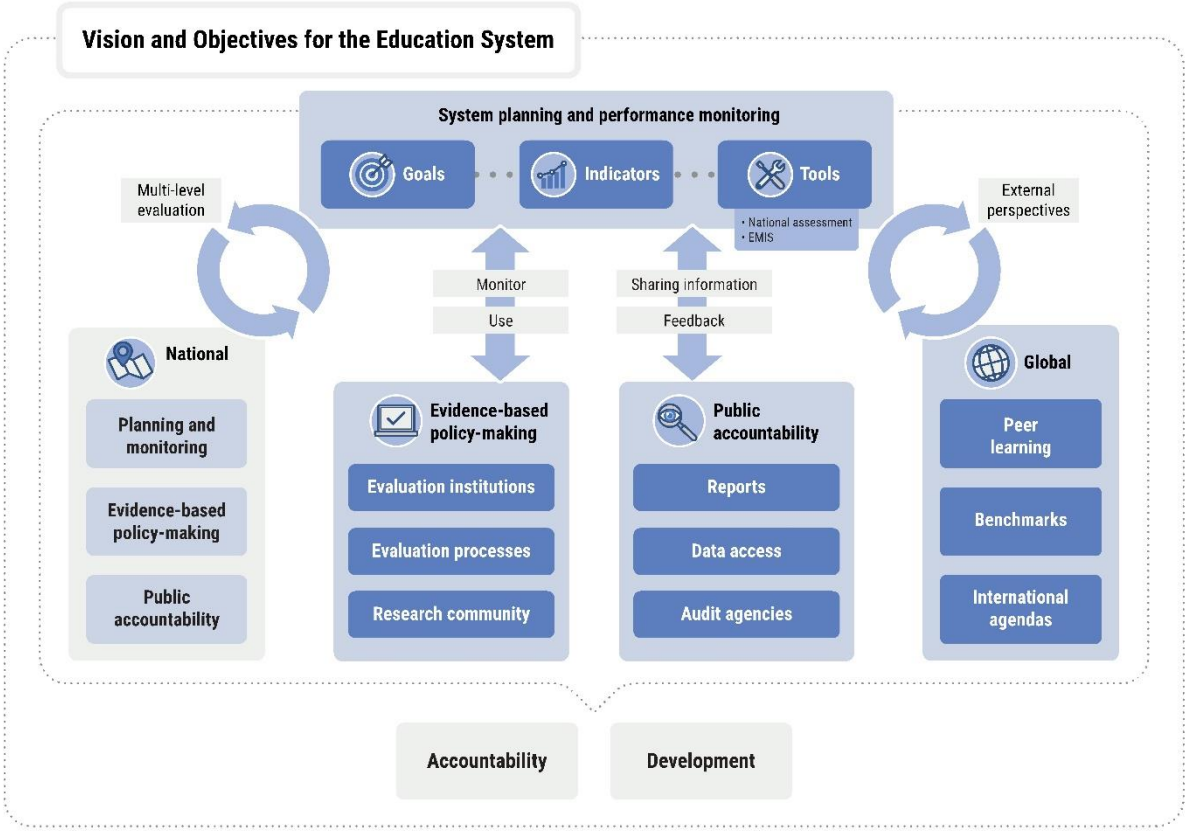
Public reporting of progress against national goals enables the public to hold the government accountable. However, the public frequently lacks the time and information to undertake this role and tends to be driven by individual or constituency interests rather than broad national concerns (House of Commons, 2011[9]). This means that objective and expert bodies, such as national auditing bodies, parliamentary committees and the research community, play a vital role in digesting government reporting and helping to hold the government to account.

An important vehicle for public reporting is an annual report on the education system (OECD, 2013[2]). In many OECD countries, such a report is now complemented by open data. If open data is to support accountability and transparency, it must be useful and accessible. Many OECD countries use simple infographics to present complex information in a format that the general public can understand. Open data should also be provided in a re-usable form, i.e. for other users to download and use in different ways so that the wider evaluation community, such as researchers and non-governmental bodies, can analyse data to generate new insights (OECD, 2018[10]).

National goals are a strong lever for governments to direct the education system

Governments can use national goals to give coherent direction to education reform across central government, subnational governance bodies and individual schools. For this to happen, goals should be clear, feasible and above all, relevant to the education system. Having a clear sense of direction is particularly important in the education sector, given the scale, multiplicity of actors and the difficulty in retaining focus in the long-term process of achieving change. In a well-aligned education system, national goals are embedded centrally in key reference frameworks, encouraging all actors to work towards their achievement. For example, national goals linked to all students reaching minimum achievement standards or to teaching and learning fostering student creativity are reflected in standards for school evaluation and teacher appraisal. Through the evaluation and assessment framework, actors are held accountable for progress against these objectives.

Figure 5.1. System evaluation



Tools for system evaluation

Administrative data about students, teachers and schools are held in central information systems

In most OECD countries, data such as student demographic information, attendance and performance, teacher data and school characteristics are held in a comprehensive data system, commonly referred to as an education management information system (EMIS). Data are collected according to national and international standardised definitions, enabling data to be collected once only, used across the national education system and reported internationally. An effective EMIS also allows users to analyse data and helps disseminate information about education inputs, processes and outcomes (Abdul-Hamid, 2014[11]).

National and international assessments provide reliable data on learning outcomes

Over the past two decades, there has been a major expansion in the number of countries using standardised assessments. The vast majority of OECD countries (30) and an increasing number of partner countries have regular national assessments of student achievement for at least one level of the school system (OECD, 2015[12]). This reflects the global trend towards greater demand for outcomes data to monitor government

effectiveness, as well as a greater appreciation of the economic importance of all students mastering essential skills.

The primary purpose of a national assessment is to provide reliable data on student learning outcomes that are comparable across different groups of students and over time (OECD, 2013[2]). Assessments can also serve other purposes such as providing information to teachers, schools and students to enhance learning and supporting school accountability frameworks. Unlike national examinations, they do not have an impact on students' progression through grades. When accompanied by background questionnaires, assessments provide insights into the factors influencing learning at the national level and across specific groups. While the design of national assessments varies considerably across OECD countries, there is a consensus that having regular, reliable national data on student learning is essential for both system accountability and improvement.

An increasing number of countries also participate in international assessments such as the OECD Programme for International Student Assessment (PISA) and the two programmes of the International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS) and Progress in International Reading Literacy Study (PIRLS). These assessments provide countries with periodic information to compare learning against international benchmarks as a complement to national data.

Thematic reports complement data to provide information about the quality of teaching and learning processes

Qualitative information helps to contextualise data and provide insights into what is happening in a country's classrooms and schools. For example, school evaluations can provide information about the quality of student-teacher interactions and how a principal motivates and recognises staff. Effective evaluation systems use such findings to help understand national challenges – such as differences in student outcomes across schools.

A growing number of OECD countries undertake policy evaluations

Despite an increased interest across countries in policy evaluations, it is rarely systematic at present. Different approaches include *ex ante* reviews of major policies to support future decision-making and evaluation shortly after implementation (OECD, 2018[13]). Countries are also making greater efforts to incorporate evidence to inform policy design, for example, by commissioning randomised control trials to determine the likely impact of a policy intervention.

Effective evaluation systems require institutional capacity within and outside government

System evaluation requires resources and skills *within* ministries of education to develop, collect and manage reliable, quality datasets and to exploit education information for evaluation and policymaking purposes. Capacity *outside* or at arms-length from ministries is equally important and many OECD countries have independent evaluation institutions that contribute to system evaluation. Such institutions might undertake external analysis of public data or be commissioned by the government to produce annual reports on the education system and undertake policy evaluations or other studies. To ensure that such institutions have sufficient capacity, they may receive public funding but their statutes and appointment procedures ensure their independence and the integrity of their work.

System evaluation in Serbia

Serbia has some of the basic components that are integral to performing system evaluation. For example, a national education strategy provides a reference for planning and the ministry, along with specialised technical bodies, collects valuable data and has some capacity for policy evaluation. Nevertheless, there are major gaps in terms of system evaluation tools. In particular, the lack of a national assessment and a low-functioning EMIS system limits Serbia's ability to conduct analysis and provide timely information about the performance of the education system. This contributes to a relatively underdeveloped culture of public reporting and information sharing. Without such tools and processes for system evaluation, public accountability becomes a challenge and the impetus to improve the education system fades. Table 5.1 shows some of the components and main gaps for system evaluation in Serbia.

Table 5.1. System evaluation in Serbia

References for national goals and vision	Tools	Body responsible	Outputs
• The Strategy for Education Development in Serbia 2020 • European Union (EU) 2020 goals for education and training	Administrative data	Statistical Office of the Republic of Serbia (SORS) Ministry of Education, Science and Technological Development, Sector for Digitalisation in Educational Science	Regular statistical releases Unified Information System of Education (UISE), Dositej platform, eClass register
	National assessment	Institute for Education Quality and Evaluation (IEQE's) Centre for International and National Assessments and Research and Development	Under development
	International assessments	Until recently, the University of Belgrade was responsible for PISA and the Institute for Educational Research was responsible for TIMSS. Now, all international assessments are the responsibility of the Institute for Education Quality and Evaluation (IEQE)	National reports on: • PISA (age 15) mathematics; science; reading • TIMSS (Grade 4) mathematics and science
	School evaluations	Institute for Education Quality and Evaluation (IEQE)	Annual report on school evaluations
	Policy evaluations	Institute for Education Quality and Evaluation (IEQE)	Ad-hoc policy evaluations in response to ministry requests
	Reports and research	Institute for Education Quality and Evaluation (IEQE) International partners (EU and donor agencies)	No overall report on the education system; various specialised agencies report ad-hoc situation analysis, feasibility studies and evaluation exercises

High-level documents provide a clear vision for the education system

The 2020 Education Strategy marks a step change in policymaking

In 2012, the Ministry of Education, Science and Technological Development (hereafter the ministry) adopted the Strategy for Education Development in Serbia 2020 (hereafter the strategy). The document includes four broad objectives for education (see Chapter 1) that aim to provide a foundation for the economic, social, scientific, technological and cultural development of individuals, society and the Serbian state. The strategy represents continued efforts to move Serbia's education system away from a culture based on political

negotiations over legislation towards one that draws on evidence, aligns with national goals and can better support public accountability.

The ministry established a Project Unit in 2011 to develop the strategy. The unit was led by two external researchers and engaged more than 200 renowned experts to help analyse the state of education in Serbia and set out a comprehensive vision for developing the sector from pre-school to adult education (MoESTD, 2012[14]). The strategy also underwent a one-month public consultation process. However, there is some evidence that public consultation in Serbia does not generally enable all interested parties to provide timely and qualitative input (European Commission, 2018[15]).

Serbia's education strategy includes a diagnosis of the country's strengths, weaknesses, opportunities and threats (SWOT) across the sector. It also offers some quantitative targets that align with those established by the European Union's (EU) 2020 Strategy (see Box 5.1). The abundance of goals and targets interspersed throughout the extensive strategy document provide great ambitions for Serbia's education system but little prioritisation of what issues are most important for driving improvement. In 2015, Serbia adopted an action plan to support the strategy's implementation and a special working group within the ministry prepared a progress report in 2018. However, this report was mainly descriptive and offered no recommendations about where efforts should be prioritised to improve teaching and learning (MoESTD, 2018[16]). The ministry also reports that such evaluations are not usually available to the public (MoESTD, 2018[17]).

Box 5.1. Selection of targets included in Serbia's 2020 Education Strategy

Some of the quantitative targets included in the Strategy for Education Development in Serbia 2020 align with the European Union's 2020 Strategy, in particular benchmarks around enrolment in higher education and participation in adult learning programmes. A selection of key targets from Serbia's strategy include:

- At least 98% of enrolment in primary education and drop-out rate no higher than 5%.
- At least 95% of those who complete primary school enrol in secondary school.
- At least 95% of those enrolled in four-year secondary vocational schools complete it.
- At least 50% of the total student cohort enrols in higher education institutions.
- At least 7% of the population follow one of the programmes dedicated to adult education and lifelong learning.

Noticeably, the Serbian 2020 strategy does not include benchmarks related to underperformance in reading, mathematics and science, or the share of employed graduates (individuals aged 20-34 who completed at least upper secondary education and left education 1-3 years ago), which are high-level standards set by the EU.

Sources: European Commission (n.d.[18]), *European Policy Cooperation (ET 2020 framework)*, https://ec.europa.eu/education/policies/european-policy-cooperation/et2020-framework_en (accessed on 8 July 2019); MoESTD (2012[14]), *Strategy for Education Development in Serbia 2020,* http://erasmusplus.rs/wp-content/uploads/2015/03/Strategy-for-Education-Development-in-Serbia-2020.pdf.

Discussions about the new education strategy are underway

Serbia's current education strategy will end in 2020. As such, the ministry has started discussions about the contents for a new medium-term strategy that will outline the country's vision for education to 2030. The new strategy will cover a critical period for Serbia's national development and potential accession to the EU, highlighting the importance of directing the education sector towards supporting more students to achieve good and excellent outcomes. The new strategy aims to build on the strengths of Serbia's 2020 strategy, namely to consult with a range of stakeholders and undertake a strategic review of the system's key strengths, challenges, opportunities and threats. However, the ministry also aims to make the next strategy more achievable by narrowing its focus and considering the resources needed for implementation. Such efforts would help ensure the new strategy prioritises key education issues and guides efforts to drive improvement.

Action plans do not provide clear goals nor precise targets

Serbia's action plan for the implementation of the education strategy consists of three distinct parts. Respectively, these address pre-university education, higher education and a cross-cutting education development strategy. All of the action plans set out activities, implementation methods, deadlines, key actors, indicators of progress, resourcing needs, as well as procedures for monitoring, evaluation and reporting. The action plans specifically call for the use of a special electronic database and a ministry-appointed working group to support overall monitoring of the strategy (MoESTD, 2015[19]). However, the special working group was only developed in 2018, six years after the strategy was adopted, and there is no electronic database to monitor the strategy's implementation.

In addition to underdeveloped monitoring processes, Serbia's action plans do not clearly align with the goals and targets that are interspersed throughout the ambitious strategy document. For example, while both the strategy and action plan express the goal of reducing the primary school drop-out rate, only the former sets a clear target of having no more than 5% of primary students drop out by 2020 and identifies specific groups of students at risk of doing so (MoESTD, 2012[14]). Moreover, some of the activities and implementation steps in the action plans do not address important parts of the implementation process. Developing a final exam system at the end of secondary education, for example, does not include key actions such as piloting the new exam or sensitising schools and students about how the new exam will operate (see Table 5.2). While Serbia may take these actions to benefit from donor funding, such as the EU Instrument for Pre-accession Assistance (IPA), the vagueness of the national action plans for education hinders system monitoring and evaluation (see Recommendation 5.1.2).

The lack of clear goals, targets and actions offer limited guidance on what education actors should be working towards to help improve the quality and equity of Serbia's education system. This can lead to the fragmentation of efforts and undermined accountability as directing action and communicating performance become more difficult without clear benchmarks. Moreover, policymakers are not required to investigate or explain why certain goals and targets were not met, presenting another challenge to accountability. It will likely remain difficult for Serbia to implement its education strategies and action plans without relevant and reliable sets of indicators to help guide and measure progress.

Emphasis on results in public financial management is limited

Serbia's action plans for education include information about the funding required for various activities. While this review did not look specifically at how the education budget is negotiated and allocated, other OECD analysis finds that government budgets in Serbia are not prepared on the basis of strategic plans or systematic analysis of programmes to encourage discipline (OECD, 2017[1]). Moreover, the review team was informed that new legislation in Serbia is assessed as having "no cost for implementation". This means that laws are approved by the government and parliament but then face major implementation challenges as there is no discussion of cost implications. These processes for public financial management do not encourage policymakers or line ministries to exercise fiscal discipline and focus when developing long-term reforms. As such, Serbia's education strategy and action plans may not be financially viable and the pressure to achieve system goals is reduced because funding is not linked to planning or performance.

Donor funding has helped fill some of the resource gaps in Serbia's education sector. However, since the ministry and central government does not adequately prioritise, plan or provide sufficient resources for actions, many important reforms and policies wane or have been discontinued. For example, the ministry did not take ownership of the new master's programme for school leadership when EU funding ended in 2016/17 (see Chapter 4). As a result, enrolment in the programme dropped significantly, partly because aspiring principals were left to pay for courses out of pocket and given little incentive to do so. Serbia's experience with national assessment provides another example of poor strategic planning. Previously, national assessments were financed by donors on an ad-hoc basis. However, lack of government funding to carry out these exercises in the medium to long term helps to explain why Serbia has not had a regular national assessment since 2006 (World Bank, 2012[20]).

Prospect of EU accession creates a demand for system evaluation

Alongside Montenegro, Serbia is one of the two Western Balkan countries most advanced in the European Union accession process. As an accession country, Serbia benefits from the EU Instrument for Pre-accession Assistance (IPA). This has provided significant financial and technical resources to support important education reforms, including the development of tools that can support system evaluation, such as a new national assessment. The prospect of EU membership has also become an important framing objective and is helping to raise expectations for system improvement in line with European standards. For example, in line with EU 2020 goals, Serbia has committed to reducing its share of early school leavers and increasing the share of 30-34 year-olds that have completed tertiary education to at least 40% by 2020 (Eurostat, 2019[21]). These new tools and expectations have put pressure on the government to improve system evaluation processes for more results-oriented monitoring, planning and accountability.

Tools for system evaluation are not fully developed

Serbia has some of the institutions and processes required to gather information and monitor the performance of the education system. However, there are challenges around national data collection and there was no national assessment of student learning between 2006 and 2018. This means that Serbia's only external sources of information about learning outcomes are sample-based international assessments, such as PISA and TIMSS, and the final examination that students take at the end of compulsory schooling (see Chapter 2). Serbia's situation contrasts with other countries in the region, which have

managed to develop tools for system evaluation more fully. Improving teaching and learning outcomes will require more sophisticated tools to measure inputs, outputs and outcomes of the education system.

Efforts are underway to modernise data collection and management

Serbia's 2020 Education Strategy set out a series of measures to modernise the country's EMIS. Some of these measures have already been achieved or are being implemented. For example, the ministry introduced the *Dositej* platform in 2016 which provides an interface for schools to directly enter administrative data into a secure online database, rather than through paper or electronic forms that must be aggregated at the central level. Another innovation is the *eClass Register* (*eDnevnik* in Serbian), which the ministry introduced in 2019 to make enrolment and reporting of classroom data more efficient and available to parents. While this tool could lead to interesting studies at the regional or national level, it is not currently integrated with the *Dositej* platform, making it difficult for researchers to analyse information across the two databases (e.g. to design an early warning system for drop-out). The ministry plans to start linking various databases by introducing a unique educational number (UNI) for students. This will make it possible to track an individuals' progression through the system and analyse education inputs, processes and outcomes. The ministry has made less progress in defining relationships among statistical bodies, harmonising methodologies and using international data standards.

Administrative data collection does not follow unified procedures

There are currently two key bodies that collect and manage education data in Serbia. The first is the Statistical Office of the Republic of Serbia (SORS) which collects and processes statistical data for national and international reporting in a variety of fields. These include (among others) the economy, finance, agriculture and regional policy. In regards to the education sector, the SORS collects administrative data on the number of schools, classes and students at the beginning and end of the school year and the number of teacher working hours. Some of this data can be disaggregated by gender and minority language but no data can be used as a proxy for socioeconomic background. The SORS also manages the *DevInfo* database, which was developed in 2004 to help the government monitor human development, support planning and facilitate reporting (MoESTD, 2018[17]). The *DevInfo* database includes education indicators, such as literacy rates and public expenditure on education.

The second body responsible for data collection and management is the Serbian education ministry through its Unified Information System of Education (UISE). The UISE was introduced in the early 2000s as the ministry's official EMIS. While it also collects and stores administrative data about the education system, the ministry's UISE manages a more comprehensive list of indicators than the SORS does. The type of data stored in the UISE and how it should be used, updated and kept secure is regulated by the national education law (Law on the Foundations of Educational System, LFES) (MoESTD, 2018[17]). However, despite political discussions on the system, relevant bylaw regulations that set out detailed procedures for collecting and managing data are just now being developed, which currently prevents the UISE from operating at its full potential. Moreover, staff turnover within the ministry has made it difficult to develop further and improve the UISE system.

To collect administrative data, both bodies rely on educational institutions from the pre-primary to the tertiary level, which are required to respond to various information

questionnaires. Importantly, the data collected and reported by the SORS follows international definitions and procedures while the ministry's UISE does not. For example, to collect information about educational attainment, the SORS calculates the average number of students enrolled at the beginning of a school year, minus the number of students enrolled at the end of a school year. The ministry, on the other hand, uses its own definitions to calculate attainment and there are no protocols to ensure the quality of the data collected. There were attempts in 2016 to create a national strategy on education statistics between ministry and the SORS to ensure that all data be collected according to standard definitions; however, this was never realised. Having two parallel data collection and management systems not only prevents Serbia from establishing a unified source of reliable information about its education system but also creates an unnecessary reporting burden for schools.

A pilot national assessment has been introduced

In 2016, a World Bank functional review of Serbia's education sector highlighted the importance of measuring learning outcomes at the school level on a regular basis and improving administrative data to support key educational reforms (World Bank, 2016[22]). While this has been a major limitation in evaluating and improving educational quality at the system level, Serbia is starting to address this by developing a new national assessment. The lack of a national assessment sharply contrasts with the majority of EU and OECD countries, which administer some form of national assessment to measure student learning (OECD, 2013[2]). Serbia's last national assessment was administered in 2006 to a sample of students in their final year of primary school (Grade 4). Since then, results from the end of basic education exam (Grade 8) have been used as the only national tool for monitoring student learning outcomes. However, the structure of the final exam gives a very limited understanding of students' skills and development (see Chapter 2). Moreover, the "combined test" assesses several subjects at once, limiting its relevance for analysing individual subjects. As a result, Serbia has little information about learning outcomes during transition years. This is problematic since there is a general concern that performance tends to decrease when students move from classroom teachers to subject teachers (starting in Grade 5).

In 2017/18, Serbia piloted a new national assessment for students in Grades 7 (basic education) and 11 (upper secondary). Serbia decided to administer the assessment in Grade 11 in order to pilot test questions for the new Matura, which is under development and will be used to certify graduation from secondary school and inform selection into tertiary education (see Chapter 2). The OECD understands that, in the future, the assessment will be administered in Grade 6, though no fixed cycle has yet been established. The sample-based pilot was administered in paper-and-pencil format and tested students' knowledge in mathematics, physics and history (MoESTD, 2018[17]). Four interdisciplinary subjects were also assessed, including: problem-solving; digital competency; tolerance, entrepreneurship and responsibility towards the environment. To better understand the conditions in which the learning process takes place, the pilot was accompanied by a ten-page background questionnaire for students, teachers and school principals.

Serbia's Institute for Education Quality and Evaluation (IEQE) was responsible for the overall plan and design of the pilot assessments; however, the ministry, its regional units and external associates (i.e. experienced teachers) were responsible for their implementation. Results from the pilot national assessment are expected in 2019 and there are plans to report the findings in three formats: an internal report for the ministry, a public report for education actors (e.g. schools and training providers), and a third summative

report for the public. This experience serves as a strong foundation for Serbia to fully implement its new national assessment.

Participation in international assessments is somewhat irregular

Serbia regularly participates in the International Association for the Evaluation of Educational Achievement (IEA)'s TIMSS, though at different grade levels. In the 2003 and 2007 cycles, only students in Grade 8 took the TIMSS assessment and since 2011, only students in Grade 4 have participated. Serbia also regularly participated in PISA between 2006 and 2012 and participated again in PISA 2018. The latter was the first time students in Serbia took the PISA assessment using computers rather than pencil and paper.

The administration of large-scale international assessments in Serbia was previously managed by the University of Belgrade (PISA) and the Institute for Educational Research (TIMMS). However, the IEQE was recently made responsible for all international assessments, in addition to managing national exams and developing the new national assessment. The experience of administering PISA and TIMSS will help the IEQE to develop its capacity to administer large-scale assessments of student learning. However, this also places an additional workload on the IEQE and it is unclear if resources and technical expertise are being proportionally increased to ensure the institute can sufficiently meet the demands of these new responsibilities.

Evaluation and thematic reports

Thematic evaluations exist but there is no national analysis of the education system

Serbia's national statistical office (SORS) prepares an annual statistical report on education that includes administrative data, such as the number of students across different levels of education, demographic information, completion and drop-out rates, and the number of teaching staff. Most technical agencies also prepare annual reports based on their programmes of work. For example, the IEQE develops an annual report summarising key findings from external school evaluations. This provides valuable information about how schools perform compared to school quality standards, the main challenges they face and recommendations for improvement (see Chapter 4). The IEQE also produces regular public reports on results from the final exam of compulsory education and international assessments.

Serbia has some thematic reports that can provide an important accountability function. However, this information has not been pulled together into a comprehensive report that evaluates the overall state of education. This makes it difficult to highlight the main system-level challenges and communicate policy priorities.

The IEQE leads the practice of evaluating policies and programmes

In addition to reporting on thematic areas of the education system, the IEQE also undertakes ad-hoc research at the request of the ministry and has established a practice of using evidence to inform education policy. For example, the IEQE organised two large-scale conferences and conducted statistical analysis over a five-year period to ensure that the new quality standards for schools and the indicators used to measure them provided clear definitions of good teaching and learning.

International donors drive thematic evaluations

On occasion, international donors provide valuable analysis of education issues in Serbia that contribute to system evaluation by providing thematic reports or policy evaluations. These exercises often consist of situation analysis and/or feasibility studies on specific education policies (MoESTD, 2018[17]). For example, the EU has commissioned studies related to inclusive education as well as other reform efforts. The United Nations Children's Fund (UNICEF) and the World Bank have also conducted analysis on education issues including early childhood education and care. While the work of external actors can provide important insights for system evaluation, it can also lead governments to focus on priorities that are determined by external actors and pay less attention to developing the capacity of national agencies.

Evaluation institutions

The Institute for Education Quality and Evaluation (IEQE) has a formal mandate for system evaluation

The IEQE is the main institution in Serbia with a formal mandate to evaluate the education system independently and carry out research for strategic planning purposes. The IEQE has four organisational units:

1. *The Centre for Quality Assurance of Educational Institutions*, which is responsible for developing education standards; developing standards and instruments for school evaluations; occasionally participating in external school evaluations; producing annual reports on school evaluations; and providing training on self-evaluation and student assessment.
2. *The Exam Centre*, which develops and manages Serbia's two national examinations and produces periodic reports on results.
3. *The Centre for International and National Assessments and Research and Development,* which is responsible for research and evaluation and making recommendations on how the ministry can support system improvement based on analysis.
4. *The Centre for Educational Technology*, a relatively new organisational unit that is responsible for the application of new technologies in education.

The staff within the various IEQE units have significant technical expertise and are responsible for implementing two of Serbia's major education reforms: the new Matura exam and the national assessment. However, capacity remains a challenge since less than half of the current staff are skilled education professionals and there is a lack of individuals with experience in quantitative research, statistical analysis, psychometrics and survey design (MoESTD, 2018[17]). Moreover, restrictions on hiring public service employees, low salaries and heavy workloads make it difficult to recruit and retain staff. As such, the IEQE sometimes commissions external experts or research institutions to help carry out the institute's programme of work. Since the IEQE's responsibilities are expanding (it is now also responsible for administering all international assessments), limited human and financial resources may jeopardise the institute's ability to conduct system evaluation.

Evaluation and analytical capacity within the ministry is limited

There is limited capacity within the ministry to conduct system evaluation. The Group for Analytics was established as the evaluation and research arm of the ministry in 2014. Despite its position within the ministry's Sector for Higher Education, the Group for Analytics was given a mandate to collect evidence and analyse policies across the whole education system (not just higher education). However, because of significant fluctuations in personnel, the ambitions of the group were never realised and its operations are currently managed by a single staff member (MoESTD, 2018[17]).

Policy issues

The primary challenge to developing system evaluation in Serbia is the absence of clear high-level goals for the education system that are accompanied by precise targets. First and foremost, this review strongly recommends that Serbia use the opportunity of developing a new national education strategy to identify a clear set of priorities for the education system and create action plans and indicator frameworks to help drive system improvement. With system goals in place, the country can then work towards developing the high-quality data needed to monitor progress and promote more transparent and evidence-informed policymaking. This will involve strengthening procedures for data collection and addressing important information gaps, in particular in student learning outcomes. Finally, Serbia's new national assessment can help better understand how students are performing and serve as a reference to improve teaching and learning.

Policy issue 5.1. Using the new education strategy to focus on achieving national priorities

Serbia's current education strategy is ambitious and extensive. The strategy document was informed by research about the performance of the education system and underwent a stakeholder consultation process. This allowed for a lengthy description of the various challenges facing the system. The document itself is over 230 pages long and its action plan, which was developed 4 years after the strategy was introduced, sets out around 157 different activities to be carried out across the education system. This has made it very difficult to drive system improvement since there is no prioritisation of what issues and actions are most important.

As Serbia works to develop its next medium-term strategy for the education sector, the ministry should focus on key national priorities that are supported by an action plan better designed to steer the implementation process. In particular, there should be greater alignment between the strategy and action plan, with specific goals and activities accompanied by measurable targets. Serbia will also need to establish a much stronger link between the strategy and resources. This was a considerable challenge for the current strategy, which was based on the education budget increasing to 6% gross domestic product (GDP) by 2020. However, in practice, education spending fell across the duration of the strategy.

Strategic education priorities need to be costed and action plans developed in agreement with the Ministry of Finance based upon a robust dialogue of the required and available funds. While the Serbian Ministry of Finance prepares annual budgets within a three-year medium-term framework, the timelines for preparing these are too tight for a proper assessment and debate of programmes (OECD, 2017[1]). Resource considerations should address investment in human and technical capacity to carry out evaluation processes and

manage the instruments needed to support a more results-oriented, transparent and accountable planning cycle.

Recommendation 5.1.1. Identify national priorities for the new strategy

In Serbia, the current strategy's multiplicity of objectives are difficult to distil into a small number of high priority goals that drive system improvement. Moreover, the progress indicators included in the action plan are not always relevant and lack specific targets. This presents a risk in terms of policy misalignment and uncoordinated initiatives. As Serbia works towards developing a new education strategy, national goals should be more specific and clearly expressed. They should also be accompanied by relevant and reliable indicators with precise targets to help monitor progress.

The first step in this process will be to determine what strategic issues should be prioritised. Evaluating the achievements of the 2020 strategy and triangulating this information with other evidence can help identify the most pressing issues facing the Serbian education system. Serbia will also need to think about what challenges the education system is likely to encounter in the future. Next, a clear set of meaningful goals that are easy to communicate across the education sector and society should be established to galvanise support for system improvement. Engaging the public, both during the strategy's development and after its adoption, can help build consensus and understanding that these goals are national and urgent priorities, which transcend political factions and stand to benefit public interest. This can also help promote transparency and trust in education reform.

Evaluate the 2020 strategy and other evidence to prioritise key strategic issues

In Serbia, the 2020 Education Strategy is the highest-level strategic document that guides education activities. These activities include more than 124 different policies, actions and measures that are proposed to improve pre-university education. There are an even greater number of proposals for vocational and higher education. Efforts include defining a concept for a secondary graduation exam, introducing socially relevant elective courses and developing operational and quality standards for different types of early childhood education and care (ECEC) provision (MoESTD, 2012[14]). While such activities can lead to improvements, the lack of prioritisation about what is *most* important presents a major challenge for Serbia since it fails to direct the education system and galvanise support among various stakeholders.

A holistic evaluation of Serbia's 2020 strategy would not only provide an account of progress made to improve the country's education system but also offer insights into the successes and challenges of the current strategy, i.e. why some objectives were achieved while others were not. This evaluation could build on the strategy's 2018 progress report; however, the new analysis should focus more on measuring progress against the strategy, on drawing conclusions from the evaluation and other key sources of evidence to prioritise strategic issues and on identifying specific goals and targets for the next strategy. The holistic evaluation could also assess the strategy and action plans themselves to better understand how they were perceived, understood and used by different stakeholders to provide insights into how the new strategy could be more operational. The ministry should task the IEQE to undertake the evaluation of the 2020 strategy since this body has the technical expertise required. Findings from the evaluation report should be made available to the public and parliament to support transparency and accountability. In turn, this report can feed into the consultation process for the next strategy.

Consider a range of evidence

In addition to drawing on findings from the evaluation of the 2020 strategy, Serbia should continue the practice of considering a wide range of evidence to develop its new education strategy. For example, information from national data sources, international benchmarks and research findings should be triangulated to decide what issues to address first. Serbia's current education strategy recognises many of the challenges facing the country's education system and offers foresight into the challenges the country is likely to face in the future; however, there could be more prioritisation. The current strategy also offers some benchmarks against regional peers and identifies areas for capacity development, in particular the need to develop and use education statistics more effectively. Nevertheless, there is a very limited discussion about what capacities are needed to better plan, deliver and evaluate education policies. As such, this review recommends that Serbia consider a range of evidence when identifying national education priorities, including what capacities should be developed to achieve the new strategy's goals.

Identify key national goals for education

After strategic issues have been identified, a small set of high-level goals will need to be established. Internationally, countries use national goals and targets to give visibility to national priorities and direct the education system towards their achievement. The goals should be specific and balanced, considering both the outcomes a system wants to achieve, as well as the internal processes and capacity throughout the system required to achieve these outcomes (Kaplan and Norton, 1992[8]). In turn, the goals should be associated with measurable indicators and achievable targets that are clearly reflected in the new strategy's action plan and monitoring framework (see Recommendation 5.1.2).

Considering the challenges Serbia faces in terms of improving its education system, this review strongly recommends the government establish goals to raise learning outcomes and improve educational equity. This would help to ensure that the education system and society in general recognise these as national and urgent priorities. For example, the goal of improving student learning outcomes might be measured by the new national assessment once it is fully implemented. In the meantime, Serbia could use data from international assessments, such as PISA, to monitor student performance and measure progress towards this goal. Reducing the share of low performers in PISA to below 15% by 2020, in line with the European Union (EU) target (European Commission, n.d.[18]), would serve as a good national target for this indicator. The government can also consider setting interim benchmarks to ensure that the country is progressing towards the long-term goal.

Undertake a national consultation to develop the new strategy

The 2020 strategy was developed in consultation with key stakeholders in the sector and informed by analysis from a large group of education experts. Continuing this practice will help raise the profile of the new strategy and build stakeholder buy-in for the newly established educational goals. To ensure the consultation process is efficient, the ministry should lead the strategy's overall development but manage the consultation process in a way that is both inclusive and effective.

This should involve forming a representative stakeholder group that includes key actors across the system such as ministry officials, staff from technical bodies (IEQE and IIE), but also actors who may not have been included in consultations on the current education strategy, such as parents and students. A wide range of actors should be invited to provide direct feedback and suggest proposals to be included in the new strategy. The process might

be time-bound (e.g. three to six months) to keep development of the strategy on track. This is important since long consultation processes may lead to stakeholder fatigue. However, public consultations should not end once the new strategy is adopted. In 2018, the EU found that Serbia had few public consultations on education and training regulations (European Commission, 2018[15]). Maintaining stakeholder engagement throughout the legislative development process and clearly communicating progress towards headline goals and targets can advance the implementation of the strategy and support accountability.

Recommendation 5.1.2. Develop action plans and a monitoring framework with measurable targets

Once Serbia has prioritised a set of strategic issues and identified clear national goals for education, it will be important to operationalise these goals through concrete actions and specific, measurable targets. The current education strategy includes a multiplicity of goals and some quantitative targets (see Box 5.1). For example, by 2020, the strategy aims to increase public funding for education to 6% of GDP, reduce the drop-out rate to 5% and have 50% of students who graduate from university continue their studies at the graduate level. However, these targets are not reflected in the action plans. Aligning the activities in the action plan with clear goals and measurable targets would help stakeholders to better understand what they are working towards and direct change. It would also help monitor the implementation process and communicate progress more effectively to promote greater transparency and accountability.

Create new action plans with specific actions and measurable outcomes

To make Serbia's new education strategy more operational, the ministry should focus on specific actions with measurable outcomes. The action of "evaluating educational achievements of primary students", for example, is measured by progress indicators including: 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, 2015[19]). Some of these indicators (such as the number of teacher education programmes) may not be the most relevant measures for evaluating student achievement. Tables 5.2 and 5.3 provide examples of action points from Serbia's current plan and suggests ways in which these could be improved for the action plans associated with the new strategy. In developing substance for the new action plans, it will be important for the ministry to consider the following points:

- *Align actions with clear and specific goals*. Some of the actions listed in the current strategy could serve as system goals, such as "reduction in drop-out rate during primary education"; however, others are less clear, such as "elaborating all the components of continuous teacher development and advancement". While the former action plainly indicates what goal is trying to be achieved (lowering the drop-out rate), the latter does not as the desired outcome is not explicitly stated. Serbia's new action plans should align actions with clear and specific goals so that actors know what they are working towards (the outcome). Desired outcomes could also be clearly stated and included in action plans.
- *Ensure actions are clear and specific*. Similar to goals, actions and sub-actions should be operationally clear and specific. For example, one of the implementation activities for "elaborating components of teacher development" includes establishing "a fair, performance-based system of teacher evaluation". However, this could be unpacked further to outline what specific steps are required to

establish such a system. For instance, developing the tools and guidelines to build the capacity of advisors to undertake teacher appraisals is an example of a more specific action point that could be included in the new strategy to better support implementation.

- *Include an indication of timing and points of contact*. Serbia already includes a timeline and points of contact for each action. This practice should be continued in the next strategy as it can help keep the implementation process on schedule and hold designated stakeholders accountable for specific actions. The ministry could also consider developing mid-term outcomes or milestones for the next strategy in order to monitor progress continuously. For example, a mid-term outcome of building the capacity to conduct teacher appraisal could be that advisors understand what makes for an effective appraisal and where they can receive further support.
- *Review progress indicators and assign clear targets*. While the 2020 strategy has some clear targets, these should be reflected in the action plans to help track progress towards the national education goals. Serbia could also add indicators related to the types of processes and capacities that need to be developed to achieve national goals, defining what success would look like for stakeholders (i.e. outcomes). For example, there was no mention of the need to build the capacity of advisors to carry out teacher appraisals; this is, however, an important progress indicator that could be assigned clear targets.
- *Identify and plan for resource needs*. For the action plan to be financially viable, the issues addressed must be sufficiently important, produce desirable results at a reasonable cost and have stability (Bryson, 2018[23]). This requires a constructive discussion with the Ministry of Finance, which should exert pressure on the education ministry to develop a realistic budget that prioritises actions and measures results. Decisions should align with the government's broader national development agenda and adequate resources should be allocated with more predictability based on strategic plans.

Table 5.2. Examples of items from Serbia's current action plans

Action	Instruments for implementation of the action	Outcome – Result of action	Progress indicators	Start	End	Responsible agencies and partners
Development of system of final exam in secondary education: comprehensive, artistic and vocational final exams	• Drafting laws and adopting bylaws • Developing the final exam model • Establishing connection with higher education in the process of preparing and implementing matriculation exam • Developing the system of baccalaureate quality monitoring • Developing the map of baccalaureate introduction and result application	• Uniform system of taking all established final exams and beginning the implementation of that system	• Number and quality of designed instruments • Number and quality of performed tests, quality of analyses, change of educational practice • Number of reviews	Feb 2015	June 2019	Ministry, IEQE
Elaborating all the components of continuous teacher development and advancement	• Drafting laws and adopting bylaws • Establishing a fair, performance-based system of teacher evaluation • Establishing sustainable funding models for teacher advancement • Producing analyses of the effects of teacher advancement • Revising criteria for acquiring teacher certification to provide continued quality of teachers' work (possibility of losing the title)	• Better teacher quality by reinforcing teachers' motivation for professional development • A more efficient teacher advancement system providing better quality of teaching	• Harmonised teacher development and teacher advancement components • Number of defined indicators of teacher quality • Database of teachers with titles • Percentage of teachers who have advanced to specific titles	Feb 2015	Dec 2017	Ministry, IEQE, National Education Council

Source: MoESTD (2015[19]), *Action Plan for Implementation of the Strategy for Education Development in Serbia 2020*, Ministry of Education, Science and Technological Development.

Table 5.3. Proposal for items to be included in Serbia's new action plan

Goals	Actions/sub-actions	Timeline	Lead agency/partner	Mid-term outcomes	Outcome
Implement the Matura at the end of upper secondary	Determine the responsible body(ies) for key administrative tasks	2019		Key administrative responsibilities are clear; body(ies) have adequate resources to undertake their role.	New Matura is taken by all students at the end of upper secondary education. Results determine university placements.
	Develop examination syllabi and example test materials	2019-20		Examination syllabi and example test materials reflect the curriculum's learning objectives.	
	Develop a Common Admissions System (CAS) for higher education (HE) placements	2019-21		CAS system is fully developed; universities have confidence in it.	

	Pilot the new Matura and review design	2021-22		The pilot covers a representative student sample; modifications to the Matura model are made based on an evaluation of the pilot.	
	Prepare schools and students for the new Matura	2022-23		All schools have received training/materials. Schools and students understand how the new Matura will operate and know which body they can direct questions to.	
	Implement new Matura	2023		All eligible students take the Matura in 2023; the vast majority (xx%) of university places are determined by Matura results.	
Strengthen support and incentives for teachers' promotion	Revise teacher standards and define competencies needed to move up levels and how to acquire them	2019-20		New standards clearly set out required competencies to move up to new levels; teachers are engaged in the development of the new standards and support them.	Teachers pursue promotion to higher levels.
	Provide teachers with guidance and mentorship on how to select professional development opportunities that will help them move up the career path	2019-20		Teachers receive guidance and mentorship when selecting professional development; they know who to ask for further information.	
	Develop education advisors' capacity to undertake appraisals, including guidelines and tools	2019-20		Education advisors understand what makes for an effective appraisal, and where they can receive further support.	
	Link the career path to the teaching salary scale	2019-20		Teachers' salaries increase in line with international and regional practices.	
	Changes to promotion are communicated to teachers and schools	2020-22		Teachers and schools understand changes to the promotion system.	
	New promotion system is progressively implemented	2022		Xx% of existing teachers pursue promotion annually. Most teachers understand and support the new promotion system.	

Recommendation 5.1.3. Monitor progress to build accountability for achieving education goals

System monitoring has an accountability function, which determines if goals are being reached, and a learning function, which determines if defined strategies and policies are up to date in the current environment. It is not a stand-alone process but part of an ongoing, cycle (Bryson, Berry and Kaifeng Yang, 2010[24]; George and Desmidt, 2014[25]). Without a means to monitor the system continuously, countries risk producing an abundance of potentially out-of-date information that is not relevant for policymaking. System monitoring should not be an isolated technical process but rather create pressure for the government and education system to demonstrate progress. One of the key reasons that Serbia's 2020 strategy has not fully achieved its objectives is the lack of outreach to raise awareness among policymakers and the public about progress towards achieving educational goals.

Strengthen the role of the special working group to monitor the strategy

Serbia established a special working group within the ministry to monitor the implementation of the strategy and action plan in 2018. To date, the group has only published one progress report which highlighted the need for better education statistics. To maintain the impetus for system improvement, hold the government accountable for progress and ensure alignment across different policy areas, the ministry should strengthen the role of the special working group to monitor the new education strategy and action plans.

One way to strengthen the role of the working group is to ensure the ministry's leadership is personally invested in the strategy's progress and raise the group's prominence within the ministry. This could be achieved by having the minister lead the working group. Key representatives from each unit within the ministry, including officials from the National Education Council, the IIE and the IEQE, should also be invited to participate in the group to support comprehensive system evaluation.

Another way to strengthen the role of the working group is to organise regular (e.g. monthly) meetings to discuss progress and identify important challenges. These discussions do not need to be technical but should focus on taking stock of which actions have been completed and where progress is stalled. The technical research to inform these discussions should be carried out by the analytics group that this review recommends be re-established (see Recommendation 5.2.2), which could serve as a secretariat for this body. For example, the special working group could request the analytics group to produce a national report on progress towards achieving the strategy and undertake other specialised research. A summary of the discussions at these meetings could be published on a regular basis (e.g. quarterly) to keep the public informed of progress and success.

Develop platforms for regular reporting on progress

Most OECD countries regularly publish an analytical report on education (OECD, 2013[2]). National policy goals and priorities guide the content of this report. Typically, such reports describe progress against the targets of the national indicator framework and explain the strength and challenges of the system by studying related inputs, process, outputs and outcomes. For example, an analytical report might first describe the overall performance of students on a national assessment and examine this performance in relation to changes in school resource allocation and efforts to improve teacher assessment literacy. The report might also discuss future policies or activities intended to address certain challenges.

Serbia has only had one analytical report that took stock on progress towards achieving the current education strategy and with the exception of EU funding commitments, there is no expectation or timeframe for reporting on a regular basis during the strategy's implementation. This makes it difficult for policymakers to make informed decisions and impedes the national education debate on education. Serbia should establish a regular reporting timeframe about progress towards achieving the education strategy. The ministry could aim to publish such a report every two years and then later on an annual basis, which would provide more stability than reporting intermittently or only at the end of the strategy. This report should be the responsibility of the ministry's analytics group but, if capacity is an issue, it could be undertaken by external researchers. The reporting timeframe should also be accompanied by a dedicated budget, agreed upon by the government.

In addition to creating a regular analytical report on education, the Serbian ministry could develop other platforms to report on progress and success. For example, a performance

dashboard could be added to the ministry's website so that users can not only access an electronic copy of the strategy and action plan but see visual representations of progress towards selected indicators included in the national indicator framework (see Recommendation 5.2.1). Instead of developing a separate electronic database, the ministry could link the dashboard directly to the UISE through the open data website. This would ensure the dashboard always displays the most recent information to users without the need to wait for a report to be published (Eckerson, 2011[26]). Box 5.2 describes some of the procedures and tools that New Zealand and the United States use to provide regular, up-to-date information about the performance of their education systems. These efforts would support Serbia in communicating information about the education sector more effectively.

Box 5.2. Examples from New Zealand and the United States on providing regular up-to-date information about progress in education

In New Zealand, *Education Counts* is an online platform managed by the Ministry of Education that was built to increase the availability and accessibility of education data in the country. It provides a range of information, such as achievement and participation data, and allows users to filter by level of education and demographic background. The platform also provides tools such as *Know Your Region*, where it is possible to select a particular regional council or territorial authority and access data such as student attainment, student population, or student engagement specific to that area.

In the United States, the National Center for Education Statistics (NCES) is the country's primary federal entity for collecting and analysing education data. The NCES provides current information about the American education system through its online database, allowing users to access information about the state of education from pre-school to the post-secondary level. The NCES also publishes an annual report that shows progress on key indicators, such as drop-out rates. The website and annual report help summarise important developments, progress and trends based on the latest national statistics, which are updated throughout the year as new data become available.

Sources: NCES (2019[27]), *The Condition of Education,* https://nces.ed.gov/programs/coe (accessed on 26 August 2019); Ministry of Education (2019[28]), *Education Counts*, https://www.educationcounts.govt.nz/home (accessed on 26 August 2019).

Policy issue 5.2. Enhancing the availability and use of evidence for accountability and policymaking

Data is integral to system accountability and, as such, the ministry must ensure that the Unified Information System of Education (UISE) has the capacity to support a wide range of evaluation efforts. Primarily, regulations and processes around data collection and access should be standardised. While Serbia has attempted to establish a national strategy on education statistics between the ministry and the SORS, this has not been realised and leaves the country without a central, unified source for education data. Strengthening administrative data in the UISE will not only provide a valuable source of information to inform policymaking, it can also help drive improvements and ensure more efficient spending on education. In addition to increasing the availability of education data, Serbia should ensure that relevant information can be extracted and easily used. Without greater functionality, Serbia's UISE will struggle to generate a stronger national understanding of the challenges and progress of the education sector.

Recommendation 5.2.1. Strengthen foundations for effective data collection and storage

High-quality and accessible data is integral to system evaluation and accountability. Currently, the parallel processes for data collection prevent Serbia from developing a unified source of reliable information about the education system and create a reporting burden for schools. Developing a national indicator framework could help Serbia measure and communicate progress towards national education goals. It would also serve as a basis for conducting a systematic mapping exercise of available, problematic and missing education indicators across various databases. To do this, Serbia will need to develop a formal data dictionary and sharing protocol to help improve the quality of education data and encourage actors to rely on the UISE for desired information. Finally, the ministry should consider using civil identification numbers with appropriate data security measures instead of separate student identifiers to maximise the analytical potential and policy relevance of education data.

Establish a national indicator framework to measure progress

A national indicator framework not only specifies the measurable targets associated with goals, but also the data sources that will be used to measure progress and the frequency of reporting around the indicator. Without this valuable component, system evaluation loses co-ordination around what data points to pay attention to, resulting in a general loss of systematic direction and fragmented goal-setting. In 2011, Serbia's National Education Council proposed a set of indicators to help monitor the education system; however, this document is not currently used and some of the progress indicators in Serbia's 2020 Education Strategy are vague. For example, the action to "strengthen the educational function of primary school" is measured by progress indicators such as best practices and models of work prepared (MoESTD, 2015[19]).

The lack of clear and measurable indicators inhibits the reporting and monitoring of system progress. As such, Serbia should review existing education indicators across various databases and develop a clear indicator framework to support the next education strategy. This could build on the proposed framework developed by the National Education Council but should be updated to include new data sources, such as the national assessment. This would support public accountability vis-à-vis national goals and identify data gaps to orient the future development of Serbia's UISE. Box 5.3 shows the how Ireland included specific indicators in its Action Plan for Education 2018 to measure progress toward national goals for education.

Box 5.3. Example of Ireland's indicator framework for the Action Plan for Education 2018

Ireland's Action Plan for Education 2018 accompanies the country's national education strategy 2016-19, setting out priorities and actions that the Department of Education and Skills and its technical agencies should undertake during the year. The action plan clearly aligns each action and sub-action to the country's five main goals for improving the quality of its education system. Each goal is associated with a list of actions and a set of indicators that are used to measure progress. The first goal, "improve the learning experience and the success of learners", identifies six objectives, followed by indicators, including for example:

Objectives	Indicators
1.2 Deliver a "step change" in the development of critical skills, knowledge and competencies to provide the foundations for participation in work and society	Increase the percentage of students taking higher-level maths at the end of Junior Cycle: 60% by 2020
	Increase the proportion of students performing at Level 5 or above for reading in PISA: 12% by 2020
	Decrease the proportion of students performing below Level 2 for science in PISA: < 10 by 2025
	Increase the proportion of students performing at Level 5 or above for mathematics in PISA: 13% by 2020
1.6 Enable learners to communicate effectively and improve their standards of competency in languages	Percentage of candidates presenting a foreign language at the Junior Certificate/ Cycle Examination: 100% by 2026, 92% by 2022
	Students studying a foreign language as part of their HE course: Support 20% of all HE students to study a foreign language as part of their course (2026)
	Students doing Erasmus +: 4 100 HE students (2018/19)

Note: Junior Cycle in Ireland covers the first three years of secondary school. Starting age is around 12 or 13 years old. The Junior Cycle Examination takes place at the end of Junior Cycle in post-primary schools.
Source: Department of Education and Skills (2018[29]), *Action Plan for Education 2018*, http://www.education.ie (accessed on 9 August 2019).

Harmonise data collection by establishing clear definitions and protocols

While a national indicator framework can help orient reform efforts, Serbia will still need clear and harmonised protocols regarding the definition of indicators and data points across the education databases. Currently, education data is managed in parallel by the ministry (UISE) and the SORS. Moreover, while the *Dositej* platform aims to streamline the data collection process, there are no common data standards to ensure that all schools have a shared understanding of data definitions. The result is an increased risk that indicators or data points are reported in different ways, preventing Serbia from establishing a central source of reliable data about the education system. A formal data dictionary and sharing protocol would guide schools and actors within the SORS and ministry on how to define data, preferably in line with international standards, and encourage both government and peripheral requestors to turn to the UISE for their desired information.

Many countries have established strict protocols regarding the definition of data points and who can retrieve information from schools. For example, to ensure consistency for national-level reporting and analysis across individual states, the United States Department of Education has created the *Common Education Data Standards*, which defines education data around the country (Department of Education, n.d.[30]). By implementing common data

standards, national education policymakers can be confident that data from different states have the same meaning and can be relied upon to inform federal decision-making. Moreover, the United States also regulates who can collect data from schools. For example, if government parties wish to contact schools to collect information, they must undergo a rigorous screening process that is regulated by data sharing legislation (U.S. Department of Education, 2018[31]). These procedures help restrict outside access to school information, funnel data retrieval to the education database and limit direct collection from schools to data that cannot be found in the EMIS (e.g. interviews with teachers or students).

Develop processes to identify data gaps

High-quality data and indicators are crucial parts of making informed policy decisions. In Serbia, education statistics are not sufficiently reliable and present a major challenge to system evaluation (MoESTD, 2018[16]). Improving data quality and undertaking research to shed light on some of the "gaps" where data collection is too costly/not feasible are some of the ways in which the government can improve the quality of education data (OECD, 2013[2]). In particular, the national indicator framework, recommended by this review should be used to conduct a systematic mapping of available, problematic and missing indicators. This could help the ministry identify data gaps and orient the future development of the UISE. If, for example, Serbia sets a goal to improve the retention of vulnerable groups of students, the national indicator framework would indicate that UISE is the data source to be used to monitor this indicator It would need to collect data about students' demographic or socio-economic profile, for example, and other measures of vulnerability. The lack of available indicators to measure progress towards this goal would signal UISE staff to prioritise developing capacity and data collection procedures to support this indicator.

Link education data to data stored by other agencies

The ministry's plans to introduce a unique identifier that will follow individuals throughout their educational trajectory is a noteworthy innovation for Serbia's UISE. This will allow for integrated analysis of the education system, for example, by producing information to calculate real drop-out rates and analysing the relationship between student-teacher ratio vis-à-vis assessment results. However, the current design of the unique identifier limits the analytical potential of Serbia's education data since it will not link education data to other government databases. This contrasts with most modern EMIS systems which use the national/civil identification number of students, rather than creating student identifiers (Abdul-Hamid, 2014[11]).

There are several advantages to using civil identification numbers. First, these numbers are inherently standardised and therefore will follow a standard structure across all education databases, including vocational education and training and higher education. Moreover, because they exist nationally, civil identification numbers can be used to research different sectors (e.g. if one wishes to study education outcomes and labour market success). Finally, by using this identifier, much student information can be retrieved automatically into UISE by linking the system with the national registry, which greatly improves data quality and reduces the data entry burden on schools. Of course, managing civil identification numbers should be done carefully, with strict protocols about who can access data, how they can access and use it and when data should be anonymised to protect student privacy.

Recommendation 5.2.2. Support the use of data and evidence in policymaking

To strengthen the use of data and evidence in policymaking, Serbia needs to build the capacity of technical staff and key actors across the system. Primarily, this involves re-establishing the ministry's analytics group which was created in 2014 to collect and analyse education data and policies, no longer operational because of significant fluctuations in staff numbers. It also involves strengthening the IEQE and drawing on the wider research community to undertake analysis and conduct evaluations that can inform policymaking. Without stronger capacity, using data and evidence to inform policies will likely remain a challenge for Serbia (MoESTD, 2018[17]).

Re-establish the analytics group in ministry

Using data and evidence in policymaking requires having enough people with the right skills to support system evaluation. For example, these individuals should conduct regular policy evaluations that consider past and international experiences. While Serbia's IEQE already has the capacity to assume some of these responsibilities, their staff members are not directly involved in the policymaking process. To bridge this gap, Serbia should re-establish the ministry's analytics group with a mandate to feed data and evidence into the special working group responsible for monitoring the education strategy. The group could also be tasked with managing the UISE and reviewing and implementing some of the recommendations presented in this review. For example, it might introduce standardised data definitions and protocols or develop a national report on the performance of the education system.

This will require additional staff capacity and resources since the ministry will likely need more than three individuals and a range of profiles, including statisticians and people with experience in research and policy analysis to help make sense of the data and provide recommendations for policy. In Georgia, for example, the EMIS employs five statisticians solely for responding to data and research requests, in addition to department leadership, administrative support and software developers who manage the system.

Strengthen the IEQE's capacity and resources

While the appointment process for senior management of the IEQE is in line with the practices of OECD countries, the institute is operating within the context of a limited budget and insufficient staff with the right technical expertise. This makes it difficult for the institute to fulfil its broad mandate of supporting evaluation and assessment in Serbia's education system. As the IEQE's list of responsibilities continues to grow (they are now responsible for all national and international student assessments and exams), the government should strengthen the institute's capacity and resources to ensure its effective operation. The current public sector hiring freeze is hindering the IEQE's ability to address its staffing deficit. Until this ban is overturned, one possible way that Serbia could address resource issues involves agreeing to a multi-year activity programme and related budget. Currently, the institute's budget is planned on a three-year basis but is approved annually, making it difficult to ensure important research and evaluation activities in the long term and hire external consultants to support the IEQE in fulfilling its mandate.

Make greater use of the research community for policymaking

- Serbia has a strong research community that produces extensive evidence about the education system which feeds into the policymaking process. For example, independent researchers developed the new Matura proposal and have provided national analysis of

PISA data. The Serbian ministry also funds education research and has tested various mechanisms to support research activities, for example by seconding staff between education authorities and academic and organising conferences. Other countries support their research communities in this way by providing funds for a university department to create a platform to share call for tenders and post-research. However, there is a lack of alignment between research projects and the needs of Serbian policymakers. This could be improved by making the analytics group responsible for commissioning, publishing and hosting education research. Box 5.4 provides an example of how the research arm of the United States' Department of Education organises research activities to guide and inform policy.

Box 5.4. Ways to encourage and support the research community

In the United States, the Institute of Education Sciences (IES) is the statistics, research and evaluation arm of the U.S. Department of Education. The IES is responsible for providing evidence to guide educational practice and policy. Under its Education Research Grants Program, the IES has established 13 programmes of research on different topics regarding the education sector. With applications accepted once a year, topics range from "Early Learning Programs and Policies" to "Improving Education Systems". Eligible applicants include but are not limited to public and private agencies and institutions, such as colleges and universities, and non-profit and for-profit organisations.

Source: IES (2019[32]), *Education Research Grants Program,* https://ies.ed.gov/funding/ncer_progs.asp (accessed on 26 July 2019).

Recommendation 5.2.3. Improve the functionality of UISE to make data more accessible

One reason why data from Serbia's UISE is not used more widely is that its functionality is limited to data entry and storage. Effective EMIS systems also have strong analysis and reporting functionalities (Villanueva, 2003[33]). These features should be available to all interested parties since it can encourage the public to consult the UISE as the central source for information about the Serbian education system. Improving the functionality of the UISE can also support Serbia to communicate proactively about the performance of the education system.

Disseminate data more effectively to inform education actors and society

Real-time access to data through a public web portal (accessible by anyone, not just those with ministry credentials) is a common international method of extracting information from EMIS databases and presenting it in an accessible manner. At the most fundamental level, users will be able to know how many students attend a school and how they perform on a national assessment. More sophisticated systems, such as EdStats in the United States, aid external research and analysis by facilitating comparison across schools, aggregation at different levels (e.g. regional or national) and providing a set of data visualisation tools (Abdul-Hamid, Mintz and Saraogi, 2017[34]). Serbia's DevInfo website, which is managed by the SORS provides public users with an interface to explore a limited amount of education data. The ministry could build on this example by creating an online platform that is easy to use and draws on select data from the ministry's UISE. The platform should contain reporting features to create dynamically generated charts and figures and export

data for further analysis. Parents and students could use the portal to make important decisions and help hold the system accountable. Researchers would be able to use this portal to study the education system and contribute to system evaluation efforts. Insights from this tool could help encourage greater use of data to monitor educational progress and establish a national education debate.

Help schools to make greater use of data

In addition to making education data more assessable to the public, Serbia should support schools in making greater use of data. Building on recent development of the *eClass Register* pilot project, the ministry should explore the potential for expanding this to become an open data portal for schools. This portal would link to the UISE system, making real-time administrative and learning outcome data accessible in a user-friendly format to a wider range of education actors. The portal should not only allow schools to input data (e.g. attendance) but also export it. For example, a principal might want to know the attendance rate of students according to grade levels. The portal could include a reporting feature that allows the principal to specify that he/she wishes to create a two-column table in which the first column lists grade levels and the second indicates the attendance rate of students from that grade. This type of advanced functionality would allow education data to be filtered by time period and generate graphical charts to depict the results. Every time a report is "run", the system would populate the defined objects with the most recent data (Abdul-Hamid, 2014[11]). Other types of data that could be accessible in this portal are:

- *Student profile.* This might include information disaggregated by gender, mother tongue and socioeconomic background (in the future).
- *School context.* Data could be filtered according to where a school is located (rural or urban), teacher-student radio, etc.
- *Outcomes.* This might include drop-out rates or learning outcomes (taking care to avoid the creation of league tables or other test-based accountability structures that can have negative consequences). Census data from the Grade 2 national assessment recommended by this review (see Recommendation 5.3.1) should only be available to schools but results could be aggregated by Regional School Authority (RSA) and shared publicly.

The portal should include a function that allows users to make contextualised comparisons of outcomes across schools operating in similar contexts or groups of students with similar profiles.

Policy issue 5.3. Developing the national assessment to support system goals

National assessments that provide regular and reliable data on student learning outcomes can inform education policy, support strategic planning and help drive system improvement (OECD, 2013[2]). Results from these assessments can also be used to better understand how students are performing and serve as a reference for teachers' classroom marking. In Serbia, system evaluation relies on periodic international assessments and the final exam of compulsory schooling to provide information on student learning. However, international assessments do not allow for comparisons at the local level (across RSAs) and are not specific to the Serbian context. For example, a large-scale international assessment may not test competencies that are included in the Serbian curriculum, such as transversal skills. Moreover, the final exam of compulsory education is not fully standardised and assesses a relatively limited range of competencies (see Policy issue 2.3). As a result, timely, reliable

information about the extent to which students are meeting national learning standards is very limited.

While Serbia's new Matura exam will provide an additional source of information about student learning, it will not address the gap in data on learning outcomes for earlier years of schooling. To address this, the ministry introduced a pilot national assessment in 2017/18. The pilot was developed centrally by the IEQE and consisted of a sample-based assessment for Grades 7 and 11. Results will be available in 2019 and discussions are currently underway about using these findings to establish a new national assessment system. However, there is no clear mandate to develop this tool in the country's education strategy and action plans. As such, despite having some plans in regards to the design of the new assessment (its frequency, what grades and subjects will be assessed, etc.), no official decisions have been made. There are also no plans for financing the new assessment. This is a concern since the lack of an adequate budget is one of the reasons Serbia has not administered a national assessment since 2006 (World Bank, 2012[20]). This review provides suggestions on how Serbia could advance the development of the national assessment and establish it as a key instrument to support system goals for learning and equity.

Recommendation 5.3.1. Consider the design options to align the national assessment with its stated purpose

The main purposes of a national assessment in most EU and OECD countries is to support system monitoring, provide formative information about learning and to serve as an accountability tool (OECD, 2013[2]). National assessments can serve one or a combination of these purposes. Currently, Serbia aims to design its new national assessment for the primary purpose of system monitoring. However, the national assessment could also provide information on other issues where the ministry would like to have more data. For example, it could help monitor the transition of students from class to subject-based teaching, the implementation of the new curriculum or the quality of teachers' classroom assessments.

The stated purpose of a national assessment closely impacts its design and implementation. As such, the following section provides recommendations on how Serbia could build on the pilot assessment to design a national assessment system that fulfils the stated purpose of system monitoring while supporting broader education policy goals. The following analysis is guided by a set of key considerations, outlined in Table 5.4, which any country needs to review when determining the design of a national assessment. This review suggests that Serbia create a steering group to lead the development of the national assessment (see Recommendation 5.3.3), which could be tasked with making decisions on these design questions. This review recommends the following options.

Table 5.4. Key decisions regarding national assessment

Topic	Options	Advantages	Disadvantages
Subjects	Many	Broader coverage of skills assessed	More expensive to develop, not all students might be prepared to take all subjects
	Few	Cheaper to develop, subjects are generalisable to a larger student population	More limited coverage of skills assessed
Target population	Sample	Cheaper and faster to implement	Results can only be produced at high, aggregate levels
	Census	Results can be produced for individual students and schools	More expensive and slower to implement
Grade-level	Lower	Skills can be diagnosed and improved at an early stage of education	The length of the assessment and the types of questions that can be asked are limited
	Upper	More flexibility with respect to the length of the assessment and the types of questions that are asked	Skills cannot be evaluated until students are in later stages of education
Scoring type	Criterion-referenced	Results are comparable across different administrations	Results require expertise to scale and are difficult to interpret
	Norm-referenced	Results are easier to scale and interpret	Results are only comparable within one administration of the assessment
Item type	Closed-ended	Cheaper and faster to implement, items are more accurately marked	Can only measure a limited amount of skills
	Open-ended	A broader set of skills can be measured	More expensive and slower to implement, marking is more subjective in nature
Testing mode	Paper	The processes are already in place and the country is familiar with them, requires no additional capital investment	Results are produced more slowly, seen as more old-fashioned
	Computer	Results are produced more quickly, more cost-effective in the long term, seen as more modern	New processes have to be developed and communicated, requires significant initial capital investment

Sources: Adapted from DFID (2011[35]), "National and international assessment of student achievement: A DFID practice paper", https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/67619/nat-int-assess-stdnt-ach.pdf (accessed on 13 July 2018); OECD (2011[36]), *Education at a Glance 2011: OECD Indicators*, https://doi.org/10.1787/eag-2011-en.

Implement national assessment in Grades 2 and 6, and consider Grade 10 in the future

Currently, the ministry plans to administer the national assessment in Grade 6. While this would fulfil the need for more data on learning outcomes at the lower secondary level, it leaves the country with little information about learning in the early primary grades. This is a concern, given that the consolidation of foundational cognitive skills in the first years of schools is essential for future learning. For this reason, most OECD countries assess student learning in at least one grade of primary school. As such, this review recommends administering the national assessment in both Grades 2 and 6. If additional resources are available in the future and after the assessment in Grades 2 and 6 have been established, Serbia might consider administering a national assessment in Grade 10. This could allow for broader measurement of the curriculum by testing subjects that may not be covered by PISA or the new Matura.

- Administer the national assessment for primary education in Grade 2.
  - Currently, Serbian teachers are required to administer school-based diagnostic tests at the beginning of each academic year. This review recommends that

Serbia standardise the content of these assessments and establish mandatory initial tests for Grades 1 and 5 (see Chapter 2). This will provide comparable data about student learning at the start of the two cycles of basic education. However, since the marking of these tests will not be standardised, results cannot not be used as a reliable source of information to monitor the first cycle of primary school.

- The review team was informed that one of the reasons Serbia had not chosen to administer a national assessment in the early years of schooling was because of the strong performance of students in the TIMSS Grade 4 survey. However, there is a risk in relying on this one measure to form an opinion on learning in the critical early years of schooling, especially when this measure does not cover reading literacy. To further support system monitoring in the early years of primary, Serbia could consider conducting a national assessment in Grade 2. This would be administered to the full cohort of students in the second half of the school year, giving teachers an external reference point to moderate or benchmark their classroom assessments. The design, delivery and scoring procedures of the Grade 2 national assessment must be appropriate for very young learners.
- Importantly, Serbia would need to ensure that these externally marked assessments are not interpreted as having summative consequences, which could have negative consequences. It is important to communicate that the assessment is for system monitoring and diagnostic purposes only. A national assessment in Grade 2 would give students one year to adjust to formal schooling but still help teachers identify learning needs early enough to address achievement gaps before they become problematic. This assessment would also provide valuable insights about student learning at a stage where the national perception of education quality is good.

- Implement plans to administer the national assessment in Grade 6.
  - This review supports Serbia's plans to administer the new national assessment in Grade 6. This would provide information on student learning one year after the transition into the second cycle of education (Grades 5 and 9), addressing the need for better data to understand how the transition from class-based to subject-based teaching impacts learning. It would also fill an information gap between Grades 5 and 8, stages which can respectively draw on available data from the new initial diagnostic test (Grade 5) and the final exam of compulsory education (Grade 8). Serbia might also consider introducing links between Grade 4 TIMSS survey and the Grade 6 national assessment both for the test instruments and background questionnaires. This would allow for comparative analysis on important research questions, such as "Do Serbian students become less engaged in school after Grade 4?".
- Consider administering a national assessment for Grade 10 in the future.
  - When Serbia implements its new Matura exam, this will provide reliable data about student learning at the end of upper secondary. However, there will still be a gap in reliable data in the first years of secondary school. International assessments such as PISA can help fill this gap but do not provide information on the extent to which students are mastering the national curriculum. As such, this review recommends that once the Grade 2 and 6 assessments have been

established, the steering committee consider administering a national assessment in Grade 10 should additional funding becomes available.

- An assessment in Grade 10 could help develop test items for the Matura. The IEQE already used the recent pilot assessment to test new Matura items and could continue this practice to adjust the exam in the future. The Grade 10 assessment would also allow Serbia to measure broader competency areas that align with national priorities. For example, the subjects assessed in Grade 10 might include foreign languages, science, technology, engineering and mathematics (STEM) fields, digital competencies, social and civic competencies, entrepreneurship and intercultural skills, which are among the key competencies of Serbia's education law (MoESTD, 2018[17]). The IEQE could alternate the subjects, assessing them in different years to reduce the cost of administering multiple assessments at the same time.

Maintain plans for sample-based assessment but consider census-based assessments in the future

To ensure the 2018 pilot national assessment was representative, the IEQE stratified the student sample by RSA. However, during the review mission, the ministry mentioned that the sample might be extended to provide analysis at the municipal or school level. This would require more students and schools progressively participating in the assessment to maintain precise and reliable comparisons. It is not clear that sampling at the district level would provide added value beyond the existing sampling at the RSA level since these units of analysis are not that different (there are 17 RSAs and 29 districts). Serbia would not be able to sample at the school level because the average class size per grade is too small. As such, to make school-level comparisons, the assessments would need to be census-based.

This review recommends that Serbia maintain the current plans to stratify the sample by RSA for the Grade 6 assessment but make the Grade 2 assessment census-based once the instrument has been developed (see above and Table 5.5). If more resources are available in the future, Serbia could also consider making the Grade 6 assessment census-based. This would provide data that could be used formatively to improve teaching and learning within and across schools; however, this option would be considerably more expensive and require additional capacity to implement. Moreover, this review recommends that Serbia maintains a sample-based assessment in Grade 10, should this be developed in the future. This will help avoid the perception that the Grade 10 assessment has consequences for students at a time when they are starting to prepare for the Matura exam.

Develop a timetable to assess foundation skills in Grades 2 and 6

Serbia's 2018 pilot national assessment tested students' knowledge in mathematics, physics and history but the country only has guaranteed funding to develop tests for two subject areas. Focusing on a limited number of subjects is consistent with the national focus to relieve testing pressure on students and schools (see Chapter 2). It also creates space to include more questions within each subject to gain better insights into areas where students struggle to meet learning standards. As such, this review recommends that Serbia's national assessments maintain the mathematics subject from the pilot but replace the physics and history test with an assessment of literacy in either the Serbian language or mother tongue. These subjects were assessed in Serbia's previous national assessment, which was discontinued after 2006 (World Bank, 2012[20]). Reintroducing these subjects in the new

national assessment of Grades 2 and 6 could help the Serbian education system strengthen the foundational skills of students.

The frequency in which countries assess mathematics and literacy is somewhat varied. For example, among OECD countries with national assessments at the lower secondary level, around 60% of countries test students in mathematics on an annual basis; in literacy, this share is 64% (OECD, 2015[12]). Other countries assess subjects on a rotation or alternate basis. To generate regular, predictable and timely information about learning outcomes for system monitoring, Serbia should develop a clear timetable to identify the frequency that subjects will be assessed by the national assessments in Grades 2 and 6. Since annual testing is costly, Serbia could assess foundation skills in Grade 6 every 2 years but aim to administer the Grade 2 assessment annually once the instrument has been developed (see Table 5.5).

If additional funding is made available after the national assessments in Grades 2 and 6 are fully operational, Serbia might then consider introducing a wider range of subjects on an alternative basis every 2-3 years for the Grade 10 assessment (see above and Table 5.5). This could provide information about student learning in areas relevant to the country's economic development. However, caution should be taken when adding subjects as this will add to the costs of administering the assessment and requires greater implementation capacity.

Table 5.5. Proposal for organisation of cycles for new national assessment

	Year N	Year +1	Year +2	Year +3	Year +4	Year +5	Year +6	Year +7	Year +8	Year +9	Year +10
Grade 2	S* M, L		C M, L	C M, L	C M, L	C M, L	C M, L	C M, L	C M, L	C M, L	C M, L
Grade 6	S M, L		S* M, L		S* M, L		C M, L		C M, L		C M, L
Grade 10						S M, L, Sc.		S M, L, FL		S M, L, Sc.	

Notes: C = census; S = sample; M = mathematics; L = language; Sc.= science; FL = foreign language.
* Serbia should consider moving towards a census-based assessment in the future.

Use challenging test items that are designed to assess student learning

In Serbia, some of the sample questions from the pilot national assessment that were shared with the review team required using higher-order thinking skills. This demonstrates the IEQE's efforts to align test questions with the competencies included in the new curriculum and student achievement standards. The capacity developed through this process can also support the country's efforts to reform the content of high-stakes examinations. However, considering the small number of sample questions available for review and the lack of statistical data on results from the pilot national assessment, this review is unable to make general conclusions about the type of questions that will be included in new national assessment. Nevertheless, Serbia will need to ensure that test items in the national assessment do not encourage memorisation and that proper item-writing convention is followed, such as reviewing the tests and items for potential bias and varying the placement of distractor choices (the incorrect options in a multiple-choice test) (Anderson and Morgan, 2008[37]). Distractor choices should also represent common mistakes made by students.

Consider computer-based assessment delivery

The use of computers to administer national assessments is becoming more common, particularly in countries that have introduced national assessments relatively recently (OECD, 2013[2]). Compared to paper-based delivery, computer-based testing has several advantages. It tends to be cheaper to administer (aside from the initial capital investment), less prone to human error and integrity breaches in the administrative procedures and the results are delivered more quickly. Computer-based assessments also allow for greater flexibility in terms of developing test items that assess interdisciplinary skills in real-world contexts. This is an area Serbia would like to develop and an investment that could benefit the national exam system since students could take the Grade 8 exam and the Matura on the computer in the future.

Serbia's pilot national assessment is currently paper-based. This allows Serbia to focus on finalising the development of the assessment instrument and procedures for its implementation. However, in the medium to long term, Serbia should consider moving towards a computer-based assessment. This will require overcoming key challenges, in particular the lack of technological infrastructure in schools (hardware, software, connectivity and technicians) and ensuring that teachers and students are familiar and comfortable with computer-based approaches to teaching and testing. When resources allow Serbia to make the transition to a computer-based assessment, the digital version should mimic the paper version to the greatest possible extent. This would allow researchers to compare student results using the different delivery methods and help ensure the reliability of the new testing approach. Before fully implementing the digital assessment, Serbia should evaluate the system's readiness, address remaining issues and run a communications campaign to prepare schools, teachers, parents and students for the new computer-based national assessment.

Recommendation 5.3.2. Disseminate and use results from the national assessment to inform education policy

Considering the resource demands related to implementing national assessments, it is critical to optimise this tool by communicating findings in an appropriate form for interested parties (Kellaghan, Grenaney and Murray, 2009[38]). While developing and establishing a reliable national assessment should be Serbia's top priority, the country should also reflect on how to most effectively report assessment results to support improvements in the education system. In particular, thought should be given to how results from the national assessment can be used to inform policymaking and drive improvements in teaching and learning.

Serbia plans to implement a new national assessment in the primary and secondary levels of education. The country will need to determine how results are reported and to which audiences. The uses and consequences of the data should also be made clear. These decisions should be taken with caution to avoid potentially negative consequences. Adequate financial resources for the dissemination of results should also be considered in central planning and budgeted accordingly.

Disseminate results in different ways

The IEQE plans to produce a national report to publically disseminate results from the new national assessment and inform the policymaking process. This will not only help inform policy questions such as the extent to which students are mastering the curriculum but also support greater transparency and public accountability. However, reporting must be done

with care to avoid potentially negative consequences, such as using the results to produce decontextualised rankings or attaching high-stakes accountability measures. To promote responsible dissemination and use of assessment results, Serbia's national report should include three core components:

- *Provide context*. The report should set the context of the assessment by highlighting its relevance for policymaking. For example, it could clearly state how the instrument supports monitoring of the curriculum, education strategy and sustainable development goals (SDGs).
- *Include technical details.* The report should clearly state the objectives of the national assessment and the framework that guides its design and methodology. This level of transparency is an important part of establishing the assessment as a valid measure of student achievement and building public trust in both the assessment process and results.
- *Present results*. The report should provide a description of achievement results and correlations according to background information that is relevant for national policy. In particular, results might be disaggregated by gender, mother tongue language, the geographic location of school or socio-economic background. Over time, the report should also provide trend data to offer a picture of how student performance in Serbia evolves. The Australian Curriculum, Assessment and Reporting Authority (ACARA), for example, publishes an annual report that presents comparisons within jurisdictions and trend data from the National Assessment Program (NAPLAN). The ACARA also has a dedicated website for assessment results which allows users to disaggregate results by Indigenous status, language background (other than English), geographic location, parental occupation and level of education (ACARA, n.d.[39]).

In addition to a national report, Serbia should consider other ways to make data from the national assessment more accessible to the public and policymakers. For instance, the IEQE or the ministry could develop infographics, factsheets or short briefs that target different audiences. The IEQE could also create a dedicated webpage for the national assessment that provides information about its context, technical details and results. In Norway, for example, the Directorate for Education and Training has a website for national assessments that addresses frequently asked questions, offers guidance for schools and municipalities on how to make use of the data and includes a data portal where users can filter results and extract data to conduct different types of analysis. In addition to creating a website for the national assessment, Serbia could link results data to the ministry's improved open data portal or the *eClass Register* (see Recommendation 5.2.3).

Providing data from Serbia's national assessment in a public and user-friendly data portal can make this information more accessible to a wider range of stakeholders, especially when the data is easy to extract, download and present. However, it can also encourage researchers to conduct secondary analysis of individual questions, topics or skills that would be important to identify at a national level if students in Serbia tend to struggle more with certain competencies or in certain domains. For example, this information might reveal the need for reflection on how teaching in certain parts of the curriculum can be improved. Making assessment data public can also help investigate dimensions of educational inequity that are not yet well analysed or understood.

Avoid decontextualised rankings of individual schools in census assessments

When census data from the Grade 2 (and eventually Grade 6) national assessment become available (see Recommendation 5.3.1), student information should be anonymised to protect privacy. However, Serbia will need to carefully assess the potential risks and benefits of publishing school-level results and develop a policy for how this information can be used most effectively. While reporting the performance of individual schools can support transparency and accountability, using a single indicator, such as a school result on an assessment, is not an accurate indication of the school's effectiveness as it does not consider factors outside of the school's control (OECD, 2013[2]). Instead, Serbia could identify different benchmarks against which schools can compare themselves (Kellaghan, Grenaney and Murray, 2009[38]). For example, school-level information could be presented alongside contextualised comparison groups, such as gender, linguistic minorities and RSAs, as well as the country as a whole.

Use results to help inform teaching and learning practices

In addition to making results available for broad public dissemination and research, Serbia should report national assessment results in a way that supports teachers and schools. For example, Serbia could develop a national report for teachers to leverage the formative value of the assessment. In particular, this teacher report should contain item-level analysis with information about how students across the country performed on each item. This "item map" could include concrete examples of what students should know and be able to do across the ability range. It might also analyse common errors that students made, with suggestions on how to improve teaching of the same content in the future. When the Grade 2 assessment comes, census-based, private reports could be generated for the teachers and school leaders in each school. For sample-based assessments, each participating school might get their own private report. The findings from these reports can help inform initial teacher education and teacher professional development.

Recommendation 5.3.3. Ensure the sustainability of the national assessment

In the past, Serbia's national assessments were financed by donors on an ad-hoc basis and without plans or government funding to carry out these exercises in the medium to long term (World Bank, 2012[20]). This partly explains why the country has not conducted a national assessment since 2006. It also highlights the need for policymakers to ensure that the new national assessment has the capacity and resources needed to establish this instrument as a reliable tool for system evaluation. While Serbia appears to have the political will to introduce a new framework for national assessment, the country must address a number of potential threats to ensure the assessment's sustainability.

The biggest threat to the sustainability of Serbia's new national assessment is the lack of stable funding. Currently, Serbia has allocated funds to develop a sample-based assessment that covers two subject areas; however, the country's current education strategy and action plans make no explicit reference to a national assessment, making it difficult to ensure continuity. There are also concerns about the capacity of the IEQE, which will lead the development of the new national assessment. The IEQE is already operating within the context of a limited budget and a growing list of responsibilities that already includes reforming national learning standards and examinations (MoESTD, 2018[17]).

Embed the national assessment in Serbia's new education strategy

Serbia could support the national assessment's sustainability by including its development and implementation as an indicator in the country's new education strategy 2030. This was absent from the current strategy but its inclusion could highlight the importance of having a national assessment that supports system improvement. Moreover, the data generated from the national assessment could be used to help measure learning goals included in the new strategy. Achievable targets should accompany these goals. For example, Serbia could set a goal to improve the learning outcomes of disadvantaged students and a target might be to have no more than X% of students score at Level 1 by 2030. Of course, this can only be done after the national assessment has been established and results are analysed to determine feasible goals and targets.

Establish a steering committee to make national assessment a political priority

Another way that Serbia can ensure the new assessment's sustainability is to make it a political priority by creating a high-level steering committee. This committee could be led by the minister, which would help provide leadership to defend the assessment's validity when results are released, ensure adequate financial support is received and co-ordinate the efforts of RSAs, schools and teachers to implement the assessment instrument. The steering committee could take decisions about the new assessment's design, implementation and use (see Recommendation 5.3.1), ensuring it aligns with curriculum reforms, school evaluation and national education policy goals. Another responsibility could be defining the wider national assessment framework (see Table 5.6). Once the steering committee determines what is technically feasible in the Serbian context, it could prepare a concept note to plan for the national assessment's development. The OECD review team was informed that Serbia intends to establish a dedicated group to fulfil this purpose; however, at the time this report was drafted no concept note for the new national assessment had been prepared.

In addition to the minister, other key members of the steering committee could include diverse stakeholders who represent different backgrounds and interests. The steering group should also include technical expertise on the development and use of national assessments, such as the director of the IEQE and the heads of other education agencies. Serbia might also consider drawing on international experience by inviting an international advisor to join the steering committee or studying the case of another country that has been successful in developing and running a national assessment. For example, North Macedonia is reviewing the Slovenian national assessment experience to develop its own national assessment (see Box 5.5). The steering committee's mandate and activities will need to be clearly documented to promote transparency if it is to become an official body that guides the development of Serbia's national assessment.

Box 5.5. The Slovenian national assessment experience

The official objective of the Slovenian National Assessment of Knowledge (NAK) is to improve the quality of teaching and learning in Slovenia. As such, the national assessment is low-stakes and does not affect students' marks or their progression into higher levels of education. A notable exception to this regulation is that student results can be used to determine secondary school enrolment if spaces are limited in certain schools.

As of 2006, the assessment is administered annually to students in Grades 6 and 9. Students in Grade 6 take mother tongue, mathematics and a foreign language, while students in Grade 9 take mother tongue, mathematics and a subject selected by the minister from a pre-defined list. The Slovenian National Examinations Centre is responsible, through various committees, for creating the guidelines, items and materials of the assessment. A separate organisation, the National Education Institute, is responsible for creating the marking procedures, training the markers and performing research and analysis using the results.

Results from the assessment are reported at the student, school and national levels. Students receive an individual report that can be accessed electronically. The report identifies the student's performance in terms of how many questions were answered correctly, the percentage of questions that were answered correctly and classifies students into one of four proficiency levels. Students' results are compared to his/her school average and the national average. Item-level analysis, showing how the student performed on different types of questions, is also provided.

Schools receive a report that shows the average performance of the students in their school compared to regional and national averages. At the national level, a report that summarises the results of the country is produced every year. The results are disaggregated by grade, subject, gender and region. All annual reports are published on line. National surveys reveal that over 90% of head teachers consider their students' national assessment results in their future work and over 80% of all teachers believe that the assessment results give them useful information about their work.

Sources: Eurydice (2018[40]) *Assessment in Single Structure Education – Slovenia*, https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-single-structure-education-35_en (accessed on 23 September 2018); Brejc, M., M. Sardoc and D. Zupanc (2011[41]), *OECD Review on Evaluation and Assessment Frameworks for Improving School Outcomes: Country Background Report Slovenia*, http://www.oecd.org/education/school/48853911.pdf; RIC (2006[42]), *Državni Izpitni Center (RIC), [National Examinations Centre]*, https://www.ric.si/ (accessed on 13 November 2018).

Make plans to ensure sufficient capacity and resources for national assessment

To ensure the sustainability of Serbia's new national assessment over the medium term, the country will need sufficient technical competency and financial resources. Drawing on the experience of administering Serbia's national examinations and more recently international assessments (since 2018), the IEQE currently has some of the infrastructure and capacity needed to administer large-scale assessments of student learning. For example, IEQE staff have expertise in sampling, test design and statistical analysis. However, these competencies need to be strengthened if a regular cyclic programme of national assessment is put in place as recommended by this review. Moreover, there appears to be no increase in funding planned for the IEQE, despite the institute's additional responsibilities for international assessment and the new national assessment. This review recommends moving the institute's external school evaluation functions to an independent agency to

relieve some of the workload; however, even with this change, the IEQE's 35 staff members will still be stretched to deliver a range of important education reforms.

While the IEQE is well-positioned to oversee the development and implementation of Serbia's new national assessment, the government should include a multi-year budget to plan for the resources needed to sustain the assessment, at least for the duration of the next education strategy. This will reduce Serbia's dependence on donor support for national assessment, allow the IEQE to hire staff with relevant competency profiles and invest in the technology infrastructure to carry out the new assessment fully. To ensure sustainability, Serbia should introduce the national assessment on a small scale, starting with only two grades and assessing foundation skills (see Recommendation 5.3.1). Plans for these assessments should be costed and secure. Then, Serbia could discuss whether to expand the national assessment framework to provide additional information about student learning in other grades and subject areas. These discussions should consider several factors including the results of the existing assessments and the extent to which they have been successfully implemented. It is also important to consider what resources are available to expand the national assessment system.

Establish an assessment framework for system monitoring

Table 5.6 proposes a holistic assessment framework for Serbia. This aggregates recommendations from across this review to demonstrate the various sources of information available to monitor student learning outcomes in Serbia. The new steering committee could be responsible for developing this framework.

Table 5.6. Proposal for a national assessment framework in Serbia

Grades	Assessment	Frequency	Population	Subjects	Primary purpose
Grade 2	**National assessment**	Two-year cycle to start, then annual	Sample to start, then census	Mathematics and Serbian language (or language of instruction)	System monitoring
Grade 4	TIMSS (international assessment)	Four-year cycle*	Sample	Mathematics and science	System monitoring
Grade 6	**National assessment**	Two-year cycle	Sample to start, then census	Mathematics and Serbian language (or language of instruction)	System monitoring
Grade 8	Final exam (end of basic education)	Annual	Census	Mathematics, Serbian language (or mother tongue), and combined test (see Table 5.5)	Student selection and certification
Grade 8/9 (age 15)	PISA (international assessment)	Three-year cycle*	Sample	Mathematics, science, reading	System monitoring
Grade 10	**National assessment**	Two-year cycle*	Sample	Alternate according to national priorities	System monitoring
Grades 11 or 12 (depending on cycle)	Matura exam	Annual	Census	Mathematics, Serbian language (or a recognised minority language) and electives (see Table 5.5)	Student selection and certification

Notes: This table is based on recommendations from across this review. It aggregates proposed and current sources of information on student learning that can be used for system monitoring.
* Serbia has participated in TIMSS at the Grade 4 level since 2011. Previously, only Grade 8 participated in TIMSS.
** Serbia did not participate in the 2015 cycle of PISA but participation has otherwise been consistent.

Table of recommendations

Policy issue	Recommendations	Actions
5.1. Using the new education strategy to focus on achieving national priorities	5.1.1. Identify national priorities for the new strategy	Evaluate the 2020 strategy and other evidence to prioritise key strategic issues
		Consider a range of evidence
		Identify key national goals for education
		Undertake a national consultation to develop the new strategy
	5.1.2. Develop action plans and a monitoring framework with measurable targets	Create new action plans with specific actions and measurable outcomes
	5.1.3. Monitor progress to build accountability for achieving education goals	Strengthen the role of the special working group to monitor the strategy
		Develop platforms for regular reporting on progress
5.2. Enhancing the availability and use of evidence for accountability and policymaking	5.2.1. Strengthen foundations for effective data collection and storage	Establish a national indicator framework to measure progress
		Harmonise data collection by establishing clear definitions and protocols
		Develop processes to identify data gaps
		Link education data to data stored by other agencies
	5.2.2. Support the use of data and evidence in policymaking	Re-establish the analytics group in ministry
		Strengthen the IEQE's capacity and resources
		Make greater use of the research community for policymaking
	5.2.3. Improve the functionality of UISE to make data more accessible	Disseminate data more effectively to inform education actors and society
		Help schools to make greater use of data
5.3. Developing the national assessment to support system goals	5.3.1. Consider the design options to align the national assessment with its stated purpose	Implement national assessment in Grades 2 and 6, and consider Grade 10 in the future
		Maintain plans for sample-based assessment but consider census-based assessments in the future
		Develop a timetable to assess foundation skills in Grades 2 and 6
		Use challenging test items that are designed to assess student learning
		Consider computer-based assessment delivery
	5.3.2. Disseminate and use results from the national assessment to inform education policy	Disseminate results in different ways
		Avoid decontextualised rankings of individual schools in census assessments
		Use results to help inform teaching and learning practices
	5.3.3. Ensure the sustainability of the national assessment	Embed the national assessment in Serbia's new education strategy
		Establish a steering committee to make national assessment a political priority
		Make plans to ensure sufficient capacity and resources for national assessment
		Establish an assessment framework for system monitoring

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SERBIA

How can assessment and evaluation policies work together more effectively to improve student outcomes in primary and secondary schools? The country reports in this series analyse major issues facing evaluation and assessment policy to identify improvements that can be made to enhance the quality, equity and efficiency of school education. Serbia's education system performs well compared to other countries in the Western Balkans. In recent years, there have been improvements in access to education and Serbia has undertaken major institutional reforms to improve teaching and learning. However, a large share of students in Serbia continue to leave school without mastering basic competencies and efforts to achieve educational excellence continue to be jeopardised by limited institutional capacity and low levels of public spending on education. This review, developed in co-operation with UNICEF, provides Serbia with recommendations to help strengthen its evaluation and assessment system to focus on support for student learning. It will be of interest to Serbia, as well as other countries looking to make more effective use of their evaluation and assessment system to improve quality and equity, and result in better outcomes for all students.

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