2 Equipping young people in Lithuania with skills for work and life

Equipping young people in Lithuania with skills for work and life is central to Lithuania's vision for a learning society that is modern, dynamic and ready for future challenges. The skills that young people develop from early childhood into early adulthood are foundational to their personal well-being and their contribution to the economy, society and the environment. This chapter explores three opportunities for Lithuania to better equip young people with skills for work and life: 1) successfully implementing and complementing modern curricula; 2) strengthening Lithuania's teaching workforce; and 3) making vocational education and training and higher education more responsive to labour market needs.

The importance of equipping young people with skills for work and life

A critical question facing Lithuania, and education systems across the OECD, is how to prepare young people for the jobs of the future and equip them with the skills to tackle societal challenges that we cannot yet imagine and use technologies that have not yet been invented. Furthermore, it is important to understand how young people can be equipped to thrive in an interconnected world where they need to understand and appreciate different perspectives and worldviews, interact respectfully with others, and take responsible action towards sustainability and collective well-being (OECD, 2019[1]).

Young people's skills are critical for their personal well-being and outcomes later in life, as well for countries' economic prosperity and social cohesion. Across the OECD, individuals with higher literacy proficiency are more likely to be employed, earn high wages, trust others, participate in the democratic process and community life, and report good health than their less-skilled peers. For countries, skills are a key driver of innovation, productivity and, ultimately, economic growth, social cohesion and higher living standards (OECD, 2016[2]). Developing skills at an early age is therefore a key investment in the economic prosperity and well-being of countries. Countries whose youth develop strong skills typically have highly skilled adult populations, as skills outcomes in youth are strongly correlated with success in tertiary education and skills proficiency in later life (OECD, 2019[3]).

The importance of young people developing a broad range of relevant skills is growing. In Lithuania, as in other OECD countries, megatrends such as globalisation, digitalisation, population ageing and migration are transforming the skills individuals need to effectively participate in work and society (OECD, 2019[3]). Students need support to develop not only knowledge and skills, but also attitudes and values that can guide them towards ethical and responsible actions (OECD, 2019[1]). Strong skills developed in youth help foster a culture of lifelong learning that can shield individuals against technological displacement. The current economic slowdown and shrinking of Lithuania's labour force arising from population ageing and emigration is putting greater pressure on young graduates to develop the skills in highest demand in the labour market so that they have a smooth transition into employment and avoid skills mismatches that could impede growth.

The COVID-19 pandemic and subsequent school closures in 2020 have tested Lithuania's capacity for, and highlighted the importance of, effectively equipping young people with skills for life. An imperative for Lithuania, and other OECD countries, is to help students recover from how the pandemic has affected their learning gains, and to help the entire education system be more resilient in the face of future shocks. This entails understanding the impact of the pandemic and school closures on young people's skills, targeting support at young people to catch up and continue their studies, and making more effective use of technology in the teaching and learning process, particularly through remote and blended learning (OECD, 2020[4]).

Equipping young people with skills for work and life is also central to Lithuania's vision and goals for the future (Table 2.1).

Table 2.1. Lithuania's strategic goals for young people's skills

Strategy/policy	Description and relevant priorities
Lithuania 2030 "*Lietuva 2030*"	Lithuania's "*Lietuva 2030*" strategy sets a vision for a "learning society" that is modern and dynamic, ready for future challenges and able to perform in an ever-changing world. Lithuania 2030 has three main progress areas: smart society, smart economy and smart governance. The relevant objectives for young people's skills relate to "smart society", and include: Gear the general education system to creativity, citizenship and leadership skills. Develop programmes focused on creativity, quest and personal development, as well as a competence assessment and self-assessment framework. Reorganise the concentrated examination system to a balanced system of accumulation and recognition of various learning achievements. Facilitate proper learning environments, establish science laboratories, create arts education tools and establish wellness areas in all schools. Consolidate Lithuanian studies as the basis for humanistic education, which encompasses training on generic cultural competencies, the development of a creative individual and public education. Introduce media literacy programmes in all education institutions. Support the non-formal academic, sport and creative education of gifted children. Bring together the country's best teachers, science, culture and sports experts. Attract foreign professionals. Enable Lithuania's high school students to study at foreign universities for at least one semester, particularly focusing on Nordic-Baltic student exchanges.
National Education Strategy for 2013-2022	The objectives of this strategy cover improving the quality of teaching, introducing a culture of education quality based on evidence, ensuring access to education and equal opportunities, and guaranteeing the efficiency of the education system and individuals' learning decisions.
National Plan for Progress (NPP) 2021-2030	This consists of 10 strategic aims, goals and impact indicators for 10 years. Relevant goals for young people's skills are centralised in "Strategic Aim 3: Increase the inclusion and effectiveness of education to meet the needs of the individual and the society", and include: 3.1. Improve educational outcomes and reduce gaps between different groups of learners. 3.2. Increase the inclusion and accessibility of education, and ensure a safe environment for everyone. 3.4. Improve the match between the competences acquired in education institutions and in the labour market. 3.6. Strengthen the attractiveness of the teaching profession. Create an effective system of teacher training and competence development.
Programme of the Government of the Republic of Lithuania	The government programme includes priority projects related to young people's skills in the area "Equal Starting Positions for all Lithuanian People". These include: 2.2. A good school for everyone and modern educational content. 2.3. Attractive teachers' workplace and teacher training "excellence" centres. 2.7. Modern, efficient and mission-oriented higher education management. 2.8. Vocational education and training system that meets market needs.

Source: Seimas of the Republic of Lithiania (2013[5]), *Dėl Valstybinės švietimo 2013-2022 metų strategijos patvirtinimo*, https://www.e-tar.lt/portal/legalAct.html?documentId=b1fb6cc089d911e397b5c02d3197f382.; Government of the Republic of Lithuania (2012[6]), Lithuania's Progress Strategy Lithuania 2030 (Lietuva 2030), https://www.lietuva2030.lt/en/; Seimas (2013[7]), Lithuanian National Education Strategy 2013-2022, https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.463390; Government of the Republic of Lithuania (2020[8]), 2021–2030 metų nacionalinis pažangos planas [National Plan for Progress 2021-2030], https://ministraspirmininkas.lrv.lt/uploads/ministraspirmininkas/documents/files/NPP%20planas.pdf; Seimas (2020[9]), Resolution No Xiv-72 on the Programme of the Eighteenth Government of The Republic Of Lithuania.

This chapter considers opportunities to better equip young people in Lithuania with skills for work and life using the definitions in Box 2.1.

Box 2.1. Definitions

Young people are defined in this report as people aged 0 to 29 years old, as in the Lithuanian context this covers the age groups eligible for and/or likely to be enrolled in learning, from early childhood education through to tertiary education.

The process of developing young people's skills includes learning:

- In various learning contexts (educational institutions, communities and workplaces).
- At different levels of education (pre-primary, primary, secondary and tertiary education).
- In different forms of learning, namely formal (leading to a recognised qualification) and non-formal education and training (e.g. extracurricular music, arts, theatre, sport, camps).

"Skills for work and life" refers to the competencies (knowledge, skills, attitudes and values) that today's students need to thrive in and shape the world, both today and in the future. In particular, this chapter focuses on young people's cognitive skills (e.g. literacy and problem solving), social and emotional skills (e.g. perseverance and teamwork), and technical skills (e.g. in mechatronics and life sciences), as these are, to varying degrees, the focus of the Programme for the International Assessment of Adult Competencies (PIAAC) and the Programme for International Student Assessment (PISA).

Source: OECD (2019[3]), *OECD Skills Strategy 2019: Skills to Shape a Better Future*, https://dx.doi.org/10.1787/9789264313835-en.; OECD (2019[1]), *OECD Learning Compass 2030: A Series of Concept Notes*, https://www.oecd.org/education/2030-project/contact/OECD_Learning_Compass_2030_Concept_Note_Series.pdf.

Overview and performance of young people's skills development in Lithuania

Overview of Lithuania's education and training system

Lithuania's education system is relatively decentralised. National institutions, municipalities and educational institutions all share responsibility for the quality of education provided (Table 2.2).

Table 2.2. Lithuanian government and stakeholder bodies responsible for young people's skills

Body	Responsibilities
Parliament (the Seimas)	Establishes the national education policy. It adopts laws that regulate the educational field, for example the Law on Education, the Law on Vocational Education and Training, and the Law on Higher Education and Research. The Seimas also adopts a national education strategy every 10 years, which is prepared by the government (i.e. Lithuania's National Education Strategy for 2013-2022). It can adopt guidelines for policy change in individual areas of education, such as the 2017 Guidelines for Change at General Education Schools. The Seimas considers and approves the annual state budget and funds for municipal budgets. This includes the approval of funds for education (for the "student basket" and "class basket", for universities, and for other educational and scientific institutions, etc.). The Seimas also exercises parliamentary scrutiny over the implementation of strategic documents, laws etc., and establishes state universities. The Education Council of Lithuania is an advisory body that provides legal counsel to the Seimas concerning legislation on education.
Ministries	
Ministry of Education, Science and Sport (SMSM)	Develops, implements and monitors national policy on education and research and higher education studies. According to the Law on Education, the SMSM is primarily responsible for the quality of education and for the financing of education. The SMSM co-ordinates the activities of municipalities' education departments (local level) in implementing state education policy. The SMSM approves the criteria for preschool education curricula, the General Curriculum Framework for Pre-Primary Education, the Description of the Procedure for Pre-Primary Education, and the general content of formal education and training (descriptions of primary, lower secondary, upper secondary education programmes, general curricula and teaching plans). The minister also approves the criteria for education programmes supplementing formal education (i.e. non-formal programmes) financed by state or municipal funds.

Body	Responsibilities
The Ministry of the Economy and Innovation (EIM)	Responsible for creating and implementing human resource development policy. EIM's skills development policies target and seek to expand and deepen the knowledge, skills and competences of the working age population (16+). It is therefore involved in the recognition of regulated professional qualifications. Along with the SMSM, the EIM sets and approves the procedures for a professional training standards structure and the preparation and modification of professional training standards.
Ministry of Social Security and Labour (SADM)	Supports young people's skills development through Lithuania's public employment service (PES) and youth work (a broad range of social, cultural, educational, sports-related and political activities carried out with, by and for young people through non-formal and informal learning). The SADM is responsible for employment and labour market services implemented by the PES. Young unemployed persons up to 29 years of age are a separate target group for the PES and receive specific measures (including training) to help them integrate into the labour market.
Government institutions/agencies	
Department of Youth Affairs	A separate institution under the SADM that implements the objectives of the state youth policy through measures to enhance the motivation of, and possibilities for, youth to acquire education, get work and engage in an active social life. The department also takes part in solving youth related problems and develops non-formal education for youth.
National Agency for Education (Nacionalinė švietimo agentūra, NSA)	Under the SMSM, this agency has a mission to implement the state's preschool, pre-primary and general education policies, and induce education institutions (except for higher education institutions) and other education providers to ensure the quality of education. It does this by providing information, counselling, qualification improvement and (self-) education assistance; conducting education monitoring and education research; and developing the education curriculum and co-ordinating its implementation
Qualifications and Vocational Education and Training Development Centre (KPMPC)	Under the SMSM, KPMPC manages the Lithuanian qualifications system and seeks to improve vocational education and training (VET) quality. It also, among other things, implements VET qualification development initiatives.
Lithuanian Centre of Non-formal Youth Education (LMNSC)	Under the SMSM, the LMNSC initiates and participates in the preparation of legal acts; submits proposals to create, implement and disseminate innovations on the issues of non-formal education policy for children; prepares and improves in-service training programmes for teachers; and provides methodological assistance.
Centre for Quality Assessment in Higher Education (SKVC)	Under the SMSM, SKVC is an independent public agency that implements the external quality assurance policy in higher education and contributes to the development of human resources by the creation of enabling conditions for free movement. The centre was founded by the SMSM as an expert institution.
Government Strategic Analysis Center (STRATA)	Provides government and ministries with the independent, research-based information required to make evidence-based public policy decisions, for example through the reports "Vocational Education in Lithuania 2019" and "Overview of Lithuanian Higher Education, Research and Innovation Status".
Municipalities	Implement the national education policy. Responsible for ensuring formal education up until the age of 16 (organising preschool education, pre-primary education, general education, vocational training and vocational guidance, and other non-formal and informal education for children). They also organise transportation to educational institutions, and other aspects.
Stakeholders	Various associations represent education and training institutions, schools heads, teachers, employers, and municipalities in equipping young people with skills for work and life.
Sectoral professional committees	Advisory bodies, established on the basis of co-operation, that are intended to co-ordinate strategic issues of qualification system formation and VET in specific economic sectors according to economic function, product, services and technologies.

Source: Government of the Republic of Lithuania (2020[10]), OECD Skills Strategy for Lithuania Questionnaire; Eurydice (2021[11]), *Lithuania Overview*, https://eacea.ec.europa.eu/national-policies/eurydice/content/lithuania_en.

A range of providers deliver learning opportunities to young people in Lithuania, the majority of which are public institutions. Participation in education is concentrated in general rather than vocational programmes (Table 2.3).

Table 2.3. Institutions providing formal and non-formal education in Lithuania (2019)

Type of educational institution	ISCED levels provided	Main orientation of the programmes provided	Total number of educational institutions	Number of public educational institutions	Total number of participants
Formal education					
Preschool (*ikimokyklinio ugdymo mokykla*)	0	(-)	779	593	103 067
Primary school (*pradine mokykla*)	1	(-)	141	118	28 357
Pre-gymnasium (*progimnazija*)	1, 2	G	160	154	95 601
Lower secondary school (*pagrindine mokykla*)	1, 2	G	307	288	59 901
Gymnasium (*gimnazija*)	2, 3	G	404	379	162 956
VET institution (*profesinio mokymo mokykla*)	2, 3, 4	V	70	64	27 826
Sectoral practical training centres within VET institutions	2, 3, 4	V	42	42	(-)
Special schools (*specialioji mokykla*) (for children with special educational needs)	0, 1, 2, 3	G	44	43	3 864
Colleges (*kolegija*)	6	V	22	12	32 931
Universities (*universitetas*)	6-8	G	19	12	73 011
Non-formal education					
Education providers of accredited non-formal education programmes for children	(-)	(-)	1721*	220 (municipal funded)	214 104

Notes: G= General; V= Vocational; (-) Not applicable; *includes providers listed above whose main activity is not non-formal education (such as vocational and higher education institutions). ISCED is the International Standard Classification of Education.
Source: SMM (2020[12]), Education Management Information System (Švietimo valdymo informacinė sistema): Educational and Science Institutions: Groups, Types and Dependence (Švietimo ir mokslo institucijos pagal grupes, tipus ir priklausomybę) (2018/2019 school year); Eurydice (2020[13]), *Lithuania: Statistics on Educational Institutions*, https://eacea.ec.europa.eu/national-policies/eurydice/content/statistics-organisation-and-governance-44_en.

Lithuania's performance

Participation and completion of education

Young people's active participation in different levels and forms of learning from early childhood onwards is essential to help them develop skills for work and life. Lithuania continues to expand young people's enrolment in different levels and forms of education and training. However, participation remains relatively low in certain types of learning, and for certain groups of learners.

Participation in early childhood education has risen, but some groups of children still miss out. From 2005 to 2017, the enrolment rates of children under the age of 3 in education in Lithuania doubled to 25%. However, participation remains slightly below the averages for Latvia and Estonia, and well below the OECD average (36%), largely reflecting parental leave arrangements that allow a parent to stay home with a child under the age of 2 (OECD, 2019[14]). Enrolment rates of children from age 3 to age 6 in education in Lithuania have also risen over time and are consistent with the OECD average (OECD, 2019[14]). However, in both cases participation gaps between advantaged and disadvantaged children and urban and rural children remain relatively large (European Commission, 2019[15]) (OECD, 2017[16]). The OECD previously recommended that Lithuania should expand participation in rural areas by stimulating parental demand for childcare services, among other measures (OECD, 2017[16]). Since then, the Lithuanian government has lowered the compulsory starting age of preschool education for children determined to be at "social risk", while also introducing other measures such as improved transport to/from preschool facilities in rural areas (Seimas of the Republic of Lithuania, 2020[17]).

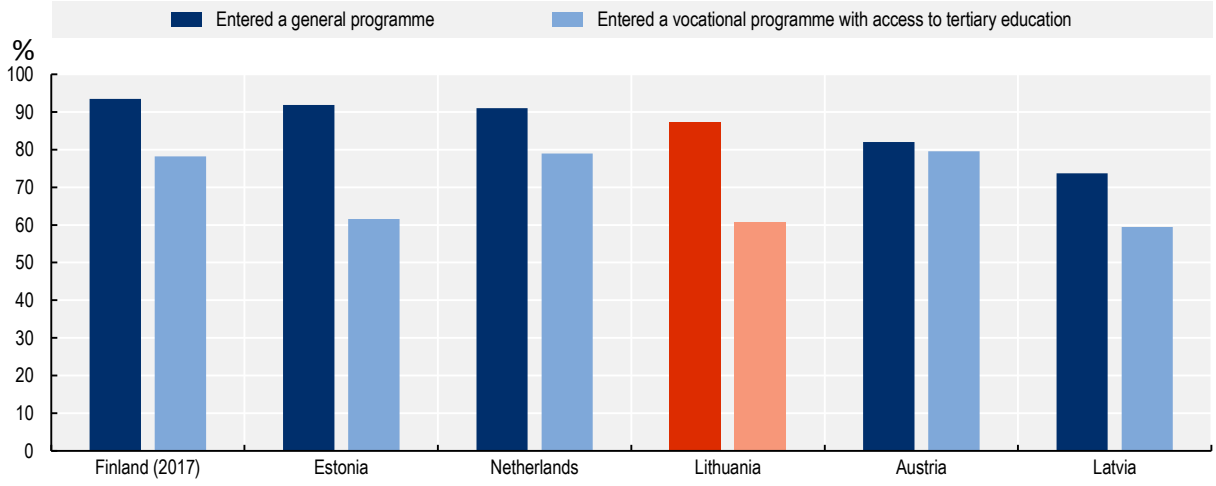
Participation and completion rates in primary and secondary school are among the highest in the OECD overall. Participation in primary and lower secondary education is universal, while participation of 15-19 year olds in formal education (94% in 2018) is among the highest of all OECD countries (OECD, 2020[18]). Lithuania has the second lowest early leaving rate from education and training in the European Union (EU) (4.7%), and the rate in rural areas almost halved from 11.6% in 2010 to 6.6% in 2018 (European Commission, 2019[15]).

However, initial VET programmes remain unpopular, and are over-represented with males and low-performing, typically disadvantaged students. The share of upper secondary students attending vocational programmes (27% in 2018) is well below the OECD average of 42% (although in a small number of municipalities, including Visaginas, VET is more popular than general education). None of Lithuania's secondary VET students were in combined school- and work-based programmes[1] (such as apprenticeships) in 2018, according to international data. However, more recent national data show that about 1.9% of initial VET students were in apprenticeships in 2018-2019 (EC, 2020[19]). Furthermore, the share of women in upper secondary VET (35%) is lower than in all OECD countries except Greece, in part reflecting the concentration of VET activity in male-dominated fields (especially engineering, manufacturing and construction) (see below) (OECD, 2020[18]). VET students are more likely than general (gymnasium) students to report that they are from single parent families and a poor family situation, and receive some kind of social support (Beleckienė et al., 2020[20]).

Fewer upper secondary VET students in Lithuania complete their programme (61% in 2018) than the OECD average for VET students (70%) and for Lithuanian students in general education (87%) (Figure 2.1), although the share of VET drop-outs in Lithuania has been decreasing (Beleckienė et al., 2020[20]). Females perform particularly poorly in VET in Lithuania, with only 57% completing their VET programme compared to 90% in general upper secondary, the largest gap in the OECD (OECD, 2020[18]).

Figure 2.1. Completion rate of upper secondary education, by programme orientation (2018)

Completion rate within the theoretical duration plus two years



Note: Countries are ranked in descending order of the completion rate of students who entered a general programme (for true cohort, by the theoretical duration plus two years).

Source: OECD (2020[18]), *Education at a Glance 2020: OECD Indicators*, https://doi.org/10.1787/69096873-en.

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A high proportion of young people in Lithuania have attained tertiary education. In 2019, tertiary attainment among those aged 30-34 was 57.8%, among the highest of all EU-27 countries, and above the national EU2020 target (48.7%) (European Commission, 2019[15]). A relatively high proportion (about two-thirds) of tertiary educated young adults in Lithuania have a bachelor's level qualification (OECD, 2019[14]), in part

because many graduate from colleges, which offer three-year professional (vocationally oriented) bachelor degrees (Table 2.3) (OECD, 2017[16]). However, the high tertiary education rate is also the result of high emigration of lower educated youth, which is helping to mask declining enrolments in tertiary education since 2011 owing to population decline. Furthermore, short-cycle tertiary programmes, which can provide participants with professional knowledge, skills and competencies (for example bank officers, lawyer assistants, technologists), were established in law in 2018 but are yet to be offered by institutions. In contrast, 10% of young people across the OECD are expected to enter short-cycle education by the age of 25 (OECD, 2019[14]).

Disadvantaged and VET students are under-represented in tertiary education. In 2020, only 17% of upper secondary graduates from the lowest income quintile entered tertiary education, compared to 68% from the highest income quintile. The access of disadvantaged students to higher education (HE) has not improved since 2015 (Strata, 2020[21]). Pathways between VET (where low performing and disadvantaged students are over-represented) and HE are weak, with students from vocational upper secondary programmes representing only 1% of entrants into bachelor's programmes in Lithuania, compared to 28% across the OECD on average (OECD, 2019[14]).

Completion rates in tertiary education are not high. Completion rates[2] for bachelor degree students in Lithuania (65%) were slightly below the OECD average (67%) in 2017, and were particularly low for males (15 percentage points less than females) and students from VET schools (16 percentage points lower than general education students) (OECD, 2019[14]). Completion rates for tertiary students are slightly higher in colleges than in universities, and differ considerably by field of study. For example, only about 50% of tertiary students (in both colleges and universities) in information and communication technology (ICT) programmes complete their studies, compared to 71% of students in technological sciences in universities, and 87% of students in physical sciences in colleges. One reason given by students for not completing ICT programmes was that secondary school did not sufficiently prepare them for the programmes (Kuodytė, 2020[22]). More generally, the officials and stakeholders consulted during this skills strategy project (project participants) raised concerns that schools may not be preparing students to successfully complete their tertiary studies. For example, in 2020 only about 65% of school leavers passed the state's school leaving/higher education entry examination (*matura*) in mathematics, compared to 82% in 2019 (National Agency for Education, 2020[23]).

Participation in non-formal education is high and growing, but unequal across regions. Across the OECD, countries are investing in various types of non-formal education for young people, such as cultural, political, social, sporting, or scientific activities, which may be delivered as extracurricular activities, youth work, volunteering, etc. A key goal of non-formal education is to complement the formal curriculum to help young people develop broad skillsets. Non-formal education can have considerable benefits for young people. In PISA 2018, students enrolled in schools that offered more creative extracurricular activities performed better in reading, on average, than students with fewer available extracurricular activities, even after accounting for student and school socio-economic profile (OECD, 2020[24]). Yet in Lithuania, the supply and diversity of non-formal education activities are not equal in all schools and regions. For example, a relatively high share of schools offer "creative" extracurricular activities (band, orchestra or choir; school play or school musical; and art club or art activities). However, disadvantaged, rural and public schools offer fewer of these activities than other schools. In particular, while the supply of non-formal science, technology, engineering and mathematics (STEM) programmes, including robotics and coding camps, is a priority in current policy, it has been unequal across regions and less accessible to youth in rural areas. Some pedagogues have also expressed concerns about the quality of teaching and learning in existing non-formal STEM programmes (Bilbokaitė, Šlekienė and Bilbokaitė-Skiauterienė, 2018[25]) (see Opportunity 1: Successfully implementing and complementing modern curricula).

In the context of COVID-19, the impact of school closures and remote learning on participation and completion in Lithuania need to be closely assessed. Across the OECD there has been evidence of higher drop-outs in post-compulsory education during school closures, especially among students from

disadvantaged backgrounds (OECD, 2020[26]). Publicly available data and research on these effects are currently limited in Lithuania, and will need to be assessed by relevant authorities.

Learning expectations and outcomes

Beyond participating in and completing education programmes, it is essential that young people of all backgrounds develop a range of skills to a high level during their studies, and build positive expectations for their future learning and work. Despite Lithuania's strong overall performance in involving young people in different forms of education and training, students are not developing high levels of skills.

Lithuania's students do relatively well at learning the knowledge taught in school curricula during initial education. The Trends in International Mathematics and Science Study (TIMMS) and the Progress in International Reading Literacy Study (PIRLS) assess how well year 4 and year 8 students have mastered the factual and procedural knowledge taught in school curricula. According to TIMSS 2019 and PIRLS 2016, the achievements of Lithuanian fourth and eighth grade students in mathematics, science and reading are above the average for participating countries, and have generally been improving over time (Mullis et al., 2020[27]).

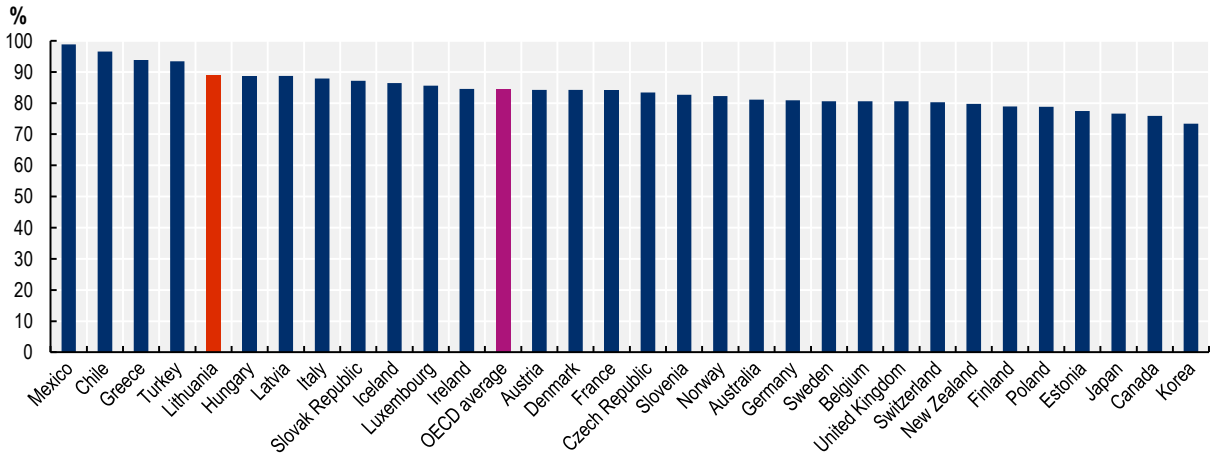
However, Lithuania's students do less well at applying their knowledge in real-world settings. PISA assesses how well 15-year-old students can both reproduce and extrapolate from what they have learned in science, mathematics and reading, as well as how they apply their knowledge in unfamiliar settings. According to PISA 2018, the performance of 15-year-old students in reading, mathematics and science remained below the OECD average, and had not clearly improved over time (OECD, 2019[28]). A high share of 15-year-old students in Lithuania (almost 90%) are not high performers in any of the three PISA domains (Figure 2.2). These results are not directly comparable with TIMMS and PIRLS as they assess different constructs and different samples of students, and do not include the same countries. However, they do suggest that Lithuanian students need to develop stronger skills in applying their knowledge in real world settings in the school years.

Young people in Lithuania also have lower collaborative problem-solving skills (their capacity to work with others to build understanding, share effort and reach a solution) than young people in most other OECD countries (OECD, 2019[28]). These skills are increasingly important as young people will need to collaborate with people from different cultures, appreciate a range of ideas and perspectives, and work with others on more complex tasks often in highly digital environments.

Lithuania has relatively large performance differences between students in rural and urban schools, and in public and private schools, which are driven by differences in students' socio-economic status. According to PISA 2018, the performance of students from rural areas is persistently lower than the performance of urban students, and this gap is almost twice as large as in Latvia and four times larger than in Estonia. This is driven by higher levels of socio-economic disadvantage among students in rural schools rather than their location. After controlling for differences in students' social-economic status, Lithuania is actually one of the few countries in which rural students outperform urban students (OECD, 2020[29]). Furthermore, the small number of students in private schools (4%) outperform students in public schools to a greater extent than in all OECD countries except Greece, Slovenia and Columbia. However, again this gap disappears after controlling for differences in students' socio-economic status (OECD, 2020[24]).

Figure 2.2. Students who are not top performers, PISA 2018

% of 15 year olds who are not top performers (Level 5 or 6) in any of the three domains (reading, mathematics, science) in PISA 2018



Source: OECD (2019[28]), *PISA 2018 Results (Volume I): What Students Know and Can Do*, https://doi.org/10.1787/5f07c754-en.

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The expectations of Lithuanian students for the future are not particularly high, and differ considerably by socio-economic background. For example, according to PISA 2018, far fewer disadvantaged students than advantaged students expect to complete tertiary education, and this gap (44 percentage points) is among the largest in the OECD. Relatively few high-performing (science and/or mathematics) students in Lithuania expect to work as science, engineering or health professionals, owing largely to low expectations among boys (OECD, 2019[30]). Low student demand and preparedness for certain STEM studies (such as ICT) have historically been a challenge for meeting skills needs and realising Lithuania's smart specialisation goals (see Opportunity 3: Making vocational and higher education more responsive to labour market needs).

The skill levels of recent graduates in Lithuania are not consistently high. According to the 2015 PIAAC Survey of Adult Skills, for example, 16-34 year-old graduates from upper secondary VET programmes in Lithuania have lower literacy, numeracy and problem-solving skill levels than VET graduates in most other OECD countries. Furthermore, only in Lithuania are the skill levels of upper secondary VET graduates no higher than those of lower secondary graduates. Tertiary graduates have literacy and numeracy skill levels similar to the OECD average, but relatively low levels of problem-solving skills. While general upper secondary and tertiary graduates have higher skill levels than lower secondary graduates in Lithuania, the difference is smaller than in most other OECD countries (Vandeweyer and Verhagen, 2020[31]), suggesting a greater role for developing young people's skills in higher levels of education.

In the context of COVID-19, the impacts of school closures and remote learning on student performance in Lithuania need to be closely assessed to ensure that anyone who fell behind receives support to catch up. "Learning losses" could be large and persistent, with young learners from disadvantaged backgrounds facing the greatest risks of falling behind (OECD, 2020[4]). In Lithuania, measures to provide pupils with computers and Internet during school closures could lead to significant gains in digital teaching and learning capacity (National Audit Office of Lithuania, 2020[32]). However, it will be important to consolidate these gains beyond the immediate crisis, and to assess how remote learning has affected student performance overall, and for specific groups of learners and schools.

Responsiveness and graduate outcomes

Successfully equipping young people with skills for work and life can positively affect their employment outcomes and help to lower skills mismatches in the labour market. While there is strong and growing demand for tertiary level skills in Lithuania, demand differs by field of study, and various medium-level and advanced vocational skills are also important for the economy. The available evidence suggests that the success of Lithuania's initial VET and HE systems in meeting these diverse skills needs is mixed, limiting the benefits of education and training for youth, employers and the economy. The challenges for policy are to increase the share of graduates finding well-matched jobs, improve employment outcomes for VET graduates specifically, and ensure students and institutions understand and have the capacity and incentives to respond to evolving skills needs in the labour market.

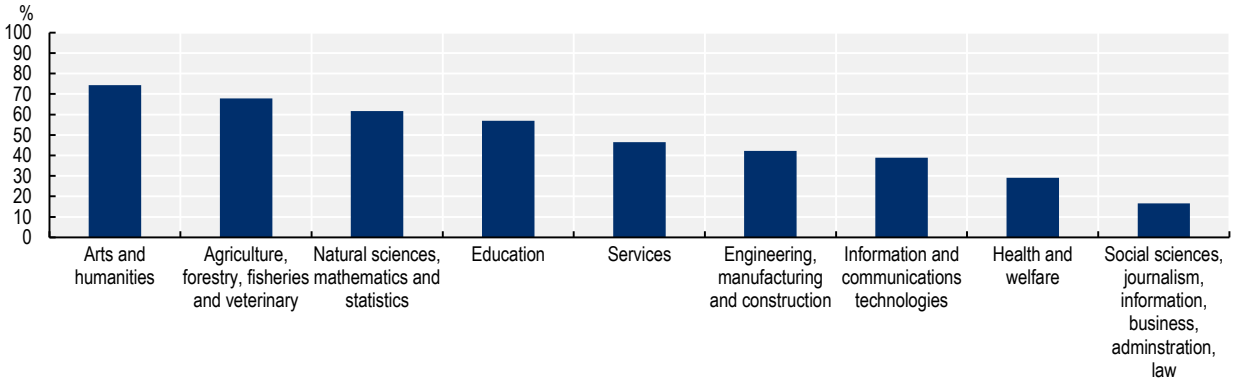
HE graduates experience much better employment outcomes than VET graduates in Lithuania, signalling relatively strong labour market demand for tertiary level skills. In 2019, young tertiary educated adults (25-34 year olds) in Lithuania had among the highest employment rates in the OECD (92%) (OECD, 2020[18]). They earnt 58% more than upper secondary educated young adults, which is one of the largest earnings advantages in the OECD. Transitions to the labour market are relatively fast, with approximately 70-75% of bachelor's and 80-82% of master's students finding employment within six months of graduating (Jakštas et al., 2018[33]). Employment rates for recent VET graduates in Lithuania (81%) are similar to the OECD average, but are 11 percentage points lower than for HE graduates, one of the largest differences in the OECD. Furthermore, unlike in most OECD countries, upper secondary VET graduates in Lithuania do not perform much better than graduates of general upper secondary education in finding work (OECD, 2020[18]).

While the vast majority of HE and VET graduates find work, many are mismatched with their jobs, suggesting that education could be more responsive to the labour market. Skills mismatches are costly – according to PIAAC, over-qualified workers in Lithuania earn on average 17% less than well-matched workers, while workers who are mismatched by field of study earn about 8% less, a rate higher than all OECD countries except Estonia (OECD, 2019[34]). In 2019, about 41% of employed HE and VET graduates in Lithuania (aged <35, not in formal education) were mismatched with their jobs by field of study and/or qualification level. While this was below the average for EU member countries (about 45%), both HE and VET graduates in Lithuania were more likely to be mismatched by field of education (about one-third of graduates) than the average for EU member countries. About one-fifth of HE graduates are over-qualified, and Lithuanian data show that approximately one-fifth of recent university bachelor graduates and one-third of college bachelor graduates work in low-skilled jobs (Jakštas et al., 2018[33]).

Graduate levels of mismatch, and to a lesser extent employment, differ depending on field of study, further suggesting a lack of responsiveness to labour market needs. For example, in 2018 the employment rate for tertiary graduates aged 25-34 years old ranged from 84% for graduates of arts and humanities to 95% for graduates of engineering, manufacturing and construction (OECD, 2020[18]). However, this range is consistent with the OECD average, and lower than the ranges observed in Latvia (14 percentage points) and Estonia (23 percentage points). Lithuanian research shows that VET graduate employment is very low for some fields of study (ranging from 55.6% for architecture and construction graduates [in part reflecting undeclared work] to 92.2% for security service graduates) (Beleckienė et al., 2020[20]). In tertiary education, levels of mismatch also differ considerably by field of study. In Lithuania, a relatively high share of young tertiary graduates from the fields of education, agriculture, and arts and humanities work in jobs not matched to their field of study (Figure 2.3).

Figure 2.3. Young tertiary graduates experiencing field-of-study mismatch, by field, 2019

Share of employed tertiary graduates (<35 years old, not in education) whose job is not matched with their field of study, by field of study



Source: Vandeweyer and Verhagen (2020[31]), "The changing labour market for graduates from medium-level vocational education and training", *OECD Social, Employment and Migration Working Papers*, No. 244, https://doi.org/10.1787/503bcecb-en.

StatLink https://stat.link/zs2hl9

In line with these current labour market signals, a large share of school leavers are enrolling in HE. Enrolments in VET, however, may be too low to meet future demand for certain middle- and higher-skilled jobs. Recent forecasts suggest that over the next decade, Lithuania could face a shortage of medium-qualified workers in occupations such as service workers and shop and market sales workers, as well as plant and machine operators and assemblers, and craft and related trades workers (Cedefop, 2020[35]). Furthermore, higher-level VET qualifications, especially in non-traditional fields such as software development, network engineering and cybersecurity, are becoming increasingly important for OECD countries (Vandeweyer and Verhagen, 2020[31]). Such qualifications have the potential to play an important role in meeting Lithuania's labour market needs for mid- to high-level STEM skills (for example in engineering and information technology). However, as noted earlier, enrolments in upper secondary VET are among the lowest in the OECD, and only 1.5% of 15-19 year olds are enrolled in post-secondary non-tertiary education (which is vocationally oriented). Tertiary institutions do not currently offer short-cycle tertiary programmes, despite the potential for these programmes to quickly meet evolving labour market needs (and offer a pathway for upper secondary VET graduates into higher education). Furthermore, colleges that offer vocationally oriented professional bachelor degrees account for a relatively small share of HE enrolments (about 30%).

By field of study, recent enrolment and graduation patterns in HE and VET are broadly similar to the OECD average, but in some areas do not appear to be closely aligned with Lithuania's skills needs. In 2018, 32% of new entrants to tertiary education in Lithuania (ISCED 5-8) entered the three fields comprising STEM (natural sciences, mathematics and statistics; ICT; engineering, manufacturing and construction), a rate surpassed by only the United States (39%). Within these fields, Lithuania has a relatively large number of entrants to engineering, manufacturing and construction (21%). Some of these sub-fields have actually been experiencing skills surpluses (OECD, 2018[36]). Furthermore, there are relatively few entrants to natural sciences, mathematics and statistics (4%) (OECD, 2019[14]), a field that project participants stated as being highly relevant for Lithuania's smart specialisation priorities, such as energy and sustainable environment, health technologies, and agricultural innovation. There are also low levels of enrolment in some VET fields of strategic importance to Lithuania. As noted earlier, enrolments in upper secondary vocational education are highly concentrated in the fields of engineering, manufacturing and construction,

as well as services (OECD, 2020[18]). Certain study fields linked to newer technologies and industries – such as ICT and environmental protection – comprise a very small share of VET enrolments.

Increasing the responsiveness of VET and HE in Lithuania will be essential to complement short-term youth employment measures in the context of the coronavirus crisis and to improve graduate outcomes in the medium-long term. The economic disruption caused by COVID-19 has lowered job prospects for recent graduates, with youth unemployment (15-24 year olds) reaching 28% in November 2020, the highest rate since 2012 (OECD, 2021[37]). Even with a best case scenario, the OECD forecasts that overall unemployment in Lithuania will be 9.1% in 2020 and 8.2% in 2021, well above 2019 levels (6.3%) (OECD, 2020[38]). Graduates' initial labour market experience has a profound influence on later working life, and a crisis can have long-lasting negative effects on employment and earnings perspectives (OECD, 2020[39]). As Lithuania implements short-term measures such as the reinforced Youth Guarantee, which offers comprehensive job support to young people, it will be essential that it also closely monitors how graduate employment and mismatches evolve in the current environment, and seeks to make education more responsive to evolving labour market needs.

Opportunities to better equip young people with skills for work and life

Lithuania's performance in equipping young people with skills for work and life reflect many factors that include individual, institutional and system-level factors, as well as broader economic and social conditions in the country. However, three critical opportunities for improvement have been identified based on a review of literature, desktop analysis, and data and input from officials and stakeholders consulted as part of this project.

The OECD considers that Lithuania's main opportunities for improvement in the area of equipping young people with skills for work and life are:

1. Successfully implementing and complementing modern curricula.
2. Strengthening Lithuania's teaching workforce.
3. Making VET and HE more responsive to learner and labour market needs.

While Lithuania also needs to improve skills needs intelligence and career guidance in order to better equip young people with skills for work and life, these issues are discussed in Chapter 5 of this report.

Opportunity 1: Successfully implementing and complementing modern curricula

Raising students' performance in the school years and equipping them with the skills needed for success in work and life requires, among other things, a modern and effective school curricula. Previous research has highlighted the importance of curriculum for the quality of education and student outcomes (Wyse, Hayward and Pandya, 2016[40]; OECD, 2019[41]; Voogt et al., 2016[42]). Curricula design can also have implications for equity, as students from disadvantaged backgrounds tend to benefit when curriculum content is challenging, and may not reach their potential if able to choose lower level courses (Voogt et al., 2016[42]). This is particularly important for Lithuania's VET schools, in which low-performing students from disadvantaged backgrounds are relatively concentrated. For Lithuania, it is essential that the SMSM and stakeholders successfully design, implement and communicate the new general curriculum framework for primary, basic and secondary education in both general and vocational education schools to improve students' performance. Lithuania's new competency based curricula will also need to be complemented by modern assessment practices and more high-quality and better targeted non-formal education and training outside of the classroom.

Lithuania, like many other OECD countries, is tackling the great challenge of identifying what kinds of competencies today's students need for the future, and how to design learning environments and

implement curricula to equip students with such competencies. The OECD's Future of Education and Skills 2030 project (Education 2030) is developing a future-oriented conceptual learning framework that supports a common understanding of what knowledge, skills, attitudes and values are important for students to learn (e.g. the OECD Learning Compass 2030). It is also conducting an international comparative analysis to guide evidence-based debates and facilitate international peer learning and self-reflection on curriculum redesign for the future. As part of this, Lithuania has participated in the OECD's Curriculum Content Mapping document analysis exercise, which involved mapping seven learning areas of the curriculum against a list of 28 competencies that stem from the Learning Compass 2030 to explore how knowledge is intended to be taught together with skills (e.g. critical thinking, creative thinking, co-operation/collaboration), attitudes and values (e.g. respect, empathy). Lithuania has also participated in the Mathematics Curriculum Document Analysis project to investigate the extent to which it has incorporated 21st century skills into the current mathematics curriculum. Key results from these exercises are summarised below. Looking forward, the OECD is preparing thematic reports on curriculum redesign that can further inform Lithuania's efforts. These reports cover curriculum overload, managing the time lag between today's curriculum and future needs, ensuring equity through curriculum innovations, managing curriculum flexibility and autonomy, embedding values into the curriculum, and designing/planning for effective implementation (OECD, 2019[1]).

Lithuania is in different phases of curriculum reform at different levels of its education system. The phases of curriculum reform include planning, decision making, preparation, implementation and monitoring (OECD, 2021[43]). In Lithuania, updated pre-primary and secondary vocational education and training curricula have been implemented and are now in the monitoring phase. In 2016, the pre-primary education programme was updated to foster entrepreneurship, ICT and social competencies, and to improve cohesion with the primary education curriculum. This comes with updated methodological and teaching guidance to preschool and pre-primary teachers (Government of the Republic of Lithuania, 2020[10]). However, implementation of the curriculum has been hampered by a number of factors, including teachers' lack of ICT skills (see Opportunity 2: Strengthening Lithuania's teaching workforce). VET curricula were updated in 2015 and included a move to modular VET programmes. VET curricula are updated on an ongoing basis, as professional standards are updated (Eurydice, 2019[44]).

Several participants in this project argued that the current priority for Lithuania is the general school curricula, in particular ensuring the success of the ongoing update of the general curriculum framework for primary, basic and secondary education (ISCED 1-3). The SMSM is currently finalising the preparation phase and entering the implementation phase of the update. Participants highlighted the need to successfully implement the general curriculum framework by effectively engaging with school leaders and teachers, communicating the general curriculum framework in a clear and accessible way, and complementing new curricula with modernised assessment practices and high-quality non-formal education and training. Project participants also highlighted the need to complement new curricula with high-quality teaching (see Opportunity 2: Strengthening Lithuania's teaching workforce), and ensure the curricula prepare students to further develop skills (such has mathematics) in tertiary education that meet labour market needs (see Opportunity 3: Making vocational and higher education more responsive to labour market needs).

Implementing the new general education curricula and modern assessment practices

The SMSM has identified several weaknesses with the current general curriculum framework for primary, basic and secondary education (ISCED 1-3). The Curriculum Content Mapping that Lithuania carried out within the scope of the OECD project Education 2030 found that the general curriculum framework of certain subjects (such as mathematics) covers less content and is less demanding than in other OECD countries. Furthermore, the inclusion of certain skills, qualities, abilities and values (perseverance and resilience, trust and respect) in the general curriculum framework is unbalanced: over-prominent in some subjects and lacking in others. And while certain competences such as problem solving or critical thinking

are often indicated in the general curriculum framework for various subjects, they do not appear to be translating into student competences according to national and international metrics (e.g. PISA). Finally, the standardised examination system (culminating in the *matura* exit examination) does not directly assess many of the transversal competencies targeted by the curricula, thereby narrowing teachers' and students' educational goals to subject proficiency, and limiting the possibility for students to receive ongoing feedback (OECD, 2017[16]; National Agency for Education, 2019[45]).

Participants in this project reiterated the importance of addressing these and other problems with the current general education curricula in Lithuania. They stated that general competences (such as perseverance and resilience, trust and respect) are not yet well integrated across subjects, particularly in middle school (lower secondary), and there is little interdisciplinary content in the curriculum. Curricula at different levels of education still lack coherence as they differ in how they prioritise similar knowledge, skills, values and attitudes. This disadvantages students transitioning between levels of education. The curricula, and therefore teachers and students, are overloaded with an excessive amount of content to be taught and learned in the available time (particularly in middle school). General school curricula have expanded steadily over time to include new competencies, and the same knowledge is taught several times across different learning stages. Some project participants also raised concerns that the implementation of the general curriculum in vocational schools is of a lower quality than in general education schools, which may be limiting performance and equity in secondary education. Furthermore, student assessment continues to be focused on subject matter knowledge rather than cross-cutting competences, and still relies on high-stakes exams (*matura*) rather than moderated grading or formative assessment. Even with the best curricula, this is a disincentive to teaching and learning the cross-cutting skills, values and attitudes required for success in work and life. Early childhood education is not included in the current reform of the school curriculum, so ensuring coherence between these levels of learning will be essential.

In order to address many of these challenges and ensure higher quality general education, the SMSM, as mentioned, is currently updating the general curriculum framework for primary, basic and secondary education (ISCED 1-3). In 2019, Lithuania developed the Guidelines for Updating the General Curriculum Framework for primary, basic and secondary education. These guidelines draw on an impressive range of national and international evidence, and cover changes to the goals, learning outcomes (competences), learning content and assessment of student achievements. They seek to ensure that new curricula integrate sustainable development, creativity, entrepreneurship and STEAM competences (science, technology, engineering, art [creative activities] and mathematics). They establish competence-oriented education covering knowledge (subject, interdisciplinary, procedural and epistemic), skills (cognitive, metacognitive, emotional, social and practical) and values (personal, interpersonal and societal). Based on the guidelines, Lithuania is updating school curricula in 2020/2021 with the involvement of over 120 experts (National Agency for Education, 2019[45]). The new curricula is planned to be implemented in schools in 2022. Recommendations for implementation are being developed that involve illustrating achievement levels with examples, such as indicating the interconnection of interdisciplinary topics within the area of education and the subjects taught, giving examples of student activities associated with (educational) learning outcomes, and proposing how to work with students with different educational needs (National Agency for Education, 2019[45]). The most recent government programme also sets a goal to better integrate digital literacy into STEM subjects (Seimas, 2020[9]).

Project participants highlighted limitations with the current update of the general curriculum framework. In terms of the guidelines and process for updating curricula, they commended the continued move to a competence-based curriculum, although some stated that the identification and definition of competencies remains vague. More generally, some project participants stated that the process lacks a clear vision, and that the SMSM has been only partially successful in co-ordinating the numerous and diverse actors and interests involved. Timelines are short given that this is a once-in-a-decade reform, school leaders and teachers have not been closely involved, and trade unions have mainly focused on teacher workloads and

salaries. Furthermore, project participants were concerned that teachers and school leaders currently lack the incentives, skills and capacity to properly implement the competence-based curriculum as currently designed, and may struggle with the increased flexibility afforded to teachers in the new curriculum without appropriate support (see Opportunity 2: Strengthening Lithuania's teaching workforce).

In order to successfully implement the current reforms of general school curricula it will be essential that authorities effectively engage stakeholders and complement the curricula with modernised assessment practices (Gouëdard et al., 2020[46]).

The SMSM and involved stakeholders should continue to refine and improve the quality of the curriculum design in the final steps of the preparation phase. In particular, they should seek to ensure that general competences are well integrated across subjects, and that there is sufficient interdisciplinary content in the curriculum, coherence between levels of education (including with pre-primary), and less overload. This could involve a close final expert review of the framework against the guidelines. The SMSM could start to articulate how assessment practices and teacher preparation, as well as school funding, could be adapted to complement the new curriculum, in order to equip young people with cross-cutting skills, values and attitudes for success in work and life, without leaving any schools or students behind.

The SMSM could strengthen its engagement of educational stakeholders in the implementation phase to support successful implementation. Policy makers, experts, teachers, school leaders and representatives of students and families should develop a shared understanding of what the vision and framework for the new curricula looks like in practice, and of each stakeholder's revised roles and responsibilities for implementation. This involves developing a shared overarching vision of what the curriculum implies for practice in schools, and defining associated operational objectives and indicators to monitor progress towards achieving the vision. The SMSM could develop knowledge, materials and space for the local and school level to be able to understand and collectively design their own curriculum reflecting the aspirations of the framework. This will likely require investments in developing the capacity of education professionals to be the main drivers of the curriculum in schools by enhancing their skills and competencies and promoting their collaboration (see Opportunity 2: Strengthening Lithuania's teaching workforce), and potentially by establishing collaborative networks that leverage curriculum expertise and resources, with wide participation from practitioners and experts.

Participants in this project also highlighted that a clear communications strategy including an interactive online portal for the new curriculum with support materials and good practices would be highly beneficial for practitioners. The SMSM has developed a reform website[3], but currently the information that it provides is relatively high level, and it does not offer support materials and good practices in an interactive format. New Zealand's Curriculum Online website[4] is an example of a more comprehensive online portal that aims to help educators create an engaging, inclusive, and dynamic curriculum that meets the needs of their unique school communities. The website offers a range of information, resources, news, advice, guidance, inspiring school stories, practical ideas and research reports, etc.

It will be important for the SMSM to devise a plan for ensuring that implementation of the curricula helps to reduce, and not intensify, longstanding inequalities in the education system. As noted earlier, curricula design can also have implications for equity, as students from disadvantaged backgrounds tend to benefit when challenged by curriculum content, and may not reach their potential if able to choose lower level courses (Voogt et al., 2016[42]). School leaders, teachers and students in disadvantaged schools will require relatively more guidance, training and resourcing in order to achieve the goals of the new curricula. Equity considerations should be prioritised in the provision of professional learning, school improvement services and resourcing to avoid risks of inequalities increasing with curriculum realisation (OECD, 2020[47]).

Lithuania should also define and begin to communicate how assessment practices will be reformed to support the curricula. This requires assessment approaches that give teachers and students incentives to develop all of the knowledge, values and skills defined in the new curricula. The OECD previously

recommended that Lithuania adopt moderated grading that contributes to students' tertiary entry scores, or realign the framework and content of the *matura* examinations to assess more of the competencies in curricula (OECD, 2017[16]). The current guidelines stipulate that evidence of student achievements in formal and non-formal contexts shall be collected in personal learning outcome folders (known as portfolios in some OECD jurisdictions, such as Queensland, Australia), and that this evidence shall be credited at the end of primary, basic and secondary education curricula (National Agency for Education, 2019[45]).

As the technologies to assess some of the desired outcomes of the new curricula may not yet exist, different assessment practices may be needed for different purposes, and new assessment methods should be developed that value student outcomes and actions that cannot be easily measured (OECD, 2019[1]). Lithuania's new 4k learning model (I create, I change, with others, for others) could help to serve this purpose as it promotes reflection-based student learning and self-development, with a focus on self and formative assessment (Ministry of Education, Science and Sport, 2020[48]). New Zealand takes an approach of "assessment for learning", a process by which teachers use assessment information to adjust their teaching, and students to adjust their learning strategies. Assessment is envisioned as a way to motivate and engage students in their learning because it is done in collaboration between the teacher and the learner (New Zealand Ministry of Education, 2021[49]). Additionally, alternative credentials (such as open digital badges and micro-credentials) could be utilised in secondary education to allow students to accumulate externally issued credentials that are recognised when entering tertiary education for specific areas of learning, with less emphasis on final exams (IMS Global Learning Consortium, 2021[50]; Kato, Galán-Muros and Weko, 2020[51]).

In order to successfully implement the new general education curricula, Lithuania could potentially build on its own good practice in national student achievement tests, and learn from curriculum reforms in Wales and Finland (Box 2.2). Wales (United Kingdom), a country of similar size to Lithuania, is ahead of Lithuania in its timelines for implementing a new school curriculum, and has partnered with the OECD in this journey. Finland completed a reform of its national core curricula at all levels of education between 2014 and 2017, ensuring coherence across the education system. Broad participation and support for municipalities and practitioners was central to Finland's approach.

Box 2.2. Relevant national and international examples: Implementing and complementing school curricula

Lithuania – National student achievement tests

National student achievement tests (*Nacionaliniai mokinių pasiekmų patikrinimai*) (standardised testing) have been used for school improvement, and could potentially be expanded to measure more general competencies (e.g. critical thinking) in line with the new curricula.

These tests examine the achievements of second, fourth, sixth and eighth grade students in general education schools. The tests currently cover reading, writing and mathematics (and science and social education for eighth grade students). Since 2011, the assessments have been carried out by the National Examination Centre (NEC).

Based on the test data, the SMSM prepares a series of publications for politicians, educators and the public that aim to provide a concise presentation of educational challenges. The available data are crucial for making decisions that improve teaching. Schools get anonymised results and can use them to compare themselves with others. In addition, NEC provides individual reports for assessed students (and their parents) on their learning outcomes.

Wales – Achieving the new curriculum

Wales has successfully mapped out its policy plan to move away from what had become a highly prescriptive national curriculum to one that focuses on the future, is adapted to learners' diverse needs, and puts teachers and principals back into positions of leaders of learning and teaching. The policy vision is clear and looks to the long term. The new curriculum framework aspires to best practices in terms of 21st century learning and gives high levels of agency for all stakeholders. The curriculum reform was developed as part of a wider reform agenda that included key complementary policies for its implementation. The Welsh Government and other system leaders have started developing initiatives to support schools with curriculum implementation.

The Welsh Government invited the OECD to assess the implementation of the new Curriculum for Wales, review the country's readiness to implement the new policy, and suggest next steps for implementation. The OECD found that the challenge for Wales will be to remain true to the vision, while shifting the perspective of the strategy from being policy driven to focused on schools. To ensure the intentions of the new curriculum translate into practice, it is essential for Wales to address several issues, including a lack of deep understanding of what successful realisation of the curriculum might look like in practice, challenges for schools to design their own curriculum, and implications in terms of developing specific capabilities. There is a risk of inequalities increasing due to the challenges that disadvantaged schools might have in implementing the curriculum, which accentuates the need to clarify the resources available for schools. Following OECD recommendations and discussions with practitioners, the Welsh Government and the Strategic Education Delivery Group updated their implementation strategy to guide the common effort to support schools through the curriculum launch, which is scheduled for September 2022.

Finland – Reform of national core curricula

Between 2014 and 2017, Finland reformed the national core curricula at all levels of education, forming a coherent line throughout the entire education system. The national reform process was guided by transparency and extensive participation, a strong knowledge base, and future orientation (supported by futures research). Based on the national guidelines, all municipalities and schools constructed their own local curricula. An integrative, multidisciplinary pedagogical approach was emphasised, and new tools for crossing the boundaries of subjects were developed. Finland has now experienced nearly two school years of teaching and learning based on the new curricula. The reforms seem to have had a strong influence on school practices, on the provision of education in municipalities and on teacher education.

Source: Lituanistika mokykloje (2019[52]), *Nacionaliniai mokinių pasiekimų tyrimai*, http://www.lituanistika.emokykla.lt/tyrimai/2013-m-vbe-rezultatai/nacionaliniai-mokiniu-pasiekimu-tyrimai/.; National Examination Centre (2021[53]), *Švietimo problemų analizės [Analysis of Educational problems]*, https://www.nec.lt/183/.; OECD (2020[47]), *Achieving the New Curriculum for Wales*, https://doi.org/10.1787/4b483953-en.; Halinen (2018[54]), *The New Educational Curriculum In Finland*, http://www.allianceforchildhood.eu/files/Improving_the_quality_of_Childhood_Vol_7/QOC%20V7%20CH06%20DEF%20WEB.pdf.

Recommendations for implementing the new curricula and modern assessment

1.1. **Continue to improve the design of the general curriculum framework during the final steps of the preparation phase**. In particular, the SMSM should focus efforts on ensuring well-integrated general competences across subjects, sufficient interdisciplinary content in the curriculum, coherence between levels of education (including with pre-primary), and less risk of curriculum overload. This could involve more clearly defining and prioritising the competencies that young people should develop and consistently integrating foundational/transversal skills across subjects, while identifying opportunities to simplify the curricula. Subject content that is less comprehensive and challenging than in other OECD countries, such as mathematics, should be aligned with international standards. Experts should conduct a final review of the framework against the guidelines before implementation, and the SMSM should consider how to test the framework design with school leaders, educators and students. In the longer term, the SMSM and stakeholders should seek to make early childhood, general and vocational curricula coherent and mutually reinforcing so that students in all stages and paths of learning can develop skills for work and life in the 21st century.

1.2. **Actively engage and communicate with education stakeholders to ensure the successful implementation of the new curriculum for general education, especially in socio-economically disadvantaged schools**. The SMSM should actively engage practitioners and experts to develop a shared understanding of what the vision and framework for the new curricula looks like in practice in both general and vocational schools, and of each stakeholder's revised roles and responsibilities for implementation. The SMSM and practitioners could develop knowledge, materials and space for the local and school level to understand and collectively design new curriculum, potentially by establishing collaborative networks. The SMSM should develop a communication strategy for the new curriculum, in particular utilising the reform website (mokykla2030.lt) to provide an interactive online portal with support materials and good practices. As part of this, the SMSM should proactively communicate how professional learning, school improvement services and resourcing will support the new curricula, especially for schools with more students from socio-economically disadvantaged backgrounds.

1.3. **Modernise student assessment practices to complement the new curriculum for general education**. The SMSM should work with teachers, experts and other stakeholders to align the *matura* examination with the new competence-based curriculum. It should also supplement the *matura* with personal learning outcome folders, and potentially the externally moderated grading of classroom-based work (e.g. open/digital badges) and/or more formative assessment (e.g. as in Lithuania's new 4K learning model). Student assessment should aim to cover all relevant cognitive and non-cognitive competencies targeted in the curriculum. Students' tertiary entrance scores should be based on their performance and results according to all of these modernised student assessment practices.

Complementing formal education with accessible, high-quality non-formal education and training

To facilitate young people's development of the transversal competencies (e.g. socio-emotional skills) identified in the new school curricula, it will be essential to give more young people access to high-quality non-formal education programmes. Such programmes targeting specific skills (such as coding or other ICT skills) can also improve young people's performance in higher levels of formal education, as well as their later employment outcomes.

Young people can develop skills in various learning contexts (homes, schools, communities and workplaces), including through non-formal education and training (not leading to a recognised qualification). Non-formal education and training (which may be delivered as extracurricular activities in or outside of schools, or via youth work) can have an explicit academic focus (e.g. offering additional enrichment or remedial lessons) or aim to achieve a broader set of goals, such as physical exercise and health, the development of creativity and practice or appreciation of the arts, or volunteering and engagement with the community. Non-formal education and training can help students develop non-cognitive skills that are helpful for academic success, such as persistence, teamwork or a stronger sense of belonging at school, and help develop social networks (Farb and Matjasko, 2012[55]; Stuart et al., 2011[56]). However, research suggests that extracurricular activities might have the unintended effect of enhancing disparities in achievement related to socio-economic status, because they tend to be more frequently available to students from advantaged socio-economic backgrounds (OECD, 2020[24]).

Various ministries in Lithuania are increasing their investments in non-formal education and training for young people. The SMSM introduced a universal non-formal education basket/voucher for children in 2015, with a total budget of EUR 12 million per year (with vouchers worth EUR 10-20 per enrolment). This helps young people to partly cover non-formal education fees, and 30% of youth participating in non-formal education programmes utilise the voucher. Municipalities also fund 220 non-formal education and training institutions, bringing total public funding to about EUR 100 million (Government of the Republic of Lithuania, 2020[10]). In addition, the Department of Youth Affairs funds and oversees 69 open youth spaces and 43 open youth centres, which provide non-formal education to around 8 000 young people to help them develop their personal and social competences and to promote social participation. The department also oversees outreach and mobile programmes and youth volunteering, through which young people can develop a range of competencies.

In Lithuania today, 65% of students participate in non-formal education programmes (up from 50% in 2016). According to PISA, 32% of 15-year-old students attended extracurricular activities at school and 44% attended activities out of school (with most attending both) in 2018 (OECD, 2020[24]). Most programmes for non-formal children's education (78%) are related to music, arts, choreography, dance, theatre and sport, although there have been a small number of successful examples of ICT-related programmes such as "coding camps".

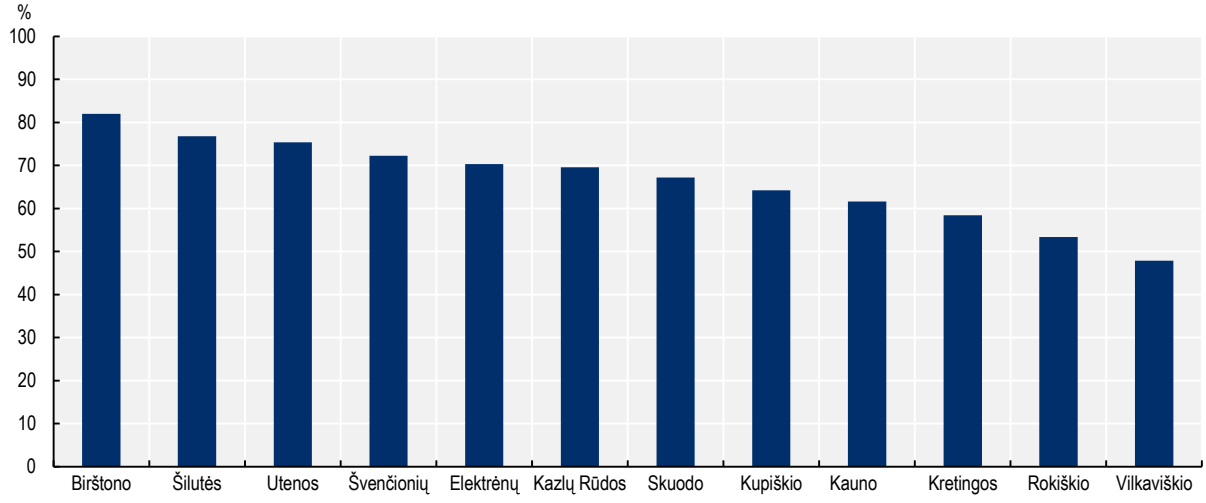
According to project participants, there are various strengths with the current arrangements for supporting the non-formal education of youth: the voucher enables young people to develop competencies in a non-academic setting, especially by financially supporting and empowering vulnerable groups; the offer of programmes at the municipal level is growing (more than 1 000 programmes were developed since the beginning of 2016); and the improvement of young people's social competencies acquired after certain activities (e.g. mobile work with youth, open work with youth) is monitored.

However, Lithuania is not yet realising the full potential of non-formal education to complement school curricula and equip young people with skills for work and life. In particular, non-formal education activities are not equally available in all regions of Lithuania (Figure 2.4), especially for STEAM subjects (Bilbokaitė, Šlekienė and Bilbokaitė-Skiauterienė, 2018[25]). As noted earlier (see the section on Lithuania's performance), a relatively high share of schools in Lithuania offer creative extracurricular activities, but these activities are less common in disadvantaged, rural and public schools (OECD, 2020[24]). The value

of the voucher (EUR 15 per enrolment) is likely insufficient to stimulate enough demand and to draw providers to non-urban areas. One survey found that households in Vilnius with young children enrolled in non-formal sports activities spent EUR 550 on average over nine months on these sports activities (Čingiene, 2020[57]). It is also often difficult for students in rural areas to stay behind after school to participate in non-formal programmes because of limited transport options to get home (National Audit Office of the Republic of Lithuania, 2015[58]). International literature shows that investments in non-formal and extracurricular programmes can actually be regressive and favour advantaged students, as noted above (OECD, 2020[24]), which means that Lithuania needs to find ways to target its national voucher system and municipal funding to disadvantaged students. This could involve, for example, targeted awareness-raising campaigns and higher levels of support in disadvantaged and rural schools.

Figure 2.4. Differences in young people's participation in non-formal education and training, selection of municipalities, 2018-19

Share of students in general education schools who participate in non-formal education programmes for children or attend general education school clubs



Source: Education Management Information System (2021[59]) *Neformalus vaikų švietimas [Non-formal education for children]*, http://svis.emokykla.lt/neformalus-vaiku-svietimas/.

StatLink https://stat.link/j0p75r

Participants in this project also noted a lack of coherence and integration between formal and non-formal education, despite their similar objectives. Currently in Lithuania, the Law on Volunteering provides that volunteering activity may be recognised as practical work and/or learning experience, or credited as social work under a programme of general education (Republic of Lithuania, 2011[60]). For example, the Youth Voluntary Service (*Jaunimo Savanoriška Tarnyba*, JST), established in 2018, is an intensive six-month volunteer programme for young people aged 14 to 29. Volunteers who complete more than three months of continuous service (not less than 40 hours/month) receive a certificate that certifies their competencies and provides the possibility to get 0.25 entrance points for admission to first cycle studies (Government of the Republic of Lithuania, 2020[10]). However, in 2020 only 198 youth had used these points when entering higher education. More generally, project participants stated that the recognition of non-formal education and training is not common in practice, and that its impact on students' aggregate scores is very low. With few exceptions, the skills young people acquire through non-formal education and training are not recognised and rewarded in formal examinations or tertiary entrance (National Agency for Education, 2019[45]).

Lithuania should seek to implement a nationwide model for schools to recognise and reward young people's competences developed in non-formal education and training. The Guidelines for Updating

the General Curriculum Framework state that the general curriculum framework can serve as a reference point for non-formal education programmes, and that student achievements in non-formal contexts should be credited. Lithuania's new "4k model" takes steps towards the greater coherence and integration of different forms of learning, including recognition, and introduces a process to validate and evaluate competencies acquired by non-formal and informal learning (Ministry of Education, Science and Sport, 2020[48]). Lithuania could also build on its experience using open digital badges to recognise learning and participation achievements in a variety of programmes. For example, the Department of Youth Affairs and the Lithuanian Association of Non-formal Education developed and implemented the badge-based validation and recognition system for the national volunteering scheme "Discover Yourself" (Badge Wallet, 2021[61]). Lithuania could also consider the experience of the European Youth Pass project, and especially Portugal's experience implementing a youth pass to recognise students' competencies from non-formal education and training (Box 2.3).

Lithuania also lacks a nationwide quality assurance and monitoring system for non-formal education and training, which may limit the government's capacity to maximise the impacts of its investments, and inhibit the recognition of non-formally acquired skills. A national audit in 2015 found that the quality of non-formal education of school children was not sufficient (National Audit Office of the Republic of Lithuania, 2015[58]). For example, municipalities were generally not carrying out external performance assessments, and some were delivering low-quality non-formal education programmes (owing to the lack of specific national quality standards and/or insufficient resources). A study in the Šiauliai municipality found that the extent of quality assurance and the perceived quality of non-formal STEAM programmes were below that of non-formal music education, sports, fine art and dance programmes (Bilbokaitė, Šlekienė and Bilbokaitė-Skiauterienė, 2018[25]).

In 2018, a pilot of a quality assurance evaluation methodology in six municipalities found several areas needing improvement in non-formal education providers, including data-based decision making, curricula, and educational goals, achievements and evaluation (Saranienė, 2018[62]). In 2019, the Minister of Education, Science and Sport recommended that providers of non-formal education adopt the piloted methodology of quality assurance (Box 2.3). However, as of 2020 many municipalities had not formally adopted the recommendation and methodology, and those that had had done so to varying degrees. The extent and results of the quality assurance evaluations are also not monitored by central government. Quality assurance and monitoring could also be more systematic for youth volunteering. The Department of Youth Affairs has processes in place to assure the quality of the volunteer activities that it co-ordinates or implements. The Department of Youth Affairs and the public employment service (PES) have also developed standards of quality and self-evaluation activities for specific projects, and some municipalities (Šilale) have enacted regulations to set standards and procedures for volunteer activities. However, aside from the Department of Youth Affairs, no systematic volunteering quality assurance system exists among organisations providing volunteer activities (European Commission, 2021[63]).

Lithuania should seek to implement a standard quality assurance and monitoring system for non-formal education and training to ensure that young people of all backgrounds are successfully developing skills for work and life. Research in the field of youth work has highlighted the importance of quality indicators, tools (for gathering statistics, surveying young people, assembling and presenting results, etc.) and systems to improve the credibility and recognition of non-formal education and training undertaken by young people (European Commission, 2015[64]). Implementing an effective quality assurance system should be a joint process in which all stakeholders engage. Lithuania's methodology for the quality assurance of non-formal education provides a solid base, and the government could ensure its use by all municipalities by linking it to state funding and/or mandating its use (Box 2.3). Furthermore, European institutions and countries like Portugal have designed a range of quality tools and systems for non-formal education and training on which Lithuania could draw to bolster quality assurance over time. These include performance-based funding, self and peer assessment of youth centre activities, and the development of detailed administrative datasets, youth surveys, etc. (European Commission, 2015[64]). In particular,

the European Youth Forum's Framework for Quality Assurance of Non-formal Education could be instructive for Lithuania's efforts

Communication and peer learning between school teachers and instructors of non-formal programmes will also be important to ensure that curricula and teaching practices are complementary. The rationale for such communication is varied and includes: the common priorities that exist for teaching and learning; the need to reduce duplication and gaps and associated funding efficiencies; and inter-dependencies and spillover effects between the two systems. Recent evaluations of European programmes for peer learning between teachers and youth workers through interactive training suggest that such experiences can be effective in creating mutual understanding about content and teaching approaches (Tarasova et al., 2020[65]). Some project participants stated that interactions between teachers in formal education and instructors in non-formal education are currently limited.

Box 2.3. Relevant national and international examples: Non-formal education and training for youth

Lithuania – Recognition and quality assurance of non-formal education

In 2019, the Minister of Education, Science and Sports recommended that providers of non-formal education for children apply a standard methodology of quality assurance, which was specified in a ministerial order. This methodology includes monitoring, performance self-assessment and external evaluation, and research. The external evaluation includes indicators such as whether children have developed general and professional competencies and received certificates of acquired competencies. The methodology was piloted in six municipalities, and evaluations concluded that the methodology was effective, and that most indicators were measurable and allowed an objective assessment of provider performance.

However, the evaluations also highlighted the need to provide support and guidance to municipalities and providers to undertake self-assessments, and to ensure the competencies of evaluators, among other matters. As of late 2020, just over half of Lithuania's 60 municipalities had formally adopted the methodology in municipal legislation. However, the success of the methodology's implementation in municipalities, and of central government's collection and use of the results in policy making, are yet to be seen.

Portugal – Youth Pass

The Portuguese government launched the Youth Pass certificate in 2017, a recognition and validation instrument for competences acquired by young people in non-formal education. The Youth Pass also gives youth a personalised free-of-charge certificate that, over time, can be updated with new competences.

This is built on the European Union Youthpass, a tool to document and recognise learning outcomes from youth work and solidarity activities funded by Erasmus+: Youth in Action and European Solidarity Corps Programmes. This initiative responds to the need to enhance and recognise young people's non-formal skills acquired through voluntary work and participation in youth associations, thereby promoting citizenship education, youth associations and volunteering.

The Youth Pass in Portugal helps young people (aged 12 to 18) create a record of their skills and competences, which can be used later when applying for a job. It is also a new way for young people participating in the Youth in Action programme to describe what they have done and learned during activities such as youth exchanges and training courses.

The Youth Pass is created, managed and issued by the Portuguese Institute of Sport and Youth (Instituto Português do Desporto e Juventude). The recognised and validated competences are classified into the different areas including communication; mathematics, science and technology; digital competence; learning to learn; social and civic competences; sense of initiative and entrepreneurship; and sensibility/cultural expression/creativity.

Source: Government of the Republic of Lithuania (2019[66]) (2019[66]), *Dėl Neformaliojo vaikų švietimo ir jo teikėjų veiklos kokybės užtikrinimo metodikos patvirtinimo*, https://www.e-tar.lt/portal/lt/legalAct/5fddafe0512311e9975f9c35aedfe438.; National Agency for School Evaluation (2021[67]), *Neformaliojo vaikų švietimo ir jo teikėjų veiklos kokybės išorinis vertinimas*, http://www.nmva.smm.lt/isorinis-vertinimas/neformaliojo-vaiku-svietimo-teikeju-veiklos-kokybes-isorinis-vertinimas/.; Cedefop (2018[68]), *Portugal: Youth Pass*, https://www.cedefop.europa.eu/en/news-and-press/news/portugal-youth-pass.

Recommendations for complementing formal education with non-formal education and training

1.4. **Recognise and reward the skills young people acquire through non-formal education and training, including in formal examinations and tertiary entrance**. Lithuania should seize the opportunity afforded by the current update of the general curriculum framework to implement a system to recognise and reward young people's competences developed in non-formal education and training. This could involve the use of personal learning outcome folders and/or alternative credentials (such as digital badges). Lithuania could learn from the experience of the Discover Yourself project, the new 4k model and/or the European Youth Pass project in Portugal. The skills young people acquire through non-formal education and training should be recognised in student assessments for the new curricula, as well as in tertiary entrance examinations.

1.5. **Better target non-formal education and training programmes and vouchers to students from socio-economically disadvantaged backgrounds**. School communities (municipalities, leaders, teachers, guidance counsellors, etc.) should increase awareness-raising efforts to promote non-formal education and training, especially in disadvantaged schools. The SMSM should also consider increasing the monetary value of the learning voucher for students in rural areas to spur the demand for and supply of non-formal education and training in underserved areas. The SMSM and municipalities should co-operate to ensure that there is sufficient publicly subsidised transport for students in rural areas to allow them to participate in after school non-formal education programmes.

1.6. **Systematically assess and monitor the quality and impact of non-formal education and training on young people's competencies to inform future investments**. Lithuania should implement a standard, robust monitoring and evaluation system for publicly funded non-formal education and training for young people to ensure that participants are developing skills for work and life. Various education and youth policy stakeholders should be involved in developing and implementing quality indicators, tools and systems. This should build on current leading practices in monitoring and evaluating non-formal education and training, such as the state methodology for the quality assurance of non-formal education, as well as practices from the field of youth work.

Opportunity 2: Strengthening Lithuania's teaching workforce

Alongside successfully implementing a modern school curricula and expanding opportunities for high-quality non-formal education, equipping young people with higher levels of skills depends on capable and empowered teachers and school leaders in both general and vocational education institutions. Investing in the competencies of teachers will be essential for achieving the goals of Lithuania's curricula reforms.

Teachers and school leaders are among the most important components of the quality of the school-based learning process. Decades of research have found that teachers and school leaders shape the quality of instruction, which strongly affects students' learning and outcomes (OECD, 2019[69]). Effective teachers create fertile learning environments, inspire and motivate students, and bring out the best in their students. Access to high-quality teachers is even more relevant for students from disadvantaged backgrounds or for those with special learning needs. A good teacher can play a key role in compensating for unfavourable socio-economic environments by providing learning opportunities for those who otherwise would have been left behind. School leaders can help to develop a spirit of innovation responsiveness among their staff by encouraging them to accept new ideas, by working with staff in school-based professional learning communities, and by making assistance available to support teachers in the process of change (OECD, 2019[69]). Strengthening Lithuania's teaching and school leader workforce is critical for improving young people's skills for work and life.

Recent analysis has highlighted the need to strengthen the teaching and school leadership workforce at various levels of education in Lithuania (OECD, 2017[16]). Project participants confirmed that the need for a more capable and empowered teaching workforce has been a persistent challenge and policy priority for decades in Lithuania, and features in almost all strategic documents related to skills development. Some project participants viewed teachers as the most important factor for improving the quality of formal education in Lithuania. Lithuania's 2020 government programme includes the project "Attractive Teacher's Workplace and Teacher Training 'Excellence' Centres", which involves initiatives to make schools a more attractive workplace for teachers, ensure excellence centres produce international level teachers, and introduce a national system of in-service teacher training that responds to needs, among other things (European Commission, 2020[70]).

Lithuania's teaching and school leadership workforce in primary and secondary education is facing challenges of workforce ageing, skills shortages and underperformance in some areas. This partly reflects trends such as declining student populations and the late retirement of older teachers. About 20% of teachers are expected to reach the standard pension age in 2021, but do not face compulsory retirement (European Commission, 2019[15]). It also reflects the limited attractiveness of a teaching career for youth and working professionals, the lack of support and incentives for teachers and leaders to excel, and the quality of initial teacher education and continuous professional development. Demographic trends causing declining student numbers in Lithuania have led to various pressures on the school network, including smaller schools, falling workloads and lower salaries. Opportunities for improving funding across the school network are discussed in Chapter 5.

Lithuania has enacted several policy changes in recent years to improve the performance of its teaching workforce. The SMSM introduced a revised teacher education model in 2017 that described the competences of a modern teacher, established a comprehensive admittance procedure to initial teacher education programmes, expanded training for a wider range of teacher specialisations, and established an induction period in the working place during the first year of employment. It also expanded pathways to the teaching profession to include the concurrent model (pedagogy and subject knowledge are integrated into a pedagogical degree), the adjacent model (pedagogy is studied alongside a non-pedagogical degree), the consecutive model (pedagogy is studied after an initial degree), and alternative ways (special programmes for existing degree holders) (Eurydice, 2019[71]). Teachers can now obtain multiple professional specialisations in order to teach more subjects, instead of specialising in just one area.

The new model also introduced structural changes to the teacher education system. Until September 2018, 17 higher education institutions (HEIs) were providing initial teacher education (ITE). Now, three teacher training centres and other HEIs that have co-operation treaties with centres provide initial teacher education. The centres are universities that meets the requirements set by the SMSM, and currently include those at Vilnius University, Kaunas Vytautas Magnus University and Siauliai University. The centres develop modern study programmes to train teachers in multiple specialisations (e.g. to teach several subjects) so that graduates have more professional opportunities. The SMSM has introduced measures to enhance the development of ITE in the three centres, such as financing for targeted activities and collaboration and networks between the centres.

The SMSM left various practical, administrative and systemic questions open for centres of ITE to solve, expecting that the universities in charge of the centres would take an active role in co-creating the new system. In addition, a change was introduced to the teacher payment scheme in 2018 to address the problem of many teachers being employed and paid on a part-time basis. Teachers are now paid on a full-time equivalent basis (rather than an hourly rate) and are paid for education-related activities other than classroom-based teaching to increase their workloads and earning capacity (Varanauskas, 2020[72]).

Lithuania can further strengthen its teaching and school leadership workforce by monitoring and building on these reforms to attract more skilled candidates into teaching, by better empowering excellence in teaching and leadership, and by better training teachers and school leaders to equip young people with skills for the 21st century. While this section focuses on teachers and school leaders in primary and secondary school, the findings and recommendations also provide insights that may be applicable to pre-primary and tertiary education.

Attracting, retaining and empowering skilled teachers and school leaders

Lithuania could improve pathways into the teaching profession, as well as salary and non-salary conditions, in order to attract and retain more skilled candidates, and empower excellence in teaching and leadership.

Attracting and retaining teachers and school leaders

Lithuania has struggled to attract a sufficient number of new candidates into the teaching profession. Entry into Lithuania's main type of teacher education programmes at universities and colleges (concurrent programmes) fell from about 1 800 in 2010 to 400 in 2019. This was not offset by the slight increases in enrolment in consecutive and adjacent programmes (which are still generally perceived as inferior to the concurrent model) or in the "Teach for All" one-year non-degree programme (Varanauskas, 2020[72]). More recently, enrolment in all ITE programmes at universities and colleges have increased (Table 2.4), likely reflecting recent increases to salaries and scholarships (see below). However, Lithuania still faces the challenge that only half of ITE graduates end up in a teaching position (MOSTA, 2018[73]).

Table 2.4. Enrolment in ITE programmes, universities and colleges

	2016	2017	2018	2019	2020
Universities	611	378	305	205	474
Colleges	251	259	346	224	427
Total	862	637	651	429	901

Source: LAMA BPO (2021[74]), *2018 m. priimtųjų į programas skaičiaus kaita*, https://bakalauras.lamabpo.lt/priimtuju-i-programas-skaiciaus-kaita/.

Low enrolment in teaching programmes combined with few graduates entering the profession has contributed to skills shortages, particularly in some fields. The historical oversupply of teachers in Lithuania, reflecting a declining student population and late teacher retirement, is turning into a situation of

shortage, especially for some programmes and regions. Participants in this project stated that there are teacher shortages in several fields of VET, for STEAM subjects and in rural areas. Initial modelling predicted a shortage of almost 700 primary school teachers in total in the four years to 2022 (Leiputė, Padvilikis and Hyland, 2018[75]).

Furthermore, high-skilled students have typically not been choosing teaching as a profession. In the 2016 Survey of Adult Skills (PIAAC), for example, the teaching workforce of Lithuania, although trained to a bachelor's degree level, displayed numeracy skills lower than those of other tertiary graduates, as well as lower than the average level of teachers in other OECD member countries (OECD, 2017[16]). In particular, Lithuania has struggled to attract new teachers with strong pedagogical and professional qualifications and experience into initial VET. This represents a major challenge for education equity in Lithuania, given the fact that disadvantaged students are concentrated in VET.

Lithuania also faces challenges regarding retaining younger, skilled teachers and school leaders. For example, almost 30% of teachers below the age of 51 in Lithuania state that they want to leave teaching in the next five years, among the highest rate in the OECD, and double the OECD average (OECD, 2020[76]).

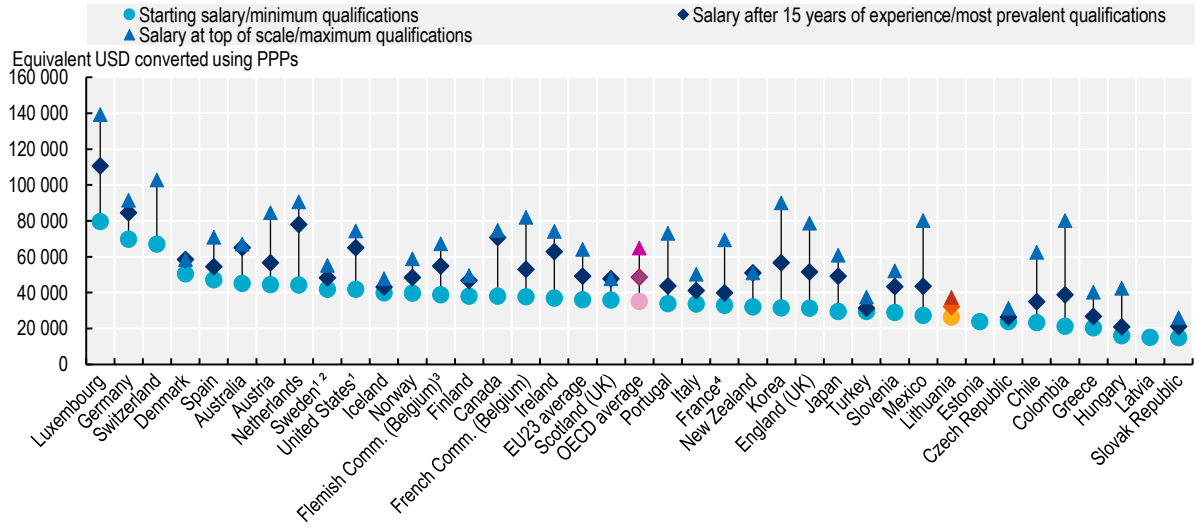
Several factors have limited the attractiveness of the teaching profession to youth, teachers and professionals in other sectors.

The teaching profession does not appear to be highly valued in society, and therefore lacks prestige. According to data from the 2018 OECD Teaching and Learning International Survey (TALIS), only 14% of Lithuanian teachers perceive that their profession is valued in society (26% OECD average) (OECD, 2020[76]). The prestige of the teaching profession can help boost the attractiveness of teaching careers among trainee teachers and improve the retention of effective teachers. Raising and maintaining prestige have been long-term endeavours of many educators, teacher organisations, social actors and policy makers across the OECD (OECD, 2020[76]).

Recent improvements to teachers' salary structure helps to make the profession more attractive, but limited opportunities for salary increases and full-time hours may still deter some teaching candidates. In 2018, only 11% of teachers in Lithuania were satisfied with their salary, well below the OECD average (39%) (OECD, 2020[76]). Since 2018, teachers' actual salaries have increased from 92% to 140% of tertiary educated workers' average earnings (in 2016 levels). Opportunities for teachers to increase their salaries through promotions have been limited, giving teachers little reward for experience and development. However, since 2018, lower secondary teachers' statutory salaries after 15 years of experience were increased from only 4% higher than the starting salary for new teachers with minimum qualifications to 22% higher. This, however, remains below the OECD average of 38% (Figure 2.5).

Figure 2.5. Lower secondary teachers' statutory salaries at different points in teachers' careers (2019)

Annual statutory salaries of teachers in public institutions, in equivalent USD converted using purchasing power parities



Notes:
1. Actual base salaries.
2. Salaries at top of scale and minimum qualifications, instead of maximum qualifications.
3. Salaries at top of scale and most prevalent qualifications, instead of maximum qualifications.
4. Includes the average of fixed bonuses for overtime hours.
Countries and economies are ranked in descending order of starting salaries for lower secondary teachers with minimum qualifications.
Source: OECD (2020[18]), *Education at a Glance 2020: OECD Indicators*, https://doi.org/10.1787/69096873-en.

StatLink https://stat.link/zv4j50

A major challenge for teacher salaries has been the large number of teachers involuntarily teaching part-time amidst declining student numbers. In 2018, the share of lower secondary teachers working part-time in Lithuania (35%) was higher than in all but four other OECD countries (OECD, 2019[69]). As noted earlier, teacher salaries have been restructured to increase workload and earning capacity. The government has also initiated a new programme called "*Tęsk*" ("Continue") that allows teachers to acquire, at no cost, additional qualifications to teach more than one subject in school and thus increase their hours. This programme has been widely popular in its first three years, but has only been able to accommodate around 800 teachers in total (Varanauskas, 2020[72]).

Potential teaching candidates may also be deterred by a lack of suitable pathways into the teaching profession. Recent research in Lithuania found a lack of flexibility in initial teacher education studies in terms of different pathways and modes of delivery that could attract highly skilled students and professionals (Varanauskas, 2020[72]). The student selection process for pedagogical studies is focused on academic achievements more than candidate motivation, prior non-formal experience, skills and attitudes. Lithuania lacks well-developed processes for recognising formally and non-formally acquired competencies of youth and professionals from other sectors, which could allow them to fast track the process of acquiring a formal teaching qualification.

Insufficient pathways into ITE may harm the quality of teaching and learning in secondary VET most of all, potentially compounding disadvantage for students from low socio-economic backgrounds. There are widely acknowledged concerns about the profile, currency and depth of professional experience among

VET teachers. According to a recent review (OECD, 2017[16]), some Lithuanian vocational teachers have no hands-on experience in their occupational area. Almost all vocational teachers in Lithuania have professional qualifications in their area of specialisation, but more than 40% have no prior relevant work experience, and about 30% of vocational teachers in 2015-16 lacked a pedagogical qualification (OECD, 2017[16]). Further improving pathways for mid-career professionals will be essential to strengthen the teaching workforce in Lithuania's 70 VET institutions. At the same time, recent research by the OECD highlights that flexible pathways for industry professionals into the VET teaching profession will need to be combined with sufficient and flexible opportunities to acquire pedagogical skills/qualifications (OECD, 2021[77]). Alternatively, industry professionals can be brought into the classroom in more flexible/non-formal ways (e.g. in workshops, or by teaching only a limited number of hours per year/week) without becoming qualified teachers. This requires strong engagement between VET schools and employers (see Opportunity 3: Making vocational and higher education more responsive to labour market needs).

Lithuania has recently introduced various measures to improve pathways into the teaching profession, including for students and professionals from other sectors. The 2018 Regulations of Initial Training of Pedagogues (*Pedagogų rengimo reglamentas*) diversified pathways to the teaching profession (for example by introducing adjacent, consecutive and alternative pathways). Lithuania has also increased scholarships for students entering teaching programmes. From 2020, students studying to become teachers are to receive "motivation scholarships" (Government of the Republic of Lithuania, 2020[10]). These scholarships need to be well targeted to high-skilled students and specialisations in shortage (e.g. STEAM, VET), and their impact closely monitored. As Lithuania's career guidance system is underdeveloped (Opportunity 3: Making vocational and higher education more responsive to labour market needs), education institutions will need to proactively promote these new pathways, methods and incentives in schools, universities and the labour market.

Empowering teachers and school leaders to excel

Lithuania could also better empower teachers and school leaders to excel in equipping young people with skills for work and life by linking promotions more closely to responsibilities and performance, and by boosting teachers' job satisfaction through efforts to improve induction activities (such as informal peer work, welcome handbooks), professional collaboration, impactful feedback and teacher autonomy.

Building on recent changes to teacher salary levels and progression could help to reward teachers' and school leaders' excellence and innovation. Some participants in this project stated that a major frustration for younger teachers is that progression and promotion is largely linked to tenure (years of service) rather than responsibilities and performance. As such, younger teachers are paid less than older teachers for the same responsibilities. This could negatively affect teachers' motivation for excellence and responsibility. Building on the recent improvements to salary progression (discussed earlier), Lithuania could more closely align progression with international standards over time (Figure 2.5). It could also link promotions more closely to teachers' responsibilities, the outcomes of teachers' ongoing performance appraisals, and/or certification (*atestacija*) as a teaching professional. Furthermore, as school leaders' salaries were not raised as part of these reforms, and senior teachers can now earn as much as school leaders, teachers now have less incentive to become school leaders. Lithuania should seek to reward teachers taking on school leadership responsibilities by also raising school leader salaries. This would complement a recent policy to limit the term of school leader appointments in order to create leadership opportunities for younger teachers.

Overall, Lithuanian teachers and school leaders are less satisfied with their profession and working environment than peers in most other OECD countries (OECD, 2020[76]). Teachers' job satisfaction has a positive impact on teachers, school climate and students, and is positively associated with teachers' performance, attitudes, efforts and confidence (self-efficacy). It also has strong implications for retention, attrition, absenteeism, burnout, commitment to education goals and teachers' job performance (OECD, 2020[76]). In Lithuania, relatively high shares of teachers agree that they regret becoming a teacher (16%)

and/or that it might have been better to choose another profession (58%). The vast majority of teachers in Lithuania agree that overall they are satisfied with their job (83%), but this is lower than in all OECD countries except the United Kingdom and Japan. Furthermore, Lithuania has the highest share of school leaders in the OECD who wonder whether they should have chosen another profession (77%).

A range of factors appear to be inhibiting teachers' satisfaction. In Lithuania, factors positively associated with teachers' job satisfaction include induction activities, professional collaboration, impactful feedback and teacher autonomy (OECD, 2020[76]). However, Lithuania had very low rates of induction and professional collaboration in 2018. The 2017 reforms introduced a formal induction period which has been positively received; however, an expert group recently determined that it would be more effective if managed by schools, as in some other countries (e.g. Finland), rather than universities, given their direct involvement in teaching and learning (Varanauskas, 2020[72]). Rates of impactful feedback are slightly above the OECD average, but it is still only received by half of Lithuania's teachers. Teacher autonomy is an important factor for teacher satisfaction and experimentation and innovation in the classroom. Some experts consulted during this project stated that teachers often lack autonomy and trust from school heads, and are given prescriptive instructions on how to implement the curriculum. In contrast, TALIS findings show that 86% of teachers in Lithuania report having control over determining course content in their class, which is consistent with the OECD average. Furthermore, teachers in Lithuania have a relatively high level of responsibility over school policies, instruction and curriculum, and many opportunities to participate in school decisions compared to other OECD countries (OECD, 2020[76]). Lithuania should monitor and carefully consider how to support teacher autonomy in the context of the current reforms to curricula.

School leaders do not always have strong internal and external support to facilitate excellence in teaching and learning. Some participants in this project highlighted that school leaders typically lack managerial support in the form of management teams, deputies, accountants, etc, and that there is a large variation in the extent and nature of support provided by municipalities as school founders. Some 75% of school leaders in Lithuania report that having too much administrative work and keeping up with changing requirements from local, municipal/regional, state or national/federal authorities are sources of stress "quite a bit" or "a lot", which is above the OECD averages. Reflecting these challenges, the SMSM announced plans for consulting school heads about the administrative, financial, legal and public procurement challenges they face (Ministry of Education, Science and Sport, 2020[78]). Uneven support for school leaders are a major concern for equity, as these rates of stress are highest for school leaders in rural schools and schools with higher shares of disadvantaged students (OECD, 2020[76]). A lack of relevant continuous professional development (CPD) for school leaders may also inhibit excellence in schools (see below).

Lithuania could learn from recent initiatives in Sweden and Estonia to better attract, retain and empower teachers and school leaders (Box 2.4).

Box 2.4. Relevant Lithuanian and international examples: Attracting and empowering teachers

Lithuania – I Choose to Teach!

The "I Choose to Teach!" programme seeks to attract recent university graduates from different disciplines to train as teachers and work in schools. This programme was started with EU funding and is now managed by the School Improvement Centre with business support. Programme participants receive tailored professional development to help them develop their teaching skills.

The high popularity of the programme is evidenced by the fact that every year 400-500 people who want to become teachers apply. After four selection stages (motivational questionnaire, group assignment, lesson simulation, tests and interviews), 20-30 participants are invited to join the project. Participants work at the school for two years, during which time they are provided with all kinds of help, such as mentoring, training and counselling.

The 192 I Choose to Teach! participants and alumni have reached 117 schools and around 31 000 students. After two years of the programme, about two-thirds of participants remain working as teachers. Overall, more than 70% of participants remain actively involved in education, either working as teachers, developing and implementing educational projects, working in the education system at the national level, and/or remaining involved in education through voluntary activities.

Sweden – Enhancing the prestige and attractiveness of the teaching profession

The Swedish National Agency for Education (Skolverket) determined that upcoming recruitment needs would be difficult to meet, and predicted a future shortage of teachers. In 2014, the Swedish government introduced the National Gathering for the Teaching Profession, which contained measures to avoid this situation and boost the attractiveness of the profession. The legislation included financial incentives in the form of salary increases and more rapid wage progression for teachers, linked to their competences and development. In 2016, this was followed by the Teacher Salary Boost initiative (*Lärarlönelyftet*), which rewarded teachers after they completed professional development programmes.

A second axis of the government strategy was to facilitate and encourage entry to the profession by promoting alternative pathways to teaching and increasing government grants for new teachers. Grants were also implemented to improve working conditions and career possibilities, targeting drop-outs among teachers.

These measures were complemented by an information campaign entitled Pass it On (*För det vidare*), which was designed to attract more people to teaching, encourage the retention of those already in the system and boost the social prestige of the profession. This media-based operation, in the form of a website, contains general information on the teaching profession, presents existing opportunities for teaching professionals and promotes entry to the profession through original materials (OECD, 2020[76]).

Estonia – Raising satisfaction and prestige in teaching

In Estonia, ensuring teachers' satisfaction and their image in society is at the core of the Lifelong Learning Strategy 2014-2020. Government action has included salary increases and reforms in work organisation to make the teaching profession highly valued in society. To attract the best candidates and make teaching a viable employment option, the average salaries of teachers have been adjusted to make them consistent with the qualifications required and the set of skills developed. Novice teachers' salaries have been specifically targeted to boost the popularity of the teaching profession for young people. The salary system for teachers also incorporates incentives to motivate professional development, with the possibility of taking half a year away from teaching to fulfil definite developmental assignments.

In addition, the Youth to School programme (*Noored Kooli*) seeks to raise interest in teaching and education by awarding scholarships to a select group of university students who teach at school for two years while taking part in teaching and leadership training. Upon completion of the programme, students can keep working at school, return to university or work elsewhere.

Estonia also values the teaching profession through education awards to expand the social recognition of education personnel. At the annual Teacher of the Year gala, awards are distributed to celebrate the contributions of the most outstanding education professionals to education quality and student support.

Source: Renkuosi mokyti (2021[79]), Renkuosi *mokyti! (I Choose to Teach!) website*, https://www.renkuosimokyti.lt/.; OECD (2020[76]), *TALIS 2018 Results (Volume II): Teachers and School Leaders as Valued Professionals*, https://doi.org/10.1787/19cf08df-en.

Recommendations for attracting and empowering teachers and leaders

1.7. **Make initial teacher education studies accessible to highly skilled students and professionals by continuing to develop and promote multiple pathways, delivery methods and incentives**. The SMSM and teacher training centres should continue to develop and promote diverse pathways for students and working professionals to become teachers, such as the consecutive, adjacent and alternative pathways. In order to increase the intake of skilled students and professionals to ITE programmes, the Lithuanian High Schools Association for Centralised Admission (LAMA BPO) and teacher training centres should also ensure that student selection processes systematically consider candidates' motivation, prior non-formal experience, skills and attitudes, in addition to academic achievements. Institutions should also develop processes to better recognise the formally and non-formally acquired competencies of mid-career professionals in order to offer tailored and expedited pathways to a formal teaching qualification. The SMSM should expand public funding for the I Choose to Teach! programme. It should also increase the value of teaching scholarships for highly skilled students and those specialising in fields experiencing shortages (e.g. STEAM, VET), closely monitoring their impact and potentially making them conditional on entering the profession. Finally, the government and institutions should actively promote these pathways, methods and incentives in schools, universities and the labour market through various multimedia channels, as well as through expanded career guidance services (see Chapter 5).

1.8. **Continue improving career progression opportunities to attract, retain and motivate highly skilled teachers and school leaders, especially in socio-economically disadvantaged schools**. More closely link teachers' and leaders' salaries to their responsibilities and the outcomes of their ongoing performance appraisal processes (and potentially ongoing professional certification), rather than tenure. Consider the greater use of pay increases or bonuses linked to appraisal processes (and potentially certification), as is the growing trend in OECD countries, and/or grants for teachers or teaching teams for innovation and excellence. Consideration should be given to developing oversight arrangements to ensure appraisal processes and promotions are implemented fairly and consistently across schools. Ensure that increases to school leaders' salaries are consistent with recent increases for teachers to attract and reward highly competent leaders. Introduce systematic national financial incentives for teaching in subjects in shortage (e.g. STEAM) and in rural and disadvantaged schools, for example in the student funding formula. Also, provide meaningful and impactful opportunities for CPD (see next section).

1.9. **Improve non-salary work conditions and the school climate for teachers' and school leaders' well-being to empower teaching excellence, especially in socio-economically disadvantaged schools**. Further investigate the quality of non-salary work conditions and school climate in Lithuania, and its impact on teachers' performance. Expand activities positively associated with teachers' job satisfaction and self-efficacy in Lithuania, such as induction activities, professional collaboration, impactful feedback and autonomy. Look for opportunities to reduce teacher stress by reducing administrative work, especially for school leaders in rural areas and disadvantaged schools. This could be done, for example, by reviewing and reducing administrative burdens through streamlined processes, and by setting standards and allocating funding more consistently across municipalities for administrative support in schools. Provide more relevant and impactful opportunities for CPD to school leaders (see next section). Teachers and school leaders should also have ongoing opportunities to provide feedback to central government on education policy, for example through engagement on the new school curricula (see Opportunity 1: Successfully implementing and complementing modern curricula) and improved skills policy engagement more broadly (see Chapter 5).

Training teachers and school leaders to equip young people with skills for work and life

In addition to being attracted to and empowered when in the teaching profession, teachers and school leaders in general and vocational education need the right competencies to successfully equip young people with skills for work and life. Ensuring the quality and availability of initial teacher education and continuous professional development also helps to attract, retain and motivate teachers.

High-quality initial teacher education is an important factor in determining the quality of teaching and learning in Lithuania's schools. Teachers' education affects the teaching strategies they adopt and the quality of their instruction which, in turn, are significantly related to student achievement (OECD, 2019[69]). In order for teachers to deliver high-quality instruction and help all students reach their full potential, countries need to establish and sustain a coherent system of initial teacher preparation. However, while evidence on effective teacher education is growing, it is far from being clear-cut and conclusive, making it challenging for governments to make evidence informed decisions about policy reform in this field (OECD, 2019[80]).

High-quality and accessible CPD is becoming increasingly important for Lithuania's teachers and school leaders to help them ensure the quality of teaching and learning in schools. A crucial component of professionalism among teachers and schools leaders is their participation in ongoing in-service professional development. Achieving a professional-level mastery of complex skills and knowledge is a prolonged and continuous process, and professionals must continually update their skills as the body of technology, skills, and knowledge advances (OECD, 2019[69]). This is particularly important for VET teachers, as megatrends such as digitalisation and automation continue to transform the skills required in vocational occupations (see Chapter 1). In Lithuania, as in most other OECD countries, impactful CPD is positively associated with teachers' job satisfaction and self-efficacy (OECD, 2019[69]). As megatrends change what skills students need for success in work and life (see Chapter 1), and countries update curricula accordingly, teachers need opportunities to upskill and reskill to pass these skills onto students.

Teachers in many OECD countries, including Lithuania, are not using effective teaching strategies to their full potential, suggesting a need for improved ITE and CPD. For example, OECD studies provide repeated evidence that cognitive activation practices are positively related to student learning and achievement (Echazarra et al., 2016[81]). As part of such practices, teachers might, for example, ask questions and give problems that make students reflect or think for an extended time, ask students to decide on procedures for solving complex problems, present problems in different contexts, or help students learn from mistakes. However, while cognitive activation instruction is positively associated with students' mathematics performance in Lithuania (and in other OECD countries), it is used relatively infrequently by teachers (Echazarra et al., 2016[81]). Such instruction practices could be particularly beneficial for Lithuania's VET institutions, given comments by project participants and evidence from previous reviews (OECD, 2017[16]) that the teaching quality of the general education curriculum in VET institutions is relatively low. Effective teaching strategies will be essential to complement and ensure the successful implementation of the new school curricula (see Opportunity 1: Successfully implementing and complementing modern curricula).

As noted earlier, Lithuania has enacted reforms to teacher education in recent years. Clearer pathways to acquiring teacher qualifications were defined through consecutive and concurrent study programmes, and structural changes to the teacher education system led to the creation of three teacher education excellence centres. While CPD remains the personal responsibility of each teacher, centres of ITE now have a strengthened role in CPD, with legislation emphasising the possibility for teachers to enrol in ITE modules and receive formal credits towards formal qualifications. Such CPD is publicly financed (Varanauskas, 2020[72]). It is essential that Lithuania monitors and ensures the success of these reforms, including complementing and adapting them as necessary, to ensure that teachers develop the competencies they need to equip young people with skills for the 21st century.

Initial teacher education

Lithuania could further boost the quality of ITE by increasing practical learning, school leader training, and research and development capacity in educational sciences, as well as by monitoring the success of new provisions for induction and mentoring, and adjusting them as needed. Younger teachers in Lithuania report a lack of preparedness for teaching in some areas (OECD, 2019[69]).

ITE in Lithuania appears to be focused on theoretical knowledge at the expense of practical knowledge. A previous OECD review found that ITE is mainly focused on traditional subject matters and curriculum content, with limited focus on the actual teaching process. Initial teacher education should be more closely connected to real-life classrooms and ongoing professional development (Shewbridge et al., 2016[82]).

In particular, research highlights the importance of having opportunities to engage in a teaching practicum that requires planning lessons or analysing student work, rather than just listening to lectures (Boyd et al., 2009[83]). Several countries have recently reformed their initial teacher education systems to make teaching practicum a mandatory element (OECD, 2019[80]). In Lithuania, while 84% of teachers who graduated in the five years before the 2018 TALIS survey reported that their formal education or training included classroom practice, only 75% felt that their ITE left them "well prepared" or "very well prepared" for classroom practice. The incidence of and preparedness for classroom practice was low for younger teachers in Lithuania compared to older teachers and younger teachers across the OECD (OECD, 2019[69]). A recent review in Lithuania determined that the country's one semester minimum for school (teaching) practice and the lack of current teachers' involvement in delivering initial teacher education may contribute to the gap between teachers' theoretical and practical knowledge. It recommended designating at least one quarter of each ITE programme to practical learning (placements) and including practitioners (teachers) in the development and delivery of study programmes (Varanauskas, 2020[72]).

The competencies that teachers develop in ITE and that they are asked to help students develop in the new general education curricula need to be harmonised. The Regulations on Teacher Training (*Pedagogų rengimo reglamentas*) state that eight general competencies and five special competencies are needed in order to acquire a teaching qualification. These general competencies include leadership; creativity, problem solving and critical thinking; social justice and public spirit; reflection and self-assessment; and consistent development. The special competences include understanding of a student and his/her environment; creation, management and implementation of educational content; and ensuring a student's progress, evaluation of his/her achievements and feedback. The guidelines for the update of general education curricula state that students should develop the following competences: social and emotional, cognitive, creativity, civic, cultural, and communication. The extent to which these competencies overlap and how teachers will be prepared to teach them is unclear and will need to be reviewed as part of the curricula update.

Training for school leaders appears to be a major gap in Lithuania that risks negatively affecting teachers' and students' performance. Evidence suggests that school principals who are trained more thoroughly in instructional and organisational leadership more often display effective leadership, which is associated with more teacher collaboration, higher qualifications of teams of teachers in the school and school improvement progress (Orphanos and Orr, 2013[84]). However, the share of principals who undertook school administration or principal training or instructional leadership training before taking up their role as a principal is lower in Lithuania (<30%) than in all other OECD-TALIS countries (OECD, 2019[69]). Combined with the stress that principals are facing from administrative work and policy changes (discussed earlier), this could be inhibiting school leaders' capacity to drive school improvements.

Lithuania lacks strong research capacity and knowledge transfer in educational sciences to underpin excellence and continuous improvement in teacher education programmes. As noted in research by Varanauskas (2020[72]), there is no long-term (longitudinal) research and little planning for future research. Large research groups do not exist, and there is no cross-institutional co-operation. Educational research is the second weakest social science field in Lithuania for research and development performance

(MOSTA, 2018[85]). Related to this, ITE programmes are not based on the latest scientific research, and co-operation between teachers and researchers is almost non-existent (Varanauskas, 2020[72]). This may threaten the successful implementation of modern curricula in schools, especially as teachers are likely to lack familiarity with the latest education research to contribute to the update (Opportunity 1: Successfully implementing and complementing modern curricula).

Induction and mentoring are a vital final step in ITE as graduates enter the workplace, therefore the success of Lithuania's new model for induction and mentoring should be monitored and adjusted if needed. As noted earlier, induction activities are positively correlated with teachers' job satisfaction in Lithuania. However, before the reform only 21% of teachers reported having participated in some kind of formal or informal induction when they joined their current school, compared to 42% of teachers across the OECD. Only 9% of novice teachers (with up to five years of experience) in Lithuania had an assigned mentor, compared to 22% across the OECD (OECD, 2020[76]). While the new induction system has been positively received, as noted earlier the system could potentially be more effective if managed by schools, as in some other countries (e.g. Finland), rather than universities, given their direct involvement in teaching and learning. The study recommended to either reduce or cease the role of ITE providers in induction/mentoring, and transfer responsibility and resourcing to schools. ITE centres could also be involved in training school mentors (Varanauskas, 2020[72]).

Continuous professional development

Despite universal CPD participation, there appears to be a shortage of high-quality CPD for teachers and school leaders in Lithuania. Lithuania could boost the quality of CPD and its impact on teaching and learning by increasing and better targeting public support to the identified training needs of teachers and leaders, and by providing more innovative forms of professional development and formal training to teach additional subject areas. This should be complemented with a clearer vision and set of responsibilities in the system, as well as a more systematic evaluation of outcomes (see Chapters 3 and 5).

Some participants in this project stated that a lack of vision and clear roles in the CPD system is contributing to fragmentation, which undermines the government's capacity to ensure quality in the system. A diverse range of public and private providers offer formal and non-formal training opportunities, from which teachers are free to select. In Lithuania, CPD is provided by around 60 teacher centres, which are established by municipalities, some private organisations and several HEIs. Lithuania lacks detailed data on CPD training patterns and evidence on the quality of training (Beleckienė et al., 2020[20]). Participants in this project also stated that the roles of the new ITE centres in CPD regarding other publicly funded providers are unclear.

A range of public measures are in place to ensure teachers' participation in CPD in Lithuania, and participation is universal. Teachers are entitled to a minimum of five days CPD during a school year. Five days of in-service training per year is actually a necessary pre-condition for a teacher to be appraised and retain or increase their qualification category, with a higher qualification category leading to a higher salary. There are different funding sources for teacher CPD, including state funding provided to schools, other state and municipality funding, EU structural funds, or teachers' personal resources. In most cases, CPD is financed using school and EU structural funds (Varanauskas, 2020[72]). Compared to teachers in other OECD countries, Lithuanian teachers are more likely to receive some form of financial/non-financial support to participate in CPD, and they participate in more CPD activities (OECD, 2019[69]).

Evidence on the availability and relevance of CPD training is mixed. In Lithuania, the share of teachers who feel that their CPD activities had a positive impact on their teaching practices (89%) is above the OECD average (82%). The main reasons teachers gave for this positive impact were that CPD built on the teacher's prior knowledge, adapted to the teacher's personal development needs, and provided opportunities to practice/apply new ideas and knowledge in the teacher's own classroom (OECD, 2019[69]). However, teachers in Lithuania were far less likely than teachers in other OECD countries to report that

impactful training had focused on innovation in the teacher's teaching or had taken place over a longer timeframe (several weeks or longer).

Lithuanian teachers and school leaders report higher training needs than their peers in most other OECD countries, signalling that they lack access to relevant CPD. For example, over 20% of Lithuanian teachers report training needs in ICT skills for teaching, student assessment practices, and student behaviour and classroom management, all of which are above the OECD averages (OECD, 2019[69]). School leaders report their highest training needs as using data for improving the quality of the school (46%), providing effective feedback (34%) and financial management (34%), all of which again are well above the OECD averages.

Furthermore, many teachers still report facing barriers to participating in training, including a lack of relevant training, despite their universal participation in CPD. For example, about 43% of teachers report facing the barrier of no relevant CPD being offered, compared to 38% across the OECD. Furthermore, 54% of teachers report that professional development is too expensive, while 47% report that professional development conflicts with the work schedule. Only half (53%) of Lithuania's teachers report receiving reimbursement or payment of costs for their CPD, while 37% were released from teaching duties for activities during regular working hours. Similarly, the cost and relevance of CPD are barriers for over 30% of school leaders in Lithuania, which exceeds the OECD average. In initial VET, the amount that institutions allocate to CPD varies greatly, from EUR 1 000 to EUR 19 000 (0.3%-0.8% of total budgets) (Beleckienė et al., 2020[20]). This is a concern given that professional development opportunities for VET teachers (including work-based learning) are crucial to ensure that their industry knowledge/skills remain up to date with industry trends (OECD, 2021[77]). This suggests that many teachers and school leaders are currently inhibited from participating in the CPD they would ideally like to undertake.

A major challenge for ensuring the relevance and impact of CPD is the lack of integration between teachers' appraisals and CPD. The OECD found that the provision of teacher professional development was not based on a systematic analysis of the needs of teachers, schools or the system overall (Shewbridge et al., 2016[82]). Some participants in this project stated that very few teachers have individual learning plans, which results in teachers participating in multiple short-term training activities in an unsystematic way. Developing learning plans for teachers as part of their appraisals, and using these to choose training, could help increase the impact of CPD.

School leaders and teachers could also engage more in innovative forms of professional development. While traditional training in the form of courses or seminars can be effective (Hoban and Erickson, 2004[86]), school-embedded professional development, such as peer-learning opportunities, tends to have a larger impact on teaching practices and can significantly reduce the cost of training. Teacher coaching (i.e. a school-embedded approach to in-service training) can have positive impacts on both teachers' instruction and students' achievement (Kraft, Blazar and Hogan, 2018[87]). In Lithuania, participation in peer and/or self-observation and coaching as part of a formal school arrangement by teachers (69%) and school leaders (44%) is well below the level of participation in in-person courses/seminars (albeit to a similar extent as the OECD average).

In light of this evidence, paid leave and public subsidies for CPD may not be sufficient for teachers and providers to engage in high-quality CPD. Evidence suggests that many teachers and school leaders are engaging in CPD for which they partly or fully pay, and would participate more (and in different types of CPD) with greater financial support. While the SMSM began providing national priorities for CPD in 2016 to better steer and support high-quality, high-value CPD, it has not provided targeted funds for CPD in these areas (Varanauskas, 2020[72]).

Opportunities to gain qualifications to teach additional subject areas are unlikely to be sufficient to keep up with demand. The SMSM and the National Agency for Education have been providing possibilities for current teachers to acquire specialisations in other subjects/areas in order to be able to teach these subjects and maintain a full-time workload and salary amidst falling student numbers. In March 2018,

the four-year project “Continue!” (*Tęsk!*) was launched, which offers free training for current teachers so that they can gain the additional qualifications required to teach more than one subject in school (Box 2.5). This programme has been widely popular, and has over the course of three years been offered to 821 teachers. However, these numbers are modest, given that 35% of teachers in Lithuania worked on a part-time basis in 2018 (OECD, 2019[69]).

Lithuania is implementing several measures to improve the CPD system for teachers and school leaders, the effects of which are not yet clear. Recent regulations have strengthened the role of centres of ITE in delivering CPD, thus allowing teachers to enrol in modules provided by ITE centres and receive formal credits, which can accumulate to a qualification. The SMSM finances these studies for teachers. A recent statute more clearly defines responsibilities for CPD, for example, national institutions are in charge of permanent monitoring and co-ordinate implementation. The statute also sets a minimum of 40 hours for CPD programmes, enables various flexible programmes (including self-education), and requires programme content to be based on research evidence. The SMSM has identified priority competencies for professional development for 2020-2022, namely digital literacy, skills to meet a variety of students’ educational needs, and the leadership of teachers and headteachers.

Box 2.5. Relevant national and international examples: Training school teachers and leaders

Lithuania – "*Tesk*" project

The "*Tęsk!*" ("Continue!") project from 2018-2021 seeks to improve student achievement by providing support for innovations in teacher professional development and pre-service teacher training. The project targets beginning teachers, teachers who want to re-qualify or get an additional qualification, and individuals from beyond the education sector who hold a higher education degree and want to become a teacher.

In particular the project funds the acquisition of an additional subject qualification for serving teachers to help tackle the problem of small schools in which a single subject teacher is not able to work full-time. The project offers free training for current teachers to gain the additional qualifications required to teach more than one subject in school. Over 800 teachers have participated in formal education and training through the project, allowing many to acquire additional qualifications and increase their teaching workload, among other benefits.

Estonia – Competency framework for teachers

Estonia has identified a strategic approach to improve initial teacher preparation by aligning teacher education programmes to national competency standards. Estonia’s teacher standards (2013) provide a competency framework for teachers, as well as guide the curriculum of teaching institutions and the assessment of graduating teacher candidates. The University of Tartu in Estonia revised its curriculum in 2012-13 in parallel with the development of the new teacher standards, and now focuses on four core pedagogical areas: communication and feedback in school, designing learning and instruction, teaching and reflection, and a teacher’s identity and leadership. Estonian initial teacher education also includes a minimum 50 days of practicum experience at a school site, and a mandatory 12 month induction programme that includes the support of a trained mentor.

Source: Education Development Centre (2018[88]), *Continue! Project summary*, https://www.upc.smm.lt/projektai/tesk/english.php.; Varanauskas (2020[72]), *Reform of the Network of Teacher Education Institutions in Lithuania: Final Report*, https://www.smm.lt/uploads/documents/veikla/tarptautinis%20bendradarbiavimas/Final%20report.pdf.

Recommendations for training teachers and school leaders to equip young people with skills for work and life

1.10. **Improve the content and quality of ITE by aligning it with the new general curricula, focusing more on practical learning and teachers' training needs, and investing in educational research**. The SMSM should provide information and support to ITE providers to update their programmes in order to prepare teachers to implement the new general education curricula. ITE should familiarise teaching students with all major elements and content of the new general curricula, as well as best-practice teaching and learning and assessment strategies. The Government should consider raising the minimum requirement for practical training, and/or find other ways to connect the theory and practice of ITE, such as involving current teachers/leaders in delivering some course content. The Government and ITE institutions should expand national and international collaboration, increase investment and improve knowledge transfer with practitioners in educational research to facilitate continuous improvement and best practices in ITE. Finally, the Government should closely monitor the impacts of recent ITE reforms on learning and teaching outcomes in the short term (for example by surveying educational stakeholders), and monitor ITE graduates' training needs (for example for ICT skills) in the longer term to guide further improvements to ITE.

1.11 **Better target public funding for CPD to the needs of teachers, leaders and schools, while improving quality assurance and increasing funding (especially for socio-economically disadvantaged schools) over time**. The SMSM should expand the *Tęsk!* programme to give more teachers the opportunity to teach in multiple subject areas. The Government should formalise individual learning plans as part of teacher and school leader appraisals, and collect data on and monitor teachers' and school leaders' training needs over time. The Government should require that CPD be linked to individual learning plans and broader school needs, and align national priorities for CPD with the results of the ongoing monitoring of training needs. In the first instance, priority could be given to CPD for the new curricula, as well as ICT skills, student assessment and classroom management for teachers; and data use, feedback, and financial management for school leaders. The SMSM, municipalities, institutions, experts and stakeholders should develop a quality assurance system for CPD to assess alignment with learning needs, user satisfaction, and impacts on teaching and leadership. With this system in place, the SMSM and municipalities should increase public funding for CPD to overcome barriers to the provision of and participation in relevant, high-quality CPD. In particular, higher rates of public CPD funding for teachers and school leaders should be provided in disadvantaged schools to improve their access to CPD and their capacity to teach and support disadvantaged students.

Opportunity 3: Making vocational and higher education more responsive to labour market needs

In addition to implementing and complementing the new school curricula, as well as strengthening the teaching workforce, Lithuania could increase the responsiveness of vocational and higher education to current and anticipated labour market needs to better equip young people with skills for work and life. A responsive education system that allows students to develop a set of skills aligned with current and anticipated labour market needs is beneficial for students, employers and the economy as a whole.

As noted earlier, while responsive education systems benefit students, providers and enterprises, initial VET and HE in Lithuania do not appear to be highly responsive to labour market needs. Responsive

education systems help graduates achieve higher employment rates, avoid the "scarring effects" of youth unemployment and build resilience to future changes in the world of work. However, while the vast majority of HE and VET graduates in Lithuania find work, many are mismatched with their jobs. Graduate employment rates and levels of mismatch also differ depending on field of study. VET enrolments may be too low to meet future demand for certain middle- and higher-skilled jobs. Furthermore, recent enrolment and graduation patterns in HE and VET do not appear to be closely aligned with Lithuania's skills needs in some areas. The lack of responsiveness of VET and HE may be contributing to skills imbalances in Lithuania's labour market.

Various Lithuanian strategies prioritise the importance of meeting the evolving skills needs of Lithuania's economy and society. For example, Lithuania's National Plan for Progress 2021-2030 sets goals to improve the match between the competences acquired in education institutions and the labour market. The 2020 government programme seeks to make HE and VET more responsive to the needs of the economy and society through initiatives to link higher education funding to performance indicators, and to implement an apprenticeship culture, among other things (Seimas, 2020[9]).

Recent reforms in VET and HE seek to make education more responsive to labour market needs. All VET institutions were given the status of "self-governing organisation" in 2018. This decentralised model aims to provide wider engagement and shared responsibility for ensuring that VET programmes correspond to labour market needs, provide better practical training conditions in companies, and improve the employability of VET graduates (OECD, 2017[16]). Networks of VET institutions were also reorganised in each of the 10 regions based on an evaluation of demographic trends, economic needs, etc., as well as institutions' programmes, responsiveness to skills needs in the economy, learners, pedagogical staff, accessibility, etc. In each region, programmes are being reviewed to identify duplication and assess alignment with labour market needs. By the end of 2020, there were 57 VET institutions remaining, and many overlapping programmes within regions had been abolished (Eurydice, 2020[89]). This took place alongside other amendments, such as the introduction of modular programmes and the apprenticeship model, mentioned earlier. In higher education, reforms of the funding and quality assurance systems, as well as further consolidation of HEI networks, were planned for 2017-2020. These reforms included plans to introduce a performance and results-oriented funding system, bring programmes closer to the needs of the market, and introduce results-oriented quality assurance that measures student employment rates, among other things. However, while some steps have been taken to optimise the network of HEIs, the implementation of funding and quality assurance reforms have been delayed, in part because of contradictions with existing national laws (Caturianas and Budraitis, 2019[90]).

The available data and evidence, including input from project participants, suggest that funding design, co-operation between institutions and employers, and career guidance are the major factors inhibiting the responsiveness of initial VET and HE to labour market needs in Lithuania. Funding and admissions policies are not creating strong incentives for institutions and individuals to respond to labour market needs. Educational institutions and employers do not systematically and effectively co-operate, especially in the provision of work-based learning. Finally, project participants frequently highlighted the lack of accessible and high-quality career guidance services to students in schools, colleges and universities, to guide their study choices towards meeting labour market needs. The need for a lifelong career guidance system in Lithuania, which would also meet the needs of young people, is discussed in Chapter 5.

Ensuring that VET and HE funding and admission policies incentivise institutions and students to meet labour market needs

Lithuania could modify funding arrangements and admissions policies to increase incentives for institutions and students to respond to labour market needs. This could be done by more closely linking the number and value of state-funded places ("student baskets") across different fields of study to current and anticipated skills needs, as determined by experts. State funding will need to be stable in the medium term to give institutions the time and incentives to invest in developing high-quality, responsive programmes.

Furthermore, state funding could be partially linked to institutions' performance in meeting labour market needs, for example as measured by graduate employment outcomes. In the medium to long term, as Lithuania improves its skills assessment and anticipation and career guidance systems it could consider moving away from the centralised determination of state-funded places by field of study to allow funding to more freely follow students to programmes of their choosing.

Across the OECD, governments use funding arrangements for education and training institutions to steer the mix of provision in favour of subjects that are either strategic or face high labour market demand. Such incentives may be necessary as education and training providers may be reluctant to respond to changing labour market demand given that adapting or developing courses can be costly in terms of financial and human resources (OECD, 2017[91]). Students may also lack sufficient information and guidance to make study choices aligned with labour market prospects. Several approaches can be taken to steer the mix of provision, as shown in Box 2.6.

Box 2.6. Supply-side financial incentives for steering education and training

- **Subsidies**: Governments can heavily influence provision by targeting public subsidies at particular courses only, by varying the subsidy amount for different courses, or by funding the development of specific transversal skills across all programmes. The use of subsidies to encourage institutions to provide certain types of courses assumes that the fundamental problem is a lack of provision, and that once this supply-side bottleneck is removed, sufficient demand exists for the courses being subsidised.
- **Performance-based funding** (or "outcomes-based funding"): This bases an element of the funding formula on a set of predefined outcomes, such as the number of students/graduates in certain fields, or the labour market outcomes of graduates.
- **Performance contracts** (or "target agreements" or "development contracts"): These involve the government and providers agreeing on certain objectives to be attained by the providers. Performance contracts can be tied to funding and reward organisations for graduate labour market outcomes or for the provision of certain types of courses.
- **One-off capital funding**: This seeks to establish the conditions for institutions to deliver programmes/skills for which there is a high cost of setting up or expanding programmes (particularly where capital investments are significant).
- **Regulating start-up of new programmes** (and closing existing ones): This can be seen as a financial incentive insofar as a programme's eligibility for public subsidies is conditional on it being approved. In many cases, such approval is carried out by education experts and based on an assessment of the anticipated learning outcomes, the quality of instruction (including the qualifications of the teaching staff and the adequacy of physical infrastructure and other resources available), as well as on the positioning of the new programme in relation to existing programmes (e.g. to avoid duplication). Increasingly, however, countries also require evidence of a labour market need for new programmes.
- **Tuition fee policy**: In theory, countries can steer investments in education and training by allowing institutions to charge different tuition fees by field of study. In practice, however, this is rarely undertaken. While several countries vary tuition fees by field of study, it does not appear as though they lower tuition fees to incentivise students to pursue certain fields of study over others. If anything, fees are higher for subjects for which there is higher labour market demand. Presumably, the promise of higher labour market returns is deemed to be a sufficient incentive for individuals to pursue those fields of study.

Source: OECD (2017), *Financial* Incentives *for Steering Education and Training*, Getting Skills Right, http://dx.doi.org/10.1787/9789264272415-en.

Public funding for initial VET and HE is widely available to students, subject to previous qualifications, the field of study selected, and in HE, academic performance. In both initial VET and HE, the SMSM determines the number of state-funded (free of charge) places for each field of study. Subject to these quotas, initial VET is free of charge for students acquiring the qualification for the first time, while in HE an individual's first degree at each level is free of charge, should the student meet the academic standards required for admission.[5] Subject to these criteria, VET and HEIs are then funded on the principle of the "money follows the student", which is called the "student basket" in Lithuania.[6] The state subsidy is paid based on the number of eligible students enrolled and seeks to encourage healthy competition and differentiation between institutions, and allow students/parents to choose institutions more flexibly, among other goals.

The process for determining the maximum number of state-funded places available for each field of study in VET and HE is highly centralised, and could distort the supply and demand of programmes. While comparative information on VET is sparse, in HE most governments across the OECD have limited control over student numbers by field of study. In 2017, only Lithuania and three other OECD countries (Estonia, Hungary and Turkey) had a centralised system in which an authority external to the university decided on the number of state-funded study places (OECD, 2017[91]). Since then, Estonia has abandoned this centralised system in favour of negotiated agreements with institutions (Box 2.7). The SMSM is required to consider the country's needs for economic, social and cultural development (including labour market needs) when setting the number of state-funded places for each field of study in HE. It can do this, for example, through consultations with the National Commission for the Co-ordination of Human Resources Monitoring (*Lietuvos Respublikos Vyriausybės komisija nacionalinei žmogiškųjų išteklių stebėsenai koordinuoti*).

For initial VET places, the SMSM also considers the opinions of regional councils. However, in the absence of a comprehensive and detailed skills assessment and anticipation system in Lithuania (see Chapter 5), it is difficult for the government to ensure that these quotas are aligned to labour market needs, including at a regional level. A recent national audit of VET found that the SMSM has not clearly planned or justified the allocation of state-funded positions, with too few students enrolled in manufacturing and processing and ICT (National Audit Office of the Republic of Lithuania, 2020[92]). After a recent decision to expand state-funded student places, a large number of these places have gone unfilled in some fields (e.g. ICT programmes in HE), while demand exceeds supply in other fields (e.g. business, administration and law in HE) (Table 2.5). As Lithuania strengthens its skills assessment and anticipation and career guidance systems (Chapter 5), it should consider alternatives to the central planning of state-funded places, such as allowing state-funded places to more freely follow students to fields and programmes of their choosing.

State funding for university places and admissions policies may not be working together sufficiently to support students from disadvantaged backgrounds. Some participants in this project stated that HEIs sometimes lower admission requirements to attract more students and state revenue, potentially in breach of agreements with government and/or externally determined admission criteria. This may lower incentives for school students and teachers to raise their performance (see Opportunity 2: Strengthening Lithuania's teaching workforce). More often, institutions offer fee-paying places with low admission requirements in fields and programmes where either there are no state-funded places left or students have not met admission requirements. For example, in 2020 there were 778 students enrolled in state-funded places and 350 students enrolled in fee-paying places in undergraduate and integrated humanitarian studies programmes in Lithuanian universities. The availability of fee-paying places has the positive side effect of improving access to HE for students who perform lower on the *matura* exam (and who are also more likely to be from disadvantaged backgrounds). However, the funnelling of low-performing students into fee-paying places is likely to be regressive, as students from disadvantaged backgrounds perform below advantaged students on average (OECD, 2019[30]). Lithuania should monitor and seek to increase the number of students from disadvantaged backgrounds in state-funded places, including those lacking strong academic performance. This could be done, for example, through alternative admission pathways,

a larger subsidy (student basket) to increase institutions' capacity and incentives to attract and academically support disadvantaged students to successfully complete HE studies, and expanded scholarships and loans for students from disadvantaged backgrounds to help to cover their living costs.

Table 2.5. Offered and unfilled state-funded places, by field of education, 2019/20

	HE (colleges and universities) Number of state-funded places offered	Number of unfilled state-funded HE places	Initial VET Number of state-funded places offered	Number of unfilled state-funded Initial VET places
Education	465	188		
Arts and humanities	1 718	82	875	0
Social sciences, journalism and information	1 262	0		
Business, administration and law	1 890	0	2 315	259
Natural sciences, mathematics and statistics	812*	50*		
Information and communication technologies	3 630	899	1 565	163
Engineering, manufacturing and construction	1 375	188	8 210	823
Agriculture, forestry, fisheries and veterinary	414	85	830	214
Health and welfare	1 433	48	1 620	0
Services			4 570	75

Note: * Universities only, not colleges.
Source: Seimas of the Republic of Lithuania (2019[93]), *Dėl Asmenų, išskyrus asmenis, kuriems taikomas Lietuvos Respublikos užimtumo rėmimo įstatymas, Lietuvos Respublikos neįgaliųjų socialinės integracijos įstatymas ar Lietuvos Respublikos vidaus tarnybos statutas, pageidaujančių įgyti kvalifikaciją, priėmimo*, https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/176151706ddb11e99ceae2890faa4193/asr.; LAMA BPO (2020[94]), 2020 m. stojančiųjų skaičius ir jų pasirengimas (2020 number of entrants and their preparation), https://bakalauras.lamabpo.lt/2020-m-stojanciuju-skaicius-ir-ju-pasirengimas/.

The monetary value of the student basket for HE and VET programmes in different fields of study do not create incentives for institutions to invest in programmes that respond to labour market needs. While the SMSM considers skills needs when determining the allocation of state-funded places, it does not consider skills needs in setting the value of the student basket by field of study. The SMSM calculates the student basket for VET and HE to cover the costs of delivering the course/programme, including teaching costs and the salaries of teachers, school administration, and key support staff; textbooks and school materials; and teacher in-service training. The SMSM takes into account expenses for teacher salaries based on the number of students enrolled, the number of teaching hours and class size. The funding formula assigns extra weight for students with special educational needs, migrants and those studying in a minority language. The student basket also takes into account the cost of practical training in different fields. In secondary VET, this has resulted in higher per student funding than in general secondary education, reflecting VET's higher costs for infrastructure, teaching and work-based training, etc. (OECD, 2017[16]). As such, the student baskets are not highly differentiated by field of study (Table 2.6), and do not create incentives for institutions to invest in programmes that respond to labour market needs.

Table 2.6. Student basket (public subsidy per student), by field of education, 2020/21

	Universities Student basket (public subsidy) EUR	Colleges Student basket (public subsidy) EUR
Education	980	686
Arts and humanities	1 228	1 130
Social sciences, journalism and information	620	484
Business, administration and law	557	487
Natural sciences, mathematics and statistics	917	
Information and communication technologies	984	643
Engineering, manufacturing and construction	1 050	
Agriculture, forestry, fisheries and veterinary	1 068	718
Health and welfare	976	681

Note: Derived from the number of study places and the total value of public subsidies in EUR.
Source: Ministry of Education, Science and Sport (2020[95]), *Dėl preliminaraus valstybės finansuojamų pirmosios pakopos ir vientisųjų studijų vietų, į kurias 2020 metais priimami studentai, skaičiaus, studijų stipendijų skaičiaus ir skiriamo valstybės finansavimo,* https://www.e-tar.lt/portal/lt/legalAct/6438f1c07a4f11eab005936df725feed/asr.

An increasing number of OECD countries (e.g. Australia, Czech Republic, Denmark, England) partly base the value of public subsidies for programmes on an assessment of skills shortages and priority occupations, in addition to the costs of delivery (OECD, 2017[91]). Furthermore, given the growing importance of developing transversal skills in VET and HE, more and more governments are seeking to encourage institutions to provide transversal skills for all students, regardless of their field of study. For example, in the period 2014-20, Poland introduced the Competency Development Programme to fund skills development across all courses of study, with a particular focus on entrepreneurial, professional, interpersonal and analytical skills (OECD, 2019[96]). The SMSM could consider making use of skills needs intelligence, including qualitative and regional intelligence, in setting the value of the student basket for each field/programme. School performance would need to be improved, and/or HE admission requirements adapted (and academic support services in HE strengthened), in order for these subsidies to reach more students.

Other public funding measures in Lithuania may create incentives for students and institutions to respond to labour market needs, but the size and uptake of these funds is limited. Universities can apply for targeted funding to increase the number of study places in areas of national importance that are less popular among students. In the VET sector, institutions and individual employers may apply to the SMSM for funding to start a new programme in an area where there is a clear skills need. However, in practice this targeted funding represents a very small share of institutions' revenue. In HE, targeted scholarships seek to attract students to study areas deemed important for the state, such as teacher training and marine science study programmes (Eurydice, 2019[97]), and the government plans to increase scholarships in VET (Seimas, 2020[9]). However, the impact of these scholarships is likely to be low, as only 569 university students in 2019-2020 received scholarships of any sort (social, incentive, study, doctoral, etc.) (Education Management Information System, 2021[98]).

Furthermore, public funding for VET and HE institutions is not linked to graduate study and labour market outcomes, which lowers institutions' incentives to develop, attract students, and help them complete programmes that respond to labour market needs. Performance-based funding (or outcomes-based funding) and performance contracts are increasingly being used by OECD countries. This involves funding being connected to measureable indicators to incentivise and reward the achievement of specific policy goals (Estermann and Claeys-Kulik, 2016[99]). The advantage of this approach is that it places responsibility in the hands of institutions and encourages them to think carefully about how to increase intake/graduation in certain subjects and how to improve the labour market outcomes of their students, while also giving institutions the freedom to come up with their own solutions (OECD, 2017[91]). In Poland, for example, 5% of professional HEI (college) revenue is based on the relative unemployment rate of their graduates

(Box 2.7). In Finland, polytechnics receive approximately 3% of funding based on graduate employment rates (Jongbloed et al., 2015[100]), while in VET, performance-based funding accounts for 35% of institutions' funding and is based on completed qualifications and competencies (Ministry of Education and Culture, 2019[101]). Lithuania's 2020 government programme states that the government's intention is to link HE study funding with the level of graduate competencies and employment indicators (Seimas, 2020[9]). In several OECD countries, performance funding is greater for VET and colleges than for academic universities – a differentiation that Lithuania could consider following.

In 2019, Lithuania's government updated regulations to allow the SMSM to enter into performance-based contracts/agreements with providers for a small amount of funding (capped at 5% of institutions' basic funding), which is above and beyond what institutions already receive. The SMSM has not yet made any such agreements with institutions, and if they do the level of performance-based funding may be insufficient to make institutions more responsive. Lithuania should seek to implement an element of performance-based funding and/or use performance contracts for colleges and universities. Funding could be partially based on outcomes metrics such as completions by field of study, and graduate employability and skills match to their jobs. Lithuania will be even better placed to do this as it continues to improve its skills needs intelligence and detailed administrative datasets arising from the National Monitoring of Human Resources system (see Chapter 5).

Box 2.7. Relevant national and international examples: Funding incentives for responsive education

Estonia – From centrally planned to negotiated state-funded places

Like Lithuania, Estonia had a centralised system for determining the number of state-funded places in higher education programmes each year, taking into account labour market needs. However, Estonia abandoned this system as it was found to be not effective at solving skills shortages, and instead introduced distortions. Estonia now sets and directs public subsidies based on performance agreements, which give institutions more autonomy to decide how many study places to offer in different fields of study, while still allowing the government to negotiate certain floors or ceilings on the size of individual programmes. For example, agreements have included clauses to reduce the number of admissions in law programmes, increase admissions in ICT courses, and to accept a minimum number of students to first year medicine. From 2017, Estonia also allocated up to 20% of funds based on performance, with one of the six indicators being the labour market outcomes of graduates.

Estonia has found that performance agreements are more useful for influencing the responsiveness of higher education institutions, decreasing unreasonable duplication of study programmes within and between institutions, and supporting study areas of national importance. The performance agreements have also included other criteria such as internationalisation, support services for students, co-operation with the business sector and development of common curricula and to allocate funds on the basis thereof.

Poland – Performance based funding

The massification of higher education in Poland means that labour market outcomes of graduates are an important perspective for future students, higher education institutions and policy makers at the national level.

Poland's algorithm for allocating funding to professional higher education institutions (colleges) is based on four criteria: students, staff, graduates and income. The graduate criteria refers to the number of graduates and the relative graduate unemployment rates based on findings from graduate career tracking. Some 5% of funding is based on the graduate criteria.

The Polish Graduate Tracking System, based on administrative data, allows for the monitoring of graduate outcomes in the labour market by institution, field of study and individual course. A mix of absolute and relative measures allow the government to assess graduate outcomes in the context of local labour market conditions. Results of the first two waves of graduate tracking show that the outcomes vary by study area and over time.

Source: Eurydice (2020[102]), *Estonia: Higher Education Funding*, https://eacea.ec.europa.eu/national-policies/eurydice/content/higher-education-funding-24_en.; OECD (2019[96]), OECD Skills Strategy Poland: Assessment and Recommendations, https://doi.org/10.1787/b377fbcc-en.; OECD (2017[91]), Financial Incentives for Steering Education and Training, http://dx.doi.org/10.1787/9789264272415-en.

Recommendations for ensuring that VET and HE funding and admission policies incentivise institutions and students to meet labour market needs

1.12. **Make better use of "student basket" subsidies and performance contracts/funding to steer HE and VET enrolments towards fields facing shortages and/or of strategic importance**. The SMSM, in consultation with the National Commission for the Co-ordination of Human Resources Monitoring, social partners and institutions, should re-evaluate the effectiveness of the current methodology for allocating state-funded places by field of study to consider meeting labour market needs. They should also consider partially linking the value of student basket subsidies for different VET and HE programmes to labour market needs, as assessed by experts. As Lithuania improves its skills needs assessment and career guidance systems over time (see Chapter 5), the SMSM should consider decentralising the allocation of student basket subsidies, for example by removing field-of-study-level quotas for state-funded places and allowing funding to more freely follow students to courses of their choice. In addition, the SMSM should make use of performance agreements and/or performance funding to link some funding to completions by field of study and/or graduate employment outcomes to increase institutions' incentives to attract students to, and ensure they complete, programmes that meet labour market needs. Finally, the SMSM should seek to increase public transparency around how and why state-funded places are allocated, and make funding allocations more stable over the medium term (e.g. for a five-year period, with limited annual fluctuations) so that institutions have incentives to invest in new and innovative programmes that meet labour market needs. These measures should be complemented by measures that empower learners to make well-informed study choices, such as access to high-quality lifelong career guidance (see Chapter 5).

1.13. **Expand measures to support students from socio-economically disadvantaged backgrounds to access state-funded HE places, especially in fields experiencing skills shortages and/or of strategic importance**. In the context of declining HE enrolment numbers and persistent inequalities in access, the SMSM should seek to improve admission policies, financial incentives and support for youth from disadvantaged backgrounds. Lithuania's admission agency and institutions should seek to implement alternative pathways into HE for youth from socio-economically disadvantaged backgrounds, for example by recognising a broader range of competencies in the admission process (see Opportunity 1) and by providing upfront academic support. The SMSM could raise the value of the student basket subsidy for

students from low socio-economic backgrounds to increase institutions' capacity to academically support students to successfully complete their studies. This could be complemented by expanded and more generous needs-based scholarships and loans for youth from disadvantaged backgrounds to help cover their living costs during studies. The SMSM should start with these measures in fields assessed by experts as facing shortages and/or being of strategic importance for the economy. The measures for students from disadvantaged backgrounds should be complemented by efforts to improve school performance in the long run (see Opportunity 1: Successfully implementing and complementing modern curricula, and Opportunity 2: Strengthening Lithuania's teaching workforce).

Strengthening co-operation between employers and VET and HE institutions

Improving the labour market relevance of education requires effective interaction between the education system and employers (OECD, 2015[103]). In VET, employers frequently co-operate with VET institutions at the national and subnational level to suggest adjustments to the curriculum and feed in other relevant information (Kuczera and Jeon, 2019[104]). In HE, employers should collaborate with universities to ensure that the content of the curriculum is labour market relevant (OECD, 2017[105]). Employers should also collaborate with education institutions to provide work-based learning that will allow students to develop work relevant technical skills using up-to-date equipment and work practices, as well as soft skills that are valuable in the workplace (OECD, 2018[106]).

The importance and challenge for governments in supporting effective co-operation between educational institutions and employers is amplified in the context of COVID-19. The economic slowdown has left many firms in a position where they have either delayed hiring, shed staff or closed altogether. Fewer firms have the capacity to provide work-based learning opportunities to students and may not see other forms of engagement with educational institutions as a priority in this context. In addition, increasing numbers of students face short-term risks of unemployment, which could have a scarring effect on their employability in the long term if left unchecked. Work-based learning opportunities for these students could help to improve their labour market prospects and reduce their risks of unemployment.

Participants in this project stated that Lithuania lacks a culture of co-operation between educational institutions and employers, and that co-operation is often ad hoc. The challenge for Lithuania has been to enact policies that raise and align the incentives of institutions and employers to co-operate effectively. Achieving this will help ensure that youth in VET and HE are equipped with the skills that meet current and anticipated labour market needs.

Employer involvement in the governance of VET institutions has been lower in practice than intended by the relevant regulations. In several OECD countries (including Flanders [Belgium)], Estonia and Poland), employers, and often trade unions, play a role in HEI governance bodies (OECD, 2017[105]). In Lithuania, the law stipulates that HEIs must include external stakeholders in their councils, which elect rectors, approve budgets and strategy, etc. In practice, employer representatives are often selected to sit on HEI councils. Across the OECD, employer involvement in institutional governance is even more common in VET systems. However, in Lithuania this has not been the case in practice. For example, in 2018, employers were involved in the governance of only 15 out of 70 VET schools in Lithuania (Cedefop, 2019[107]; National Audit Office of the Republic of Lithuania, 2020[92]). Since 2018, changes to the governance of VET schools make them "self-governing organisations" with their own public budget governed by representatives of the SMSM, regional and municipal governments, private employers, and industry representatives (Government of the Republic of Lithuania, 2020[10]). It will be important to convince employers of the value of this co-operation in order to interest them to be active in this role.

Employer involvement in curriculum design for VET and colleges is relatively systematic in Lithuania, and appears to be improving with recent policy changes. Lithuania's 18 sectoral professional committees (SPCs), comprising business representatives, employers, employees and education providers, are advisory bodies that aim to support the effectiveness of the qualifications system and the labour market relevance of vocationally oriented programmes in specific economic sectors. Their activities include assessing vocational training programmes or their modules and helping to conduct external evaluation exercises of vocational training suppliers offering formal vocational training (Cedefop, 2019[108]). Increasing the capacity of SPCs will be important for ensuring that they play this role effectively (see Chapter 5). Individual VET institutions prepare their own curriculum in accordance with legislation, and it is recommended that this is done with working groups composed of representatives of the school community (including employers) (Eurydice, 2020[109]).

High-quality work-based learning (WBL) is an essential element of co-operation between institutions and employers to help make education more responsive to labour market needs. WBL can include apprenticeships, field experience, mandatory professional practice, co-operative education placements, internships, applied research, project learning and service learning. WBL complements the learning that takes place in the classroom or laboratory by enabling students to develop work-relevant technical and professional skills using up-to-date equipment and work practices, as well as transversal skills such as teamwork, communication and negotiation (OECD, 2012[110]). Certain skills developed in work-based learning, such as interpersonal sensitivity and professionalism, are especially difficult to develop in the classroom (Shoenfelt, Stone and Kottke, 2013[111]).

WBL is built into VET programmes in Lithuania to a limited extent. Initial VET in Lithuania is school based and includes 8 to 15 weeks in either a company (as an unpaid traineeship) or a school-based workshop simulating working conditions (Cedefop, 2019[112]). In contrast to "dual" vocational systems (e.g. Germany or Switzerland), the duration of the Lithuanian student's firm-based work experience is brief. Lithuania has a network of 42 sectoral practical training centres in its 70 VET institutions that seek to raise the attractiveness of VET, improve the quality of practical training for VET students and teachers, and generate additional revenue for VET institutions by allowing them to offer paid services to local businesses. Lithuania is also seeking to make WBL available by expanding apprenticeships.

Recent efforts to improve WBL in initial VET in Lithuania have focused on introducing apprenticeships, but employers are likely to need considerable financial and non-financial support to offer such opportunities. As noted earlier, Lithuania has been unable to achieve its goals for developing an apprenticeship system, with financial barriers identified as a major obstacle for firms (Beleckiene, 2019[113]). The OECD has previously recommended that Lithuania consider a modification of the student basket funding methodology for vocational schools to recognise and reward the work-based instruction of vocational students (Shewbridge et al., 2016[82]). Lithuania is seeking to do this with the recent 25% funding premium introduced for apprenticeships. Plans are in place for firms to receive compensation of 70% of the wage of the apprentice and social security contributions (up to 1.5 times the minimum wage), as well as up to 20% of the wage of the manager in charge of training of the apprentice. However, Lithuania's many micro-sized firms may have limited capacity to oversee an apprentice, even with financial support. It will be essential that the ministries involved in apprenticeships also implement effective non-financial incentives that could include capacity building and support measures designed to help employers make better use of apprentices, such as the provision of training for apprentice instructors, offering support materials to firms to help them develop their training skills, and facilitating networking among employers (OECD, 2017[16]).

Initial VET institutions and smaller sized firms in Lithuania may also lack incentives to support non-apprenticeship forms of WBL in workplaces. Vocational school heads have estimated that 85% or more of students' work experience is undertaken in firms (OECD, 2017[16]). However, almost 30% of Lithuania's upper secondary VET graduates (15-34 years old) in 2016 reported that they had undertaken no work experience during their studies. This is a missed investment, as Lithuania's vocational graduates (16-34 years old) who completed a traineeship during their studies had much higher employment rates

(78%) in 2016 than their counterparts who had no work experience (65%) (Musset, 2019[114]). VET institutions may lack incentives to increase work-based learning, despite its benefits, given their long experience with and large investments in school-based training (especially in Lithuania's 42 sectoral practical training centres). Additionally, many Lithuanian firms may lack the financial incentives, experience and robust capacities for the provision of work-based learning. Similar to the proposed premium for apprenticeships in the student basket, Lithuania could consider a premium for shorter term WBL experiences that take place with employers.

Industry professionals are not highly engaged in the teaching process in VET schools and sectoral practical training centres, which may be a missed opportunity for students to learn about the latest practices and technology. Recruiting industry professionals on a part- or full-time basis to teach in VET programmes can help to ensure that courses are responsive (OECD, 2017[105]; OECD, 2021[77]). Industry professionals can be recruited as teachers through simplified pathways or engaged in flexible/non-formal ways (e.g. workshops, teaching only a limited number of hours per year/week) without becoming teachers in order to bring industry knowledge/expertise to the classroom (OECD, 2021[77]). This is particularly important in the context of Lithuania's VET, as one survey showed that over 40% of vocational teachers have no prior relative work experience in the area they teach (Vaitkute, 2016[115]; OECD, 2017[16]). Lithuania's network of 42 sectoral practical training centres were intended to raise the attractiveness of VET, improve the quality of practical training of VET students and teachers, and generate additional revenue for VET institutions, permitting them to offer paid services to local businesses. However, these ideas have proven relatively unattractive to employers (National Audit Office of the Republic of Lithuania, 2020[92]), who are not highly engaged in their activities. Furthermore, students from rural areas are often disadvantaged in terms of access to a sectoral practical training centre because of distance and transport limitations. The OECD recommended that Lithuania ensure the financial sustainability of sectoral practical training centres and improve the accessibility of the centres through a system of student support that puts them within reach of all vocational learners (OECD, 2017[16]). In the context of COVID-19 and subdued work placement prospects for youth, attracting employers to be more involved in the teaching process at sectoral practical training centres could help ensure the benefits of WBL for youth.

WBL is gradually becoming a more prominent part of HE in Lithuania, but its implementation is largely dependent on individual institutions. WBL in HE can include placements (internships/apprenticeships), traineeships and entrepreneurship. WBL is an integral part of the professional higher education curriculum in colleges in particular. For example, in business studies at Vilnius College, at least 40 European Credit Transfer and Accumulation System (ECTS) credits are dedicated for students' practical experience in businesses. Moreover, business simulation courses (5 ECTS) provide students the opportunity to simulate working in different parts of a company to better understand business processes. Experiences such as the "Creativity Camp" involve businesses in presenting real world challenges to students, who need to find real solutions. Furthermore, almost half of HE students in Lithuania work during their studies, and half of these in a job (very) closely linked to their field of study (Masevičiūtė, Šaukeckienė and Ozolinčiūtė, 2018[116]).

Policy makers lack data on the extent and quality of WBL in VET and HE, from which they could design effective policies. In HE, individual institutions collect some information on WBL and may report this in their annual reports. For example, the 2019 annual report of the University of Vilnius showed that 389 students went on an Erasmus+ internship, and that a programme was introduced to allow students to work on projects set by enterprises (University of Vilnius, 2020[117]). However, Lithuania currently lacks a system and consistent approach between institutions for monitoring the quality of WBL for students. This limits the ability of the ministries involved in VET to ensure funds and policies are directed effectively and efficiently. Such monitoring should be developed, and for VET could be included within the VET monitoring system being established as a part of the national project: Strengthening VET Quality Assurance Systems and Processes.

Despite these systemic challenges, various promising practices exist in Lithuania, and elsewhere, which could inform future improvements. In HE, promising practices include the project Erasmus+ KA2:

Co-operation for innovation and the exchange of good practices – Knowledge Alliances and the PATIRTIES PARTNERIAI LT, which gives students hands-on training by asking them to solve company challenges. The Project Strategic Partnership GRADual: Increasing Students/Graduates Employment Readiness (Government of the Republic of Lithuania, 2020[10]), led to the creation of the Partners 4 Value University-Business Consortium in Lithuania, which has enabled almost 500 HE students to undertake internships with businesses (Box 2.8).

Box 2.8. Relevant national and international examples: Collaboration between institutions and employers

Lithuania – Partners 4 Value

Partners 4 Value is the first university-business consortium in Lithuania, taking place between the Lithuanian Confederation of Industrialists (LPK) and the leading Lithuanian universities (Vilnius University, Vilnius Gediminas Technical University, Kaunas University of Technology, Vytautas Magnus University and Klaipeda University). Its goal is to expand "real life" training opportunities for students and university personnel through business-international and organisation-university partnerships. It aims to improve youth employment readiness and job prospects in local and international markets, among other things. This is achieved by promoting university-business co-operation, entrepreneurial education, and investing in the human potential of future leaders. Some 497 students completed an internship between December 2017 and December 2019.

England and Sweden – Recruiting industry professionals to VET teaching

In several countries, such as Sweden and England, there are simplified pathways for industry professionals to enter the VET teaching workforce.

In Sweden, all school teachers should be certified, and only these teachers can have permanent employment and are allowed to set grades. For VET teachers, however, the Education Act permits an exception: non-certified teachers in VET can have permanent employment and set grades independently if certified teachers are unavailable. In England (United Kingdom), each VET provider recruits its own teachers. Candidates with work experience and/or relevant qualifications in a trade can apply directly for teaching vacancies and then train – on a voluntary basis – for a teaching qualification on the job, if supported by their employer. It is also possible for trainee teachers to undertake pre-employment training, which is typically delivered by universities.

Norway – Financial and non-financial support for WBL (apprenticeships)

Norway, like several other OECD countries, offers a range of financial incentives and non-financial support for employers to offer work-based learning in the form of apprenticeships. Some of this support is tailored to small and medium-sized enterprises (SMEs). Norway offers a direct subsidy per apprentice depending on apprentice characteristics (such as age, disability, school performance, migration status, gender, previous education) and sector characteristics.

The Norwegian Directorate for Education offers free resources for apprentice instructors on their website, including short movies showing how instruction can be carried out in practice. Following a recent campaign in Norway, training companies can now brand themselves with a label for "approved learning enterprise" to encourage consumers to buy goods and services from them, and so that more enterprises join the apprenticeship scheme. Apprenticeship training agencies (*opplæringskontor*) are an important form of support for SMEs to hire apprentices as they establish new apprenticeship places, supervise companies with apprentices, train staff involved in the instruction of apprentices and organise the administrative tasks related to being a training company.

The Norwegian government has also introduced rules for apprenticeship requirements in public procurement. For contracts worth a minimum of NOK 1.5 million (Norwegian krone), the government must buy goods and services from companies that are an approved apprenticeship provider. These regulations mainly apply to the building, construction and ICT sectors, and seek to ensure that every VET student in search of an apprenticeship finds one.

Source: Lithuanian Confederation of Industrialist (2021[118]), *Patirties partneriai LT*, https://www.lpk.lt/patirties-partneriai-lt/.; (OECD, 2021[77]); Kuczera (2017[119]) "Striking the right balance: Costs and benefits of apprenticeship", *OECD Education Working Papers*, https://doi.org/10.1787/995fff01-en.

Recommendations for strengthening co-operation between employers and VET and HE institutions

1.14. Expand work-based learning (WBL) in VET and HE by increasing financial and non-financial support for apprenticeships and other forms of WBL. The ministries overseeing apprenticeships should ensure that recent plans to expand financial support for apprentices and their employers are implemented. The ministries could also provide training for apprentice instructors, offer support materials to firms to help them develop their training skills, and facilitate networking among employers. They could promote bodies that work with groups of small employers to co-ordinate training, and support them with the administration and provision of apprenticeships. Ministries should also consider introducing financial incentives to firms for curriculum relevant traineeships and other types of work-based learning in VET and HE programmes to support WBL in the context of the current economic downturn.

1.15 Increase rural students' access to, and attract employers to be more involved in VET 'work-based learning' in VET institutions and sectoral practical training centres. The government and municipalities should seek to increase subsidised transport for rural VET students to access sectoral practical training centres, particularly if they are unable to find workplace placements in the context of the current economic downturn. The ministries should work with institutions to reach out to and attract employers to be more involved with teaching and instruction at the centres. For example, this could be through offering credits to use the centre's infrastructure at a later time and/or financial incentives. This would have the added benefit of creating linkages between students and employers, and between centres and employers.

1.16. Expand existing administrative datasets with details on students' work-based learning activity to inform policy and ensure the quality of WBL. The responsible ministries should collect administrative data from VET institutions, colleges and universities on the quantity and type of WBL undertaken by students to better inform policy in this field. The quality assurance agencies responsible for VET and HE should develop and implement a framework for monitoring the quality of WBL as part of their activities.

Summary of policy recommendations

Policy directions	High-level recommendations
Opportunity 1: Successfully implementing and complementing modern curricula	
Implementing the new general education curricula and modern assessment practices	1.1 Continue to improve the design of the general curriculum framework during the final steps of the preparation phase. 1.2 Actively engage and communicate with education stakeholders to ensure the successful implementation of the new curriculum for general education, especially in socio-economically disadvantaged schools. 1.3 Modernise student assessment practices to complement the new curriculum for general education.
Complementing formal education with accessible, high-quality non-formal education and training	1.4 Recognise and reward the skills young people acquire through non-formal education and training, including in formal examinations and tertiary entrance. 1.5 Better target non-formal education and training programmes and vouchers to students from socio-economically disadvantaged backgrounds. 1.6 Systematically assess and monitor the quality and impact of non-formal education and training on young people's competencies to inform future investments.
Opportunity 2: Strengthening Lithuania's teaching workforce	
Attracting, retaining and empowering skilled teachers and school leaders	1.7 Make initial teacher education studies accessible to highly skilled students and professionals by continuing to develop and promote multiple pathways, delivery methods and incentives. 1.8 Continue improving career progression opportunities to attract, retain and motivate highly skilled teachers and school leaders, especially in socio-economically disadvantaged schools. 1.9 Improve non-salary work conditions and the school climate for teachers' and school leaders' well-being to empower teaching excellence, especially in socio-economically disadvantaged schools.
Training teachers and school leaders to equip young people with skills for work and life	1.10 Improve the content and quality of ITE by aligning it with the new general curricula, focusing more on practical learning and teachers' training needs, and investing in educational research. 1.11 Better target public funding for CPD to the needs of teachers, leaders and schools, while improving quality assurance and increasing funding (especially for socio-economically disadvantaged schools) over time.
Opportunity 3: Making vocational and higher education more responsive to labour market needs	
Ensuring that VET and HE funding and admission policies incentivise institutions and students to meet labour market needs	1.12 Make better use of "student basket" subsidies and performance contracts/funding to steer HE and VET enrolments towards fields facing shortages and/or of strategic importance. 1.13 Expand measures to support students from socio-economically disadvantaged backgrounds to access state-funded HE places, especially in fields experiencing skills shortages and/or of strategic importance.
Strengthening co-operation between employers and VET and HE institutions	1.14 Expand work-based learning (WBL) in VET and HE by increasing financial and non-financial support for apprenticeships and other forms of WBL. 1.15 Increase rural students' access to, and attract employers to be more involved in VET 'work-based learning' in VET institutions and sectoral practical training centres. 1.16 Expand existing administrative datasets with details on students' work-based learning activity to inform policy and ensure the quality of WBL.

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Notes

[1] In combined school- and work-based programmes, less than 75% of the curriculum is presented in the school environment (including special training centres for VET) or through distance education, with the remainder occurring on the job in a workplace.

[2] Calculated using the true cohort method, which requires using longitudinal surveys or student registers to follow an entry cohort to the theoretical duration of the programme plus three years.

[3] https://www.skola2030.lv

[4] https://nzcurriculum.tki.org.nz

[5] Students who do not meet the admission requirements for a state-funded university or college programme may be offered a fee-paying place in the programme by the institution.

[6] In Lithuania, public funding for VET and HE is allocated according to the “student basket” methodology, whereas funding for general and lower levels of education is allocated according to the “class basket” methodology. The student basket allocates funding as a function of the number of students enrolled in the institution, and the class basket allocates funding as a function of the number of classes offered by the institution (OECD, 2017[16]).