An assessment of the professional development of teachers and school leaders, and curriculum and learning resources in the Republic of Moldova

This report is an output of the project "Support to implementation of education policies in Moldova", funded by the European Union

The Republic of Moldova (hereafter "Moldova") considers education a national priority. Since the adoption of a renewed Education Code in 2014 the country's education system has been in a process of reform and modernisation, with an increasing focus on strengthening education governance and improving the quality of education. Building on the steady progress made in recent years, the Ministry of Education and Research (MoER) launched its Education Development Strategy 2030 in March 2023.

The MoER considered that the successful implementation of the strategy would benefit from a deeper analysis on several policy domains. It therefore requested the Delegation of the European Union to the Republic of Moldova to engage the OECD to undertake a deeper analysis of selected policy domains that are central to the success of the education reform of Moldova, with a focus on understanding the potential challenges to the implementation of reform initiatives and providing concrete advice to overcome these. The MoER expressed a keen interest to learn from international research evidence and relevant international examples that could help advance its education reform agenda and where possible "leapfrog" (i.e. make non-linear, rapid progress), with a particular interest in harnessing the potential of digital technologies in education. This request and expression of interest by the MoER laid the foundation for the project "Support to the implementation of education policies in Moldova", funded by the EU.

This report is the first output of the project that presents an in-depth analysis of two of the selected policy domains: "professional development of teachers and other education professionals" and "curriculum and learning resources" and has been developed by the OECD in collaboration with the UNESCO International Institute for Education Planning (IIEP).

A second report has been developed that presents an in-depth analysis of a selected third policy domain: "the evaluation of Vocational Education and Training (VET) programmes and institutions in order to improve their functioning".

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1 Education in Moldova: an overview

Introduction

The Republic of Moldova considers education a national priority. Since the adoption of a renewed Education Code in 2014 (Parliament of the Republic of Moldova, 2014[1]) the country's education system has been in a process of reform and modernisation, with an increasing focus on strengthening education governance and improving the quality of education. Following the conclusion of its 2014-2020 Education Development Strategy (Government of the Republic of Moldova, 2014[2]), the Ministry of Education and Research (MoER) began developing its Education Development Strategy 2030, also referred to as "Education 2030", that was published in March 2023 (Government of the Republic of Moldova, 2023[3]).

The MoER considered that the successful implementation of the new strategy would benefit from a deeper analysis on several policy domains. It therefore requested the Delegation of the European Union to the Republic of the Moldova to engage the OECD to undertake a deeper analysis of three policy domains that are central to the Education Development Strategy 2030, with a focus on understanding the potential challenges to the implementation of reform initiatives and concrete advice to overcome these. The three policy domains are: 1) professional development of teachers and other education professionals; 2) curriculum and learning resources; and 3) the evaluation of Vocational Education and Training (VET) programmes and institutions in order to improve their functioning. The MoER expressed a keen interest to learn from international research evidence and relevant international examples that could help advance, and where possible "leapfrog" (i.e. make non-linear, rapid progress), its education reform agenda, with a particular interest in harnessing the potential of digital technologies in education.

The overarching objective of the project "Support to implementation of education policies in Moldova" is to support Moldova in the implementation of the new Education Development Strategy 2030 and its accompanying policies and programmes, in line with national development goals and those of the EU Eastern Neighbourhood Policy and the EU regional- and bilateral programmes for education, training and youth. Furthermore, the implementation of the Education Development Strategy 2030 is expected to be supported by substantial external aid provided by international development partners. This project therefore not only informs the actions of the Government of Moldova, but also those of development partners in support of the implementation of the country's education reform agenda.

This report is the first output of the project that presents an in-depth analysis of two of the selected policy domains: "professional development of teachers and other education professionals" and "curriculum and learning resources". Recognising its institutional capacity for effective planning and management of education sector development in low- and middle-income countries, OECD sought a collaboration with the UNESCO International Institute for Education Planning (IIEP) to jointly undertake this work.

A second report has been developed that focusses on the third identified policy domain, "the evaluation of Vocational Education and Training (VET) programmes and institutions" (OECD, 2023[4]).

Following a brief introduction to Moldova and its school system (Section 1), this report provides a detailed assessment of the policies and practices concerning the professional development of teachers and school leaders (Section 2). This is followed by a discussion on the current curriculum review approach and the partially untapped potential of using digital technologies for innovating teaching and student learning (Section 3). Section 4 consists of an examination of several relevant areas of policy and factors of influence on the successful implementation of the Education Development Strategy 2030. At the end of each section, the report offers concrete recommendations for action.

An overview of the project and methodology

The project "Support to implementation of education policies in Moldova" aims to provide an in-depth analysis on the above-mentioned policy domains, resulting in concrete recommendations for action in support of the successful implementation of the Education Development Strategy 2030.

The project team (see Annex A) has operationalised the work by undertaking an extensive desk study of policy documents and studies, and conducted a series of semi-structured online interviews and focus group discussions with key stakeholders from different levels of the Moldovan education system, consisting (among others) of school leaders and teachers, representatives from district Departments of Education, tertiary education institutions providing teacher education and continuous professional development, the MoER, the National Agency for Quality Assurance in Education and Research (ANACEC), the National Agency for Curriculum and Evaluation (NACE) and several international development partners that are active in Moldova.

Part of the project team also travelled to Chisinau, Moldova in December 2022 for a 4-day visit to conduct additional semi-structured interviews with education stakeholders. In May 2023, the project team returned to Moldova to facilitate a 1½-day stakeholder workshop, of which the first day was devoted to discussing the project team's preliminary findings and recommendations on the professional development of teachers and school leaders, and the curriculum review approach and learning resources in Moldova, together with education stakeholders. During the workshop the preliminary findings and recommendations were discussed and where needed further developed (Annex B).

These activities have allowed the project team to gain an in-depth understanding of the policy domains under examination, as well as of the broader education context, granting the formulation of concrete recommendations for action. These are – as requested by the MoER – aimed to be as concrete as possible in terms of "what to do" and "how to do", with a particular interest in exploring opportunities for leapfrogging – including by harnessing the potential of digital technologies in education. The many international examples that are presented throughout this report are aimed to serve as a source of inspiration and offer guidance to the MoER for advancing the proposed recommendations.

The Moldovan context

Moldova is a small country (33 850 km^2) lying in the north-eastern corner of the Balkan region of Eastern Europe. The country is bordered by Ukraine in the north, east and south, while the Prut River in the west defines the boundary with Romania. The capital city Chisinau is located in the south-central part of the country. Moldova declared its independence after the dissolution of the Soviet Union in 1991, becoming a member of the United Nations in 1992. The current Constitution of Moldova was adopted in 1994 (International Energy Agency, 2022[5]; European Committee of the Regions, n.d.[6]).

Population

In 2021, Moldova had just over 2.6 million inhabitants with about 43% of the population living in urban areas and 57% in rural areas (Data Commons, 2021[7]; National Bureau of Statistics, 2022[8]). Moldova's population has declined rapidly during the last decade (by 9.3% since 2014) as a result of decreasing birth rates and high emigration (National Bureau of Statistics, 2022[9]). The declining population is greatly impacting the provision of education (and other public) services as will be discussed below. In addition, Moldova has been severely impacted by Russian's large-scale invasion and ongoing war against Ukraine. Over 678 000 refugees from Ukraine – mostly women, children and senior citizens – have travelled to Moldova since February 2022. While many have moved on to Romania and other EU Member States, approximately 102 000 remained in Moldova as of January 2023 (United Nations Refugee Agency (UNHCR), 2023[10]; OECD, 2022[11]).

Economy

Moldova is a small lower-middle income country with a high Human Development Index[1] (0.767) (United Nations Development Programme, 2022[12]). Economic expansion during the past two decades and moderate growth in recent years were not sufficient to improve living standards to a significant degree. In 2021, close to a quarter (24.5%) of the population lived in absolute poverty (International Monetary Fund, 2022[13]). The national economy has been affected by systemic issues such as a population decline, limited industry (market) competition and corruption (OECD, 2022[14]; National Bureau of Statistics, 2022[15]; OECD, 2022[16]). In recent years, the COVID-19 pandemic and Russia's war against Ukraine have also severely impacted Moldova's economic growth and performance (OECD, 2022[14]). The Government of Moldova has demonstrated strong leadership in responding to the needs of refugees from Ukraine, promoting employment opportunities and ensuring access to public services such as education, employment, housing, security, food, health and other social services (United Nations Refugee Agency (UNHCR), 2023[10]; European Commission, 2022[17]; OECD, 2022[11]; OECD, 2022[11]).

The Government aims to respond to these and other challenges through the implementation of its multi-sectoral National Development Strategy Moldova 2030 (Government of the Republic of Moldova, 2022[18]). This strategic vision document indicates the direction of development for the country and society in the next decade based on the principle of the human life cycle, human rights and quality of life, and includes the following four pillars of sustainable development: a sustainable and inclusive economy, reliable human and social capital, respected and effective institutions, and a healthy environment.

National, regional and local governance

Moldova became a sovereign state in 1991. The Constitution of 1994 provides for a single-chamber Parliament consisting of 101 members who elect a President. The members of Parliament are elected every four years by citizens on the basis of proportional representation. The Government is formed by the Prime Minister, the Deputy Prime Minister and ministers after consultation with the parliamentary majority (OECD Development Centre, 2018[19]; European Committee of the Regions, n.d.[6]).

[1] The Human Development Index (HDI) is the United Nations Development Program's summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living (United Nations Development Programme, 2022[12]).

In Moldova, public administration is based on the principles of local autonomy and decentralisation of public services. Administratively, the country is organised in Administrative Territorial Units (ATUs) consisting of two levels of local government that each are responsible for delivering a range of key public services.

ATUs at the lower level, "Level 1" ATUs, consist of 896 villages ("communes"), towns and cities ("municipalities"). These Level 1 public authorities have elected local councils and mayors. Within education, they are responsible for the delivery of early childhood education and care services (see below) (Beschieru et al., 2018[20]; UNICEF, 2019[21]; World Bank, 2018[22]; European Committee of the Regions, n.d.[6]).

The "Level 2" ATUs are made up of 32 districts ("rayons"), the municipalities of Chisinau and Balti, and the territorial autonomous unit of Gagauzia (35 in total) – hereafter referred to as "districts" for simplicity. At the district level there is an elected district council and district President. Within education, the Level 2 public authorities are responsible for the construction, operation and maintenance of primary, lower and upper secondary educational schools (UNICEF, 2019[23]; World Bank, 2018[22]).

On the path towards EU membership

In June 2022 the European Council granted Moldova candidate status for EU accession (European Council, 2022[24]). In April 2023 the European Council reaffirmed that the EU would continue to provide all relevant support to Moldova to strengthen the country's resilience, security, stability and economy and help it on its path to EU accession (European Parliament, 2023[25]).

School education in Moldova

The Moldovan school system – a brief overview

The Moldovan school system is relatively small. In 2021/22 there were 1 232 schools, serving around 331 000 students. The majority of students are in Romanian-medium schools. There are also schools that serve the needs of minorities and students who select Russian, Gagauzian, Ukrainian, or Bulgarian as their language of instruction. Data from the school year 2021/22 suggests, however, that almost 81% of primary, lower secondary and upper secondary students were taught through the medium of Romanian. A further 19% of students were taught in Russian and only very small group of students (0.1%) in other languages (National Bureau of Statistics, 2022[26]).

Education is compulsory for six- to sixteen-year-olds, yet many children begin their education at an earlier age. Moldova has an extensive network of early childhood education and care institutions. Early childhood education and care comprises two stages: early childhood educational development that is available for children from birth to age two; and preschool education that is available to children aged three- to six-years, of which the final year is compulsory (see Table 1.1). Moldova's preschool gross enrolment ratio for three- to six-year-olds, 97.5% in 2021/22, is relatively high compared with that of other countries in the region (National Bureau of Statistics, 2022[27]).

Primary education in Moldova starts at the age of 7 and lasts for 4 years (Grades 1-4). Classes are taught by generalist teachers. Secondary education comprises two phases: lower secondary education starts at the age of 11 and lasts for five years (Grades 5-9); and upper secondary education (ISCED level 3) starts at the age of 16 and lasts for three years (Grades 10-12).

Students receive lower secondary education at a gymnasium. Students here follow a wide variety of subjects, ranging from mathematics to languages and social and scientific subjects. Between 80-85% of

the subject cluster consists of compulsory subjects, the rest are elective subjects (Nuffic, 2019[28]). At the end of this phase, students sit a national exam (see below).

Table 1.1. Overview of the education system

Educational phases	Grades	Ages	Years	ISCED levels
Early childhood education and development	0	1-2	Up to 2 years	0
Preschool education (the final year is compulsory)	0	3-6	Up to 4 years	0
Primary education (compulsory)	1-4	7-10	4	1
Lower secondary (gymnasium) (compulsory)	5-9	10-15	5	2
Upper secondary education (lyceum)	10-12	15-18	2- 3	3
Upper secondary vocational education and training	10-12	15-18	2-3	3

Source: National Bureau of Statistics, (2023[29]), Education in the Republic of Moldova 2023, https://statistica.gov.md/en/the-statistical-publication-education-in-the-republic-of-moldova-12_60486.html (accessed on 29 July 2023); Nuffic (2019[28]), The education system of Moldova described and compared with the Dutch education system, https://www.nuffic.nl/sites/default/files/2020-08/education-system-moldova.pdf.

Upper secondary education is divided into two main strands: (general) upper secondary education and secondary Vocational Education and Training (VET). Students receive (general) upper secondary education at a lyceum. Students select a profile from art, social, science or sports. Between 75-80% of their time is spent on compulsory subjects, the rest on elective subjects. At the end of this phase, students sit the national baccalaureate exam (see below). Students that pass the exam are awarded the baccalaureate diploma which provides access to tertiary education. If students do not sit the exam or fail it, they are awarded a certificate of completed upper secondary education. This does not grant admission to tertiary education but does give access to VET.

Programmes in secondary VET take two or three years to complete. At the end of these two or three years, students are awarded a qualification certificate that grants the student access to post-secondary VET. This certificate does not grant admission to tertiary education, but upon completion students can transfer to Grade 12 of a school that offers general upper secondary education (i.e. a lyceum) (Nuffic, 2019[28]).

The Moldovan school system has seen a significant decline in its student population during the last two decades as a result of emigration and a decline in birth rates. The student population in primary, lower secondary and upper secondary education decreased by almost 9% between 2012/13 and 2021/22 (from 367 200 to 334 500) with schools in rural areas most impacted (OECD, 2022[11]; United Nations, 2021[30]). This trend is expected to continue. According to demographic projections, by 2035 Moldova's population aged under 24 is likely to have decreased by almost 33% compared to 2014 estimates (Centre for Demographic Research, 2016[31]). A steep decline is anticipated in the student population during these years, as high as 50% for the preschool population.

As a result, Moldova is faced with a fragmented and overextended school network. Recognising that these demographic shifts are to continue and cause further inefficiencies and pressure on the public budget, the MoER has made the consolidation of the school network a policy priority (Government of the Republic of Moldova, 2023[3]).

School governance and funding

School governance

The Moldovan Education Code of 2014 (that provides the legal framework for the design, organisation, implementation and development of the education system) promotes the principles of local autonomy and decentralisation by stipulating that school education is a shared competence between the Government, districts (i.e. Level 2 public authorities) and schools (Parliament of the Republic of Moldova, 2014[1]). The MoER defines policies, standards and legislation that districts and schools must follow to ensure their appropriate functioning.

Moldova's public primary, lower secondary, and upper secondary schools are primarily financed by the central government (see below). Districts, as mentioned earlier, may decide on the creation and closure of schools, and must monitor and ensure their proper functioning in accordance with the regulations and standards approved by the MoER (UNESCO, 2021[32]; World Bank, 2018[22]; European Committee of the Regions, n.d.[6]). Districts are also responsible for the recruitment and dismissal of the school leader who in turn is responsible for the recruitment and employment of teachers, using a competitive recruitment process (World Bank, 2018[22]).

All schools must establish an Administration Board that participates in the governance of the school. Administration Boards, for example, approve the school's budget and the appointment and appraisal of the school leader. The Administration Board is to be formed by the school leader, the deputy school leader, a representative from the district, and representatives of teachers, parents and students (World Bank, 2018[22]).

Returning to the national level, an important body of the Moldovan education system (that will be discussed in the following sections of this report) is the National Agency for Quality Assurance in Education and Research (ANACEC). ANACEC is a legal public body responsible for quality assurance in the field of education and research. The Agency's core duties include the:

- quality assurance of primary education, lower secondary education and upper secondary education
- quality assurance of VET
- quality assurance of tertiary education
- evaluation of continuous professional development programmes
- evaluation of organisations in the field of research and innovation
- evaluation of the scientific and scientific-didactic staff.

The Agency also provides and supports quality assurance measures, trains evaluators and coordinates the external evaluation process (ERI SEE, 2022[33]; ANACEC, 2018[34]; ANACEC, 2020[35]).

The National Agency for Curriculum and Evaluation (NACE) is another important national level body (that will also be discussed in the following sections of this report). NACE is responsible for the design, development and implementation of national student assessments and exams and as such plays a vital role in the monitoring of school performance at the system level and in student assessment. National assessments take place at the end of Grade 4 (primary school assessment), Grade 9 (gymnasium examination) and Grade 12 (baccalaureate examination) (see below) (UNICEF, 2019[23]).

A reported governance challenge of the Moldovan school system is the weakness in monitoring practices however, with little known about the extent to which the districts and schools comply with their assigned roles and responsibilities (World Bank, 2018[22]; Beschieru et al., 2018[20]).

School funding

The Moldovan Government provides funding to all public schools. In 2014, a school funding model was introduced through which state funds are allocated to public schools based on their student enrolment numbers (Government of the Republic of Moldova, 2014[2]). This reform was aimed to increase efficiency and school autonomy (World Bank, 2018[22]).

As an initial step to determine annual school budgets, the Ministry of Finance, with input from the MoER, estimates the expenditure ceiling for each education phase (i.e. for early childhood education and care, primary education, etc.). This amount is obtained from the expected overall budget for public education (using historic data, projections of salaries, inflation rate, etc.). Based on the overall budget available, the school funding formula is applied to calculate the "categorical transfers" that are to be allocated from the state budget to the budgets of the districts for the purpose of funding public primary, lower secondary and upper secondary schools, or to schools themselves. These "self-managed" schools tend to be larger schools that have the resources to employ an accountant. At least 95% of the categorical transfer in each district is allocated to the schools in an amount proportional to the number of students, according to the funding formula. From these funds received, the schools pay the salaries of school leaders, teachers and other staff. The remaining share (at most 5%) is allocated by the district to benefit, among others, special needs children, small schools, and students' transportation and accommodation costs (World Bank, 2018[22]; UNICEF, 2019[21]; Beschieru et al., 2018[20]).

Further sources of school funding may include donations and fees, which account for only a very small portion of total education spending. Additional funding may also be provided by international organisations and donors to support various educational programmes and initiatives.

Schools have responsibilities for budget preparation and execution. The school leader is expected to develop and present budget proposals to the school administrative board for approval, and ensure that expenditures are made as per the approved budget and budget lines, and in accordance with the mandate and objectives of the school (UNESCO, 2021[32]; World Bank, 2018[22]).

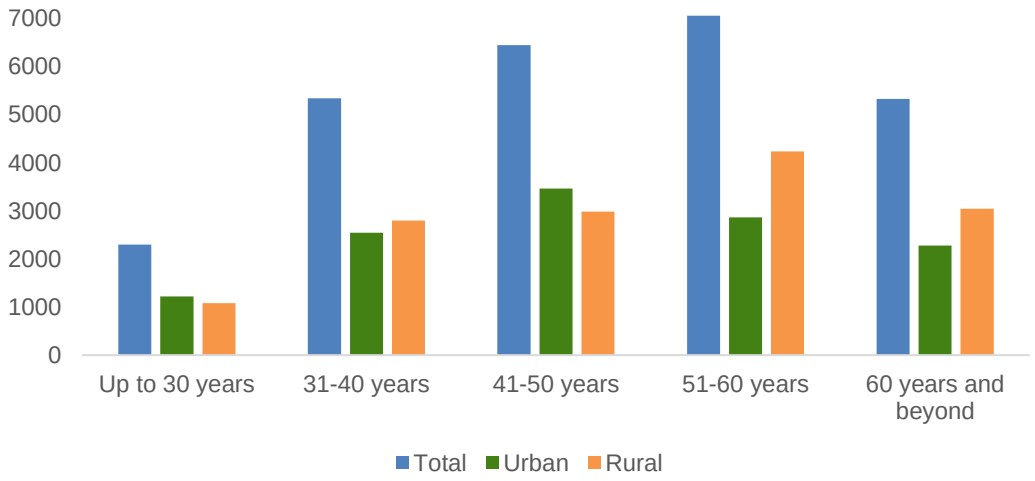
The education profession

In 2021/22 there were approximately 26 500 teachers and school leaders working in primary-, lower secondary- and upper secondary education in Moldova. Teacher qualifications in Moldova are comparable to those of most OECD Members as teachers are required to have a tertiary degree to be able to teach (UNESCO, 2021[32]). Primary- and lower secondary education teachers require a bachelor's degree, while teachers working in upper secondary education must hold a master's degree with a teaching specialisation. However, given that there is a shortage of teachers in the system, these requirements are not always met in practice (ERI SEE, 2020[36]).

Both concurrent and consecutive models for teacher education exist. Concurrent programmes, which teach subject knowledge and pedagogic skills together are one pathway to enter the teaching profession. To qualify as a teacher, a candidate must undergo a course of study that includes: 270 hours of pedagogy, 270 hours of psychology, 300 hours of teaching methods, 60 hours of professional ethics and 900 hours of practical professional experience. The Education Code also allows for an alternative (consecutive) teacher education programme, meaning anyone with a bachelor's degree can take a psycho-pedagogical course and become a teacher (Beara and Petrovic, 2020[37]).

Moldova is faced with an aging education workforce, with many being close to retirement[2] (see Figure 1.1). Part of the challenge lies in a decline in the number of young people starting initial teacher education programmes and entering the education profession. As a result, some schools face challenges in attracting sufficient numbers of qualified staff, particularly lower secondary and upper secondary education schools and schools in rural and disadvantaged areas. According to the OECD's Programme for International Student Assessment (PISA) 2018, 43% of students enrolled in a disadvantaged school and 28% of students enrolled in an advantaged school attend a school where the principal (i.e. school leader) reported that the capacity of the school to provide instruction is hindered (at least to some extent) by a lack of qualified teaching staff. On average across OECD Members, 34% of students in disadvantaged schools and 18% of students in advantaged schools attend such a school (OECD, 2019[38]). Moldova's aging education workforce may not necessarily need to cause major staff shortages considering the decreasing student population and overstaffing in some schools.

Figure 1.1. Number of teachers and school leaders by age and location, 2021/22



Source: National Bureau of Statistics, (2023[29]), Education in the Republic of Moldova 2023, https://statistica.gov.md/en/the-statistical-publication-education-in-the-republic-of-moldova-12_60486.html (accessed on 29 July 2023).

Carefully designed task profiles and/or professional standards, from initial teacher education and beyond, can play a key role in clarifying and reaching agreement about expected roles and responsibilities of teachers and school leaders in an education system (OECD, 2019[39]). These standards aim to motivate teachers and school leaders to engage in lifelong learning, support career progression, enhance transparency and recognition for teachers and school leaders, among others (Government of the Republic of Moldova, 2018[40]; Government of the Republic of Moldova, 2018[41]). However, these standards are not yet widely used for these purposes and there is scope for their further development, as will be elaborated on in Section 2.

Quality teaching does not just involve high-quality initial teacher education and clarity in, and the adoption of, professional standards. It also requires that those who are already teaching adapt to constantly changing demands (Schleicher, 2011[42]). In Moldova teachers and school leaders are expected to engage in continuous professional development. Professional development is organised at the school level (often

[2] The standard retirement age for men in Moldova is 63 years and for women 60.5 years. Moldovan legislation foresees that by 2028 the retirement age for women will gradually increase to 63 years.

by the school's deputy), at the district level (organised by the Department of Education), occasionally at the national level (e.g. organised by the MoER), and at the professional development centres of tertiary education institutions (UNICEF, 2019[23]). On the latter, Moldova has a well-established system of teachers participating in professional development courses that are organised by these continuous professional development centres. Teachers, as well as school leaders, must participate in and successfully complete professional development courses totalling 20-ECTS (600 hours) every three years (Government of the Republic of Moldova, 2020[43]).

Teacher salaries are largely based on teachers' educational attainment, duration of teaching experience and the number of hours worked (World Bank, 2018[22]). In order to offer teachers career advancement opportunities and encourage them to improve their skills, three teaching levels have been established: second-, first- and senior-level teacher (Beara and Petrovic, 2020[37]). The holders of the higher levels (i.e. first- and senior teachers) receive salary supplements. These teaching levels are awarded based on performance, on the results of continuous professional development and on the outcomes of a teacher's methodological and teaching activities (Parliament of the Republic of Moldova, 2014[1]; Beara and Petrovic, 2020[37]). This policy however has added to concerns that the participation in professional development courses is seen by many teachers as an exercise to primarily gain credits and fulfil expectations for career advancement, rather than seeing it as a vital means to support professional development and growth (Beara and Petrovic, 2020[37]). We will elaborate on this issue in Section 2.

The assessment of teachers' performance is given shape through a self-evaluation and an internal appraisal conducted by the school, as well as through an external assessment conducted by ANACEC once every five years as part of the larger external school evaluation (see below). Teachers are responsible for carrying out a self-evaluation at the end of every school year using a purposefully designed Teacher Assessment Sheet. They are required to submit their self-evaluation and their Professional Portfolio to the school's Teaching Council (which is the collective management body of the school composed of all teaching staff and chaired by the school leader). A school-based "teacher evaluation commission" (consisting of the school leader and selected teachers) is to appraise teachers against the same Teacher Assessment Sheet. The results of the self-evaluation and the appraisal are then reviewed by the Teaching Council of the school. Professional development plans are to be prepared by teachers based on the recommendations that emerge from the self-evaluation and the appraisal process (UNICEF, 2019[23]).

Teachers that obtain an unsatisfactory rating two years in a row are considered to have committed a disciplinary offense and are to be disciplined by the school leader. Consistent very good ratings allow teachers to acquire a higher professional level (i.e. first- or senior teacher) and/or benefit from a financial bonus. On the latter, although a performance-based scheme was introduced for all civil servants in 2018 (Parliament of the Republic of Moldova, 2018[44]; Government of the Republic of Moldova, 2018[45]) school leaders have reported being confused about the scheme as it was another cause for teacher appraisal, and a new system needed to be developed for it. School leaders have since taken different approaches in designing this system. In response to this apparent confusion and lack of consistency, the MoER released in August 2023 the "Methodology for the Evaluation of Individual Performance of Teaching Staff in Primary and Secondary Institutions" (Government of the Republic of Moldova, 2023[46]) that is aimed to support schools and district Departments of Education in the implementation of the performance-based pay scheme (see Section 4).

School leaders

In Moldova, school leaders are expected to play a key role in the development of the school, the evaluation of school projects, the dissemination of good practices among teachers, the support of teachers in their professional development and the organisation of staff appraisal. School leaders are also responsible for the recruitment, appraisal, promotion, and dismissal of school staff, based on procedures established by the MoER (World Bank, 2018[22]). School leaders may combine their leadership responsibilities with teaching or other school activities, which is considered unavoidable given the high proportion of small schools operating in Moldova.

Primary and secondary school leaders are appointed by districts (i.e. Level 2 public authorities) upon succeeding in a nationwide competition. School leaders in turn appoint their deputies and the school's teachers and other staff. The district Departments of Education immediately oversee school leaders' performance, while ANACEC is the national body responsible for school evaluation and the appraisal of the school leader. In addition, as mentioned earlier, the Administration Board and the Teaching Council are the two bodies that hold school leaders further accountable at the level of the school (UNICEF, 2019[23]).

No additional qualification is required to become a school leader, yet engagement in additional management-related training is possible. The OECD/IIEP team learned that professional development opportunities are in fact quite limited. While management support and training were provided to school leaders in the past during the decentralisation process, a high proportion have not engaged in management training since taking up the position (World Bank, 2018[22]).

As mentioned, professional standards for school leaders were approved in 2018. The standards are structured around six priority areas: i.e. 1) vision and strategies; 2) curriculum; 3) human resources; 4) financial and material resources; 5) structures and procedures; and 6) community and partnerships. These apply both to school leaders and their deputies (Government of the Republic of Moldova, 2018[40]). School leaders are expected to assess their own performance against the professional standards and prepare an annual school activity report with supporting evidence that is submitted to the school's Teaching Council and Administration Board as part of the internal appraisal process. The evidence suggests, however, that in practice few school leaders in Moldova self-evaluate their performance again the standards (UNICEF, 2019[23]).

To support school leaders in the self- and external appraisal processes, in August 2023 the MoER released the "Methodology for the evaluation of management staff in general education" (Government of the Republic of Moldova, 2023[47]). The appraisal process builds on the school leader's annual self-evaluation that is based on the six priority areas mentioned above and their associated indicators. For each indicator points may be accumulated to support the determination of a final grade: "very good", "good", "satisfactory", or "unsatisfactory". The school leader's annual activity report (up to 20 pages in length) is submitted as further evidence of achievement (no later than 20 September) to the school's Administration Board and Teaching Council. The school leader also presents this report in person. Based on the submission and presentation, the Administration Board and Teaching Council vote on a final outcome. A representative of the district Department of Education must also join this meeting, either in person or online.

Where a school leader's appraisal is deemed to be "unsatisfactory", the district Department of Education monitors the development and implementation of a professional improvement plan prepared by the school leader. In the following academic year, the district Department of Education requests ANACEC to organise an external appraisal procedure. An unsatisfactory rating obtained two years in a row by the school leader, leads to termination of the school leader's contract. School leaders that receive a "very good" or "good" rating are eligible for a salary raise (UNESCO, 2021[32]; Government of the Republic of Moldova, 2023[47]). The external appraisal of school leaders is closely tied to that of their schools, as elaborated on below.

Curriculum and student assessment

Move towards a competency-based curriculum

In 2010, Moldova started the implementation of a new, competency-based primary and secondary school curriculum, thereby moving away from the previous knowledge-based curriculum. An updated version of the school curriculum was developed and completed for the 2019/20 school year. While started in 2010, the move towards a competency-based curriculum and corresponding teaching and assessment is likely to require further support and guidance. Part of the challenge lies in the curriculum and supporting guidance documents, and assessments that are still theoretical and academic in their emphasis and lack a consistent structure (UNICEF, 2019[23]).

In addition, a large part of Moldova's (aging) teaching force has been originally trained for teaching a knowledge-based curriculum. Also, a challenge for many teachers' skills is the formative function of assessment for feedback and growth that is emphasised in the competency-based school curriculum, a new concept for many (UNICEF, 2019[23]). The transition towards competency-based teaching and assessment, and ultimately student learning, is therefore expected to take more time and effort, including further investments in the professional development of Moldova's teachers.

Standardised student assessments and central examinations

The use of standardised student assessments in primary and secondary education is commonplace in OECD Members. Over the past 20 years, many have chosen to administer full cohort assessments; that is, with all students and schools participating. These assessments, depending on their purpose(s), can help governments, local education authorities, schools and other education stakeholders identify whether students are reaching intended learning outcomes and what areas of the curriculum they are struggling with to inform remediation actions (OECD, 2013[48]; Jackson, Adams and Turner, 2017[49]; DeMatthews, Knight and Woulfin, 2021[50]).

Moldova aims to use the standardised full cohort primary school assessment at the end of Grade 4 for system level monitoring and for informing teaching and student learning. All primary students are mandated to participate in the national student assessment in the following disciplines: mathematics, Romanian language and literature, and mother tongue/language of instruction and literature (i.e. Russian, Ukrainian, Gagauzian or Bulgarian), if applicable. Students enrolled in non-Romanian language schools or streams also have an oral Romanian language assessment.

The administration, marking and scoring of these Grade 4 student assessments is executed at the level of the school. To help ensure consistency, comparability and objectivity of student assessment results, teachers in principle do not supervise the administration of, or mark the assessments of their own students. In schools where there is only one Grade 4 class this may not be feasible. An assessment committee is to be formed at the school level and the assessment methodology (including marking and scoring scales) shared with schools by the NACE is to be followed when grading all assessments. Student results are expressed in percentage points and assigned a qualitative rating: "very good", "good", "satisfactory" and "recovery" (for fewer than 25%) (UNICEF, 2019[23]).

These school-level activities are coordinated and monitored by the district Departments of Education. The district Departments of Education are also responsible for collecting these student assessment data from the schools under their jurisdiction and submitting these through an electronic form to the NACE for analysis at the national level.

In addition, and similar to many OECD Members and EU Member States, Moldova uses central examinations to certify students' learning through its gymnasium examination at the end of Grade 9 (lower secondary) and baccalaureate examination at the end of Grade 12 (general upper secondary) (OECD, 2013[48]; UNICEF, 2019[23]). All students must take the gymnasium examination in the following subjects: mathematics, Romanian and world history, native language and literature (i.e. Romanian, Russian or Ukrainian), and Romanian language and literature for non-Romanian medium schools. Marks from 1 to 10 are assigned to students' work, with 5 (a score of at least 25%) constituting the passing mark.

The gymnasium examination is administered in schools, while its marking, scoring and review of appeals are the responsibilities of the district Departments of Education. The district level assessment commissions follow the marking and scoring schemes issued by the National Examination Commission. As in the case for the Grade 4 student assessment, the district Departments of Education are responsible for collecting and submitting students' examination results to the NACE. Gymnasium completion certificates are issued to the students who have passed their gymnasium examination and allow students to transfer to either (general) upper secondary education or secondary VET (UNICEF, 2019[21]; Nuffic, 2019[28]).

At the end of Grade 12 all students are required to take the baccalaureate examination in at least four subjects: the language of instruction, one foreign language, mathematics or history (depending on their selected profile), and one elective subject (Nuffic, 2019[28]). Similar to the gymnasium examination, marks from 1 to 10 are assigned to students' work, with 5 (a score of at least 25%) constituting the passing mark. The baccalaureate examination is overseen directly by the National Examination Commission under the supervision of the NACE. The examination is administered at designated baccalaureate centres and students' work is marked and scored by the "National Evaluation Commission". Baccalaureate diplomas are issued to students who pass their baccalaureate examinations. Baccalaureate scores are stored on a national database and general upper secondary schools (lyceums) are rated based on their results (UNICEF, 2019[21]). If students do not sit the baccalaureate exam or fail it, they are awarded the certificate of completion of upper secondary education which grants access to VET, however, it does not grant access to tertiary education (Nuffic, 2019[28]).

In addition, in terms of international student assessments Moldova participates in OECD's Programme for International Student Assessment (PISA). Its participation is overseen by NACE (UNICEF, 2019[23]).

School self-evaluation and external evaluation

Research shows the vital contribution school self-evaluation and improvement planning can make towards improving the quality of education and student performance (McNamara et al., 2021[51]; Ehren et al., 2013[52]; Hofman, Dijkstra and Hofman, 2009[53]; OECD, 2013[48]). There are a growing number of international examples where the quality criteria or standards used for school self-evaluation and external evaluation are similar enough to create a common language about priorities and about the key factors which influence high-quality teaching and student learning (OECD, 2018[54]; OECD, 2013[48]).

Moldova has also developed a common framework of school performance standards to be used for both school self-evaluation and external evaluation, of which the latter is undertaken by ANACEC. The framework is made up of five performance standards: 1) Safety, security and health; 2) participation and democratisation; 3) inclusion; 4) educational process; and 5) gender equity. The school self-evaluation against the school performance standards is to be undertaken annually and used to inform the school's five-year school improvement plan. Standards-based tools for self-evaluation are provided by ANACEC, but schools are free to use other evaluation tools in addition to these (UNICEF, 2019[23]).

All school performance standards and underlying indicators fall under the authority of the school leader, making school performance a direct reflection of the school leader's and, to a certain extent, teachers' performance. As mentioned earlier, a school's persistently unsatisfactory performance is interpreted in the

current ANACEC school evaluation methodology as a reflection on its school leader, with their contract discontinued in this case.

External evaluation is conducted every five years by ANACEC and may also be initiated based on the request of the school, district Department of Education or the MoER. The school leader's self-evaluation and annual activity report serves as a key input for the external evaluation process. The school leader must submit their activity report to the district Department of Education (no later than 30 August), after which the school leader will present this report to the Administration Board and Teaching Council, as mentioned above. The district Department to Education then share this report with ANACEC who initiate the external evaluation (UNICEF, 2019[23]; Government of the Republic of Moldova, 2023[47]).

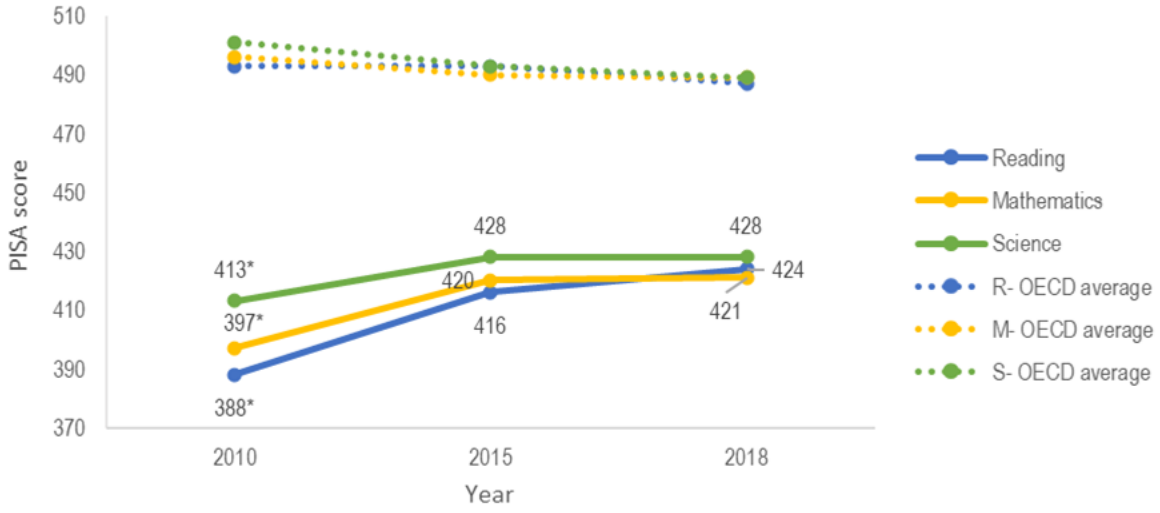
The school is to indicate its annual self-evaluation scores on each standard and underlying indicators for the past four years. This is later compared to the scores gathered during the visit of the external evaluation committee that is formed with ANACEC staff and external evaluators. Following the external evaluation, a report is drafted with a list of strengths, areas for improvement and recommendations. Schools that receive an unsatisfactory rating are to be monitored and supported by the district Department of Education and re-evaluated by ANACEC the following year. An unsatisfactory rating obtained two years in a row leads, as mentioned, to the termination of the school leader's contract. All results must, in the end, be approved by the President of ANACEC (UNICEF, 2019[23]; Government of the Republic of Moldova, 2023[47]).

Quality and equity of school education.

Moldova has participated in the OECD's PISA in 2009, 2015, 2018, and 2022; the latter of which the results are to be released in December 2023. Although, the long-term change in all three main subjects over the period of Moldova's participation in PISA shows one of the strongest increases among PISA participating countries and economies (see Figure 1.2) there is still considerable room for improvement (OECD, 2019[55]). In 2018, the mean performance of 15-year-old Moldovan students was significantly lower than the OECD average in mathematics (421 compared to 489), reading (424 compared to 487) and science (428 compared to 489). Also, a smaller proportion of students in Moldova performed at the highest levels of proficiency (Level 5 or 6) in at least one subject compared to the OECD average; at the same time a smaller proportion of students achieved a minimum level of proficiency (Level 2 or higher) in at least one subject.

In addition, the data point to significant equity challenges. For example, in Moldova socio-economically advantaged students outperformed disadvantaged students in reading by 102 score points in PISA 2018. This is larger than the average difference between the two groups across OECD Members (89 score points). Also in PISA 2009, this performance gap related to socio-economic status was considerably smaller as it stood at 80 score points (and 87 score points on average across OECD Members). PISA 2018 also showed that the location where students attend schools is an important factor in their performance. Students attending schools in urban areas performed significantly better than students attending schools in rural areas, and at rates exceeding those of similar students across the OECD (OECD, 2019[56]).

Figure 1.2. Moldova's average student performance on PISA 2009, 2015, 2018



Notes: In the 2009 PISA cycle, data in Moldova was collected with a year's delay (2010). The country did not participate in PISA 2012. In 2015 there were changes to the test design, administration, and scaling of PISA. Please see the Reader's Guide and Annex A5 of PISA 2015 Results (Volume I): Excellence and Equity in Education (OECD, 2016[57]) for a discussion of these changes.
The asterisks symbolise a statistically significant difference from the score in 2018.
Source: OECD (2019[55]), PISA 2018 Results (Volume I): What Students Know and Can Do, https://dx.doi.org/10.1787/5f07c754-en; OECD (2016[57]), PISA 2015 Results (Volume I): Excellence and Equity in Education, https://dx.doi.org/10.1787/9789264266490-en; OECD (OECD, 2010[58]), PISA 2009 Results: What Students Know and Can Do: Student Performance in Reading, Mathematics and Science (Volume I), https://dx.doi.org/10.1787/9789264091450-en.

Furthermore, in all countries and economies that participated in PISA 2018, girls significantly outperformed boys in reading – by 30 score points on average across OECD Members. In Moldova, the gender gap in reading (40 score points) was higher than the average gap. The gap in reading was similar to that observed in 2009 (45 score points), with both boys' and girls' performance remaining stable over the period (OECD, 2019[38]). In Moldova, girls scored similar to boys in mathematics (across OECD Members, boys outperformed girls by five score points). Girls outperformed boys in science by 11 score points in Moldova (across OECD Members, girls slightly outperformed boys in science by two score points on average) (OECD, 2019[38]). While 77% of Moldovan students reported that they are satisfied with their lives (compared to an OECD average of 67%), many students, especially disadvantaged students, reported holding lower ambitions than would be expected given their student performance. About one in three high-achieving disadvantaged students – but one in ten high-achieving advantaged students – do not expect to complete tertiary education.

These findings support earlier studies that conclude equitable access to good quality primary, lower secondary and upper secondary education for all Moldovan students remains a challenge. Barriers to access for children with special education needs persist, as well as the integration of Roma children and other minorities (UNICEF, 2018[59]). The new Education Development Strategy 2030 recognises much remains to be done to ensure all Moldovan children and young people can realise their full potential (Government of the Republic of Moldova, 2023[3]).

Moldova's new education sector strategy

In March 2023 the Moldovan Government approved a new education sector strategy, the Education Development Strategy 2030 (Government of the Republic of Moldova, 2023[3]). The development of the strategy and supporting implementation plan included a consultative process in which a wide range of education stakeholders were given opportunities to participate, including students, parents, youth organisations, local public education authorities, and international development partners, among others.

The strategy sets out a long-term vision for the development and transformation of the education sector, covering early childhood education and care, primary, secondary, tertiary and vocational education, and including non-formal education, as well as adult literacy and lifelong learning. It aims to realise the following strategic objectives:

- Connecting education to the requirements and needs of the labour market from the perspective of sustainable development by restructuring the mechanisms for the development of human capital.
- Ensuring access to quality education for all throughout their lives.
- Providing the educational system of all phases and forms of education with qualified, competent, motivated and competitive teaching, scientific-didactic and leadership staff.
- Strengthening socio-educational cohesion for quality education by combining the efforts of all actors of the educational process.
- Creating new, effective, and motivating environments for the development and lifelong learning of all citizens.
- Improving the functionality, quality and sustainability of the education system through the efficient implementation of digital technologies.
- Ensuring for all citizens, throughout their lives, opportunities for learning and education in a formal, non-formal or informal context.
- Promoting innovations and changes in education through the development of scientific research.
- Increasing the performance of the educational system by streamlining the network of educational institutions, modernising the infrastructure, strengthening the leadership and managerial capacity and developing a culture focused on quality.

The analysis and concrete recommendations presented in the following sections of this report are aimed to support Moldova in the successful implementation of the Education Development Strategy 2030.

2 A review of the professional development of teachers and school leaders in Moldova

This section presents an in-depth analysis of the selected policy domains "professional development of teachers and other education professionals". It starts by examining the strengths and challenges of Moldova's continuous professional development system. Drawing from international research evidence and international examples it provides concrete guidance for the reconceptualisation of the continuous professional development system called for in the Education Development Strategy 2030 (Government of the Republic of Moldova, 2023[3]). This includes ensuring that professional development is based on identified needs; systematically promoting collaborative working and learning within and between schools; harnessing the underutilised potential of using digital technologies to support teacher and school leader continuous professional development; strengthening the capacity of school leaders and other system leaders; and working towards more systematic and data-informed school improvement (support). Concrete recommendations for action are proposed at the end of this section.

In-depth analysis of the continuous professional development of teachers and school leaders in Moldova

Moldova has a well-established system of participation in continuous professional development courses …

Education is no longer just about teaching students something, but more about providing them with a reliable compass and the tools to navigate with confidence in this world that is increasingly volatile, complex, ambiguous and uncertain (Schleicher, 2018[60]; OECD, 2019[61]). The expectations for teachers are high and rising each day. Teachers are expected to have a deep and broad understanding of what they teach and whom they teach, because what teachers know and care about makes such a difference to student learning (Schleicher, 2018[60]; Boeskens, Nusche and Yurita, 2020[62]). The kind of education needed today requires teachers who constantly advance their own professional knowledge and that of their profession (Boeskens, Nusche and Yurita, 2020[62]; OECD, 2016[63]). Research evidence clearly shows that teachers' continuous professional development can have a positive impact on teachers' practice and student outcomes (Cordingley et al., 2015[64]; Fletcher-Wood and Zuccollo, 2020[65]; Darling-Hammond, Hyler and Gardner, 2017[66]; OECD, 2019[67]). Consequently, scholars, educators and policymakers around the world increasingly support the notion of investing in quality, career-long opportunities for ongoing professional development. Effective professional development includes a focus on (curriculum) content and responsiveness to students' learning needs. It provides opportunities for reflection and feedback, and emphasises collaborative professional working and learning (OECD, 2020[68];

Jensen et al., 2016[69]; Popova et al., 2022[70]; Darling-Hammond, Hyler and Gardner, 2017[66]; Boeskens, Nusche and Yurita, 2020[62]).

These key features of effective professional development to some extent reflect the continuous professional development opportunities available to teachers and school leaders in Moldova. As mentioned earlier (in Section 1), in Moldova teachers and school leaders are expected to engage in continuous professional development. Professional development is organised at different levels of the system: at the school level, at the district level, occasionally at the national level (e.g. when it is organised by the MoER), and at the professional development centres of tertiary education institutions, of which there are 17 (UNICEF, 2019[23]). On the latter, Moldova has a well-established system of professional development programmes and courses for teachers that are primarily offered by the tertiary education institutions' professional development centres. Teachers and school leaders must participate in and successfully complete professional development courses totalling 20-ECTS (600 hours) every three years (Beara and Petrovic, 2020[37]).

In addition, several OECD Member counties, such as Australia (AITSL, 2018[71]; AITSL, 2014[72]), Estonia (Révai, 2018[73]; NCEE, 2021[74]), Ireland (The Teaching Council of Ireland, 2016[75]; The Teaching Council of Ireland, 2016[76]) and Scotland (United Kingdom) (The General Teaching Council of Scotland, 2021[77]) have developed professional standards to (among others) support appraisals and the reflection on practice that in turn is used to inform teachers' and school leaders' professional development. As mentioned in Section 1, Moldova developed professional standards for teachers and for school leaders in 2018 for similar reasons. Moldova has developed professional standards for teachers and school leaders that aim to support engagement in lifelong learning, career progression, enhance transparency and recognition for teachers and school leaders among others (Government of the Republic of Moldova, 2018[40]; Government of the Republic of Moldova, 2018[41]). While these are clear strengths to build on, the evidence suggests that these standards are not yet widely used for these purposes and there is scope for further development (see below).

Similar to most OECD Members, teachers in Moldova are also expected to carry out self-evaluations at the end of every school year (OECD, 2013[78]; Boeskens, Nusche and Yurita, 2020[62]), using a purposefully designed Teacher Assessment Sheet and submit their self-evaluation and their Professional Portfolio to the school's Teaching Council. The school-based "Teacher Evaluation Commission" is to appraise teachers using the same Teacher Assessment Sheet. The results of this internal evaluation and the teacher's self-evaluation are then reviewed by the Teaching Council which provides recommendations for improvement. Teachers are to use these recommendations to prepare a professional development plan, which can be considered a positive measure for receiving feedback from peers and connecting professional development to appraisal. Although the evidence suggests these processes are not yet well-established in Moldova's school system (UNICEF, 2019[23]), they provide important means to build on for ensuring that teachers' participation in professional development is based on identified needs (see below).

In addition, the piloting of a new standardised classroom observation tool (i.e. TEACH, see below) and the recent establishment of the National Institute for Education and Educational Leadership are examples of promising new policy initiatives to build on for strengthening Moldova's continuous professional development system – and ultimately for improving teaching and student learning in all schools across the country.

… yet there is scope for strengthening the professional development system for Moldovan education professionals

In Moldova, teachers and school leaders are, as mentioned above, expected to engage in continuous professional development. This is organised at different levels of the system: at the school level, at the district level, occasionally at the national level (e.g. when organised by the MoER), and at the professional development centres of tertiary education institutions.

In schools, professional development of teachers is often coordinated by deputy school leaders. It is also to be supported through mentoring activities across a teacher's career (Parliament of the Republic of Moldova, 2014[1]). However, it is unclear to what extent this is happening in schools across Moldova.

Teachers' professional development is also supported by district Departments of Education (i.e. Level 2 public authorities). These have the responsibility to support and encourage the professional development of teachers and school leaders, for example, by offering advice and guidance in response to the recommendations from external school evaluations. Some districts also organise localised professional development workshops and trainings for the teachers and school leaders of their schools (UNICEF, 2019[23]). However, little is known about the quantity and quality of the support provided by the district Departments of Education. That said, their capacities are known to vary which is believed to have also impacted on their abilities to offer professional development support to their schools (World Bank, 2018[22]; Beschieru et al., 2018[20]). Several MoER officers and other stakeholders noted to the OECD/IIEP team that the ongoing territorial reform and planned consolidation of districts presents an important opportunity for strengthening the professional development and improvement support to schools (see below).

While Moldova's well-established system of professional development programmes and courses for teachers is a clear strength to build on, the strong emphasis placed on the participation in course-based continuous professional development leaves scope for improvement. The desk review and interviews with various education stakeholders showed that professional development in Moldova is primarily understood as and given shape through face-to-face participation in one-off courses or trainings, often of short duration.

Apart from their often-one-off nature and short duration, a key challenge is that the participation in professional development trainings and courses in many cases is based on teachers' and school leaders' interests, rather than on an actual assessment of their professional development needs or their students' learning needs. It is also unclear to what extent teachers' and school leaders' participation in professional development trainings and courses responds to schools' improvement priorities. However, the OECD/IIEP team's interviews with education stakeholders and discussions during the stakeholder workshop (in May 2023) suggested there is considerable scope for strengthening these linkages.

Part of the challenge would seem to lie in the fact that professional development courses (with the exception of school-based professional development) are often designed to meet mandatory and optional teacher accreditation requirements and explain policy and new expectations by the MoER, with limited opportunities for the education profession to inform the offer (UNICEF, 2019[23]). Several stakeholders the OECD/IIEP team interviewed shared their concerns about the direct link between participation in professional development and career advancement opportunities. The career structure consists of three teaching levels: second-, first- and senior-level teacher. The holders of the higher levels (i.e. first- and senior teachers) receive salary supplements. These teaching levels are to be awarded based on performance, on the results of continuous professional development and on the outcomes of his/her methodological and teaching activities. International evidence however warns for the unintended effect of "credit chasing". The phenomenon of credit chasing entails teachers enrolling in any courses they can rather than in courses that are relevant for them and their school (Santiago et al., 2016[79]) – the evidence clearly showed this to be a challenge for Moldova (Beara and Petrovic, 2020[37]; UNICEF, 2019[23]).

Therefore, the MoER should consider revisiting the direct link between the accreditation process and participation in professional development. Professional development activities seek to update, develop and broaden teachers' competencies in agreement with their professional aspirations, needs and specific school context. Ideally, they should change teachers' practices and impact student learning. This is less likely the case if the teacher's motivation to engage in professional development is focused on achieving better career prospects (Santiago et al., 2016[79]). The findings from this review corroborated those of earlier studies that showed this to be the case for many teachers in Moldova (Beara and Petrovic, 2020[37]; UNICEF, 2019[23]).

Furthermore, part of the challenge of making participation in professional development (more) needs-based lies in the fact that teacher appraisals are rarely used to support teachers in the identification of their professional development needs (Beara and Petrovic, 2020[37]; UNICEF, 2019[23]). The findings from this review suggested that teacher appraisal is not yet well-established in Moldova's school system. This seems to partially result from the varying awareness of the professional standards for teachers, with schools across Moldova seemingly using a variety of (other) systems and standards to evaluate teachers' performance against (UNICEF, 2019[23]). In addition, the professional standards that are made up of underlying indicators and descriptors of desired practice can be considered minimum standards (as the descriptors provide guidance of the desired behaviour at one level). As also noted by several education stakeholders the OECD/IIEP team interviewed, these standards arguably provide little guidance for further professional development and growth. We will return to this issue later in the text.

It is also noteworthy that the teacher appraisal methodology did not include a classroom observation component. This while in many OECD Members teacher appraisal is often firmly rooted in classroom observation (OECD, 2013[78]; Boeskens, Nusche and Yurita, 2020[62]). ANACEC has clarified that lesson observations would remain a part of the appraisals to be undertaken by the district Departments of Education, while the external evaluation process would focus on ensuring schools have the capacity to appraise their teachers. The evidence suggested, however, that schools and district Departments of Education use different classroom observation tools to support teacher appraisal and inform teachers' professional development (UNICEF, 2019[23]).

A recent UNICEF study (2019[23]) recommended revisiting the teacher appraisal methodology to ensure that classroom observations are accounted for and provide guidance to district Departments of Education and school leaders on the types of indicators to observe. The recent piloting of the classroom observation instrument TEACH responds to this call for further guidance and can be considered a positive development to build on, as will be elaborated on below.

In addition, the OECD/IIEP team's interviews and review of policy documents and studies showed a limited emphasis on seeing professional development as a collaborative endeavour, which research evidence suggests can greatly enhance teaching and student outcomes (Earl and Timperley, 2008[80]; Hattie and Timperley, 2007[81]; Darling-Hammond, Hyler and Gardner, 2017[66]; OECD, 2019[67]). The potential benefits of enhanced collaborative working and learning are many, including the facilitation of knowledge sharing and innovation, within and between schools, enhanced job satisfaction and staff well-being, and ultimately improvements in teaching and student outcomes (Ronfeldt et al., 2015[82]; Solvason and Kington, 2019[83]; OECD, 2020[68]). The stakeholder workshop confirmed that the systematic promotion of collaborative working and learning – within and between schools – offers an important "untapped potential" for improving teaching and student learning in the Moldovan school system.

Furthermore, digitalisation in education has been gaining increased attention internationally with a focus, among others, to enhance educators' professional development and innovate teaching and learning (Minea-Pic, 2020[84]; OECD, 2023[85]). In line with this international trend, Moldova's Education Development Strategy 2030 recognises and aims to respond to the underutilised potential of using digital

technologies to (among others) strengthen teachers' and school leaders' professional development in the country (Government of the Republic of Moldova, 2023[3]; World Bank, 2022[86]). For example, as mentioned above, although the OECD/IIEP team learned of some examples of using online learning, professional development courses and trainings were often primarily given shape through a face-to-face methodology. The stakeholder workshop discussions provided strong support for the directions set out in the Education Development Strategy 2030 for further harnessing the potential of digital technologies to innovate teaching and student learning, and teachers' and school leaders' professional development in Moldova.

Research evidence also shows the pivotal role school leaders can play in leading educational change and school improvements (OECD, 2020[87]; Leithwood and Seashore Louis, 2012[88]; Robinson, Hohepa and Lloyd, 2009[89]; Kools and Stoll, 2016[90]). In many OECD Members school leaders are at the forefront of the implementation of education policies – as is the case in Moldova. School leaders have a vital role as educational leaders and in establishing a collaborative learning culture in their schools. They are responsible for shaping the work and administrative structures to facilitate professional development, including through professional dialogue, collaboration and knowledge exchange – all of which are crucial for promoting educational change and innovation (OECD, 2020[87]; Leithwood and Seashore Louis, 2012[88]; Robinson, Hohepa and Lloyd, 2009[89]; Kools and Stoll, 2016[90]). Contrary to many OECD Members, however, the capacity development of school leaders and that of other system leaders such as those working in the district Departments of Education has received relatively little attention to date in Moldova.

In sum, these (and other) challenges support the objective set out in Moldova's Education Development Strategy 2030 that calls for reconceptualising the continuous professional development of teachers and school leaders (including those working in tertiary education) (Government of the Republic of Moldova, 2023[3]). The text below elaborates on these challenges, points to strengths to build on and offers concrete guidance to help the MoER and education stakeholders reconceptualise and strengthen the continuous professional development of teachers and school leaders in Moldova.

Ensuring that professional development is based on identified needs

Research evidence shows that for professional development to be effective it must be seen as a long-term continuous inquiry process, spanning educators' professional life cycle. It should respond to their actual professional development needs, in line with school improvement priorities and student learning needs. It should be based on continuous assessment and feedback and be built into their daily practice. When shaped in a structured and purposeful manner this can have a strong positive influence on teachers' and school leaders' professional development and their daily practice (Timperley et al., 2007[91]; OECD, 2019[67]; Hattie and Timperley, 2007[81]; Darling-Hammond, Hyler and Gardner, 2017[66]; OECD, 2020[68]; Jensen et al., 2016[69]).

As mentioned above, a key challenge for Moldova is that the participation in professional development trainings and courses is based primarily on teachers' and school leaders' interests, rather than on an actual assessment of their actual professional development needs or their students' learning needs. Professional development courses are also often designed to meet mandatory and optional teacher accreditation requirements and explain policy and new expectations by the MoER, with limited opportunities for the education profession to inform the offer (UNICEF, 2019[23]).

That said, the OECD/IIEP team identified several promising policy initiatives and opportunities for making the professional development of teachers and school leaders more responsive to their actual needs and the learning needs of their students, as will be elaborated on below.

Analysing student assessment data to inform teacher professional development

Research evidence shows the importance of aligning teachers' professional development with classroom contexts and students' learning needs, particularly as they relate to subject and curriculum components (Cordingley et al., 2015[64]; OECD, 2019[67]; Pedder and Opfer, 2013[92]; Darling-Hammond, Hyler and Gardner, 2017[66]). National and international standardised student assessments can provide rich and detailed information about students' strengths and their areas for further learning (e.g. in terms of subjects, specific competencies, the types of questions students struggle with, etc.) (OECD, 2023[93]; OECD, 2013[48]). Apart from the option of analysing these data to inform future curriculum reviews (see below), these data can also greatly inform teachers' on how to adjust their teaching in response to students' learning needs. When aggregated to a national- or sub-national level these data in turn can be used to inform the professional development offer, as well as the development of additional teaching and learning resources – and Moldova in fact is well-positioned to do this.

National standardised student assessments are well established in Moldova (see Section 1), as well as the country's participation in PISA (since 2009). The OECD/IIEP team learned of the good practice of the National Agency for Curriculum Evaluation (NACE) having analysed the data of national and international student assessments to identify the knowledge and competencies students master and need further support on – and thereby their teachers. That said, NACE officers noted the limited capacity of the agency for undertaking such highly technical analysis (e.g. item analysis). Therefore, considering the potential benefits of such systematic analysis for improving the quality of education in Moldovan schools in the years to come, the MoER should consider making sustained investments in further strengthening NACE's capacity to undertake such analysis and disseminate these results so these can inform the professional development offer, the development of additional teaching and learning resources and future curriculum reviews.

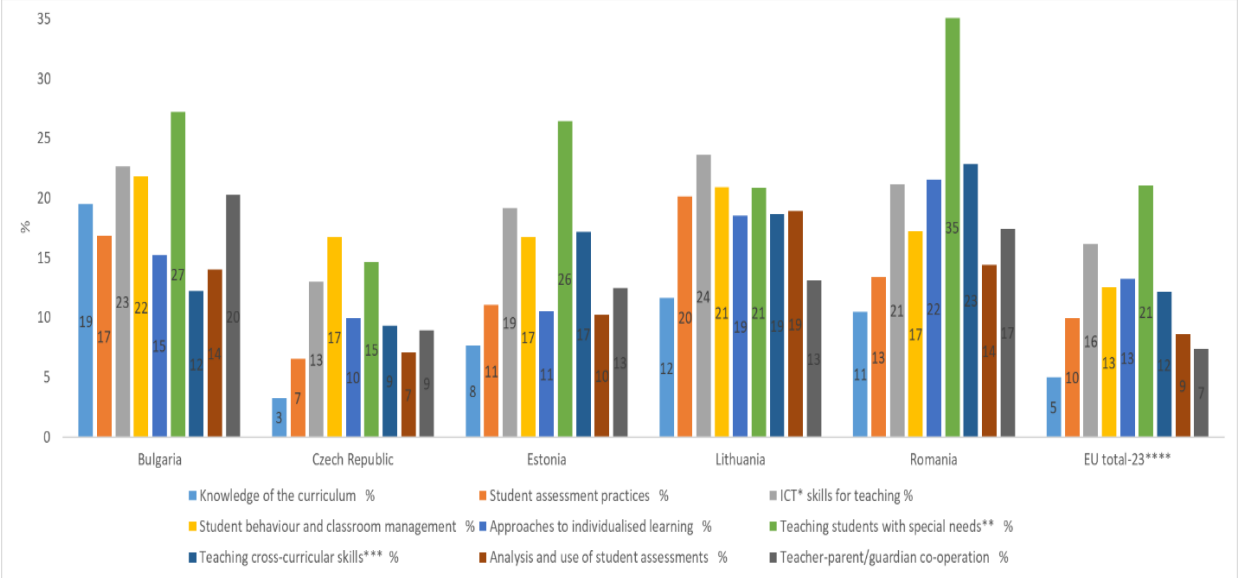
Using selected research to identify professional development needs

Many OECD Members use various means to examine teachers' and school leaders' professional development needs, including through the use of surveys and other selected research (Boeskens, Nusche and Yurita, 2020[62]). This however is not yet systematically done in Moldova. Considering also the MoER's objectives for strengthening the connection between the field of education and research (Government of the Republic of Moldova, 2023[3]), it should consider investing in the systematic use of selected research to support the identification of teachers' and school leaders' professional development needs. It may look towards the example of a country like Norway that sets out an annual (voluntary) Teacher Survey that asks teachers to share their views on their students' learning and well-being at school, as well as on questions concerning the organisation of their school and professional development. Similarly, the Norwegian Directorate for Education and Training sets out the annual Student Survey in which students are asked to share their opinion about their learning and well-being in school (Norwegian Directorate for Education and Training, 2023[94]; Norwegian Directorate for Education and Training, 2023[95]). The answers to these surveys have proven very helpful to schools, municipalities and the government in identifying strengths, but also areas for improvement, including areas for professional development of teachers and school leaders.

Another example to possibly look towards for inspiration that provides an internationally comparative view is OECD's Teaching and Learning International Survey (TALIS). TALIS asks teachers and school leaders about their working conditions and the learning environments at their schools to help countries respond to diverse challenges, including in the area of initial education and professional development of teachers and school leaders (see Figure 2.1). The 2018 TALIS survey was answered by 280 000 teachers and 15 000

school leaders across 48 countries and territories, including all EU Member States (with financial support provided by the EU). In many of these countries, the survey results have informed policy measures that aim to enhance the working conditions and learning environments of teachers and school leaders, including their professional development (OECD, 2020[87]; OECD, 2019[67]).

Figure 2.1. Lower secondary teachers' professional development needs in specific areas, TALIS 2018



Notes: Data from Table I.5.21 in the source. * ICT: Information and communication technology; ** "Students with special needs" are those for whom a special learning need has been formally identified because they are mentally, physically, or emotionally disadvantaged; *** For example, creativity, critical thinking and problem solving; **** EU total-23: weighted average based on ISCED 2 teacher or principal data across all EU Member States that participate in TALIS with adjudicated data.
Source: OECD (2019[67]), TALIS 2018 Results (Volume I): Teachers and School Leaders as Lifelong Learners, https://doi.org/10.1787/1d0bc92a-en.

Using regular feedback and appraisals to identify professional development needs

As mentioned above, research evidence shows that for professional development to be effective it (among others) needs to be based on continuous assessment and feedback that should be built into the daily practice of teachers and school leaders. When shaped in a structured and purposeful manner this can have a strong positive influence on teachers' and school leaders' professional development and their daily practice (Timperley et al., 2007[91]; OECD, 2019[67]; Hattie and Timperley, 2007[81]; Darling-Hammond, Hyler and Gardner, 2017[66]; OECD, 2020[87]; Boeskens, Nusche and Yurita, 2020[62]). There are various ways of structuring such systematic feedback, including through regular informal feedback and more formal appraisals for example.

On the former, the OECD/IIEP team learned of the recent successful piloting of TEACH in Moldova. TEACH is a free standardised classroom observation tool that has been implemented in several countries around the globe with the support of the World Bank (World Bank, 2022[96]) (see Box 2.1). Responding to the MoER's interest in leapfrogging, the OECD/IIEP team in its discussions with representatives from ANACEC, the MoER and the World Bank suggested the idea of capturing classroom observation data digitally (e.g. through a tablet) and sharing data in aggregated from with the MoER. The sharing of such aggregated (thereby anonymous) data by the school with the MoER would help avoid unintended

consequences such as these classroom observations being perceived by teachers as “high stakes”. The representatives were quick to positively respond to this suggestion as it could allow for 1) the instant generation of an automated feedback reports for teachers and schools to use, and 2) for aggregating these data at national and subnational levels to inform the professional development offer organised by districts and at the national level, for example, by the professional development centres or the recently established National Institute for Education and Educational Leadership. These data could also be analysed and used to inform the development of (digital) teaching and learning resources that respond to identified needs. For example, if many teachers are found to struggle with giving quality feedback to students or in fostering their social and collaborative skills then for example district education officers could organise trainings for teachers of a cluster of schools on this.

Furthermore, research evidence shows that effective appraisals can help to improve teachers’ and school leaders’ practices by identifying strengths and weaknesses for further professional development (Schleicher, 2012[97]; Révai, 2018[73]). However, while successful implementation is frequently one of the largest barriers to any education reform effort (Viennet and Pont, 2017[98]), the domain of appraisal has been particularly difficult as it often combines resourcing, capacity, technical, political and cultural challenges (OECD, 2019[39]). This is also the case for Moldova, where further work remains to be done to implement its teacher appraisal system.

Before turning to its implementation, however, there may also be opportunities for further strengthening the design of the teacher appraisal methodology. First, as mentioned earlier, Moldova should consider revisiting the direct link between the accreditation process and participation in professional development. Professional development is to serve the purpose of updating, developing and broadening teachers’ competencies and should be based on their aspirations, identified needs and the specific school context, and ideally result in improvements in teaching and student learning. This is less likely to happen if teachers’ motivation to engage in professional development is focused on career advancement (Santiago et al., 2016[79]), as is currently the case for many teachers in Moldova.

Second, instruments used in teacher appraisal need to capture the quality of teachers’ practices in the classroom. As mentioned earlier, in many OECD Members teacher appraisal is often firmly rooted in classroom observation. Many countries use classroom observations and/or teacher portfolio’s for providing evidence of teachers’ work. Moldova’s teacher appraisal methodology called for the use of teachers’ portfolio’s but did not include an observation component. While ANACEC has clarified that it would not conduct classroom observations as part of its external evaluation process and instead would focus on evaluating schools’ ability to appraise its teachers – which indeed would seem vital for ensuring teacher appraisals are consistent and coherent across schools (Santiago et al., 2016[79]), it should consider promoting the use of classroom observations to feed into the evidence base for teacher appraisal – together with other sources of evidence. The positioning of the classroom observation data as being (only) one of the sources of evidence for capturing teachers’ practice and performance could help safeguard the developmental function of classroom observations and avoid any perception of “high stakes” among teachers.

As also noted by the mentioned UNICEF study (2019[23]), district Departments of Education and schools would benefit from guidance on the types of indicators to observe. The above discussed TEACH classroom observation tool responds to this call for providing further guidance to schools and districts. The OECD/IIEP team learned of the plans to further scale up the use of TEACH which indeed could greatly benefit teachers’ in the identification of their strengths and professional development needs.

Box 2.1. TEACH – Helping countries track and improve teaching quality

Moldova is among a steadily growing number of countries around the globe that has piloted and/or implemented TEACH, a free classroom observation tool designed by the World Bank to capture the quality of teaching practices that support quality learning, nurturing children's cognitive and socio-emotional skills. TEACH has been developed to support countries in tracking and improving the quality of teaching in early childhood education (ECE), primary and secondary classrooms.

The TEACH framework measures teacher-student interactions, focusing on known teacher behaviours which may nurture children's cognitive and socio-emotional skills. TEACH captures both the time teachers spend on learning and the quality of teaching practices, focused on three domains: (i) how a teacher creates a culture that is conducive to learning; (ii) whether a teacher teaches in a way that deepens student understanding and encourages critical thought; and (iii) how a teacher fosters socio-emotional skills that encourage students to succeed both inside and outside the classroom. In addition, the tool measures how well teachers use inclusive teaching practices that help all students learn (see Figure 2.2).

Figure 2.2. TEACH Primary Framework

Source: World Bank (2022[96]), TEACH Primary: Helping countries track and improve teaching quality, https://www.worldbank.org/en/topic/education/brief/teach-helping-countries-track-and-improve-teaching-quality (accessed 4 March 2023).

The implementation of TEACH is often given shape through a five-step process: i) consultation with stakeholders on what TEACH measures and a discussion on its application and as needed adaptation to ensure it fits the local context (e.g. adaptation to ensure alignment with national teacher standards); ii) the collection of video footage from classrooms in the country or region; (iii) certified experts reviewing and coding the videos; (iv) a TEACH trainer leading the Observer training; and, (v) observers (who have passed a certification exam) conducting classroom observations.

To date, TEACH has been implemented in 36 low- and middle-income countries. The classroom observation data and secondary analysis of these data have guided governments in the design and development of a range of policy initiatives and programmes that aim to enhance teaching and student learning, including the tailoring of professional development courses and teaching resources to (better) respond to the identified professional development needs of teachers.

Source: World Bank (2022[96]), TEACH Primary: Helping countries track and improve teaching quality, https://www.worldbank.org/en/topic/education/brief/teach-helping-countries-track-and-improve-teaching-quality (accessed 4 March 2023); World Bank (2021[99]), Teach in Action: Three Case Studies of Teach Implementation. Washington DC, World Bank.

Returning to the issue of implementation, there remains, as mentioned, much work to be done to embed teacher appraisal in Moldova's school system. Teacher appraisal operates from the premise that if teacher and school leader standards are clear and rigorous, and where evaluators are trained to observe and rate staff against those standards, evaluators will reach valid and reliable conclusions about teachers' and leaders' effectiveness. Setting aside the technical definitions of these terms, the "validity" assumption implies that evaluator ratings of an individual reveal meaningful information about their skill and effectiveness and the "reliability" assumption implies that multiple evaluators in multiple time periods would rate the staff member similarly. These two assumptions are critical for the appraisal effort to be of value (OECD, 2013[48]).

However, as noted earlier, the evidence points to varying levels of awareness of the teacher professional standards. The UNICEF study (2019[23]) found that schools across Moldova used a variety of (other) systems and standards or criteria to evaluate teachers' performance against. The interviews with education stakeholders corroborated these findings and also pointed to the need for making sure teachers and school leaders are aware of and understand these standards. This "sense making" of standards by teachers and school leaders is essential to transform their practice. Extensive socialisation of standards can be done at several stages of teachers' and school leaders' careers:

- During initial teacher education so that beginning teachers already have a clear understanding of what is expected from them.
- In induction and mentoring programmes to ease the transition between initial education and school-level practice.
- During continuous professional development: teachers and school leaders must receive training on the use of standards and their implications for their professional development and classroom practice (OECD, 2019[39]; OECD, 2013[48]).

A separate, though related issue, concerns the skills of teacher appraisers. In both the research literature and OECD reviews, teacher appraisers (largely school principals and other leaders) report having not only limited time to engage meaningfully in appraisal, but also needing additional training to successfully appraise teachers (often by making use of classroom observations) and providing feedback (OECD, 2019[39]). The evidence points to similar challenges for teacher appraisers in Moldova i.e. the members of the school-based "Teacher Evaluation Commission". Apart from school leaders reporting their concerns about the administrative burden of the teacher appraisal process, they have also noted shortcomings in the skills of appraisers of teachers and school leaders (UNICEF, 2019[23]).

Moldova should therefore consider investing in the continuous professional development of the appraisers i.e. members of the "Teacher Evaluation Commission" who appraise teachers, and the members of the Teaching Council and/or the Administrative Board who appraise school leaders (UNICEF, 2019[23]). This would help ensure consistency and coherence in the implementation of teacher appraisal in schools across the country. This continuous professional development could, for example, be given shape through a specific training course, the development of user-friendly guidelines, online tutorials or possible other (self-learning) resources.

Furthermore, as also noted by several stakeholders the OECD/IIEP team interviewed, the professional standards in their current form can be considered minimum standards that arguably give little guidance for further professional development and growth. The discussions with ANACEC officers revealed an interest to further develop the professional standards by developing descriptors for different performance levels or competency levels, similar to the professional standards of OECD Members and EU Member States such as Australia (see Box 2.2), Estonia and the Republic of North Macedonia (AITSL, 2018[71]; Révai, 2018[73];

Guerriero, 2017[100]; OECD, 2019[101]). The potential benefit of such an approach would be that the descriptors of different competency levels could provide the needed additional support and guidance to the evaluator, as well as the teachers and school leaders themselves to help them in their reflections and in determining where they are in terms of their professional performance. The different competency levels could offer further guidance for professional development and growth (i.e. scaffolding).

The evidence suggests that effective appraisals require the development of considerable expertise in the system, including the training of appraisers, establishing and where needed further developing appraisal processes and aligning broader school reforms, such as professional development opportunities, with evaluation and assessment strategies. All of these require considerable resources, including time (Schleicher, 2012[97]; OECD, 2013[48]). Therefore, it may take some time before the results of appraisals will serve as a major source of information for identifying the professional development needs of teachers and school leaders in all schools across the country.

Box 2.2. The Australian Professional Standards for Teachers

The Australian Professional Standards for Teachers are a public statement of what constitutes teacher quality. They define the work of teachers and make explicit the elements of high-quality, effective teaching in 21st century schools that will improve educational outcomes for students. The Standards do this by providing a framework which makes clear the knowledge, practice and professional engagement required across teachers' careers.

Teacher standards also inform the development of professional learning goals, provide a framework by which teachers can judge the success of their learning and assist self-reflection and self-assessment. They could also be used as the basis for a professional accountability model, helping to ensure that teachers can demonstrate appropriate levels of professional knowledge, professional practice and professional engagement. The Standards comprise seven Standards which outline what teachers should know and be able to do. The Standards are interconnected, interdependent and overlapping. The Standards are grouped into three domains of teaching; Professional Knowledge, Professional Practice and Professional Engagement.

Figure 2.3. Organisation of the Standards

Domains of teaching	Standards	Focus areas and descriptors
Professional Knowledge	1. Know students and how they learn 2. Know the content and how to teach it	Refer to the Standard at each career stage
Professional Practice	3. Plan for and implement effective teaching and learning 4. Create and maintain supportive and safe learning environments 5. Assess, provide feedback and report on student learning	Refer to the Standard at each career stage
Professional Engagement	6. Engage in professional learning 7. Engage professionally with colleagues, parents/carers and the community	Refer to the Standard at each career stage

Source: AITSL (2018[71]), Australian Professional Standards for Teachers, AITSL, Melbourne.

Within each Standard, the focus areas provide further illustration of teaching knowledge, practice and professional engagement. These are then separated into descriptors at four competency levels or career stages and guide the preparation, support and development of teachers: Graduate, Proficient, Highly Accomplished and Lead. The stages reflect the continuum of a teacher's developing professional expertise from undergraduate preparation through to being an exemplary classroom practitioner and a leader in the profession.

Figure 2.4. Example of the descriptors of the Standard focus areas

Standard 3: Plan for and implement effective teaching and learning

Descriptor at career stage			
Graduate	Proficient	Highly Accomplished	Lead
Focus area 3.1 Establish challenging learning goals			
Set learning goals that provide achievable challenges for students of varying abilities and characteristics.	Set explicit, challenging and achievable learning goals for all students.	Develop a culture of high expectations for all students by modelling and setting challenging learning goals.	Demonstrate exemplary practice and high expectations and lead colleagues to encourage students to pursue challenging goals in all aspects of their education.
Focus area 3.2 Plan, structure and sequence learning programs			
Plan lesson sequences using knowledge of student learning, content and effective teaching strategies.	Plan and implement well-structured learning and teaching programs or lesson sequences that engage students and promote learning.	Work with colleagues to plan, evaluate and modify learning and teaching programs to create productive learning environments that engage all students.	Exhibit exemplary practice and lead colleagues to plan, implement and review the effectiveness of their learning and teaching programs to develop students' knowledge, understanding and skills.

Source: AITSL (2018[71]), Australian Professional Standards for Teachers, AITSL, Melbourne.

Working towards using school evaluations for identifying strengths and areas for improvement, including professional development needs

In many OECD Members, the school self-evaluation and improvement planning process and/or external school evaluations focus increasingly on helping identify strengths and areas for school improvement, including the professional development needs of teachers and school leaders (OECD, 2015[102]; OECD, 2013[48]). This isn't fully the case for Moldova yet however, as the capacity for conducting quality school self-evaluations and improvement planning varies among schools and is underdeveloped in general (UNICEF, 2019[23]). That said, the established school performance standards and processes for school self-evaluation and improvement planning, as well as external evaluations are important strengths to build on.

In the text below we will elaborate on the opportunities for strengthening the school evaluation and improvement processes and embedding these in the Moldovan school system so these can support the identification of strengths and areas for school improvement, including professional development needs.

Systematically promote collaborative working and learning within and between schools

A growing body of research evidence highlights the benefits of enhanced collaborative working and learning within and between schools (Cordingley et al., 2015[64]; Jensen et al., 2016[69]; King Smith, Watkins and Han, 2020[103]; OECD, 2020[68]; UNESCO, 2021[104]; OECD, 2016[63]). Active learning through collaboration has been shown time and again to promote professional development and a sense of professionalism among teachers, school leaders and other school staff (Darling-Hammond, Hyler and Gardner, 2017[66]; Jensen et al., 2016[69]; Hill et al., 2021[105]; McAleavy et al., 2018[106]).

However, as mentioned above, the OECD/IIEP team's interviews with education stakeholders and the review of policy documents showed limited emphasis on seeing professional development as a collaborative endeavour. For example, although the mentioned professional standards for teachers note the need for supporting collaboration between teaching, non-teaching and support staff according to the

needs of the education process, a strong emphasis on collaborative working and learning within and between schools is lacking (Government of the Republic of Moldova, 2018[41]). Also, the professional standards for school leaders emphasise the importance of engagement with the school community and partnerships. However, arguably limited reference is made to them supporting the collaboration between teachers (Government of the Republic of Moldova, 2018[40]). The stakeholder workshop discussions confirmed that the systematic promotion of collaborative working and learning – within and between schools – offers a partially untapped potential for improving teaching and student learning in the Moldovan school system.

Promoting and embedding inquiry-based collaborative pedagogies across the Moldovan school system

There are many potential strategies to strengthen collaborative working and learning at the school level. These may include workshops, structured coaching and mentoring, opportunities for classroom observations and feedback such as through the above-mentioned TEACH, joint lesson planning and team teaching, among others (OECD, 2020[68]). School leaders have a vital role in establishing a collaborative learning culture and for shaping the work and administrative structures to facilitate professional dialogue, collaboration and knowledge exchange, all of which are crucial for promoting organisational learning in schools (Kools and Stoll, 2016[90]).

However, while committed school leaders are key to promoting collaborative working and learning within and between schools, the support of policy makers, administrators and other system leaders (e.g. superintendents, inspectors, other local leaders etc.) is crucial. They should encourage professional development, promote innovations and school-to-school collaboration, and help disseminate good practice (Tournier, Chimier and Jones, 2023[107]). Without government/policy support for collaboration and collective learning, schools will continue to operate in isolation (OECD, 2020[68]; The Education Commission, 2019[108]; OECD, 2019[39]; OECD, 2016[63]). The MoER may therefore look towards the examples of strong performing education systems such as Japan, British Colombia (Canada), New Zealand and Victoria (Australia) that systematically promote collaborative inquiry-based pedagogical approaches.

The Victorian Directorate of Education for example considers professional learning communities (PLC's) a vital means for school improvement as it supports groups of teachers to work collaboratively at the school level to improve student outcomes based on a simple concept: students learn more when their teachers work together. Over a period of four years (starting in 2021), over 800 public schools will receive intensive PLC implementation support that includes a comprehensive programme of professional learning and expert advice from regionally-based teams. These teams are made up of experienced educators that advise, coach and train school and instructional leaders in all aspects of PLC implementation, including budget and resource prioritisation, meeting facilitation, inquiry-based improvement, curriculum and assessment, and data interpretation and analysis.

Several tools have been developed to support teachers and leaders, including a "Professional Learning Communities Maturity Matrix" to support schools in self-assessing and monitoring their progress against seven PLC dimensions: 1) Vision, values, culture; 2) Building PLCs through a culture of collaboration for improvement; 3) Data used to focus and drive collaborative improvement and evaluate impact on learning; 4) Structures and systems to support collaboration for improvement – focus on strategic resource management; 5) Building practice excellence; 6) Curriculum planning and assessment; 7) Empowering students and building school pride (Department of Education Victoria, n.d.[109]).

Furthermore, a range of online modules have been developed to support the implementation of the Victorian PLC approach (Department of Education Victoria, n.d.[110]), as well as a toolkit to help schools evaluate the impact of teaching on student learning growth (Department of Education Victoria, 2019[111]).

In addition, the Leading Professional Learning Communities Programme offers two concurrent streams of professional development, one for school leaders and one for PLC Instructional Leaders. The programme was established to build the capacity and skills of school leaders to improve the learning outcomes for all students through a consistent and disciplined approach to collaborative inquiry (Department of Education Victoria, 2021[112]; OECD, 2023[113]).

Other well-known international examples of collaborative inquiry-based pedagogical approaches to consider are Lesson Study, associated particularly with Japan and Hong Kong-China (Cheng and Lo, n.d.[114]) or the Spirals of Inquiry approach that has been widely applied in schools in British Columbia (Canada), Australia, Wales (United Kingdom) and New Zealand (Kaser and Halbert, 2017[115]; Timperley, Kaser and Halbert, 2014[116]) (see Box 2.3). The OECD/IIEP team for example learned of the interest of some development partners to support the MoER with the implementation of a professional development programme that aims to improve teaching and student learning in STEM (i.e. science, technology, engineering and mathematics). Such a professional development programme may benefit from integrating the Lesson Study approach.

Box 2.3. Inquiry-based collaborative professional development approaches – International examples

Lesson Study

Lesson Study is a pedagogical approach commonly used in Japan's primary schools, particularly in mathematics, that encourages teachers to work together to identify specific teaching issues, spread good practices and update their knowledge. Teachers usually work together to prepare a specific lesson on a topic which students have found challenging, while supporting their reflections with relevant academic literature. The next step involves the selected teacher(s) delivering the collaboratively prepared lesson to students, with other teachers, including at times teachers from neighbouring schools, observing the lesson. The Lesson Study approach has shown to be effective in improving teaching practices over time while strengthening cooperation between teachers and schools. This collaborative approach to working supports the ten-year curriculum cycle in Japan, as it develops collective sense-making, promotes a shared interpretation of the new curriculum, and contributes to building curriculum coherence.

Furthermore, a "Plan – Do – Check – Act" cycle takes place in every school. It respectively consists of organising, implementing, evaluating, and taking action to improve the educational curriculum. At the school level, the way curriculum is taught can evolve based on data concerning students and communities. At the national level, PDCA data concerning teaching the curriculum are gathered before the end of the 10-year revision of the curriculum. Due to the high professionalism of Japanese teachers, this accumulation of evidence on teaching practices, pedagogical pitfalls and success stories feeds into the discussion of the reform of National Curriculum Standards.

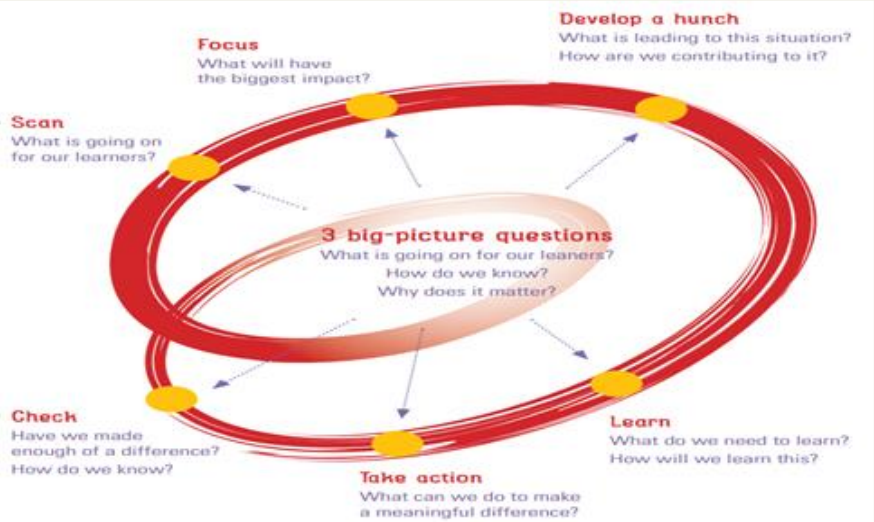
Spirals of Inquiry

The "Spirals of Inquiry" approach is rooted in the knowledge that effective teacher professional learning in high-performing systems is inquiry-based, collaborative, professionally led, connected and coherent, and sustained over time (Jensen et al., 2016[69]). This approach is widely applied in schools in British Colombia (Canada) as well as in other jurisdictions around the globe such as Australia, Wales (United Kingdom) and New Zealand. The Spirals of Inquiry offer a framework for engaging in transformational professional learning while leading change in schools. The approach presents a way of structuring questions, dialogue, enquiry, inquiry and research in sequence while supporting educators to build on strengths and clarify challenges (Timperley, Kaser and Halbert, 2014[116]).

The spiral consists of six steps that a school or cluster of schools go through (see Figure 2.5): i) scanning, ii) focusing, iii) developing a hunch, iv) new professional learning, v) taking action and vi) checking that a big enough difference has been

made. Inquiry teams may begin at any stage providing each one is completed. Learners are at the heart of the approach and at each stage three key questions are asked: What is going on for our learners? How do we know this? How does this matter? Four questions are suggested for students to answer directly at key stages: Can you name two people in this setting who believe you will be a success in life?; What are you learning and why is it important?; How is it going with your learning?; and What are your next steps?

Figure 2.5. The Spiral of Inquiry



Source: OECD (2018[67]), Education Policy in Japan: Building Bridges towards 2030, Reviews of National Policies for Education, http://dx.doi.org/10.1787/9789264302402-en; Kaser and Halbert (2017[115]) The Spiral Playbook: Leading with an inquiring mindset in school systems and schools, Spiral-Playbook.pdf (c21canada.org) (accessed 4 April, 2023); OECD (2017[117]), The OECD Handbook for Innovative Learning Environments, OECD, Publishing, Paris, http://dx.doi.org/9789264277274-en; Timperley, Kaser and Halbert (2014[116]), A framework for transforming learning in schools: Innovation and the spiral of inquiry, Centre for Strategic Education, Seminar Series Paper Vol. 234; Jensen, et al. (2016[69]), Beyond PD: Teacher professional learning in high performing systems. Washington, DC: National Center on Education and the Economy.

Furthermore, the recently established National Institute for Education and Educational Leadership could play a vital role in the systematic promotion of one or more collaborative inquiry-based pedagogical approaches across the Moldovan school system in the years to come through its collaborations with tertiary education institutions.

Consider piloting a school-to-school collaboration model fitting the Moldovan context

Research evidence indicates that collaborative working and professional learning between schools can help enhance their capacities, reduce the isolation of independently functioning schools and ultimately increase the potential for innovating teaching and making sustainable improvements in student learning and well-being (King Smith, Watkins and Han, 2020[103]; Kools and Stoll, 2016[90]; Schleicher, 2021[118]; UNESCO, 2021[104]; Jensen and Farmer, 2013[119]; Boeskens, Nusche and Yurita, 2020[62]). Moldova may look towards international examples of effective school-to-school collaboration models, such as the City Challenge programme in the United Kingdom (in London, Great Manchester and Black County) (Baars et al., 2014[120]; Hutchings et al., 2012[121]) and Shanghai's (PRC) Empowered-Management programme, as a source of inspiration for developing and piloting one or more models of school-to-school collaboration that fit the specific Moldovan context (see Box 2.4).

Box 2.4. Effective models of school-to-school collaborations – Examples from England (United Kingdom) and Shanghai (People's Republic of China)

London City Challenge

London city (England, United Kingdom) undertook a series of reforms between 2002-2011 which aimed to raise standards in its poorest performing government schools. To improve teaching and learning the city used school-to-school collaboration to provide practitioner-led professional development to all London teachers. Schools which were designated as "outstanding" became designated teaching schools and were required to open their doors and share their practice with other teaching professionals in the district. Data played a key role in this initiative. Local authorities gathered and used systematic analysis of school-level performance data to identify teaching hubs. As part of the reforms, traditional "off-site" professional development was replaced with peer-to-peer coaching.

Leaders from highly effective schools were also paired with leaders in underperforming schools. High-performing school leaders then became "Consultant Leaders" tasked with supporting and coaching their peers. School performance data was analysed and used to ensure school leaders were paired with those working in similar school contexts. This ensured they possessed up-to-date professional knowledge, an understanding of the challenges and improvement needs, based on personal recent experience. To help ensure the impact of the practitioner-led interventions, supervisors were in place to provide training and quality assure the work of expert practitioners.

The education reforms the city of London had embarked on proved to be successful, with school-to-school collaboration considered to have played a key factor in this. The impact was particularly noticeable in 119 schools that at the start of the reform (in 2002) were identified as most in need of support, Keys to Success (KTS) schools. Between 2008 and 2011 the increase in the percentage of secondary students reaching the expected level (five A*-C GCSEs including English and mathematics) was higher in KTS schools than the national figure (17.2% compared to 10.1%). In participating schools, the overall number of students reaching the expected level (five A*-C GCSEs including English and mathematics) increased from 43% in 2005 to 61% in 2011. This is higher than the national average increase of 43% in 2005 to 58% in 2011 (Hutchings et al., 2012[121]).

Shanghai's empowered-management programme

Public school students in Shanghai (PRC) are outperforming their fellow students in most OECD Members. Using an innovative partnering approach that matches successful schools with low-performing schools, Shanghai's empowered-management programme aims to improve student achievement in all of its schools by contracting high-performing schools to turn around the academic outcomes of low-performing schools, and with good results as the initiative has markedly improved low-performing schools in Shanghai.

There are five main factors that considered critical to turning around low-performing schools:

- School leadership and strategic planning that raise expectations of students and teachers
- School culture that supports and promotes student learning
- Effective teaching that emphasises professional collaboration
- Measurement and development of student learning and effective learning behaviours
- Strong community relationships that promote student learning.

The empowered-management program contracts high-performing schools to work with low-performing schools—usually for a two-year period. Teachers and school leaders from both schools move between the two schools, thereby building capacity and developing effective practices to turn around the low-performing school.

Capacity constraints are always considered when establishing arrangements between schools. This is a particularly important issue when a high-performing school has multiple arrangements to help several schools. The support school must have the ability to help another school without compromising its own performance. As such, it must have the capacity across key areas such as teacher development and effective pedagogy that improves student learning, as well as in the skills of senior management and advanced teachers. The goal is to ensure that any assistance to another school doesn't reduce the performance of the high-performing school. A partnership between schools, however, is not a zero-sum game. In fact, there have been numerous reports of both schools benefiting from the arrangements. Exchanges between teachers and school principals increase the flow of information and the sharing of ideas and good practices. The effectiveness of school principals, other school leaders, and teachers often improves when they are exposed to different environments, face new challenges, and take on the task of improving learning and teaching in their school system. Similarly, effective teachers and school leaders who are close to retirement have moved to the low-performing school in some agreements, where they have been able to provide vital skills and experience.

Shanghai's empowered-management programme has shown good results as the initiative has markedly improved low-performing schools. The programme builds on existing strengths in the Shanghai school system to help low-performing schools. Rather than applying a top-down approach, it gets schools working with one another. In addition, Shanghai makes substantial investments in effective professional learning, classroom observation and feedback to teachers, professional collaboration, and the development of teachers' research skills to create schools that are learning organisations. These are emphasised in the empowered-management programme and throughout the education system in Shanghai.

Source: McAleavy and Elwick **(2016[122])**, School Improvement in London: a Global Perspective, Education Development Trust, Education Development Trust, https://files.eric.ed.gov/fulltext/ED565743.pdf (accessed on 1 March 2023); Hutchings, M. et al. **(2012[121])**, Evaluation of the City Challenge Programme, Department for Education, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/184093/DFE-RR215.pdf (accessed on 1 March 2023); Jensen and Farmer **(2013[119])**, School Turnaround in Shanghai: The Empowered-Management Program Approach to Improving School Performance, http://files.eric.ed.gov/fulltext/ED561063.pdf (accessed on 16 March 2023).

Furthermore, an important feature to highlight of such school-to-school collaboration models that has been adopted in several education systems is the "matching" and facilitation of peer learning between underperforming schools with strong(er) performing schools. Evidence suggests that this in fact is likely to result in mutual learning (i.e. bi-directional learning) as also the school leaders and teachers of the "strong performing school" learn from working with the "underperforming school" to implement its improvement efforts. However, collaboration alone is not sufficient to enhance student learning outcomes, it should be matched with a focus in improving the quality of teaching (Jensen and Farmer, 2013[119]; Muijs et al., 2011[123]; Jones, 2009[124]; Chapman and Fullan, 2007[125]; Hutchings et al., 2012[121]; Jensen et al., 2016[69]; Boeskens, Nusche and Yurita, 2020[62]). As will be elaborated on below, the proposed further strengthening of the school self-evaluation and improvement planning process could possibly be used to identify and match underperforming and strong(er) performing schools.

The underutilised potential of using digital technologies to support professional development

The quick pace of development of digital technologies raises new challenges for many, if not all professionals, and this is also true for those working in the field of education. One of the legacies of the COVID-19 pandemic is the renewed attention for digital technologies in education internationally (Hall et al., 2022[126]; Schleicher, 2022[127]) – and Moldova is no exception to this. Digital technologies offer an immense potential for transforming and innovating teaching and student learning, as well as for the initial

and continuous professional development of teachers and school leaders (Schleicher, 2022[127]; Minea-Pic, 2020[84]; OECD and Education International, forthcoming[128]; UNESCO, 2023[129]). Teachers can, for example, browse the Internet for relevant information, use open education resources to support their work, participate in MOOCs (Massive Open Online Courses) or engage in online communities to share resources and experiences with other teachers. Digital technologies can also provide new solutions for preparing lessons, assessing student learning or completing administrative tasks more effectively, thereby allowing teachers to save time for their own professional learning (Minea-Pic, 2020[84]). Digital technologies also facilitate the pooling and sharing of knowledge about effective practices and has generated new approaches to certifying and recognising skills (e.g. open badges, micro-credentials) (OECD, 2023[130]).

While in many OECD Members most initial teacher education programmes include some introduction to digital tools for learning, many argue that the use of digital resources in teaching should be mainstreamed in all subjects in initial teacher education programmes. This would allow student teachers to better adapt the use of digital solutions in the learning scenarios they will offer their future students, thereby enhancing familiarity and building experience in such practices (OECD and Education International, forthcoming[128]). The evidence suggests this is also an area for improvement for initial teacher education programmes in Moldova, as well as for many of the continuous professional development courses and trainings in the country. As mentioned earlier, these courses and trainings are primarily offered in fully face-to-face modality, rather than, for example, utilising online or blended learning modalities which could have several benefits in terms of, for example, enhancing learning experiences, cost-effectiveness and increasing access.

In addition to promoting digital technologies in initial teacher education and continuous professional development courses and trainings, many OECD Members have been exploring other solutions to ensure teachers are able to design and use digital resources in and out of the classroom. Several OECD Members and authorities within Members, such as the Flemish Community of Belgium (Belgium), Estonia, Wales (United Kingdom) and New South Wales (Australia) have used digital technologies to support the innovation of teaching and student learning, and promote collaboration and peer learning among teachers and school leaders through dedicated platforms or "hubs" (Minea-Pic, 2020[84]; OECD, 2023[113]; OECD, 2021[131]; Welsh Government, 2023[132]).

The Welsh Government Department of Education (United Kingdom) for example developed the "Hwb", a digital platform that supports educators and students to: access a wide range of digital tools and resources; collaborate and develop their skills; meet the needs of a wide-ranging curriculum; and implement Welsh Government policy. The Hwb platform provides access to a range of centrally funded education tools and services, and trainings or professional development courses and resources (Welsh Government, 2023[132]).

The MoER of Moldova in 2018 also developed a digital learning platform called "Studii" (Studii, n.d.[133]), with the support of the UNDP. The platform has been used widely by teachers and students, particularly during the COVID-19 pandemic. However, the platform is arguably limited in its scope, especially considering the rapid developments in smart digital technologies and opportunities these may offer for innovating teaching and learning, and the professional development of teachers and school leaders, among others. Therefore, responding also to the MoER's desire for leapfrogging it should consider developing a more comprehensive digital platform that includes a set of the latest digital solutions and resources to support teachers and school leaders in their professional development and in innovating their teaching and student learning. As will be elaborated on below, digital solutions and resources to consider may include an online item bank for student assessment, additional interactive quizzes to support students in their learning or the application of Artificial Intelligence and learning analytics in schools.

Furthermore, if the MoER indeed decides to develop such a platform it should consider establishing a mechanism to quality assure the resources that are made available on it to ensure their quality and

effectiveness for supporting teachers' and school leaders' professional development and for improving teaching and student learning. For example, the MoER could establish a small committee of experts (e.g. from schools, teacher education institutions, curriculum experts, etc.) that meets periodically to quality assure selected resources that after approval are uploaded to the platform.

Experiences from OECD Members also show the importance of a careful consideration of the "coding" or "tagging" of resources when uploading these to the platform to allow for easy searching by users (OECD, 2023[134]; OECD, 2023[113]). This tagging could for example be based on the (updated) professional standards for teacher and school leaders, the school performance standards (see below) and the curriculum (e.g. the subjects, grades, topics, etc.).

The interviews with MoER officers and stakeholder workshop discussions showed a keen interest to learn more about the latest digital technologies and the experiences from other countries in developing and implementing these. The learnings from these international experiences could indeed greatly inform Moldova in deciding on its next steps for advancing its desired digitalisation of the education system (Government of the Republic of Moldova, 2023[3]).

We will later return to discussing the opportunities smart digital technologies can offer for innovating teaching and learning, as well as the professional development of teachers and school leaders.

The capacity development of school leaders and other system leaders has received relatively little attention to date

Developing the capacity of school leaders and other system leaders for providing educational leadership and lead data-informed school improvement

Leadership is the essential ingredient that binds all the separate parts of the school organisation together. School leaders provide direction for learning, take responsibility for putting learning at the centre of the school's mission (and keeping it there), and translate vision into strategy so that the organisation's actions are consistent with its vision, goals and values. They are as mentioned earlier responsible for shaping the work and administrative structures to facilitate professional dialogue, collaboration and knowledge exchange, all of which are crucial for promoting educational change and innovation (OECD, 2020[87]; Leithwood and Seashore Louis, 2012[88]; Robinson, Hohepa and Lloyd, 2009[89]; Kools and Stoll, 2016[90]). Over time, countries are likely to reap enormous benefits in terms of school improvement and student performance from developing quality professional-preparation programmes for their school principals (Schleicher, 2015[135]).

The OECD/IIEP team considers that the development of school leaders has received relatively little attention in Moldova to date, in both policy and practice. Although training has been offered to school leaders during the decentralisation process, many have been appointed after these reforms were implemented and have not received such training (World Bank, 2018[22]). Furthermore, although school leaders in Moldova are often highly experienced with many years of teaching experience, the evidence suggests they in many cases struggle to lead school improvement efforts and tend to focus on traditional administrative and management duties (UNICEF, 2019[23]). Therefore, the MoER and supporting partners should consider expanding their investments in developing the capacity of school leaders to ensure they have the educational leadership skills to serve as proactive change agents and develop the structures and conditions for professional dialogue, collaboration and knowledge exchange within and between schools.

These capacity development efforts should not be limited to school leaders, however, but should be expanded to the district Departments of Education whose capacities are reported to vary considerably (World Bank, 2018[22]; Beschieru et al., 2018[20]). A growing body of research shows that subnational

education authorities (i.e. the "meso-level layer" of education systems) can play a transformational role in improving teaching and student learning (Leithwood, 2013[136]; Childress et al., 2020[137]; De Grauwe, A;, 2009[138]; The Education Commission, 2019[108]; King Smith, Watkins and Han, 2020[103]; Tournier, Chimier and Jones, 2023[107]). As will be elaborated on below (see Section 4) the ongoing territorial reform that will result in a consolidation of districts (i.e. Level 2 public authorities) provides a timely opportunity to clarify their roles and responsibilities including for leading data-driven school improvement and providing educational leadership, while safeguarding the quality of the schools in their districts. The proposed clarification of their roles and responsibilities should be supported by investing in the capacity of the districts and their officers.

For this, the MoER may look towards the examples of Austria, Ontario (Canada), Ireland, New South Wales (Australia), the Slovak Republic, The French Speaking Community of Belgium and Spain that have aimed to systematically invest in developing the capacity of current and aspiring school leaders and other system leaders (OECD, 2023[113]) (see Boxes 2.5 and 2.6). The recent establishment of the National Institute for Education and Educational Leadership is a timely development that could play a vital role in advancing the much-needed capacity development of current and aspiring school leaders and other system leaders in Moldova.

Box 2.5. Approaches to school principal preparation in selected OECD Members

New South Wales (Australia)

In 2018, the New South Wales (NSW) Department of Education established the School Leadership Institute (SLI) to provide leadership development and support for current and future school leaders at key points in their career. The Institute strives to provide evidence-informed, future-focused leadership development programs, resources, research and initiatives for middle and senior school leaders and principals as well as support and resources for Directors, Educational Leadership (DELs) (i.e. school principal's line managers) to shape a future that enables all educational leaders to influence and impact positively on the learning of teachers and students in public schools. A selection of programmes and initiatives to support aspiring leaders are outlined below.

- Senior Leadership – Aspiring Principals Leadership Programme (SL-APLP): A 12-month professional learning programme which develops the leadership capabilities of aspiring and current senior school and system leaders. The evidence-based programme consists of nine leadership seminars delivered by international experts and practitioners through a blended model of face-to-face and online learning. Participants analyse their current practice, develop new understandings and reflect on the impact of their leadership actions by leading an inquiry in their context.
- Growing Great Leaders (GGL): A school leadership programme for first-time principals delivered by the SLI in partnership with the University of Auckland. GGL aims to develop student-centred leadership by embedding evidence-informed theory into practice. Consisting of six modules the programme aims to enhance participants' leadership capabilities by applying relevant knowledge, solving complex problems, and building relational trust.
- Principal, deputy principal and middle leader induction conferences: A range of bespoke online conferences for newly appointed, first-time and long-term senior school leaders. Facilitated annually by experienced principals and deputy principals (for middle leaders), each event seeks to grow participants' leadership capabilities, understanding of their role, and develop sustainable support networks for all.

The Slovak Republic

School principals in the Slovak Republic are required to complete "functional training", which is an officially approved professional development course in specific management competencies. Functional training courses are offered by the central Methodology and Pedagogy Centre (Metodicko-pedagogické centrum, MPC), universities and other providers. The basic training modules need to be completed prior to appointment; the extended modules within five years of appointment.

The full functional training (basic and extended modules) comprises 320 hours of training. It covers a range of issues, from school legislation and finance, pedagogical management (preparing the school education programme and working with the curriculum) and human resource management (the school as the employer), to conceptual management (responsibility for the school development plan and strategic issues).

The French Speaking Community of Belgium

Since 2007, school principals in the French Speaking Community of Belgium are required to complete a training and a mandatory entry phase (stage) for appointment. Since September 2019, the duration of training has increased from 120 hours to 180 hours, while the entry phase has increased from two to three years as part of the French Community's Pact for Excellence in Teaching (Pacte pour un enseignement d'excellence). Following successful evaluations during the entry phase, the candidate is appointed to principalship. Training covers pedagogical, educational, administrative, financial and relational aspects and should provide principals with a portfolio of knowledge and skills. Since education in the French Community is organised in educational networks (public, government-aided public and government-aided private), half of the training is organised jointly for all networks, the other half for each specific network. Since September 2019, the inter-network part comprises two axes: administration and steering (itself composed of a module on "educational vision and management" and a module on "the development of relational, interpersonal and group skills and aptitudes and the construction of professional identity"). The network-specific part addresses issues specific to the network, in terms of its educational and pedagogical or educational and artistic project, its specific legal and administrative provisions as well as material and financial management. The network-specific part moreover includes time for coaching and induction (30 hours) to support the principal in different areas: for example, teamwork, time management, priority setting or the application of laws and regulations. Coaching and induction are provided by trainers without any hierarchical relationship during the three-year entry phase; may include exchanges with other school principals and a self-assessment to highlight strengths and areas for improvement.

Spain

Before they are appointed as school principals in Spain, candidates have to pass a training course on the development of leadership of a duration of 120 hours. Training, which is organised by the state and central education authorities, includes a theoretical and a practical part. It has a modular structure of a varying length, according to the content, and covers at a minimum the following areas: i) regulatory framework for educational institutions, ii) organisation and management of educational institutions, iii) management of school resources, iv) key factors for effective leadership, v) accountability and educational quality and vi) project management.

Source: NSW Government, (2022[139]), School Leadership Institute. https://education.nsw.gov.au/teaching-and-learning/school-leadership-institute/about-the-sli#Vision0 (accessed September 22, 2022); Santiago et al. (2016[79]), OECD Reviews of School Resources: Slovak Republic 2015, OECD Publishing, Paris, https://doi.org/10.1787/9789264247567-en; Eurydice (n.d.[140]), Database of National Education Systems, https://eacea.ec.europa.eu/nationalpolicies/eurydice/national-description_en (accessed on 09 September 2023).

Box 2.6. Developing educational leadership among school leaders and teachers – An example from Ireland

In 2008, Ireland's education system underwent a period of extensive systemic change, specifically in relation to the school curriculum and teacher training. In response to these issues, the Education and Training Board of Ireland (ETBI) developed a programme of professional learning for all practising post-primary teachers and school leaders, known as the Instructional Leadership Programme (ILP). This evidence-based programme recognises every teacher as a leader, while striving to develop teachers' professional attitudes, professional dialogue, and classroom practice. Furthermore, the ILP aims to support teachers and school leaders by promoting and supporting collaborative practice within and between schools.

Each year, a cohort of approximately 150 teachers and school leaders from a range of post-primary schools across the country are invited to begin the ILP training. Implemented over a two-year period, a team of three (including the principal or deputy principal) must attend from each participating school. Participants are required to attend four in-person workshops, each lasting for 2.5 days. Workshops are designed to provide opportunities to model and practice active learning, and to engage in individual and collaborative reflection. The two-year duration offers participants an extended period to implement and refine learning, with access to extensive supports and resources also provided. ILP graduates also facilitate workshops for teachers in their own schools and local areas. This supports the dissemination of learning and the development of a shared vision and ownership of ILP, adapted to each school context. Additional, complementary programmes and resources have been developed in recent years, including an annual ILP national conference.

The ILP also aims to empower teacher leaders and contribute to career progression and the preparation for middle and senior leadership positions. In Ireland, middle leadership positions, or Assistant Principal posts, provide opportunities for teachers to take on additional leadership and management responsibilities in return for added renumeration. Posts are assigned via competency-based interviews at local school level. In 2023 the ILP entered its fifteenth year and continues to support teachers on their professional development journeys. The programme is currently available to primary schools on a small scale with expansion planned in the coming years.

Source: Education and Training Boards Ireland (2023[141]), Instructional Leadership Programme, https://www.instructionalleadership.ie/ (accessed on 25 January 2023); Government of Ireland (n.d.[142]), Posts of responsibility in schools, https://www.gov.ie/en/service/95250f-posts-of-responsibility/ (accessed on 21 April 2023).

Consider updating the professional standards for school leaders

The earlier mentioned professional standards for school leaders to some extent already promote the proposed shift towards a greater emphasis on educational leadership and data-driven improvement. The standards are important as they can direct school leaders to focus on tasks that develop teacher quality and improve student outcomes rather than administrative duties (Centre of Study for Policies and Practices in Education (CEPPE), Chile, 2013[143]; Pont, Nusche and Moorman, 2008[144]). In this way, the professional standards can bring the much-needed clarity to the role of an educational leader. Importantly, the standards can also serve as an important reference framework for ensuring the quality and relevance of education programmes for newly appointed school leaders. Similarly, they provide an important point of reference for the development of continuous professional development courses and other resources (that are to be developed) for those school leaders that have been longer in the profession and that are committed to continue their professional development and growth.

However, as is the case for the professional standards for teachers, the standards for school leaders in Moldova can be considered minimum standards that arguably give little guidance for professional

development and growth. This is important also in light of the MoER's aim for strengthening the managerial capacity at all levels of the system and moving away from a culture geared towards administrative compliance to one that is focused on a culture of quality (improvement) (Government of the Republic of Moldova, 2022[18]).

Therefore, the MoER and ANACEC should consider updating the professional standards for school leaders to show different competency levels. These competency levels could provide useful guidance to school leaders in their self-evaluations, as well as their appraisers, to help them in their reflections and in determining where the school leaders are in terms of their professional performance and offer further guidance for professional development and growth (i.e. scaffolding). In addition, the competency levels could be used to inform the competencies to be developed in professional development courses and programmes (see Boxes 2.5 and 2.6).

The need to work towards more systematic and data-informed school improvement

Research evidence shows that major improvements can be achieved when schools and school systems increase their collective capacity to engage in ongoing assessment for learning, and regularly evaluate, amend and update their theories of action about how their interventions are intended to work, and whether they actually do (OECD, 2021[145]; OECD, 2022[146]; OECD, 2020[147]; OECD, 2019[39]). Research as mentioned earlier also suggests the vital contribution school self-evaluation and improvement planning can make towards improving the quality of education and student performance (McNamara et al., 2021[51]; Ehren et al., 2013[52]; Hofman, Dijkstra and Hofman, 2009[53]; OECD, 2013[48]).

As highlighted in Section 1, Moldova has developed a common framework of school performance standards to be used for both school self-evaluation and external evaluation, of which the latter is undertaken by ANACEC. The school self-evaluation against the school performance standards is to be undertaken annually and used to inform the school's five-year school improvement plan. Standards-based (paper-based) tools for self-evaluation are provided by ANACEC, but schools are free to use other evaluation tools in addition to these (UNICEF, 2019[23]). The school self-evaluation report serves as a key input for the external evaluation process that is to take place once every five years. The school is to indicate its annual self-evaluation scores on each standard and underlying indicators for the past four years. This is later compared to the scores gathered during the visit of the external evaluation committee that is formed with ANACEC staff and external evaluators. Following the external evaluation, a report is drafted with a list of strengths, areas for improvement and recommendations. Schools that receive an unsatisfactory rating are to be monitored by the district Department of Education and re-evaluated by ANACEC the following year (UNICEF, 2019[23]; UNICEF, 2019[21]).

The findings from this review corroborated earlier findings that suggested school self-evaluations are not well-embedded across the Moldovan school system, as is there scope for working towards more systematic and data-informed school improvement (UNICEF, 2019[23]; World Bank, 2018[22]). To start with, there appears to be an inconsistent understanding of the school performance standards and evaluation methodology among many of Moldova's school leaders. A recent UNICEF study (2019[23]) found that when asked about the school performance standards, they sometimes referred to the Education Code, standards and criteria provided by the district Departments of Education, or reported they did not know of any such standards.

According to the UNICEF study, school self-evaluation (as intended) generally informed schools in the development of their five-year school improvement plans, with some schools reporting considering teacher, parent and student views in the development of their school improvement plans – which is a clear strength and good practice to build on and spread across other schools. Separate yearly academic plans were often developed by schools' deputy leaders, who act as academic heads in many schools. However, the goals

set by schools in their school improvement plans and academic plans were often phrased as inputs or outputs (e.g. book purchases, introduction of new subjects, number of hours of professional development), rather than in terms of the outcomes the school wanted to achieve. Part of the challenge seemed to lie in that fact that school leaders had not been trained in the use of the standards for conducting effective school self-evaluations, as did many lack the needed data analysis skills. In addition, the attitude of many school leaders toward school self-evaluation seemed to be focused on compliance with regulations, rather than using the opportunity to collect and reflect on the available data and information to make informed decisions about improvement actions and outcomes that are to be achieved (UNICEF, 2019[23]). The Education Development Strategy 2030 also noted this prevailing management model and organisational culture that is geared towards bureaucratic compliance rather than geared towards a culture of quality (improvement) as a particular challenge for the Moldovan education system – at all levels of the system (Government of the Republic of Moldova, 2023[3]). The OECD/IIEP team's interviews with education stakeholders pointed to the conclusion that this situation is unlikely to have changed significantly in recent years, among others due to the COVID-19 pandemic and the limited investment in the capacity development of school leaders and/or awareness raising on the use of the standards for conducting effective school self-evaluations.

Furthermore, several strong performing education systems such as England (United Kingdom), Ireland, the Netherlands and Singapore use external school evaluations to identify underperforming schools for targeting of additional resources to support schools in their improvements (Van Twist et al., 2013[148]; OECD, 2023[113]; Schleicher, 2018[149]; OECD, 2013[48]). Such processes are underdeveloped in the Moldova school system, however. Although district Departments of Education are intended to monitor and support those schools that have received an "unsatisfactory" rating in their external evaluation by ANACEC, it is not known to what extent they receive support in actioning on the proposed recommendations. The findings from the stakeholder interviews corroborated earlier findings of studies that showed districts vary in their capacity to effectively take on this task (World Bank, 2018[22]; Beschieru et al., 2018[20]). The ongoing territorial reform that is to result in the consolidation of districts provides an opportunity for clarifying their roles and responsibilities and strengthening their capacities for monitoring and targeting of additional resources to support school improvement, as will be elaborated on below.

Building on its strengths the MoER and ANACEC should consider the following measures for strengthening school self-evaluations and improvement planning, and external evaluations: First, the MoER and ANACEC should consider further updating the school performance standards. In many OECD Members such school performance standards that are used for school evaluations are often presented in an analytical framework comprising context, input, process and outcomes or results. Most OECD Members focus on a mixture of processes and outcomes (OECD, 2018[54]; OECD, 2013[48]). In Moldova the current school performance standards however are primarily focused on "inputs". This may have contributed to the fact that the goals of school improvement plans (and academic plans) have often been phrased as inputs or outputs. Therefore, consideration should be given to updating and expanding the standards with "process" and "outcome" standards. For this, it may look towards international examples of school quality frameworks such as the *OK Quality Framework* (Flemish Ministry of Education and Training, 2018[150]) of the Flemish Community of Belgium (Belgium), Scotland's (United Kingdom) quality framework *How Good is Our School?* (Education Scotland, 2015[151]), or New South Wales' (Australia) *School Excellence Framework* (NSW Government, 2017[152]).

Building on its strengths, Moldova is well-positioned to incorporate outcome standards in the school performance standards. It has several standardised student assessments in place to draw from i.e. the primary school assessment in Grade 4, the gymnasium examination in Grade 9 and the baccalaureate examination in Grade 12 (see Section 1). The use of these student assessment data in one or more

standards could help focus attention to improving teaching and student learning, while enhancing accountability.

It is recommended that such a measure is supported by regular monitoring to learn whether it is indeed supporting schools in strengthening their self-evaluations and improvement planning, as would it be important to monitor for potential unintended consequences, such as an excessive focus on teaching students the specific skills that are tested or narrowing of the curriculum. The timely identification of such potential unintended consequences would, for example, allow for making possible further adjustments to the standards and/or the school evaluation methodology.

Second, the discussions with representatives of the MoER and ANACEC revealed their interest for developing standard descriptors at different levels. The current standards are made up of underlying indicators that have several descriptors of desired practice. The evidence from this review corroborated earlier findings that suggested many school leaders struggle to define improvement actions to work towards achieving the desired practices captured in the descriptors (i.e. "the how") (UNICEF, 2019[23]). For example, descriptor 3.1.1. "Creating learning situations that stimulate training and skill development" or descriptor 3.5.2 "Ensuring the individualised and differentiated use of assessment and self-assessment strategies, starting from the individual and age characteristics of the children/students" may be challenging for some schools to realise considering their level of development, while other schools may have already achieved these standards or be close to achieving these.

Those schools that are far removed from achieving these standards could arguably benefit from further guidance on intermediate steps or actions to take to work towards realising these descriptors. Developing the standard descriptors at different levels could provide schools with this additional guidance and support to help them in their reflections in deciding where they are on their "improvement journeys" and on what next actions to take (i.e. scaffolding).

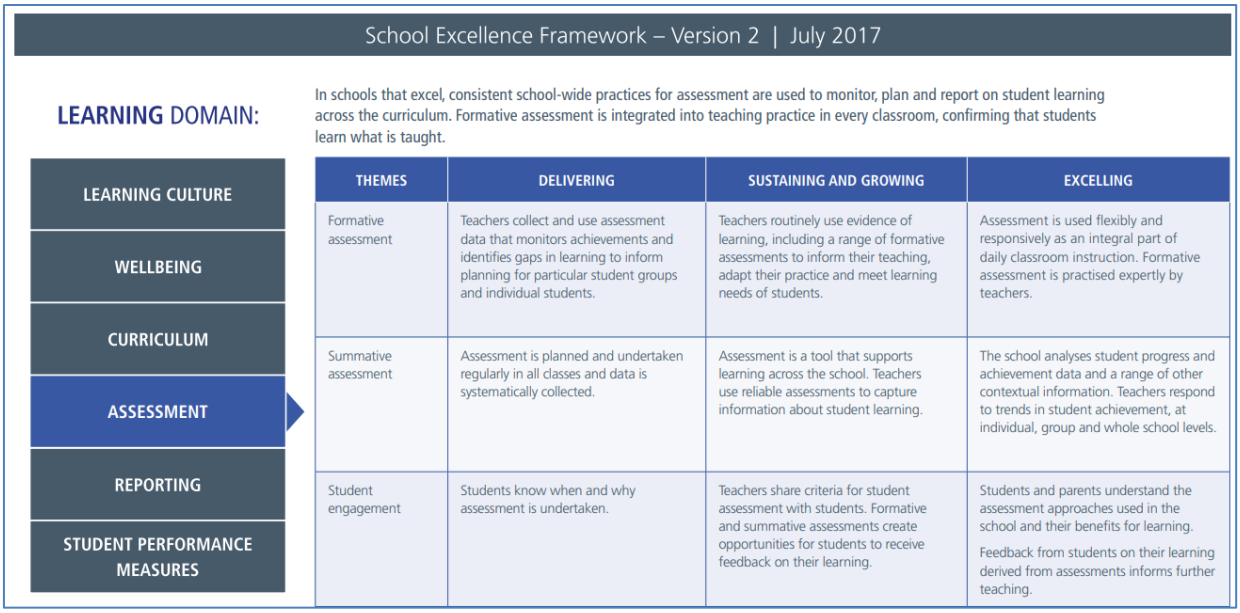
Furthermore, the interest for developing descriptors at different levels also partially responds to the objective set by the MoER for the establishment of a culture of quality improvement across Moldova's school system (Government of the Republic of Moldova, 2023[3]). Although several of the standard descriptors may be considered (rightfully) challenging and ambitious to achieve, some stakeholders the OECD/IIEP team interviewed noted that the current standards – which can be considered minimum standards – may insufficiently motivate schools to strive for further improvement.

Therefore, responding to the interest of the MoER and ANACEC for developing standard descriptors at different levels, they may look towards the example of New South Wales' (Australia) School Excellence Framework (see Figure 2.6). For each of the standards there are descriptors for three progressive performance levels – "Delivering", "Sustaining and growing" and "Excelling". The adoption of such an approach has provided school leaders, teachers and other participants to the school self-evaluation and improvement planning process with the necessary guidance for identifying their performance against specific standards and for deciding on actions for further development (OECD, 2023[113]).

Third, the discussions with ANACEC officers also revealed a keen interest to further innovate the school self-evaluation and improvement planning process using digital technologies – in line with the directions set out in the Education Development Strategy 2030 (Government of the Republic of Moldova, 2023[3]). The suggestion of the OECD/IIEP team for developing and piloting the use of a digital school self-evaluation and improvement planning tool as used, for example, by education systems such as Estonia, Romania and New South Wales (Australia) was well-received. For example, in Romania, starting from the school year 2014/15, schools must upload their annual self- evaluation reports on a centralised electronic platform (European Commission/EACEA/Eurydice, 2015[153]). A similar platform is used in New South Wales where all public schools use the School Planning and Reporting Online (SPaRO) software platform for their self-evaluation and the development of their four-year Strategic Improvement Plan, for the

implementation and progress monitoring, annual reporting and in support of the external evaluation (i.e. validation) process (NSW Government, 2023[154]). The development of such a digital school self-evaluation and improvement planning tool could allow for the further streamlining of the school self-evaluation and improvement planning process and reduce some school leaders' perception of this task being seen as an administrative burden (UNICEF, 2019[23]). One key means for ensuring this is to involve the "end-users" e.g., school leaders, teachers and district education officers in the development process. Their involvement would help ensure the quality and relevance of the self-evaluation and improvement planning tool and process, thereby enhancing the changes of its actual implementation in schools across the country (OECD and Education International, forthcoming[128]; OECD, 2020[147]).

Figure 2.6. Snapshot of New South Wales' (Australia) School Excellence Framework



School Excellence Framework – Version 2 | July 2017

LEARNING DOMAIN:

In schools that excel, consistent school-wide practices for assessment are used to monitor, plan and report on student learning across the curriculum. Formative assessment is integrated into teaching practice in every classroom, confirming that students learn what is taught.

- LEARNING CULTURE
- WELLBEING
- CURRICULUM
- ASSESSMENT
- REPORTING
- STUDENT PERFORMANCE MEASURES

THEMES	DELIVERING	SUSTAINING AND GROWING	EXCELLING
Formative assessment	Teachers collect and use assessment data that monitors achievements and identifies gaps in learning to inform planning for particular student groups and individual students.	Teachers routinely use evidence of learning, including a range of formative assessments to inform their teaching, adapt their practice and meet learning needs of students.	Assessment is used flexibly and responsively as an integral part of daily classroom instruction. Formative assessment is practised expertly by teachers.
Summative assessment	Assessment is planned and undertaken regularly in all classes and data is systematically collected.	Assessment is a tool that supports learning across the school. Teachers use reliable assessments to capture information about student learning.	The school analyses student progress and achievement data and a range of other contextual information. Teachers respond to trends in student achievement, at individual, group and whole school levels.
Student engagement	Students know when and why assessment is undertaken.	Teachers share criteria for student assessment with students. Formative and summative assessments create opportunities for students to receive feedback on their learning.	Students and parents understand the assessment approaches used in the school and their benefits for learning. Feedback from students on their learning derived from assessments informs further teaching.

Source: NSW Government (2017[152]), Schools Excellence Framework. NSW Government, Sydney.

Fourth, another option to possibly consider is to link this digital tool to the MoER education management information System (EMIS) to allow for easy sharing of – a selection of – the self-evaluation data with district Departments of Education to support them in their capacity for monitoring progress and targeting of support to schools to help them in their improvement efforts. In several OECD Members and EU Member States the local authorities that have responsibilities for managing schools are users of self-evaluation findings. For example, in Finland, where local authorities as education providers have a legal duty to evaluate the education they provide, the findings of school self-evaluations are used to support educational development and improve conditions of learning. Another example is provided by Portugal where local authorities (i.e. municipalities) use self-evaluation outcomes to inform decisions on the allocation of means that will help schools improve their provision. In some countries, for example, Greece, Latvia, Slovakia, Iceland, and the Republic of North Macedonia, schools also have to publish their school self-evaluation results on their website (European Commission/EACEA/Eurydice, 2015[153]; OECD, 2019[101]).

However, as was also noted by some education stakeholders, it is vital that such possible measures do not unintentionally undermine the formative function of the school self-evaluation and improvement planning process. This should provide schools with an opportunity to, in a trusting and open atmosphere,

critically reflect on what is working well, and what not, and allow for being honest about and learning from both successes and mistakes, without fear of any sort of punishment. To ensure that such deep and open reflections are embedded in Moldova's school self-evaluation and improvement planning process, it would be advisable to decide on what self-evaluation data and information is vital for sharing, and what not. Furthermore, it is not advisable to make these school self-evaluation data publicly available as this may (still) risk unintended consequences, such as schools not being honest and/or even hiding their weaknesses.

Elaborating on the above and earlier suggestions for clarifying the roles and responsibilities of districts, including towards the provision of educational leadership and facilitating data-informed school improvements, their officers could use the shared school self-evaluation data and improvement plans for:

1) Identifying strong performing schools and "good practices" that could be used for the proposed "matching" of schools for school-to-school collaborations (see above). In addition, the good practices could be captured in for example case studies or videos to inspire and support other schools in their improvement efforts.

2) Identifying underperforming schools and providing them with tailored support to assist them in their school improvement efforts. Those schools that are most in need of support should be prioritised and receive more substantial support.

The school self-evaluation data, together with other possible data, available in EMIS and the school improvement plan, could provide initial guidance for prioritisation of school visits by the (to be consolidated) district Departments of Education. The following professional dialogue between the district education officers and the school leadership team could be used to discuss and agree on the additional support actions. The support could for example consist of the proposed matching of the school with a strong(er) performing school, i.e. school-to-school collaboration; mentoring support provided by the National Institute for Education and Educational Leadership; or the organisation of trainings. In case of the latter, ideally such trainings are organised not for a single school, but for a group of schools to promote peer learning and collaboration and get most value for money.

Although the MoER's EMIS system could be considered rich in data and overall a clear strength to build on, the presentation by the MoER of the EMIS to the OECD/IIEP team and discussions with several education stakeholders revealed a possible opportunity for further strengthening the system. The Geographic Information System[3] (GIS) map function in the EMIS could potentially be enhanced to support the monitoring and identification and matching of underperforming with strong performing schools (see Figure 2.7) – as a whole but also on the basis of specific process or outcome standards (e.g., the effective use of formative assessments or student performance in mathematics).

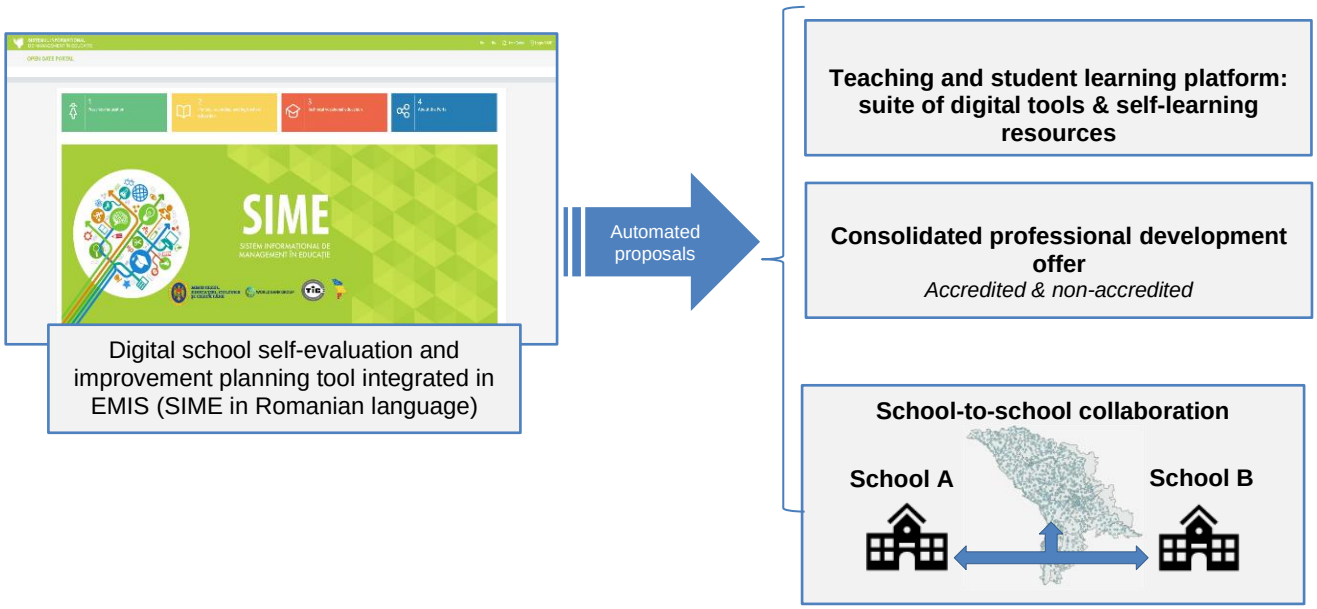
Fifth, responding to MoER's desire for leapfrogging – and by drawing from similar recent discussions of the OECD with education stakeholders in New South Wales (Australia) for innovating the school self-evaluation and improvement planning process and the provision of targeted school improvement support (OECD, 2023[113]), the MoER could consider linking the proposed digital school self-evaluation and improvement planning tool with the proposed comprehensive digital teaching and learning platform for teachers and school leaders (see Figure 2.7). Such a linkage could allow for automated presentation of relevant self-learning resources and materials that respond to identified school improvement priorities. This may help school leaders and teachers in the identification of resources that are of particular interest to them and the development of the schools (e.g. examples of good lesson plans, teaching and assessment

[3] A Geographic Information System (GIS) is a computer system used to capture, store, process, analyse and visualise spatial information and data (i.e. relative to geographic location) (UNESCO, n.d.[203]).

materials for specific subjects or topics, etc.), while importantly also saving valuable time in searching for such resources. This suggestion was supported by participants to the stakeholder workshop who were quick to recognise the potential of such an automated function in supporting the improvement efforts of school leaders and teachers by presenting them with directly relevant teaching and student learning resources to consider. That said, additional support may be needed to ensure the effective use of these resources, as there may be a need for further continuous professional development and the provision of targeted support may be needed to help schools in their improvement efforts.

Therefore, the MoER could work with tertiary education institutions to compile an up-to-date online offer of professional development programmes and courses. Again, the possible linking of the proposed digital school self-evaluation and improvement planning tool with an up-to-date professional development offer could greatly support school improvement efforts – and making participation in professional development more needs-based (see above).

Figure 2.7. Visualisation of school self-evaluation and planning generating automated proposals for self-learning resources, professional development courses and schools for collaboration



Source: Adapted from information provided by the Ministry of Education and Research, Government of the Republic of Moldova.

Sixth, the above proposed updates to the school self-evaluation and improvement planning process, and the proposal for systematic targeting of support should be matched with capacity development of all involved. The MoER and ANACEC should invest in developing schools' capacity for participatory school self-evaluations and improvement planning, involving school leaders, teachers and selected students, parents and community members. Capacity development efforts could include developing user-friendly school self-evaluation and improvement planning guidelines and other resources such as video tutorials to support school leaders, teachers and others in school self-evaluation and improvement planning, and the actual implementation of actions.

In addition, Moldova and supporting partners could consider developing a capacity development course that is targeted at all school leaders in the country, and other selected school staff, to provide them with the knowledge and skills for school self-evaluation and improvement planning. The recently established National Institute for Education and Educational Leadership could potentially play a vital role in the development and delivery of this course.

Lastly, at present external school evaluations are to be conducted once every five years by ANACEC, but may also be initiated based on the request of the school, district Department of Education or the MoER. Recognising also the limitations to ANACEC's capacity to fulfil this responsibility (World Bank, 2018[22]), it should consider piloting a risk-based analysis approach to assess the risk of an individual school underperforming that are then prioritised for external evaluations, as is done in countries such as Bulgaria and the Netherlands (OECD, 2023[113]; Guthrie et al., 2022[155]). In Bulgaria, for example, a risk assessment considers a school's State Matriculation examination results, the number of graduates and context (e.g. the socio-economic status of the region or municipality) to help prioritise low-performing schools for inspections. Moldova should consider adopting a similar approach, for example, on the basis of student assessment data, results of previous external evaluations and possible other data available in EMIS. If a school is deemed at risk, the school may be prioritised for external evaluation within the five-year external evaluation cycle. It could thereby benefit from the much-needed additional guidance on improvements and recommendations provided by ANACEC, and the support provided by the district Departments of Education.

Recommendations

- Building on Moldova's strengths, the **MoER and education stakeholders should consider reconceptualising and strengthening the professional development of teachers and school leaders.** This should entail complementing the emphasis placed on course-based professional development with a strong focus on:
  - **Promoting collaborative learning within schools.**
  - **Systematically promoting collaboration and peer learning between schools.**
  - **Digital/online and/or blended professional development,** including promotion of self-learning and collaborative learning.
  - The recognition of the **pivotal role of school leaders and other system leaders** in school improvement and innovation in education.
- The MoER should ensure participation in **professional development is based on identified needs.** This could be informed by:
  - **The systematic in-depth analysis of the national and international student assessment data to identify students' strengths and areas for further improvement,** i.e. the knowledge and competencies they master and need further support on – and thereby their teachers.

    For this, **the MoER should consider making sustained investments in strengthening the National Agency for Curriculum and Evaluation's capacity to undertake such analysis and disseminate these results** so these can inform the professional development offer, the

development of additional teaching and learning resources, and future curriculum reviews, among others.

- **Using surveys and other research to support the identification of teachers' and school leaders' professional development needs** at regular intervals.
- **Using regular feedback and appraisals to identify professional development needs.** For this, Moldova would benefit from further strengthening and investing in the implementation of its teacher and school leader appraisal system by:
  - **Revisiting the direct link between the teacher accreditation process and participation in professional development.** Professional development is to serve the purpose of updating, developing and broadening teachers' competencies and should be based on their aspirations, identified needs and the specific school context, and ideally result in improvements in teaching and student learning. This is less likely to happen if teachers' motivation to engage in professional development is focused on achieving a higher teaching level as is currently the case for many teachers in Moldova.
  - **Promoting the use of classroom observations to feed into the evidence base for teacher appraisal – together with other sources of evidence** which would seem vital to safeguard the developmental function of classroom observations and avoid these being perceived as "high stakes".
    - **Classroom observations, using TEACH, could be used for identifying teachers' strengths and professional learning needs.**
    - **The piloting of a digital version of TEACH** could allow for i) the instant generation of an automated feedback report for teachers and schools to use, and ii) for aggregating these data at national and subnational levels to inform the professional development offer organised at different levels of the system and for informing the development of (digital) teaching and learning resources that respond to identified needs.
  - **Ensuring teachers and school leaders are aware of and understand the use of professional standards for supporting their professional development and growth.** This "sense making" of standards by teachers and school leaders is essential to transform their practice. Extensive socialisation of standards can be done at several stages of teachers' and school leaders' careers:
    - During initial teacher education courses so that beginning teachers already have a clear understanding of what is expected from them.
    - In induction and mentoring programmes to ease the transition between initial education and school-level practice.
    - During continuous professional development: teachers and school leaders must receive training on the use of standards and their implications for their professional development and classroom practice.
  - To help ensure consistency and coherence in the implementation of teacher and school leader appraisals in schools across the country, **Moldova should invest in the continuous professional development of teacher- and school leader appraisers**. This continuous professional development could for example be given shape through a specific

training course, the development of user-friendly guidelines, online tutorials and possible other resources.

- Considering also the limited experience and capacity in the Moldovan school system to undertake effective self-evaluations and appraisals, the MoER and ANACEC should consider **further updating of the professional standards for teachers and school leaders**. The professional standards in their current form could be considered minimum standards that arguably give little guidance for further professional development and growth. Moldova may look towards the examples of countries such as Australia, Estonia and the Republic of North Macedonia where standards reflect different performance or competency levels.
- In addition, **the school self-evaluation and improvement planning process, and external evaluations should be used to identifying strengths and areas for improvement, including teachers' and school leaders' professional development needs that in turn respond to students' learning needs.**

- **The MoER should systematically promote collaborative working and learning within and between schools.**
  - **The MoER should consider promoting and embedding inquiry-based collaborative pedagogies across the Moldovan school system**. For this Moldova may look towards the examples of Japan, British Columbia (Canada), New Zealand and Victoria (Australia). The recently established National Institute for Education and Educational Leadership could play a vital role in the systematic promotion of one or more collaborative inquiry-based pedagogical approaches across the Moldovan school system in the years to come through its collaborations with tertiary education institutions.
  - **The MoER should consider piloting a school-to-school collaboration model that fits the Moldovan context.** Moldova may look towards the examples of the United Kingdom and Shanghai (PRC) for developing its own model for school-to-school collaboration.
- In line with the directions set out by the Education Development Strategy 2030, **the MoER should consider developing a comprehensive teaching and learning platform that includes a set of the latest digital solutions and resources to support teachers and school leaders in their professional development and in improving teaching and student learning.** For this MoER should:
  - **Consider establishing a mechanism to quality assure these resources** to ensure their quality and effectiveness for supporting teachers' and school leaders' professional development and for improving teaching and student learning.
  - **"Code" or "tag" the resources when uploading these to the platform to allow for easy searching by users.** This tagging could for example be based on the (to be updated) professional standards for teachers and school leaders, the school performance standards, and the curriculum (e.g. the subjects, grades, topics, etc).
- The MoER and supporting partners should **continue and expand efforts to invest in capacity development of school leaders and other system leaders for providing educational leadership and leading data-informed school improvement.** School leaders are to serve as proactive change agents and develop the structures and conditions for professional dialogue, collaboration and knowledge exchange within and between schools. For this Moldova may look towards the examples of Ireland, New South Wales (Australia) and Ontario (Canada).

The National Institute for Education and Educational Leadership could play a vital role in advancing the much-needed capacity development of school leaders and other system leaders in Moldova.

- As mentioned above, the **professional standards for school leaders may benefit from updating to show different competency levels** to provide further guidance for professional development and growth.
- Building on the opportunity provided by the planned consolidation of districts (i.e. Level 2 public authorities), **clarify their roles and responsibilities, including for leading data-driven school improvement and providing educational leadership, while safeguarding the quality of the schools in their districts.** The proposed clarification of their roles and responsibilities should be supported by investing in the capacity of the districts and their officers.

- **Further strengthen the processes of school self-evaluation and improvement planning, and external evaluation.** Building on its strengths, Moldova should consider the following measures:
  - First, **the MoER and ANACEC should consider further updating the school performance standards with "process" and "outcome" standards.** For this it may look towards international examples of school quality frameworks of the Flemish Community of Belgium (Belgium), Scotland (United Kingdom) and New South Wales (Australia).

    Building on its strengths, Moldova is well-positioned to **incorporate outcome standards in the school performance standards and consider drawing from its standardised primary school assessment, gymnasium- and baccalaureate exams for these data.** The use of these student assessment data in one or more standards could help focus attention to improving teaching and student learning.
  - Second, **the MoER and ANACEC should consider developing standard descriptors at different levels.** The adoption of such an approach could provide school leaders, teachers and other participants to the school self-evaluation and improvement planning process with the necessary guidance for identifying their performance against specific standards and for deciding on actions for further development. The New South Wales' (Australia) School Excellence Framework may serve as useful example for inspiration.
  - Third, **the MoER and ANACEC should consider developing and piloting the use of a digital school self-evaluation and improvement planning tool.** Such a measure could allow for the further streamlining of the school self-evaluation and improvement planning process and reduce some school leaders' perception of this task causing administrative burden. One key means for ensuring this is to involve the "end-users" (e.g. school leaders, teachers and district education officers) in the development process.
  - Fourth, **an option to consider is to link this digital tool to the MoER education management information System (EMIS) to allow for easy sharing of – a selection of – the self-evaluation data with district Departments of Education to support them in their capacity for monitoring progress and targeting of support to schools to help them in their improvement efforts**. To safeguard the formative function of the school self-evaluation and improvement planning process it would be advisable to decide on what self-evaluation data and information is vital for sharing, and what not. In addition, the self-evaluation data should not be made publicly available as this may risk unintended consequences such as schools wanting to hide their weakness and areas for improvement.

Districts could use the shared school self-evaluation data and improvement plans for:

- **Identifying strong performing schools and "good practices" that could be used for "matching" of schools for school-to-school collaborations.** In addition, the good practices could be captured in for example case studies or videos to inspire and support other schools in their improvement efforts.
- **Identifying underperforming schools and provide them with targeted support** to assist them in their school improvement efforts. Those schools that are most in need of support should be prioritised and receive more substantial support.

- Fifth, responding to MoER's desire for leapfrogging, **the MoER could consider linking the proposed digital school self-evaluation and improvement planning tool with the proposed digital teaching and learning platform for teachers and school leaders to allow for automatic presentation of relevant self-learning resources and materials that respond to identified school improvement priorities**. This may save valuable time in searching for such resources. That said, further support may be needed to ensure the effectively use of these resources, however.

  Similarly, the **linking of the proposed digital tool with an up-to-date professional development offer could potentially greatly support schools in their improvement efforts – and making participation in professional development more needs-based.**

- Sixth, the above proposed measures for strengthening the school self-evaluation and improvement planning process, and systematic targeting of support should be matched with capacity development of all involved. **The MoER and ANACEC should invest in developing schools' capacity for participatory school self-evaluations and improvement planning, involving school staff and selected students, parents and community members.** This could include:

  - **Developing user-friendly school self-evaluation and improvement planning guidelines and other resources such as video tutorials** to support school leaders, teachers and others in school self-evaluation and improvement planning and implementation of actions.
  - **Developing a capacity development course for school leaders' and other selected school staff** to provide them with the knowledge and skills for school self-evaluation and improvement planning. The recently established National Institute for Education and Educational Leadership could potentially play a vital role in the development and delivery of this course.

- Lastly, **ANACEC should consider piloting a risk-based analysis approach to assess the risk of an individual school underperforming**, for example, on the basis of student assessment data and possible other data available in EMIS. If a school is deemed at risk, the school could be prioritised for external evaluation (within the five-year external evaluation cycle). It could thereby benefit from the much-needed additional guidance on improvements and recommendations provided by ANACEC, and the support provided by the district Departments of Education.

3 A reflection on the curriculum review approach and use of digital learning resources

Building on the analysis presented in Section 2, this section focusses on the policy domain "curriculum and learning resources". It begins with a discussion on the current curriculum review approach, followed by a discussion on the partially "untapped" potential of using digital technologies for innovating teaching and student learning. At the end of the section concrete recommendations for action are proposed.

Moving towards a more participatory curriculum review approach that benefits from external expertise

Globalisation and rapid technological changes are accelerating social, economic, and environmental challenges and opportunities internationally. At the same time, those forces are providing us with a myriad of new opportunities for human advancement. The future is uncertain and we cannot predict it; but we need to be open and ready for it. Against this backdrop countries have been trying to accommodate their increasingly complex education systems to the changing times. This includes considerable attention devoted in recent years by several OECD Members in reviewing their school curricula. Examples of Members that have reviewed their curricula in recent years include Estonia, Ireland, Japan, Latvia, the Netherlands, Portugal, the Slovak Republic, Ontario (Canada) and Wales (United Kingdom) (Looney et al., 2022[156]; OECD, 2021[157]; OECD, 2020[158]; Gouëdard et al., 2020[159]; NCEE, 2021[74]; OECD, 2018[160]; OECD, 2018[161]; OECD, 2018[162]).

Also, Moldova has recently updated its school curriculum. In 2010, Moldova implemented a new school curriculum that was aimed to be competency-based, removing the previous knowledge-based curriculum. An updated version of the school curriculum was developed and completed for the 2019/20 school year. The primary and secondary curriculum is structured around competencies and sub-competencies, associated academic content, classroom activities and their expected results (Government of the Republic of Moldova, 2014[2]). The transition from a knowledge-based curriculum to a competency-based curriculum (and corresponding assessments) remains an issue requiring further work, however. As mentioned earlier, part of the challenge lies in the fact that many teachers have been originally trained for and teaching a knowledge-based curriculum for many years. The transition towards competency-based curriculum calls for focusing teaching on both competencies and content in a manner that allows for their integration (OECD, 2020[163]), assessment of competencies, with in the case of Moldova an emphasis placed on formative assessment, etc. For many teachers this transition is believed to be a formidable challenge and requires more time and effort, including further investments in the professional development of Moldova's teachers, for it to be realised. (UNICEF, 2019[23]),

A UNICEF (2019[23]) study on evaluation and assessment in education also found that the curriculum and guidance documents, and thus also associated assessments are still theoretical and academic in their emphasis and lack a consistent structure. The latter is partially the result of different experts designing parts of the curriculum (i.e. subjects) and guidance documents in an insufficiently coordinated manner. Thus, while the suggested competency-based approach to curriculum and assessment can be considered a positive step towards deep and well-rounded education, its execution by teachers is likely to need further support and guidance, which can be facilitated by simplifying and systematising existing documents. These findings were corroborated by the stakeholder interviews that the OECD/IIEP team conducted.

The UNICEF study proposed reconsidering the backgrounds of curriculum writers in future curriculum reviews. It proposed multi-expert teams as a more effective approach than the use of individual experts that design parts of the curriculum and supporting guidance documents. Particularly when academics design curriculum or assessment, there may be a bias toward factual knowledge and its theoretical expression over practical, on-the-ground application – there are indications this has also been the case with the last updating of the school curriculum. Including academics and education practitioners in the design of curriculum and assessments holds promise of delivering a more well-rounded approach that includes practical applications and skills. Such an approach can also help foster a sense of ownership and commitment, particularly among teachers and school leaders, as they may be more invested in a curriculum they helped design and are supportive of (UNICEF, 2019[23]; OECD, 2021[157]; OECD, 2021[164]; OECD, 2020[165]; OECD, 2021[164]).

For this Moldova may look towards the examples of countries such as Australia, Estonia, Ireland, Netherlands, New Zealand, Singapore and Wales (United Kingdom) that engaged not only curriculum experts but also the education profession – and importantly students – and other stakeholders throughout the different phases of the curriculum review process (Looney et al., 2022[156]; OECD, 2018[160]; OECD, 2021[164]; OECD, 2018[161]; Gouëdard et al., 2020[159]). This in several cases included the engagement with international experts to complement and enrich the national pool of experts in curriculum design and implementation and drawing from the international lessons learned in updating and innovating of curricula (see Box 3.1). Several stakeholders that the OECD/IIEP team interviewed also noted the option of engaging with curriculum experts from Romania (because of the common language) in future curriculum reviews.

Furthermore, countries also draw extensively from research evidence to inform their curriculum reviews. As mentioned above and also noted by the mentioned UNICEF study (2019[23]), there is much to gain from further enhancing the capacity of the MoER National Agency for Curriculum and Evaluation (NACE) to enable it to further examine national and international student assessment data. For example, following the example of Türkiye it would be most valuable to examine these student assessment data (e.g. through item analysis) to draw policy lessons from the findings. It would be particularly relevant to learn what curriculum (sub-) domains and competencies students are doing well at – and those they are struggling with (OECD, 2022[166]). Such analysis of student assessment data could inform a future curriculum review to adjust it to respond to students' learning needs, as could such analysis be a valuable source of information for guiding investments in teacher professional development courses and the development of (digital) teaching and learning resources, as was mentioned earlier.

Box 3.1. A participatory approach and research-informed curriculum review process – Example from New Zealand

New Zealand's school system is among the highest performing across OECD Members. However, the impact of student socio-economic background on performance is also higher than many OECD Members. Informed by a large consultation process, the country is "refreshing" the New Zealand Curriculum so that schools and communities are better supported to create rich and responsive learning that helps every ākonga (i.e. student) realise their goals and aspirations.

The four-year curriculum refresh was started in 2018 and is expected to be completed in 2025 and is driven by four goals: 1) honour our mutual obligations to and through Te Tiriti o Waitangi; 2) create an inclusive curriculum in which every ākonga can see themselves; 3) create clarity about the curriculum learning that matters; and 4) make it easy for Kaiako (i.e. teachers) to use the curriculum.

The curriculum refresh was started with a two-year period of analysis and agenda setting (2018-19), followed by a year where there was a development of professional learning (2020). This was followed by a three-year period of design and testing of the different learning areas (2021-24). In 2025, the implementation support is scheduled to start and is set to continue without an end date. The curriculum refresh covers the different curriculum learning areas in turns, taking approximately a year per block of subjects, starting by the review of social sciences in 2021 and finishing with languages, physical education and health in 2025. The new Aotearoa New Zealand's histories content needs to be taught from the beginning of 2023, but schools will have until the beginning of 2026 to work towards implementation of the rest of the refreshed curriculum.

At the start of the curriculum refresh the Ministry commissioned and considered a range of papers developed by national and international experts, alongside significant engagement with teachers and other educational staff, to inform the curriculum review approach. These papers included academic research papers, as well as targeted short reports to ensure that the reviewed curriculum is evidence-based and reflects current (international and national) good practices. An example of the participatory approach of engagement with the education profession is the feedback on draft documents that has been sought through webinars and surveys (in Autumn 2022) and through the piloting of implementation support resources in schools.

The development of an implementation plan is also embedded in the timeframe of the curriculum review. It aims to grow community relationships and teacher capabilities, as well as helping schools to incorporate the new curriculum framework and learning content in their school-based curricula. A draft "implementation pack" has been developed to support schools in starting to implement the refreshed New Zealand Curriculum. The pack includes an overview of the phased approach they are using; suggested starting points; a "readiness tool" to help you notice what you already do well; an overview of resources and supports. The latter includes mobilising "Curriculum Leads" who will offer various levels of support to schools. The draft implementation pack will be further refined following a period of piloting and feedback from schools.

Source: Ministry of Education of New Zealand (n.d.[167]), Refreshing the New Zealand Curriculum, https://nzcurriculum.tki.org.nz/Refreshing-the-New-Zealand-Curriculum (accessed 28 July 2023).

Mobilising the "untapped" potential of digital technologies for innovating teaching and student learning

Digitalisation is transforming education, as is the case in other sectors of society. As mentioned above, data are increasingly used to manage education systems and institutions, to better target policy interventions and drive innovation. In many OECD Members digital devices and solutions, sometimes powered by Artificial Intelligence, are increasingly used to assist teachers in the classroom or students in their learning at home. These can consist of the digitalisation of curricula to support all students to achieve their educational goals. In addition to digital content, it may include organisational features and formats

used to articulate curricular content, such as e-textbooks, online materials and repositories, and technological tools to deliver the curriculum, including applications such as YouTube, Artificial Intelligence and digital platforms (OECD, 2021[164]; OECD, 2023[85]; UNESCO, 2023[129]).

Smart digital technologies can improve education systems and education delivery in different ways. They can enhance access to education, improve its quality for students and enhance its cost-efficiency for societies. Another promise is to make education more inclusive and it can provide additional learning opportunities to students from more disadvantaged groups – assuming that they are widely accessible and used. Even if none of these promises of digitalisation materialise, digitalisation could still open new avenues for formal education and make it more convenient and more enjoyable for students and teachers (OECD, 2021[168]; OECD, 2023[85]).

The Education Development Strategy 2030 states the objective "to improve the functionality and quality of the education system through effective implementation of digital technologies to ensure quality and sustainability of education" (Government of the Republic of Moldova, 2023[3]). The interviews with MoER officers and other education stakeholders corroborated the great interest of mobilising digital technologies to support the implementation of the competency-based curriculum and innovate teaching and student learning in schools throughout the country. In Moldova, as in many places across the world, education was amongst the first sectors hit by the COVID-19 pandemic with distance learning becoming the new normal schools were quickly forced to explore digital learning platforms, such as the mentioned "studii" platform (UN Coordinated Education Taskforce for COVID-19, 2020[169]).

The interviews with the MoER officers however showed a keen interest to build on these experiences, but also to learn from those of other countries and "leapfrog" to decide on the way forward for Moldova's school system. There are several countries that Moldova may look towards as a source of inspiration. Estonia for example is well-known for its use of digital technologies and solutions in public services, including in education. Through its Education Strategy 2021-2035, the Estonian Ministry of Education and Research aims to (among others) further promote the use of digital solutions for fostering educational innovation, diversification and personalised learning, and promoting more efficient use of digital resources and improved working conditions (including through digital tools and solutions) for teachers (OECD, 2021[145]; Estonian Ministry of Education and Research, 2019[170]). Various digital tools have been developed to help realise these goals. This includes providing teachers with access to a rich library of digital textbooks and tools through an interactive learning platform called Opiq (Star Cloud OÜ, n.d.[171]). The digital textbooks are mirror images of the paper-based textbooks, but importantly have a number of additional digital, interactive features that aim to enhance teaching and students' learning experiences.

Box 3.2 shows another (state-of-the-art) example from Shanghai (People's Republic of China (PRC)) where schools aim to integrate Artificial Intelligence and learning analytics in schools to support school resource management as well as its focus on digital teaching and learning.

Another example is provided by UNICEF's Global Learning Passport initiative (Learning Passport, 2023[172]) which supports countries with a similar (online and offline) interactive platform that allows for easy adoption as a national learning management system or for complementing existing digital learning platforms. Digital textbooks are complemented with a range of learning materials such as interactive quizzes and as a host of international learning materials from well-known public and private providers. Due the COVID-19 pandemic, the Learning Passport underwent rapid expansion. While finalising this report (May 2023) the platform was live in 28 countries including Zimbabwe, Egypt, Mexico, Costa Rica, Sudan, Lao People's Democratic Republic (PDR), Nigeria, Poland, the Republic of Serbia, Ukraine and 25+ countries were in various stages of the deployment process (Learning Passport, 2023[172]).

Box 3.2. Digital technologies are transforming education – Examples from Estonia and Shanghai (PRC)

Estonia's Opiq platform

Estonia has become well-known for being a front runner in the digital transformation of its education system among OECD Members. Ahead of many other countries, by the early 2000s Estonia had provided all schools with computers and internet access and was offering professional learning and educational resources to build teachers' and students' technology skills. Since 2014, Estonians have a lifelong learning strategy that included a digital transformation programme that helped develop the digital competencies of both teachers and students. IT-training courses and instructional materials helped to integrate digital technology into the learning process. For this, Estonian schools have use various smart solutions, including Opiq.

Opiq is a learning management environment that is used in the majority of Estonian basic and upper secondary schools. It contains textbooks, learning kits, study journals, a self-assessment system and other important information to be used by teachers, students and parents. The directory of materials is constantly updated and covers most subjects (languages, mathematics, science, history, geography, etc.) and options are available in both Estonian and Russian language (the two official languages of instruction in the country). The digital textbooks are mirror images of paper textbooks, but importantly with a number of additional digital and interactive features. Teachers and students can for example easily access rich content in multi-media format (e.g. a music lesson is accompanied by samples of recorded music illustrating various styles and periods); use the option of spoken text (for students with special needs); and access visual simulations of experiments that may be unpractical or too expensive to realise in a real school laboratory.

Most students in grades four to six (73%) and in grades seven to nine (81%) are active users of Opiq e-textbooks. The digital textbooks are fully funded by the government. Each school receives funding according to the number of students. Basic school licenses are made available for free to all schools.

Other digital tools that schools, students and their parents have access to in Estonia include the ELIIS Kindergarten Platform which is a paperless environment for all kindergartens to help preschools and kindergartens enhance operations, administration, child development, curriculum planning and communication; eKool which is a school management tool that supports better learning for the student, parents are better aware of their children's progress and the authorities have a good overview of what goes on in schools under their management; and Cognuse's SpeakTX which is a digital health and education platform with exercises, assessments and related tools for anyone seeking to improve their speech.

Through these digital tools and other measures, the Estonian Government wants children and their parents to develop a positive attitude towards technology from an early age.

Integrating Artificial Intelligence and learning analytics in schools – an example from Shanghai (People's Republic of China (PRC))

Increasingly, school buildings are equipped with sensors, cameras, and computers to fulfil certain administrative as well as teaching and learning functions. Some schools are already experimenting and developing innovative ways to integrate smart technologies in their operations. Here is an example from Shanghai (PRC).

The Luwan No 1 Central Primary School (Huangpu District, Shanghai) is a public school integrating Artificial Intelligence (AI) in its school resource management as well as its teaching and learning – a digital model that may then be extended to other schools. The management of the campus, and the teaching and learning all rely on smart technologies. Using IT sensing technology, the "digital campus" consists of collecting and analysing campus data to automatically control and manage environmental factors such as security, lighting, water quality and air quality, but also to collect campus activity data; for example, people density in corridors etc. Combined with wearable devices, the school also collects physiological data such

as students' body temperature and heart rate as well as academic data and learning process data in order to support teachers and learners.

The "digital students" application analyses student data to create a detailed, holistic portrait of students. The collection of data increases the understanding of students' learning status and growth and provides teachers with data to tailor their teaching to their needs. The data cover discipline, academic level, physical and mental health, aesthetic taste and social practice. Socio-emotional aspects such as learning engagement and affective states are measured by voice and face-recognition technology.

Finally, a "digital teaching" system provides teachers with support on five aspects of teaching: lesson preparation, classroom orchestration, homework, tutoring and evaluation – with functionalities such as "classroom orchestration", "intelligent assessment" and "intelligent homework review". The intelligent tutoring system supports students directly in accessing resources, tools, pathways and personalised guidance. As of June 2021, this model had been studied and adopted by more than 250 schools in Shanghai, Qinghai, Shaanxi, Guizhou, etc.

Source: OECD (2020[165]), What Students Learn Matters: Towards a 21st Century Curriculum, OECD Publishing, Paris, https://doi.org/10.1787/d86d4d9a-en; e-Estonia (n.d.[173]) Education and Research, https://e-estonia.com/solutions/education_and_research/research_iinformation_system/ (accessed on 30 April 2023); OECD (2021[168]), *OECD Digital Education Outlook 2021*, https://doi.org/10.1787/589b283f-en.

The New Zealand Curriculum Online is another example of a slightly different nature. This website offers schools, students and parents with a wealth of information, guidance and practical resources to support the implementation of the curriculum (Ministry of Education New Zealand, n.d.[174]). In addition, New Zealand's e-asTTle online item bank generates ready-to-use standardised assessments for teachers to use in their classrooms. Tests are compiled by teachers selecting test characteristics (e.g. balance of content and difficulty) from a large 10 000 item bank (Ministry of Education New Zealand, n.d.[175]; OECD, 2023[134]). The development of such an online item bank is certainly an option for the MoER to consider – either or not as part of the proposed digital teaching and learning platform, as it could provide teachers with additional support and guidance in developing their own formative and summative assessments.

However, as was also made evident in the OECD Digital Education Outlook 2021, these are just some of the many digital technologies and solutions that education systems around the globe are implementing and experimenting with – and that are poised to transform how we teach, learn and run schools (OECD, 2021[168]).

As mentioned, the Education Development Strategy 2030 is clear about its objective to use digital technologies to transform and improve the quality of the education system. How the MoER aims to realise this objective wasn't fully clear to the OECD/IIEP team, however, with seemingly a number of important decisions remaining to be taken. The challenge in making such decisions partially lies in learning about and navigating through the multitude of new technologies available, taking into account matters such as their costs, implications for connectivity and digital equipment, teachers' professional development needs, etc. (UNESCO, 2023[129]). International experience shows that one challenge of using digital technologies is that most people do not understand how they work and what can be expected (and not) from them. Generative Artificial Intelligence is a striking example as it is currently impossible to fully explain why it is so effective, while also considering its potential negative effects (OECD and Education International, forthcoming[128]).

Furthermore, to develop useful digital solutions, teachers as well as other key stakeholders should be involved in their design process or piloting (OECD and Education International, forthcoming[128]). For Moldova these stakeholders could involve the MoER, teachers, school leaders, students, parents, representatives of Departments of Education of districts and municipalities and other stakeholders to define what types of solutions should be prioritised, piloted and researched to examine their effective use.

Therefore, to advance the Education Development Strategy's (Government of the Republic of Moldova, 2023[3]) strategic objective of using digital technologies to transform and improve the quality of the Moldovan education system it should explore a range of potentially suitable digital technologies and solutions to learn about their strengths and limitations for supporting teaching and student learning. For this, Moldova may want to further explore the digital technologies and solutions used in other countries (of which some examples were provided in the text above) and/or seek their actual advice to learn from their experiences in designing and implementing such digital technologies.

Recommendations

- **The MoER should for future curriculum reviews (or updates) consider adopting a more comprehensive, participatory and research-informed approach to ensure consistency across curriculum documents and to support the transition towards a competency-based curriculum and assessment practices**. It may look towards systems such as Australia, Estonia, Ireland, Netherlands, New Zealand, Singapore and Wales (United Kingdom) that not only engage curriculum experts (academics), but importantly also the education profession, students and other stakeholders throughout the different phases of the review process. This should include international experts to complement and enrich the national pool of curriculum expertise.
- **The MoER should invest in developing the capacity of its National Agency for Curriculum and Evaluation for analysing national and international student assessment data.** This analysis could greatly inform future curriculum reviews and serve as a vital source of information for guiding investments in teacher professional development courses and the development of additional (digital) teaching and learning resources.
- **The MoER should consider exploring a range of potentially suitable digital technologies and solutions to learn about their strengths and limitations for supporting teaching and student learning.** It may want to explore the digital technologies and solutions used in other countries and/or seek their actual advice and learn from their experiences in designing and implementing such digital technologies. This could help Moldova decide on the next steps for the digital transforming of its school system – and as such in working towards realising its 2030 strategic objective.

4 Creating a conducive policy context

Building on the analysis on the policy domains "professional development of teachers and other education professionals" (Section 2) and "curriculum and learning resources" (Section 3), this section consists of an examination of several relevant areas of policy and key factors of influence on the successful implementation of the proposed recommendations for action – and the Education Development Strategy 2030 more generally. The section starts by discussing the need for and possibilities for raising the attractiveness of the education profession. This is followed by a discussion on the possibilities and concrete steps for the reorganisation of Moldova's fragmented school network based on the findings of a geospatial simulation model. The section continues with a discussion of the ongoing efforts to optimise the governance of the school system.

Creating a conducive policy environment

The need to raise the attractiveness of the teaching profession

Research evidence shows that in many of the stronger performing education systems teachers are valued by society and that there is a strong positive correlation between the way teachers are perceived and student performance (Dolton et al., 2018[176]; OECD, 2019[67]; Schleicher, 2018[177]; UNESCO, 2021[104]; Viac and Fraser, 2020[178]). It is therefore no surprise that the MoER has set out to increase the attractiveness and prestige of the teaching profession in Moldova by raising its social and financial status and extending professional integration and career support programmes (Government of the Republic of Moldova, 2023[3]). As suggested in the Education Development Strategy 2030, the MoER intends to conduct a comprehensive review of the career structure and remuneration scale. This however will be challenging given the public budget situation of the country. That said, there are several measures that could be taken in the short- and medium term to work towards realising this objective.

Moving towards competitive salaries – necessary, but affordable?

The quality of teachers in the system is strongly affected by the pool of talent from which teachers are chosen. People are attracted to certain professions by a combination of the occupational status, work environment, sense of personal contribution and the financial rewards associated with a given profession (Schleicher, 2012[97]). Although teacher salaries in Moldova have been on the rise in recent years, the average remuneration remains significantly lower than that of other professionals with the same level of education (UNICEF, 2019[23]). Staff in the education sector still earn 18% less than the average gross Moldovan salary (National Bureau of Statistics, 2022[27]).

Recognising that Moldova's budget situation challenges (substantial) salary increases in the short term, fiscal space could be created by enhancing the efficiency of the education system. As also noted during several stakeholder interviews, the proposed prioritisation of the school network reorganisation discussed below provides an important opportunity for realising the much-needed efficiency gains. Stakeholders were

quick to note that these "gained funds" should be reallocated to improving the quality of education, including higher salaries for teachers and school leaders.

Exploring different options for reforming the career structure and salary scale

Although it may take some years for the school network reorganisation to result in efficiency gains to support the increase of salaries, this should not necessarily mean that the preparatory work for this important reform is to be delayed. Building on the opportunity presented by the recently established National Institute for Education and Educational Leadership, an option could be for the Institute to (once fully operational) start examining different scenarios for reforming the career structure and salary scale. For example, a scenario to explore could be to first increase the starting salaries of teachers in line with that of other professionals with the same level of education, as was done in countries such as Austria and Singapore, to ensure that teaching is seen as being equally attractive to other occupations for new graduates (Schleicher, 2012[97]; OECD, 2019[39]). A slightly different, though related issue, Moldova may also explore the cutting of tuition fees for many initial teacher education programmes as was done in Bulgaria (Guthrie et al., 2022[155]). Such measures have the potential to increase the attractiveness of the teaching profession; however, they will also place additional pressure on the country's education budget in the years to come.

As mentioned above, the career structure of teachers in Moldova currently provides a structured path of professional growth around three teaching levels: second-, first- and senior-level teacher. The holders of the higher levels (i.e. first- and senior teachers) receive salary supplements. These career levels are awarded based on performance, on the results of professional development courses and on the outcomes of teaching activities (ERI SEE, 2020[36]; Parliament of the Republic of Moldova, 2014[1]). While some stakeholders considered this system to have some strengths, it has also been found to lack objectivity and consistency in the way it has been implemented, which may have implications for teachers' career advancement (UNICEF, 2019[23]).

Furthermore, as discussed in Section 2, the MoER should consider revisiting the direct link between the accreditation to the higher levels and participation in professional development due to the unintended effect of "credit chasing". The phenomenon of credit chasing entails teachers enrolling in any courses they can rather than in courses that are relevant for them and their school (Santiago et al., 2016[79]) – the evidence clearly showed this to be a challenge for Moldova (Beara and Petrovic, 2020[37]; UNICEF, 2019[23]).

It was therefore not surprising to hear several stakeholders the OECD/IIEP team interviewed supporting the directions set out in the Education Development Strategy 2030 which calls for a review of the career structure. Several stakeholders noted their interest for revisiting the career structure by diversifying the job responsibilities with horizontally- and/or vertically differentiated tracks, with the latter offering promotion and higher pay (OECD, 2019[39]; Tournier et al., 2019[179]), as is the case in countries such as Australia, England (United Kingdom), Ireland and Singapore (Schleicher, 2012[97]) (see Box 4.1).

A full restructuring of the career structure and salary scale is likely to be a complex and time-consuming process, however, all the more so as the levels and salaries of the education profession are indexed to those of other public servants. Broader public sector reform in this area may be required. This arguably provides further impetus for not delaying the preparatory analysis work that (in due time) could result in one or more options for reforming the career structure and remuneration scale of the education profession of Moldova. Ideally these options are explored with the involvement of the education profession and other key stakeholders. This is important as evidence suggests that engaging stakeholders early in the policy design stage can serve as a key means for ensuring the relevance and quality of the new policy and gaining

the much-needed support and ownership for its successful implementation (Viennet and Pont, 2017[98]; Burns and Köster, 2016[180]; Schleicher, 2018[149]; Tournier et al., 2019[179]).

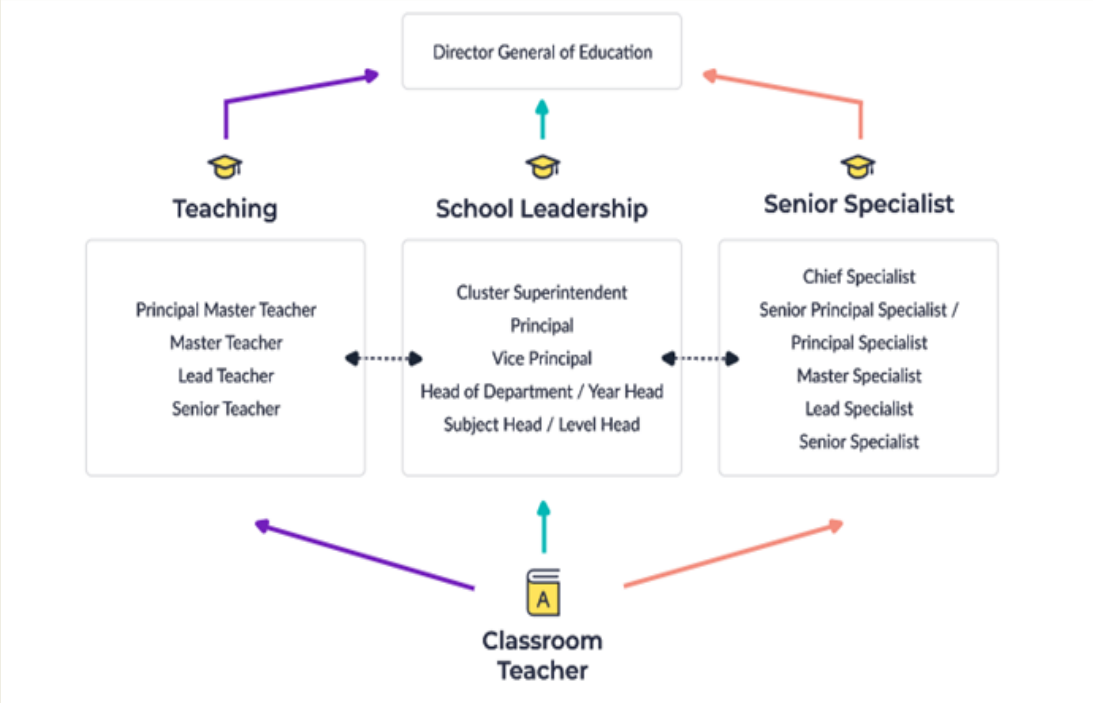
Box 4.1. Differentiated career structures for teachers – Examples from Singapore and the Republic of North Macedonia

A career ladder can contain a single track or path, but the most innovative systems tend to have a career ladder that is built around different tracks. In **Singapore**, they have developed three different tracks of promotion for teachers, each tied to performance evaluations and professional development. Figure 4.1 illustrates the possibilities of career progression for teachers in Singapore.

- The Teaching Track provides professional development and advancement opportunities for teachers who are keen to further develop the pedagogical capability of the teaching force.
- The School Leadership Track provides opportunities for teachers who are keen to contribute to the effective management and leadership of schools.
- The Senior Specialist Track provides opportunities for those who are inclined towards more specialised areas in educational development, where deep knowledge and skills are essential for breaking new grounds.

In the Teaching Track, senior teachers, lead teachers, and master teachers take responsibility for the professional development of younger, less experienced teachers, and remain as classroom teachers. This career structure expands the opportunities for horizontal mobility, whereby teachers are promoted to more advanced levels and classroom teaching in remains key to their work. The model also allows to move from one track to another.

Figure 4.1. Different career tracks for classroom teachers in Singapore



Source: Ministry of Education Singapore, (2021[181]), Professional Development and Career Tracks, https://www.moe.gov.sg/careers/become-teachers/pri-sec-jc-ci/professional-development (accessed 17 April 2023);

The Republic of North Macedonia provides another example of an innovative career structure where professional standards signal a logical improvement process at teachers' different career stages. In 2016, the Ministry of Education and Science (MoES) established a working group including education experts, teachers and representatives from the Bureau for the Development of Education (BDE) and the Vocational Education and Training Centre (VETC) to develop a plan for a merit-based career structure based on clearly defined teaching standards. The Working Group also defined standards for the school support staff (i.e. pedagogues, psychologist, etc.) as well as guidelines for teachers on what the expected competencies and criteria are to move up in the merit-based career structure.

The merit-based career structure includes four different categories of teachers: novice teacher, teacher, teacher mentor and teacher advisor. To become teacher mentors or advisors, teachers need to demonstrate that they have the competencies required for these positions during an external appraisal for promotion by the BDE or the VETC.

Table 4.1. Differentiated career structure of teachers in the Republic of North Macedonia

	Novice teacher	Teacher	Teacher mentor	Teacher advisor
Responsibilities	Teaching students under supervision of teacher mentor.	Teaching students autonomously, participating actively in teacher groups ("Teacher Actives").	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 provide feedback.	Coordinates teacher networks. Monitors and appraises students from teacher training programme during their practicum. Contributes to school self-evaluation and school planning.
Requirement to reach this career level	Successful completion of initial teacher education programme.	Pass confirmation examination (personality test, conducting a lesson, oral test on relevant laws and defending a research project).	External appraisal by BDE advisor or VETC advisor.	External appraisal by BDE advisor or VETC advisor.
Requirement to reach this career level	Successful completion of initial teacher education programme.	Pass confirmation examination (personality test, conducting a lesson, oral test on relevant laws and defending a research project).	External appraisal by BDE advisor or VETC advisor.	External appraisal by BDE advisor or VETC advisor.

Source: Ministry of Education Singapore, (2021[181]), Professional Development and Career Tracks, https://www.moe.gov.sg/careers/become-teachers/pri-sec-jc-ci/professional-development (accessed 17 April 2023); OECD (2019[101]), OECD Reviews of Evaluation and Assessment in Education: North Macedonia, https://doi.org/10.1787/079fe34c-en.

Reconsidering the performance-based pay

Recognising highly effective teachers by rewarding them with financial incentives seems intuitively appealing and has been tried in numerous settings. In theory, bonuses are supposed to motivate teachers to improve their practice and raise students' achievement by rewarding excellent teaching. However, research analysing bonus pay is mixed. Available evidence tends to show that bonus pay can introduce competition among teachers, encourage teaching to the test and can deter teachers from working in low-performing schools (Crehan, 2016[182]; OECD, 2019[39]). It is hence questionable whether tying financial reward to performance is an appropriate incentive for performance improvement, especially when it carries the risk of undermining collaboration among teachers. Moreover, the difficulty of measuring performance and of objectively selecting who should be awarded with a bonus make these programmes very difficult to implement.

The performance-based bonus scheme that was introduced for all civil servants in 2018 (see Section 1) in Moldova seems to suffer from such implementation challenges. The OECD/IIEP team learned that the performance appraisal systems to ensure sufficient rigour and fairness in the attribution of bonuses are not in place in Moldova's education system. Also, school leaders have taken different approaches in designing the appraisal system for the allocation of the bonus pay. In response to this apparent confusion and lack of consistency, the MoER recently (i.e. in August 2023) released the "Methodology for the Evaluation of Individual Performance of Teaching Staff in Primary and Secondary Institutions" (Government of the Republic of Moldova, 2023[46]) that is aimed to help schools in the implementation of the performance-based bonus scheme.

The Methodology aims to stimulate teachers' professional involvement in the school and encourage outstanding results. The methodology calls for an appraisal process to be carried out every six months for all teaching staff and members of the management team with teaching functions, including school support staff (e.g. school psychologists). The school is provided with an additional 10% of its annual salary budget for the provision of bonus pay, i.e. central funds that are distributed to schools via the district Department of Education.

The salary bonus is to be determined and paid in accordance with time worked and depending on the level of achievement based on specific performance indicators (see below). The bonus awarded is granted in conjunction with a teacher's monthly salary and is applied based on the result obtained in the previous six months. The process of appraising teachers is conducted by the head of the school's "Methodological Commission" to which the teacher belongs and by the school leader. The process follows a series of steps that are outlined below.

The first stage is a self-evaluation using a standardised self-assessment form that is outlined in the Methodology. The teacher must select from multiple key performance indicators that align with three specific yet related areas: 1) involvement in school development activities (e.g. engage in activities to enhance school performance); 2) involvement in educational activities (e.g. agree to participate in and lead professional development activities at school- or district level); and 3) involvement in methodological activities (e.g. participate in mentoring activities). For each item in the self-assessment form, the teacher is eligible for a score that is later used by the Methodological Commission to determine an overall accumulated score and grade (see below).

Next, the Methodological Commission coordinates the appraisal of the self-evaluation and determines an overall score that corresponds to a grade of "very good", "good", "satisfactory", or "unsatisfactory". The performance indicators and performance appraisals that are conducted by the Methodological Commission that the teacher belongs to are then submitted to the school leader for final approval. The deputy school leader is responsible for support teachers and other staff.

Finally, the school leader reviews and approves the performance of the teacher based on a form titled "Individual Performance Appraisal Framework of the Evaluation of the Professional Performance of Teaching Staff" that is included in the methodology and completed by the head of the Methodological Commission. The final score and grade awarded is calculated based on the indicators outlined in the self-assessment form. For leaders with teaching functions, their evaluation is conducted by another member of the school leadership team.

Teachers who have their final grade approved as "very good" or "good" are entitled to a salary bonus calculated based on their basic salary. For "good" this can range from 1% to 7%, while "very good" may correspond to a 7% to 10% bonus. Those who are awarded a grade of "satisfactory" or "unsatisfactory" are not eligible for a bonus. The school leader may award a bonus above 10% for a teacher who has achieved outstanding performance (e.g. author/co-author of textbooks, member of unpaid national committees, etc.).

While the Methodology states that the process outlined above should be based on the principles of objectivity and impartiality, this may prove challenging in practice. Furthermore, the administration of the school may, as stated in the Methodology, modify, or adapt the appraisal form based on the organisational framework of the school. They may also update the indicators of teacher performance according to the duties of the teacher concerned. While this flexibility may be welcome by many school leaders, caution should be urged against potential unintended consequences.

The OECD/IIEP team has further reservations considering that this performance-based pay scheme entails another appraisal system that is separate from the regular annual appraisal system, in terms of the appraisal process and standards/indicators used. As mentioned earlier, school leaders had shared their concerns about the administrative burden faced with the annual appraisal process (UNICEF, 2019[23]). The adding of another, separate appraisal system, on the basis of a six-month cycle, would most certainly add to the administrative burden schools are facing and the reported challenges in finding the time needed to undertake these appraisals, as are their concerns about the skills of appraisers (UNICEF, 2019[23]). Some stakeholders also shared their concerns about the indicators or criteria that are used for appraising the performance against for awarding the bonus pay in that these differ from the professional standards for teacher and school leaders. They noted this may risk confusion about what standards to aspire to.

In sum, international research evidence shows that making performance-based pay working well and sustainably is a formidable task, even under the best circumstances (Crehan, 2016[182]; OECD, 2019[39]; OECD, 2009[183]; Schleicher, 2011[42]). In light of the above, the OECD/IIEP team therefore recommends reconsidering the performance-based pay scheme.

If this is not an option for the MoER at this point in time, then it is should consider carefully monitoring the implementation of the scheme, in terms of the implementation process and whether the policy is achieving the desired outcomes. In addition, the research should examine the scheme's potential influence on other policies such as the awareness and use of the professional standards for teachers and school leaders, and the annual appraisal process. The findings from this research could be used to inform the planned reform to develop a comprehensive career structure and salary scale. The monitoring of the performance-based scheme could possibly be part of the proposed preparatory research for examining different scenarios for reforming the career structure and salary scale mentioned above.

The importance of creating an attractive professional working environment

Although competitive salaries and incentives are important for enhancing the attractiveness of the education profession, other options exist to help make the profession more attractive – that can be actioned without (much) delay. People who see themselves as candidates for the education profession, and are attracted to the working conditions enjoyed, may not find what they're looking for in schools that in many countries are still organised as prescriptive work environments that use bureaucratic management to direct their work. Many education systems have therefore started to transform the work organisation in their schools by replacing administrative forms of management with professional norms that provide the status, pay, professional autonomy and accountability, and the high-quality professional development and responsibility that go with professional work (Schleicher, 2012[97]; OECD, 2020[87]; Schleicher, 2018[149]).

The proposed updating of the school performance standards with "process" standards (and outcome standards) (see Section 2) provides an important opportunity to highlight the importance of processes such as for example all staff engaging in continuous professional development (beyond mandatory courses), new staff receiving induction and mentoring support or school leaders distributing leadership to teachers and creating the time and structures to facilitate professional dialogue, collaboration and knowledge exchange. The promotion of such collaborative processes that are promoted by many school quality frameworks of OECD countries (Flemish Ministry of Education and Training, 2018[150]; Education Scotland, 2015[151]; NSW Government, 2017[152]; OECD, 2013[48]) and that arguably are characteristic of professional working environments may also have a positive influence on how the education workforce views its own profession and how it is viewed by society.

In addition, the proposed updating of the professional standards for teachers and school leaders, as well as the various recommendations for strengthening the professional development of teachers and school leaders that were presented in Section 2 provide opportunities for enhancing the working environment of teachers and school leaders.

Reorganising the school network to realise efficiency gains

The restructuring of the school network has become a policy priority in several OECD Members in recent years (Ares Abalde, 2014[184]; OECD, 2022[185]; OECD, 2018[186]; OECD, 2016[187]). Demographic shifts, regional economic developments and changing student needs have generated costly mismatches between educational demand and the supply of school places in some countries. Operating a fragmented school network with a large number of small schools or facilities with overcapacities can place a significant financial burden on education systems – as is the case for Moldova. Many OECD Members have responded to this challenge by consolidating the school network. Measures include clustering of schools under a single leadership team, promoting the sharing of resources across schools and the closing of selected schools and transferring their students to proximate sites. The analysis presented below primarily concerns the latter option i.e. the closing of schools and transferring their students to nearby schools. Although the OECD/IIEP team would like to caution against a "one-size fits all" solution. Although the geospatial analysis may point to the closing of a school there may be some cases where this for some reason may not be desirable to all parties involved. In such cases alternative options to school closures may be explored, such as the mentioned consolidation of two or more schools under one leadership team which would still bring about some efficiency gains (Ares Abalde, 2014[184]).

Larger schools with lower per-student fixed costs may offer their students greater curricular diversity, specialised teachers, better equipment and facilities, as well as the ability to organise all teaching in single-grade settings (OECD, 2018[186]). Nevertheless, the disruptive experience of relocation and increased travel distances can negatively impact students' well-being and learning outcomes in the short term (Beuchert et al., 2016[188]). When engaging in consolidation, authorities need to carefully weigh the benefits

of school closures against their social and economic impact on surrounding communities, the transition costs generated in the process and the public and private expenditure on longer commuting distances.

Moldova is faced with a fragmented school network, primarily as a result of a significant decline of the student population (see Section 1). Recognising that these demographic shifts are projected to continue and cause further inefficiencies and pressure on the public budget, the Education Development Strategy 2030 has made the reorganisation of the school network a policy priority (Government of the Republic of Moldova, 2023[3]). Although beyond the original scope of this project, the OECD/IIEP team agreed to conduct a similar initial geospatial analysis to help advance the work on this policy priority and to inform the analysis of this report. A background paper was prepared for this purpose with the support of the OECD Centre for Entrepreneurship, SMEs, Regions and Cities. A summary of this analysis is presented below.

The initial geospatial analysis explored a targeted approach to school consolidation by rethinking how different school types and grade levels could be combined and distributed across school sites. The analysis of the data (that was shared by the MoER) provided estimates of accessibility to schools and identified areas at high risk of under-provision. It combined estimates of cost and access to quantify rural-urban differences and identify districts and municipalities facing high costs and/or low access per student, as inputs to guide consolidation decisions. The geospatial simulation suggested there is considerable scope for consolidation of the Moldovan school network.

Section 1 provided an overview of the Moldovan school system. It was made up of 1232 schools and served around 331 000 students in 2021/22. The geospatial analysis focused on three school types that together made up about 97% of all schools (see Figure 4.2):

- Primary schools, Grades 1-4
- Basic education schools i.e. schools that offer primary and lower secondary education (gymnasium), Grades 1-9
- All-level schools i.e. schools that offer primary, lower secondary (gymnasium) and upper secondary, Grades 10-12.

Basic education schools made up 64% of the total schools and served 37% of the student population in 2021/22. All-level schools are larger establishments and made up 24% of the total schools and accounted for about 55% of students. Finally, primary schools made up a small share of schools (8%) and students (3.4%). Most students attended schools offering more than one ISCED level, and a small share of students in Moldova attended schools that only provide one single educational level (3% in primary and 1% in upper secondary).

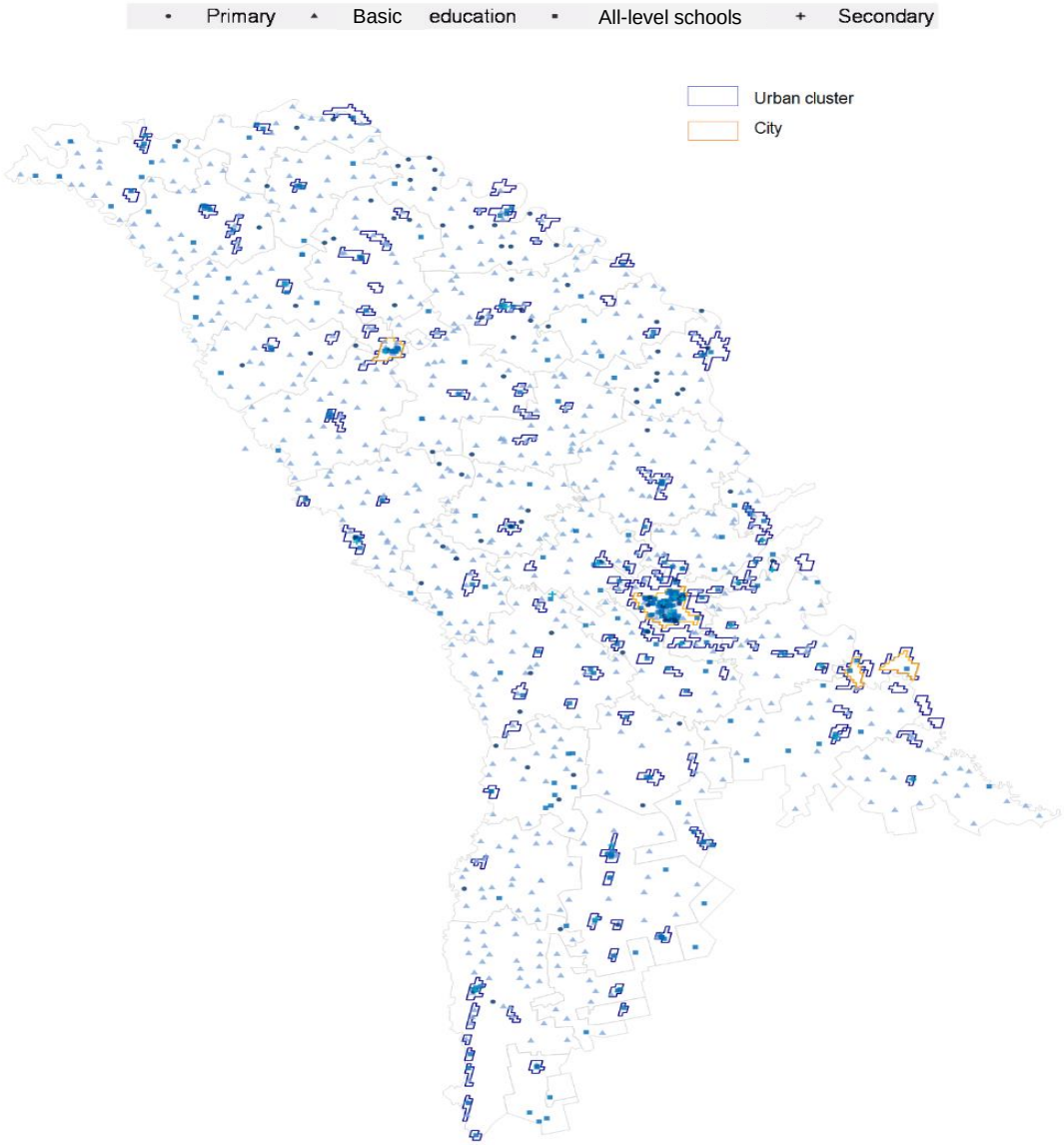
The starting point for the analysis was the classification of schools into one of the four following categories:

1. High cost & low access
2. High cost & high access
3. Low cost & low access
4. Low cost & high access.

Access was determined on the level of access that students in a certain school have to other schools offering the same education level i.e. whether they live below or above an estimated 15-minutes' drive by car from the school and their costs per student i.e. if they are above or below the 75th percentile of expenditure per student across all schools of the same type.

Using these criteria, most schools in Moldova fall in the last category, "low cost & high access", including almost all schools located in cities. The schools in the category "high costs & high access" are the target group for consolidation in the simulation, because 1) these schools are costly to operate (i.e. have a high average per student expenditure) and 2) closing these schools would mean that students of these schools would still be able to access a school within a relatively short travel time (i.e. within a 15-minute travel time), while offering the highest cost savings per student.

Figure 4.2. Geographical location of schools and urbanised areas



Note: Schools based on 2021/22 data. Urbanised areas based on 2015 population data. District boundaries shown in base layer. Urban clusters (towns, suburbs and cities) are contiguous areas with a density of at least 300 inhabitants per km2 and of at least 5 000 inhabitants. Cities are urban clusters with a density of at least 1 500 people per km^2 and at least 50 000 people.
Source: Authors' elaboration based on data provided by the Moldovan MoER. Administrative level 1 borders from https://data.humdata.org/dataset/cod-ab-mda (excluding Autonomous Territorial Units). Urban cluster and city polygons from (Ehrlich, 2019[189]) Global Human Settlement Layer 2019 version, available at: https://ghsl.jrc.ec.europa.eu/dataToolsOverview.php#inline-nav-2

While initially 248 schools satisfied the consolidation criteria, this number went down to 202 because some of the "receiving schools" also fell in the category "high costs & high access", in which case both the target and the alternative would be closed. In such cases, the largest school of the two was maintained in the sample. The simulation model, as mentioned earlier, showed there was considerable scope for consolidation of the Moldovan school network, entailing a decrease from 1 229 to 1 027 schools which is a total of 202 schools:

- Primary schools: a decrease from 100 to 82 (i.e. 18 schools)
- Basic education schools: a decrease from 797 to 662 (i.e. 135 schools)
- All-level schools: a decrease from 296 to 254 (i.e. 42 schools).

The analysis showed that schools in all types of areas i.e. i) sparse rural areas, ii) villages, iii) towns and suburbs, and iv) cities would experience school closings, but to different degrees (see Annex C for a detailed explanation on these urbanisation categories). As expected, the largest reductions in per student expenditure accrue in primary schools in villages and sparsely populated rural areas, as well as basic education schools in sparsely populated rural areas. The total estimated expenditure savings of this consolidation could amount to 1.7% of the initial expenditure, 70% of which comes from teacher compensation savings. The estimated number of teaching staff could decrease by 1%. This should not provide any challenges considering that many teachers in Moldova are nearing retirement (see Section 1).

The consolidation of schools would imply the relocation of 21 232 students. As the identified schools for closure are all under a 15-minute drive distance from the most proximate school offering the same level of education (and that has the capacity absorb these students), the travel cost for students as a result of these school closures should in principle not increase.

The OECD/IIEP team recommends the MoER to consider the following actions presented below (not necessarily in the order as presented) to advance with a first phase of school network reorganisation, recognising that further consolidation may be needed to respond to demographic shifts that are expected to continue and work towards further efficiency gains:

- Building also on the feedback received during the education stakeholder workshop, the MoER may want to further refine the geospatial simulation model and establish a final "master list" of schools that are proposed for reorganisation. An indicator to possibly include in the next iteration of the simulation model is student performance (i.e. results from the primary school assessment, the gymnasium exam and the baccalaureate exam).
- Carefully review this list as there may and likely will be some cases for which special circumstances apply and that argue against closing of a school – a "one-size-fits-all" solution may not be possible or desirable, as mentioned above.
- Following the further review of this list of schools, the MoER could establish a small technical working group (e.g. including representatives of the MoER, ANACEC and districts) to advice on possible options for consolidation. Again, the OECD/IIEP team cautions for a "one-size fits all" solution.
- In addition, the MoER should explore different policy instruments to create incentives for consolidation and consider defining a package of suitable and affordable incentives. The obtained master list could support the estimation of the possible costs involved.

  One of the most common practices is to offer direct aid programmes for consolidating institutions, as well as providing building and transportation aid, to cover the capital investments and the changes in operating costs occurring after consolidation (Duncombe and Yinger, 2010[190]; World

Bank, 2023[191]). Furthermore, following the examples from OECD Members such as Portugal (OECD, 2018[186]), Denmark (OECD, 2018[186]) and England (United Kingdom) (Nusche et al., 2016[192]), the MoER should consider establishing a funded school infrastructure programme – within the Government budget and/or with development partner support for: 1) renovating "receiving" schools to ensure they have the necessary capacity and facilities to accommodate all (new) students and provide them with a quality education; and 2) constructing new, larger school buildings to accommodate the student populations of two or more schools. The establishment of such a programme for investing in modern, state-of-the-art school buildings can provide an attractive incentive for schools to voluntary opt for closing and/or merging with another school. Several stakeholders noted that based on their past experiences the second option is likely to be less costly and preferable for the Moldovan context.

In addition, there is likely to be a large upward shift in per student costs during the years immediately following consolidation, followed by a gradual decline in the following years. For this reason, policies seeking to incentivise consolidation should cover at least the costs incurred during and immediately after the consolidation process (OECD, 2018[186]). There may be other incentives to encourage and support the consolidation of the school network in Moldova that should be explored.

- After defining the package of suitable and affordable incentives, the MoER would be well-positioned to initiate the dialogues with those schools that have been identified for reorganisation. As noted above it is important to carefully weigh the benefits of school closures against their social and economic impact on surrounding communities and recognise that a "one-size-fits-all" solution may not be possible or desirable.
- Recognising that the consolidation of the school network will take time and demographic shifts are projected to continue and cause further inefficiencies, the MoER should consider integrating the geospatial simulation model in its EMIS – though noting these data should not be made publicly available and instead are accessible to the MoER. The integration is to serve the purpose of ensuring that the MoER could benefit from an automatic generation of a "rolling master list" of schools to be considered for consolidation based on the latest data available.

Continue optimising the multi-level governance of the school system with an emphasis on support for school improvement

Strengthen the organisational capacity of the MoER, ANACEC and other national level agencies

The Education Development Strategy 2030 calls for the strengthening of the managerial capacity and a culture of quality at all levels of the education system (Government of the Republic of Moldova, 2022[18]). It sets out the objective of reforming the management at all levels of the education system in terms of strategic leadership, efficient and transparent management and public accountability. The evidence collected from this review corroborates this call for action. For example, various sources point to the variable capacity of districts (i.e. Level 2 public authorities) (see below) (World Bank, 2018[22]; Beschieru et al., 2018[20]). Another example is provided by ANACEC whose mandate and roles and responsibilities are considerable, especially considering its staffing.

There may also be challenges in terms of the MoER's organisational capacity. Apart from the earlier mentioned need for investing in the capacity of NACE, the implementation of the Education Development Strategy's objective for digitalisation of education, including this report's proposed recommendations for action, may be challenging with the current staffing. There may be other issues and opportunities for optimising the MoER organisational capacity.

Furthermore, as also noted in the Education Development Strategy 2030, across different levels of the education system, the OECD/IIEP team found evidence of a management model and organisational culture that is geared towards bureaucratic compliance. The interviews with senior MoER officers showed a clear desire to modernise its management model and move towards a culture of quality.

The OECD/IIEP team therefore recommends strengthening the organisational capacity of ANACEC, the MoER and other national level agencies. Considering the complexity of such an exercise, the MoER may consider starting by undertaking a comprehensive organisational capacity assessment of the MoER and other national level agencies to optimise their functioning and enhance their capacity for policymaking, implementation, monitoring and evaluation, that is to result in concrete actions for realising this objective. Such an assessment would exclude the districts as these are to be consolidated, see below.

The administrative-territorial reform provides an opportunity to clarify the roles and responsibilities of district authorities in the field of education

Education governance reforms, involving several layers of government, need to take into consideration and coordinate a wide range of stakeholders with various, and sometimes opposite, interests and political views (OECD, 2020[193]; OECD, 2017[194]; Burns and Köster, 2016[180]). Unsurprisingly, OECD Members are continuously working to optimise the governance of their education systems, with a seeming growing interest among several OECD Members for strengthening the support for school improvement (see Box 4.2).

Box 4.2. "Optimising Multi-level Support for School Improvement in Scotland (United Kingdom)" – International peer learning event among selected OECD Members

Like several other OECD Members, the Scottish Government has recently initiated a reflection on how to clarify and strengthen the school improvement support that is provided through different bodies at different levels of its education system; aimed at better supporting schools in the implementation of its Curriculum for Excellence (CfE). In support of ongoing reform efforts, the Scottish Government in May 2023 hosted an international peer learning event, co-organised and facilitated by the OECD. The aim of the event was twofold:

- To explore ways and approaches to clarify the roles and responsibilities of the central government (Department of Education), national bodies, Regional Improvement Collaboratives and local authorities in relation to the improvement support they provide to schools.
- To allow participating countries [to the peer learning event] to share experiences and ideas on the clarification of roles and responsibilities and functioning of education bodies/agencies across different levels of the education system (multi-level governance); thereby supporting reflections on their own systems.

The event as such brought together international experts from Ireland, Norway and Wales (United Kingdom), as well as stakeholders from all levels of the Scottish education system in order to collectively reflect on how the Scottish school improvement system could be further optimised and to compare and contrast its approach with international practices. The three invited countries were selected because of their relevance to the Scottish case. This includes them having completed and/or recently initiated similar policy initiatives to enhance the multi-level governance of their school systems and improvement support provided to schools; offering value opportunities for peer learning, drawing from lessons learning and the sharing of good practices to support the Scottish Government in deciding on next steps.

Prior to the event, all countries were asked to prepare (with the support of the OECD) a standardised presentation on its education system, governance structure and current school improvement support, etc. to optimise the peer learning between

countries. Following the country presentations, workshop sessions focused on helping the Scottish Government in its reflections on three questions to inform its next steps:

- How do we ensure that support for school improvement is always user-focused, based on the best and latest data and evidence and secures the largest possible improvement in learner outcomes?
- Are there general principles, or good practices, about what types or categories of support should be provided by organisations at different levels of the system (i.e. national, regional and local levels)?
- How does an empowered education system that is non-directive avoid duplication in school improvement efforts by schools and support provided by local authorities, regional improvement collaboratives and the national level? And the potential confusion in terms of what type of school improvement support is available and where it can be accessed?

Guided by these questions, the safe peer learning environment supported the sharing of experiences – "good" and "bad" experiences, both providing valuable information, and informing learning and the collaborative exploration of ideas and opportunities for (re-)shaping the roles and responsibilities for school improvement support across different levels of the Scottish education system.

Note: Prepared by the authors of this report.

A review of the administrative-territorial structure of Moldova found it to be characterized by a high fragmentation, encompassing 896 Level 1 public authorities (i.e. Level 1 ATUs) and 35 Level 2 public authorities (i.e. Level 2 ATUs, see Section 1) (Beschieru et al., 2018[20]). The review provided an in-depth analysis of the functioning of these two levels of public authorities. The review among others corroborated earlier findings that pointed to the variable capacity of Level 2 public authorities to effectively manage, monitor and support their schools and a lack of clarity and transparency in terms of their actual roles and responsibilities (World Bank, 2018[22]).

The administrative-territorial review proposed several scenarios for optimising the administrative-territorial structures and processes. Drawing from this review, the Government of Moldova was, at the time of the writing of this report, developing a Strategy for the Reform of Public Administration of the Republic of Moldova 2023-2030 that was scheduled for approval by Parliament by the end of 2023. The strategy concept note included the proposal for two options: 1) reducing the 35 districts to 5 districts in accordance with the current circumscription of the regional development regions; or 2) reducing the number of districts to 10 districts in accordance to the territorial offices of the State Chancellery (IPRE, 2022[195]).

Whatever option is pursued, both would entail important opportunities for strengthening Moldova's public administration and governance of its education system. The OECD/IIEP team would like to reiterate the importance of clarifying the roles and responsibilities of the to be consolidated districts in the area of education. These should include the safeguarding of the quality of their schools and supporting of school improvement efforts – without such a measure the proposed strengthening of school self-evaluation and improvement planning and targeting of support proposed in Section 2 are unlikely to be realised.

The clarification of the roles and responsibilities of the to be consolidated districts should be matched with investments in their capacity development to allow them to fulfil their roles and responsibilities. Although the consolidation likely already allows for drawing the benefits of pooling of human resources and specialisation of skills (OECD, 2017[194]; OECD, 2019[39]), the MoER should consider making further investments to develop the organisational capacities of the new district education authorities. This should include the development of a systematic and common approach to identifying underperforming schools and providing them with targeted support across the whole of Moldova's school system (i.e. a common approach across all districts) in collaboration with national level agencies (see Section 2).

While the MoER may want to lead this initiative, the development of such a common approach should be done with key stakeholders, such as ANACEC, school leaders and district education officers. This would help ensure the relevance and quality of the new policy and gaining the much-needed support for its successful implementation (NSW Government, 2022[196]; Burns and Köster, 2016[180]; Schleicher, 2018[149]). Building on the proposed guidelines for school self-evaluation and improvement planning (see Section 2), the MoER should consider developing similar guidelines that describe the actions and concrete steps these district education authorities should take to identify underperforming schools and to support them in their improvement efforts.

Recommendations

- In line with the Education Development Strategy 2030 that calls for enhancing the attractiveness and prestige of the teaching profession, **Moldova should consider initiating preparatory research work for a reform of the career structure and salary scale of the education profession of Moldova.** A full restructuring of the career structure and salary scale is likely to be a complex and time-consuming process which provides further impetus for not delaying the preparatory work that is to (in due time) result in one or more options for such reform.

  Ideally these options should be explored with the involvement of the education profession and other key stakeholders. The recently established National Institute for Education and Educational Leadership would seem well-positioned to lead this preparatory work.

- **It is recommended that the MoER reconsiders the performance-based pay scheme.** International research evidence shows that making performance-based pay work well and sustainably is a formidable task, even under the best circumstances. This while the implementation challenges for this policy are significant, including a lack of capacity of appraisers, the administrative burden on schools and the existence of a separate annual appraisal system, among others.

  If reconsidering this policy is not an option at this point in time, then the MoER should consider carefully monitoring the implementation of the scheme and use these findings to inform the planned reform to develop a comprehensive career structure and salary scale. This research could focus on the implementation process and whether the policy is achieving the desired outcomes, and its potential influence on other policies such as the annual appraisal process.

- Building on the initial geospatial analysis conducted, the **MoER should consider the following actions to advance the school network reorganisation** (not necessarily in the order as presented):

  - **Further refine the geospatial simulation model as needed to establish a final "master list" of schools that are proposed for reorganisation.** An additional indicator to possibly include is student performance.
  - **Carefully review this list as there may and likely will be some cases for which special circumstances apply and that argue against closing of a school – a "one-size-fits-all" solution may not be possible or desirable.**
  - **Following the further review of this list of schools, the MoER could establish a small technical working group (e.g. including representatives of the MoER, ANACEC and**

districts) to advice on possible options for consolidation. Again, the OECD/IIEP team cautions for a "one-size fits all" solution.

- **The MoER should explore different policy instruments to create incentives for consolidation and consider defining a package of suitable and affordable incentives.** The obtained master list could support the estimation of the possible costs involved. One of the most common practices is to offer direct aid programmes for consolidating institutions, as well as providing building and transportation aid, to cover the capital investments and the changes in operating costs occurring after consolidation.
  - Following the examples from OECD Members such as Portugal, Denmark and England (United Kingdom), the MoER should consider **establishing a funded school infrastructure programme** – within the Government budget and/or with development partner support for: 1) renovating "receiving" schools to ensure they have the necessary capacity and facilities to accommodate all (new) students and provide them with a quality education; and 2) constructing new, larger school buildings to accommodate the student populations of two or more schools. The establishment of such a programme for investing in modern, state-of-the-art school buildings can provide an attractive incentive for schools to voluntary opt for closing and/or merging with another school.
  - There is likely to be a large upward shift in per student costs during the years immediately following consolidation, followed by a gradual decline in the following years. For this reason, **policies seeking to incentivise consolidation should cover at least the costs incurred during and immediately after the consolidation process.**
  - There may be other incentives to encourage and support the consolidation of the school network in Moldova that should be explored.
- **After defining the package of suitable and affordable incentives, the MoER would be well-positioned to initiate the dialogues with those schools that have been identified for reorganisation.** As noted above it is important to carefully weigh the benefits of school closures against their social and economic impact on surrounding communities and recognise that a "one-size-fits-all" solution may not be possible or desirable.
- Recognising that the consolidation of the school network will take time and demographic shifts are projected to continue and cause further inefficiencies, **the MoER should consider integrating the geospatial simulation model in its EMIS – though noting these data should not be made publicly available and instead are accessible to the MoER.** The integration is to serve the purpose of ensuring that the MoER could benefit from an automatic generation of a "rolling master list" of schools to be considered for consolidation based on the latest data available.

- **Moldova should invest in strengthening the organisational capacity of the MoER, ANACEC and other national level agencies.**
- As part of the administrative-territorial reform, **the Government should clarify the roles and responsibilities of the to be consolidated districts in the field of education. This should include clarifying their responsibilities for safeguarding the quality of schools and supporting their improvement efforts** – without such a measure the strengthening of school self-evaluation and improvement planning, and targeting of school improvement support proposed in Section 2 are unlikely to be realised.

- **The Government should invest in developing the capacities of the to be consolidated districts. This should include the development of a systematic and common approach to identifying underperforming schools and providing them with targeted support.** Although the MoER may want to lead this initiative, ideally this is done with key stakeholders such as ANACEC, school leaders and district education officers to draw from their expertise and help to ensure their ownership.

  Building on the proposed guidelines for school self-evaluation and improvement planning, **the MoER should consider developing similar guidelines for districts that describe the actions and concrete steps they should take to identify under-performing schools and support them, including by matching schools for school-to-school collaboration.**

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Annex A. OECD-UNESCO IIEP project team members

Marco Kools is a project manager and education analyst with the OECD Directorate for Education and Skills. He currently leads the Implementing Policies: Leading Education Change work that consists of a complex portfolio of implementation support/technical assistance projects, including in the Flemish Community of Belgium (Belgium), Ireland, Latvia, Moldova, New South Wales (Australia) and Spain. He has specialised in various areas of education policy, including effective policy design and implementation, assessment and evaluation, and the development of (schools as) learning organisations. Marco in September 2021 returned to OECD after a two-year secondment with UNICEF Lao PDR where he served as Education Manager of the Partnership for Strengthening the Education System of Lao PDR Project. Before that he worked at OECD with individual countries such as the Netherlands, Latvia, Sweden and Wales (United Kingdom) in support of their school improvement reforms. Between 2005 and 2012, Marco worked with UNICEF in the Solomon Islands, Lao PDR and at the UNICEF Innocenti Research Centre in Italy. Before that he worked in the field of education in the Netherlands, where he in 1999 started his career as a secondary school teacher. Marco has written and coordinated several publications and academic articles. He holds several degrees, including a PhD in Public Administration and an MBA.

Barbara Tournier is a Programme Specialist at IIEP-UNESCO where she is responsible for coordinating research projects on teacher issues. She also manages IIEP's specialised course on teacher management and participates in technical cooperation projects and policy advice. More specifically, she works on organisational aspects of teacher management to offer insights on how improved organisation of education systems can help better support teachers in their daily activities and enhance their motivation. Her research expertise covers teacher career structures and educational leadership. Barbara has coordinated several publications, including research reports, articles, and blog posts.

Barry Kenny is working with the Implementing Education Policies Team at the OECD Directorate for Education and Skills. He is serving as a project manager and analyst for several tailored policy implementation support projects, including for the Republic of Moldova and New South Wales (Australia). Prior to joining the OECD, Barry worked with the Teaching Council of Ireland in the development and implementation of teachers' professional learning policy, also supporting teacher research engagement. Barry began his career in education as a primary teacher and he has managed numerous projects in the not-for-profit education sector. Barry holds several degrees and he is currently a PhD in Education student in Trinity College Dublin, also working towards a diploma in statistics and data science.

Inés Sanguino is working with the Implementing Education Policies Team at the OECD Directorate for Education and Skills. Inés is coordinating and supporting several tailored policy implementation support projects, including for Flanders. She has previously worked with organisations such as What Works for Children in Social Care and Unlocked Graduates. Most of her work has been in research, collaborating with various projects at the Junior Researcher, King's College London and The University of Oxford where she also engaged in tutoring undergraduates. Inés completed a BSc in Psychology, and an MPhil in Evidence-Based Social Intervention and Policy Evaluation as a "La Caixa" Scholar.

Solène Burtz is working with the Implementing Education Policies Team at the OECD Directorate for Education and Skills. Solène is serving as a project manager and analyst for several tailored policy implementation support projects, including for Ireland, Latvia and Spain. Prior to joining the OECD, Solène worked at the French National Institute for Public Service (former ENA) in Paris on international governance projects and capacity building for high-level civil servants in Europe and Africa. She previously worked for the French Ministry of Foreign Affairs, specialising in bilingual education in the United States. Solène holds a Master's in Education Policy and International Development from University College London (UCL) Institute of Education in the United Kingdom.

Annex B. An overview of the data collection and stakeholder engagement process

The work on the project "Support to implementation of education policies in Moldova" has been operationalised through an extensive desk review of policy documents and studies and by undertaking an extensive series of meetings, semi-structured interviews and focus group discussions (both online and in person) with key stakeholders from different levels of the Republic of Moldova's education system. Participants have consisted of (among others) school leaders and teachers from primary and secondary education, directors and teachers from VET institutions, representatives from the Ministry of Education and Research (MoER), district Departments of Education, tertiary education institutions providing teacher education and continuous professional development, the National Agency for Quality Assurance in Education and Research (ANACEC), the National Agency for Curriculum and Evaluation (NACE), and also several international development partners that are active in the country, such as the European Training Foundation, among others.

In an attempt to illustrate the depth and breadth of the data collection and stakeholder engagement process, key events and associated participants are outlined below.

Scoping mission, online, 14-18 February 2022

The project team conducted an initial online scoping mission from 14 to 18 February 2022. An extensive number of semi-structured interviews was conducted with key education stakeholders, including the Minister of Education and Research; the State Secretary of General Education; the State Secretary of VET Education; the Parliamentary Committee on Education; the Presidential Advisor on Education; the heads of several district Departments of Education; the Local Education Group consisting of international development partners; the EU High-level Advisor for Education and Research; and the Programme Manager of the EU Delegation to the Republic of Moldova.

VET informal working group meeting, online, 23 February 2023

The project team also participated in a meeting with the VET informal working group that includes development partners, such as the European Union, World Bank, USAID, Austrian Development Agency, Lichtenstein Development Service, GIZ, Swiss Agency for Development and Cooperation, among others. This group meets at regular intervals to discuss key policy issues and coordinate their efforts in support of the Government in strengthening VET in Moldova.

Mission, online, 30 May-3 June 2022

The project team conducted an online mission from 30 May to 3 June 2022. A wide range of virtual meetings were held with a variety of education stakeholders, including representatives of several departments of the MoER (i.e. General Education, Lifelong Learning, VET, among others); the President and Vice-President of ANACEC; four heads of district Departments of Education; teachers and school leaders from four primary and secondary schools (in rural and urban areas); teachers and directors from three VET institutions (one VET upper secondary school, one VET college, one Centre of Excellence); several MoER representatives with responsibility for VET; representatives from teacher training institutions; representative from the National Authority for Qualifications; representatives from three Sectoral Committees; Chambre of Commerce representatives; representatives from the Coordination Group of the Labour Market Observatory; the EU High-level Advisor for Education and Research; and the Programme Manager of the EU Delegation to the Republic of Moldova.

Four-day mission to Chisinau, Moldova, 6-9 December 2022

Part of the project team travelled to Chisinau, Moldova for a four-day visit in December 2022. During this visit, the team conducted additional semi-structured interviews with a wide range of education stakeholders. These included the Minister for Education and Research, officers from the MoER's departments of General Education, Lifelong learning, NACE, and ICT; the President and vice-President of ANACEC (and other colleagues); the EU High-level Advisor for Local Public Administration Reform; representatives from the European Training Foundation (ETF); the EU High-level Advisor for Education and Research; and the Programme Manager of the EU Delegation to the Republic of Moldova.

Mission, online, 8 December 2023

On 8 December, the project team conducted a series of semi-structured online interviews with a range of stakeholders. These included representatives from the National Agency for Quality Assurance in Education and Research (ANACEC), the Chamber of Commerce, the Centre of Excellence in Informatics and Information Technologies and several VET teachers.

Following this online mission, the project team also met online with the State Secretary responsible for VET and additional ETF representatives.

Stakeholder workshop, Chisinau, Moldova, 10-11 May 2023

In May 2023, the project team returned to Moldova to facilitate a 1½-day stakeholder workshop. The first day was dedicated to discussing with a broad range of education stakeholders the preliminary findings and recommendations concerning the "professional development of teachers and other education professionals" and "curriculum and learning resources". The second day focused on the third policy domain "the evaluation of Vocational Education and Training (VET) programmes and institutions in order to improve their functioning". Preliminary findings and recommendations were discussed throughout the 1½-day stakeholder workshop and where needed further developed based on extensive discussions and feedback provided by participants.

These included the State Secretary for General Education and the MoER's Head of VET; the President and Vice-President of ANACEC; representatives of NACE; teachers and school leaders representing primary and secondary education schools; directors and teachers representing VET institutions; representatives of district Departments of Education; teacher educators from higher education institutions; higher education representatives; industry representatives; representatives of the development partners; the EU High-level Advisor for Education and Research; and the Programme Manager of the EU Delegation to the Republic of Moldova.

Annex C. Explanation on the categories of urbanisation

The Degree of Urbanisation, endorsed by the UN Statistical Commission in March 2020[4], relies on population size and density thresholds to classify population grids of 1 by 1 km resolution. The Degree of Urbanisation level 1 classifies the entire territory into: 1) cities, 2) towns and suburbs, and 3) rural areas. At level 2, towns and suburbs are split into: 1) dense towns, 2) semi-dense towns, and 3) suburbs. Rural areas are split into 1) villages, 2) dispersed rural areas and 3) mostly uninhabited areas.

- Cities have a population of at least 50 000 in contiguous grid cells with a density of at least 1 500 inhabitants per km^2.
- Dense towns have a population between 5 000 and 50 000 in contiguous grid cells with a density of at least 1 500 inhabitants per km^2.
- Semi-dense towns have a population of at least 5 000 in contiguous cells with a density of at least 300 inhabitants per km^2 and are at least 2km away from the edge of a city or dense town.
- Suburbs have most of their population in contiguous cells with a density of at least 300 inhabitants per km^2 that are part of a cluster with at least 5 000 inhabitants but are not part of a town.
- Villages have between 500 and 5 000 inhabitants in contiguous cells with a density of at least 300 inhabitants per km^2.
- Dispersed rural areas have most of their population in grid cells with a density between 50 and 300 inhabitants per km^2.
- Mostly uninhabited areas have most of their population in grid cells with a density of less than 50 inhabitants per km^2.

In this report, these categories are collapsed into four categories: 1) sparse rural areas (including mostly uninhabited areas and dispersed rural areas); 2) villages; 3) towns and suburbs (including dense and semi-dense towns and suburbs); and 4) cities.

[4] https://unstats.un.org/unsd/statcom/51st-session/documents/BG-Item3j-Recommendation-E.pdf

Implementing Policies: supporting change in education

This document was prepared by the OECD Implementing Education Policies team, with the support of the UNESCO International Institute for Education Planning (IIEP).

OECD's work on *Implementing Policies: Supporting Effective Change in Education* offers peer-learning opportunities and tailored support to OECD Members and non-Members to help them achieve success in the implementation of their policies and reform initiatives.

IIEP-UNESCO supports the institutional capacity of its Member States for effective planning and management of education sector development, and makes available and encourages the use of knowledge on educational planning and management as a global public good.

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