Strengthening Upper Secondary Education in Lithuania

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Foreword

With one of the highest rates of young people attaining upper secondary education across the OECD, Lithuania and its young people clearly place high value, and invest significantly, in this level of education. Yet, the country and its young people achieve only modest returns on their investment. In Lithuania, the contribution of completing upper secondary education for young people's skills is one of the lowest across the OECD.

This report was developed by the OECD Above and Beyond: Transitions in Upper Secondary Education project at the request of the Lithuanian National Agency for Education (*Nacionalinė švietimo agentūra*). It provides options to support the country's national reforms to strengthen upper secondary education so that it contributes strongly to the learning, agency and employment outcomes of young people.

One of the report's main messages is the criticality of purposefully designed diverse upper secondary pathways that promote deeper skills acquisition. Diverse pathways are reflected in the different choices that individual learners make about how they balance general and occupationally-relevant skills, the subjects they take and the domains in which they specialise. The report suggests how guided support for learners to make informed choices across diverse pathways can help them to define their interests, understand their strengths and provide the national economy with a broad skill mix. The report pays particular attention to vocational education in Lithuania, given national concerns around its prestige and enrolment. The report suggests how vocational education can provide more options and diversity enabling students to acquire specialised, technical skills that are valued for their contributions to the economy.

As the certification of student achievement after 10 years of schooling and the passport to tertiary education, the Matura is highly influential in Lithuania. More than a decade after the Matura radically changed teaching and learning at the end of upper secondary education when it was first introduced, the report suggests how Lithuania can put in place a cycle of continual renewal supported by review and research. Central to developing a Matura that remains fit-for-purpose over time will be providing adequate investment in independent, technical assessment expertise.

The authors of the report thank all the political leaders, policy officials, teachers, students, academics, researchers and non-government bodies that shared their time and insights in the development of this report. It provides a vision for upper secondary education in Lithuania so that each young person is supported to develop their unique strengths and talents.

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This report was developed in co-operation with the National Agency for Education, whose staff provided valuable guidance and direction. We are indebted to the support and insights of the Director of the Agency, Rūta Krausauskienė, the Deputy Director, Dr. Asta Ranonytė, data specialist Eglė Melnikė, and International Co-operation Specialist Justas Paulikas.

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We would also like to extend our thanks to all the directors-general, section heads, specialists, associate specialists, teachers and students from the Centre for Quality of Assessment in Higher Education, Qualifications and Vocational Education and Training Development Centre, Lithuanian Rector Confederation, Lithuanian Principal Association, Lithuanian National Union of Students. We are also grateful to the students and teachers of Kauno Maironio universitetinė gimnazija for hosting our workshop and the translators who volunteered to support us during the workshop.

The OECD project team was led by Hannah Kitchen and Camilla Stronati (Above and Beyond: Transitions in Upper Secondary Education, OECD Secretariat), and also included Lena Gray (AQA, United Kingdom), Malgorzata Kuczera (VET and Adult Learning team, OECD Secretariat). The review team thanks Andreas Schleicher, Director, and Paulo Santiago, Head of the Policy Advice and Implementation Division, for their support and contributions. Daiana Torres Lima, Marika Prince and Caio Passos Newman provided administrative support and oversaw the publication process and Susan Copeland edited the report.

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Abbreviations and acronyms

The main abbreviations and acronyms used in the report are listed below.

Abbreviation/Acronym	Meaning
AIKOS	Open Information, Counselling and Guidance System
CPD	Continuing professional development
GDP	Gross Domestic Product
ICT	Information and communications technology
ISCED	International Standard Classification of Education
ITE	Initial teacher education
MoES	Ministry of Education and Science
PIAAC	OECD Programme for the International Assessment of Adult Competencies
PISA	OECD Programme for International Student Assessment
PPP	Purchasing Power Parity
STEM	Science, technology, engineering and mathematics
TALIS	OECD Teaching and Learning International Survey
VET	Vocational Education and Training
WBL	Work-based learning

Executive summary

Upper secondary education in Lithuania stands out internationally with one of the highest attainment rates across OECD countries. Yet the country and its young people receive relatively modest returns in terms of learning outcomes for the country's high rates of upper secondary completion. According to the OECD's Programme for the International Assessment of Adult Competencies (PIAAC), attaining upper secondary education in Lithuania provides the smallest positive contribution across OECD countries to an individual's performance. Of particular concern is the performance of students enrolled in Vocational education and training (VET). PIAAC suggests that VET in Lithuania contributes far less to young people's skills and knowledge acquisition than in other countries, with young VET graduates performing at almost the same level as those who did not complete upper secondary education. Furthermore, VET students in Lithuania are more likely to leave their programme before completion compared to their peers in general education, and even when they do complete, they have a harder time finding employment compared to vocational graduates in other OECD countries.

To improve the learning outcomes of all upper secondary graduates, Lithuania is currently undertaking a series of reforms. These include changes to how students enter upper secondary education, the introduction of a new curriculum explicitly oriented towards competency development, and reform of the national upper secondary examination and certification, the Matura.

This report provides a set of policy options to support Lithuania's reforms and national priorities for strengthening upper secondary education. It was developed by the OECD Above and Beyond: Transitions in Upper Secondary Education project at the request of the Lithuanian National Agency for Education (Nacionalinė švietimo agentūra). The report focuses on two priority areas identified by Lithuania - upper secondary pathways, and assessment and certification in upper secondary education. These are discussed below and elaborated in subsequent chapters.

Strengthening vocational education and training pathways in upper secondary education in Lithuania (Chapter 3)

Lithuania places significant importance on creating valued upper secondary pathways that young people are attracted to, and which will provide the country's economy with strong technical skills to drive production and innovation. Despite the considerable efforts to raise enrolment in vocational education and improve its attractiveness, Lithuania has not yet met its national targets and the lack of graduates with strong vocational skills has an impact on the labour market reflected in skills mismatch.

Strengthening pathways in vocational education will enable it to become a distinct and respected option that enables young people to access high quality employment and tertiary education. The OECD has developed policy recommendations to help Lithuania realise three essential actions to strengthen upper secondary vocational education and training:

1. **Reviewing students' transitions and orientation into upper secondary education** by providing a personalised transition recommendation for each student based on a wide range of information

including their learning outcomes, while ensuring that students and their guardians are supported to make an informed decision. To facilitate enrolments in vocational education, Lithuania could also consider modifying the structure of the school system.

2. **Creating valued vocational pathways through upper secondary education** by designing two separate vocational options: one more work-based programme that gives students extra support to meet minimum requirements in general subjects and prepares students to enter high quality options in the labour market or post-secondary options, and another programme, more technically oriented as a pathway into technically focused employment or tertiary education.
3. **Designing pathways with clear and sequential progression out of upper secondary education** by rewarding vocational qualifications for selection into post-secondary vocational programmes (particularly at the new International Standard Classification of Education (ISCED) 5 level) and by building sequential programmes at ISCED levels 4 and 5 that allow students to build upon their qualifications and enhance their technical skills. Lithuania will also need to consider improvements to the quality of upper secondary vocational education to ensure that its value is recognised by employers, creating a clear pathway for young, emerging specialists to enter the labour market with strong VET skills.

Consolidating Lithuania's upper secondary certification to meet learners' diverse needs and promote higher order, complex learning (Chapter 4)

The introduction of the Matura in Lithuania over a decade ago radically changed young people's experiences at the end of upper secondary education by introducing a single examination for upper secondary certification and tertiary entry, promoting fairness and reliability. Today however, there are national concerns that the Matura items are predicable, tend to assess knowledge reproduction over competencies and are not always engaging.

The challenges associated with the Matura are particularly acute as the country has started to implement a new curriculum which is explicitly oriented towards competency development. Evidence and experience from countries internationally consistently highlights that aligning certification and assessment with the curriculum is essential if the curriculum on paper is to become the curriculum that students learn in classrooms. This concern is especially prevalent in upper secondary education, where the stakes attached to upper secondary certification mean that assessment at this level invariably influences to a large extent where and how teachers and students focus their time and energy in the final phase of schooling.

For Lithuania, creating a more engaging certification that effectively assesses the competencies that young people need for future success in post-secondary education and employment is essential to help orient upper secondary education towards the skills and knowledge that matter. The OECD has developed policy recommendations to help Lithuania realise three essential actions to improve certification and assessment in upper secondary education:

1. **Supporting continual improvement and high-quality assessment** by developing a cycle of a continuous review, research and evaluation to ensure that the Matura remains fit for purpose. Of central importance is developing independent technical assessment expertise for national examination development and supporting the use of examination results across the education system to encourage assessment expertise and research that drives improvements.
2. **Introducing more alternative types of assessment**, such as projects, extended essays, performance and investigations, which can facilitate the assessment of social-emotional skills like planning, self-reflection, investigation and collaboration. The report suggests how Lithuania can make the current project more accessible to encourage the currently limited take-up while creating a more reliable project assessment so that the results are trusted, especially by tertiary institutions.

3. **Providing more flexible choices and options within the Matura to better meet learners' diverse needs and interests** – and provide them with the depth of skills and knowledge that they need for the future. As well as focusing on how the Matura can recognise greater diversity for all students, the report provides specific recommendations to better meet the needs of vocational students through a dedicated upper secondary certification for vocational students.

1 Assessment and Recommendations

Snapshot: Key Recommendations

Strengthening pathways in upper secondary education in Lithuania

Issue 1: Reviewing students' transitions and orientation into upper secondary education

a) *Making personalised transition recommendations for each student based on a wide range of information*

b) *Ensuring that students and their guardians play an informed role in transition decisions*

c) *Reconsidering the structure of schooling to facilitate transitions into upper secondary education*

Issue 2: Creating valued vocational pathways through upper secondary education

a) *Providing more flexibility in vocational education to adapt to students' needs and abilities*

b) *Creating a more work-based Vocational Education and Training (VET) option that promotes acquisition of foundational skills*

c) *Providing a technically focused and a more academically oriented vocational upper secondary option*

Issue 3: Designing pathways with clear and sequential progression out of upper secondary education

a) *Ensuring clear and diverse options of progression from upper secondary vocational education into further education*

b) *Improving the quality of upper secondary vocational education to ensure its value is recognised by employers*

Consolidating Lithuania's upper secondary certification to meet learners' diverse needs and promote higher-order, complex learning

Issue 1. Supporting continual improvement and high-quality assessment

a) *Supporting the developers of the Matura to produce high-quality items that fulfil their purpose*

b) *Developing continuous review, research and evaluation to ensure that the Matura remains fit for purpose*

c) *Making the most of the new digital examinations*

Issue 2. Introducing alternative types of assessment

a) *Reviewing and refining the current project component*

b) *Strengthening the reliability of alternative assessments*

c) Considering other types of alternative assessment

Issue 3. Providing more flexible choices and options within the Matura

a) Defining the purpose, structure and consequences of a more modular approach to assessment

b) Supporting a better match between course and examination choices

Meeting the needs of vocational upper secondary students in the Matura

Introduction

Although Lithuania has one of the highest rates of attainment in upper secondary education among OECD countries (OECD, 2022[1]), upper secondary education seems to play a relatively modest role in shaping young adults' skills compared to other OECD countries (OECD, 2012, 2015, 2018[2]). To improve the learning and outcomes of upper secondary graduates, Lithuania is currently undertaking a range of reforms at the upper secondary level (See Box 1.1). These include changes to how students enter upper secondary education, introduction of a new curriculum explicitly oriented towards competency development and reform of the national upper secondary examination and certification (the Matura). It is a pivotal moment for Lithuania to consolidate its upper secondary pathways and certification to provide greater depth in learning and more flexible options that support and recognise the breadth of competencies that matter for young people's transitions into further education and work.

This report was developed by the OECD Above and Beyond: Transitions in Upper Secondary Education project at the request of the Lithuanian National Agency for Education (*Nacionalinė švietimo agentūra*). As part of the report's development, the OECD team held workshops in Lithuania with a range of national stakeholders to understand how they perceive their country's upper secondary system and seek their views on opportunities for future development (Box 1.2). During the workshops, both students and teachers indicated that they perceive that the Matura predominantly assesses knowledge reproduction over application of that knowledge and that the items covered are not particularly engaging or stimulating. On vocational education and training (VET), participants reported that cultural and historical factors affect the reputation and attractiveness of VET and that it is perceived as an easier and less prestigious option than general education.

Chapter 2 of this report provides an overview of the context of upper secondary education in Lithuania, including the broader socio-economic context, the structure of upper secondary education and outcomes in terms of participation, completion and learning. Chapter 3 discusses ongoing reforms in vocational upper secondary education, notably the new curriculum, changes in entrance to upper secondary education, enhancement of career guidance services and the creation of short-course vocational programmes (ISCED 5), which cumulatively have the potential to help improve the reputation of VET (Box 1.1). It suggests how Lithuania can capitalise and build on its reforms to strengthen vocational education so that it becomes a distinct and respected option that enables young people to access high-quality employment or further education. Chapter 4 focuses on the Matura examination at the end of upper secondary education and suggests how investment in assessment expertise can drive continuous improvement, including aligning assessment with the new curriculum so that teachers and students focus their time and energy on the learning it emphasises.

Box 1.1. Current and upcoming education reforms in Lithuania

Curriculum and requirements to complete

In 2020, Lithuania started updating the general curriculum framework for primary, lower secondary and upper secondary education (ISCED 1-3), and in 2022 it started implementing a new competency-based curriculum.

In 2023, as well as introducing a new curriculum, Lithuania will introduce new requirements for the subjects that students are required to study and related changes to the Matura examinations (see Chapters 3 and 4). Key changes include:

- reducing hours for vocational students
- providing more choice for vocational students
- designating compulsory subjects at different levels.

Career guidance

By 2024, all learners must be provided with career guidance, vocational information and a counselling service. Lithuania is planning to develop a network of career guidance specialists who will support students to develop a sense of their strengths and interests, starting from Grade 1. The Ministry of Education will finance the initiative, but the municipalities will manage the funds and decide how to organise it (see Chapter 3).

Using academic information for entrance into upper secondary education

At the end of 2022, Lithuania passed a new law under which students' examination results from the Grade 10 national examinations in Lithuanian and mathematics will be used to inform transitions into upper secondary education. The reform will be implemented starting in 2024. Only students with a mark above 4 (the pass grade in Lithuania) in the Grade 10 examination will progress directly into upper secondary education. Those with marks below this threshold can retake the examination later in the same school year, repeat the year or move to vocational lower secondary school (ISCED 2) (see Chapter 3).

Matura reform

In 2022, Lithuania announced a series of reforms to the Matura examination at the end of upper secondary education (see Chapter 4). These include:

- removing school-level examinations and making all examinations at state level
- introducing intermediate and final examinations in Grade 11 and Grade 12
- introducing some digital examination.

Source: Beleckienė, Giedrė; Kazlavickas, Liutauras; Palevič, Mariuš (2022[3]), Vocational Education and Training in Lithuania 2021, https://strata.gov.lt/wp-content/uploads/2022/09/PMBA2021_EN_web.pdf (accessed on January 30 2023).

Box 1.2. Workshops

As part of the OECD review of Lithuania's upper secondary system, the OECD team undertook two missions to Lithuania (October 2022 and June 2023). During both missions the team delivered workshops to a range of national stakeholders – students, teachers, national education officials and civil society representatives (Table 1.1). The workshops were designed to be interactive to allow representatives to discuss how the system currently functions from their perspective, and later on, to reflect on the relevance and feasibility of the options for change suggested in the OECD report.

The main findings and insights from the workshops included the following:

- Teachers and students agreed that the Matura assesses what students know, rather than what they can do. Some students reported that it was possible to predict the Matura items before the examination, based on previous examinations.
- Many students indicated that they did not feel that the content of their learning in upper secondary education emphasised the skills and knowledge that would be important for them in the future.
- Many students currently in upper secondary vocational educational saw it as a valued option, but students in general education and those who were not yet in upper secondary education had a limited understanding of the role and purpose of vocational education.
- Students feel the need for more guidance when choosing subjects and examinations in upper secondary education.
- Both teachers and students indicated that parents put pressure on their children to enrol in general education and tertiary education.

Table 1.1. Workshops, participants and scope

	Mission 1 (October 2022)		Mission 2 (June 2023)	
	Workshop 1	**Workshop 2**	**Workshop 1**	**Workshop 2**
Participants	General and vocational upper secondary teachers from different schools and regions, general and vocational students from different schools, regions and grades (end of both lower secondary education and upper secondary education).	School leaders, civil society representatives, employer representatives, representatives from tertiary education (universities and colleges), Lithuanian Ministry and National Agency Officials on VET, curriculum, the Matura, post-secondary non-tertiary education and tertiary education.	General and vocational upper secondary teachers and students from different schools, civil society representatives, employer representatives, representatives from tertiary education (universities and colleges), Lithuanian Ministry and National Agency Officials.	General and vocational upper secondary teachers and students from different schools, civil society representatives, employer representatives, representatives from tertiary education (universities and colleges), Lithuanian Ministry and National Agency Officials.
Scope	Collecting information on the Matura examination and the student journey in, through and out of upper secondary education.	Collecting information on the upper secondary system and the current and future reforms.	Seeking feedback on the main issues and policy recommendations developed by the OECD team on examination and certification at the end of upper secondary education.	Seeking feedback on the main issues and policy recommendations developed by the OECD team on vocational education and pathways in upper secondary education.

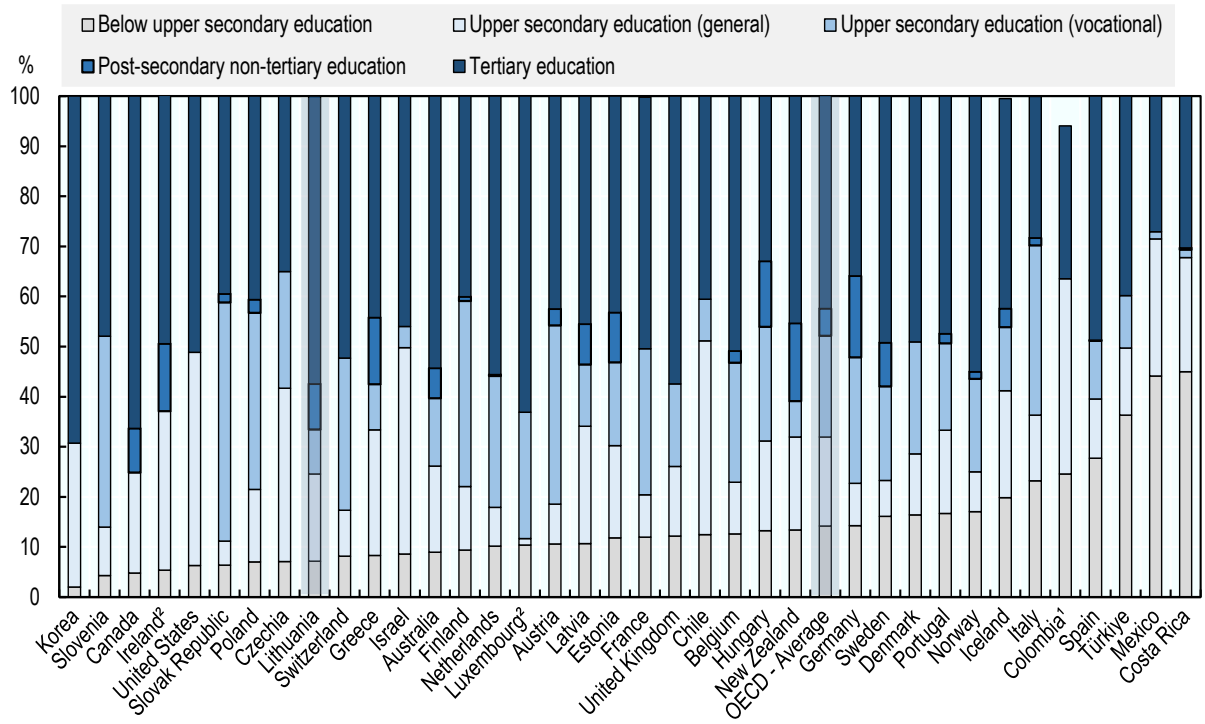
Main trends in upper secondary education in Lithuania

Participation and completion

Attainment of upper secondary education is very high

Lithuania has consistently been able to ensure that young people both successfully transition into upper secondary education and remain in the cycle until successfully completing it. Lithuania has one of the highest rates of upper secondary attainment across the OECD: 93% of 25–34 year-olds have attained at least upper secondary education, compared to the OECD average of 86% (Figure 1.1). Attainment of upper secondary education has been consistently high over time and translates into high rates of tertiary attainment. The share of 20–24 year-olds who attained at least upper secondary education in Lithuania increased from 87% in 2010 to 93% in 2020 (OECD, 2017[4]; OECD, 2021[5]).

Figure 1.1. Educational attainment of 25-34 year-olds (2021)



Notes: ¹Upper secondary general education includes both general and vocational upper secondary education.
² Upper secondary general education represents both upper secondary and post-secondary non-tertiary education.
Countries are ranked in ascending order of the share of 25-34 year-olds who attained below upper secondary education.
Source: OECD (2022[1]), *Education at a Glance 2022: OECD Indicators*, https://doi.org/10.1787/3197152b-en.

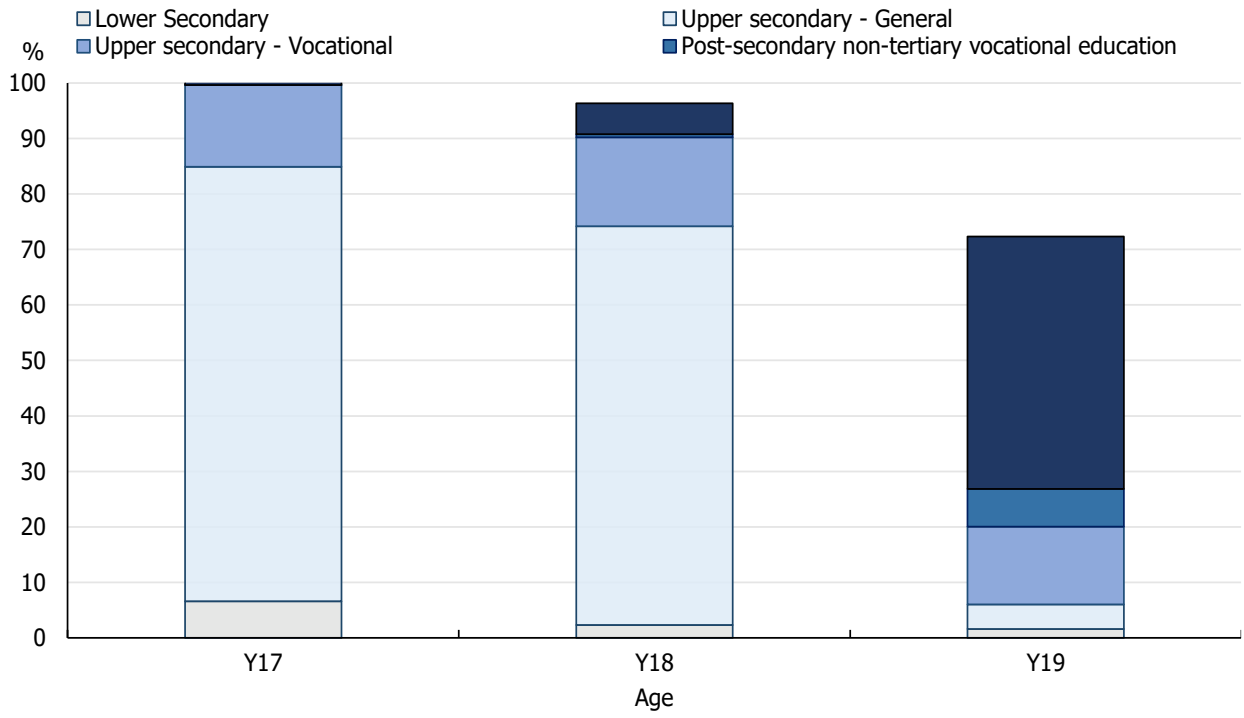
StatLink https://stat.link/n65387

Participation in upper secondary education is very high, supported by smooth transitions into and through upper secondary education

In line with high attainment overall, participation in education among 17-19 year-olds (the phase of upper secondary education) in Lithuania is high (Figure 1.2). Although compulsory education ends at age 16,

100% of 17 year-olds were enrolled in education in 2020, of which 93% successfully transitioned and were enrolled in upper secondary education (either general or vocational). Smooth transitions into upper secondary education could be encouraging this high participation (Perico e Santos, 2023[6]). In practice, this means that most students in Lithuania are enrolled in the grade that corresponds to their age. One factor contributing to smooth transitions is low repetition rates, as repetition results in students not progressing with their cohort, possibly making them more vulnerable to non-completion (OECD, 2021[5]). Smooth transitions could also be supporting students' completion of upper secondary education. Almost all students in Lithuania complete upper secondary education at the expected time, with only 4% of 19-year-olds still enrolled in general upper secondary education (Figure 1.2) and, in contrast to other OECD countries, there is limited change in completion rates two years after the programme's theoretical duration (Figure 1.3). The current plans to change entrance into upper secondary education, with the introduction of a threshold in the Grade 10 examination, could impact transitions into upper secondary education and potentially enrolments as well (see Chapter 3).

Figure 1.2. Enrolment rates of 17–19 year-olds by level of education



Source: OECD (2021[5]), *Education at a Glance 2021: OECD Indicators*, https://doi.org/10.1787/b35a14e5-en.

StatLink https://stat.link/71jxum

Participation in upper secondary vocational education is lower than national targets

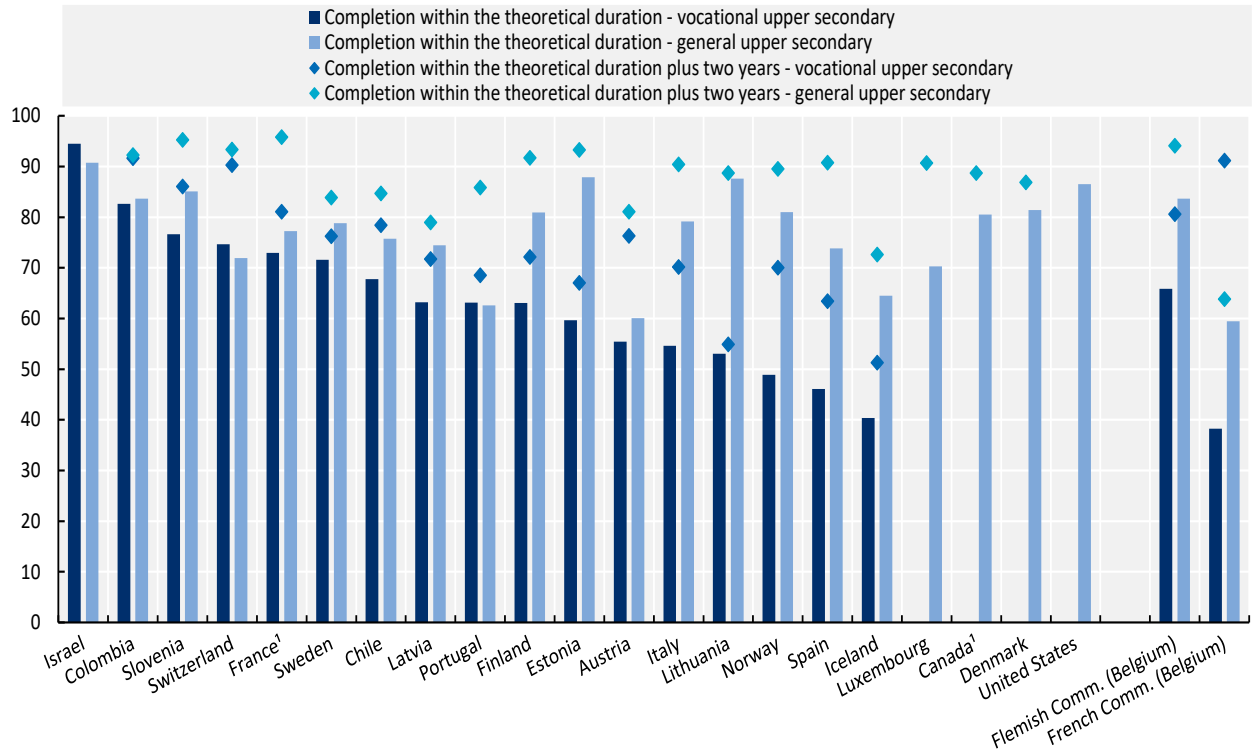
In Lithuania, 23% of 15-19 year-olds are enrolled in VET, compared to the OECD average of 36% (OECD, 2022[1]). One of the key policy concerns of stakeholders during the OECD Review team's mission to Lithuania in October 2022 was the comparatively low share of students enrolled in vocational upper secondary education. Despite successive policies and targets to increase upper secondary VET enrolment, participation has not increased significantly in recent years. On the contrary, enrolment in upper secondary VET has been stable in Lithuania at around 25% since 2013 (OECD, 2017[4]).

Completion of upper secondary education is high but lower for VET programmes

Upper secondary completion rates measure the proportion of the students who enter an upper secondary programme and ultimately graduate from it (OECD, 2020[7]). Completion rates of upper secondary education are around 90% in Lithuania for students in general programmes (Figure 1.3). While completion rates in general programmes are among the highest across OECD countries (almost 90%), only 55% of VET students graduate by the theoretical duration of the programme plus two years. Lithuania has the widest gap between completion rates of general and vocational programmes among the countries that provided data.

Figure 1.3. Upper secondary completion rates, by timeframe and programme orientation on entry (2021)

Percent, true cohort data only



Notes: The data presented here come from an ad hoc survey and only concern initial education programmes. The reference year (2021, unless noted otherwise) refers to the year of graduation by the theoretical duration plus two years.[1] Year of reference differs from 2021.
Countries and other participants are ranked in descending order of the completion rate within the theoretical duration of vocational upper secondary students.
Source: OECD (2023[8]), INES 2023 ad hoc survey on upper secondary completion rate (accessed on 15 April 2023).

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The gender gap in participation and completion of upper secondary vocational education is more pronounced than across the OECD on average

As is the case across the OECD on average, upper secondary VET in Lithuania is more popular among men, with 29% of men enrolled compared to 16% of women. This gender gap in Lithuania is slightly higher

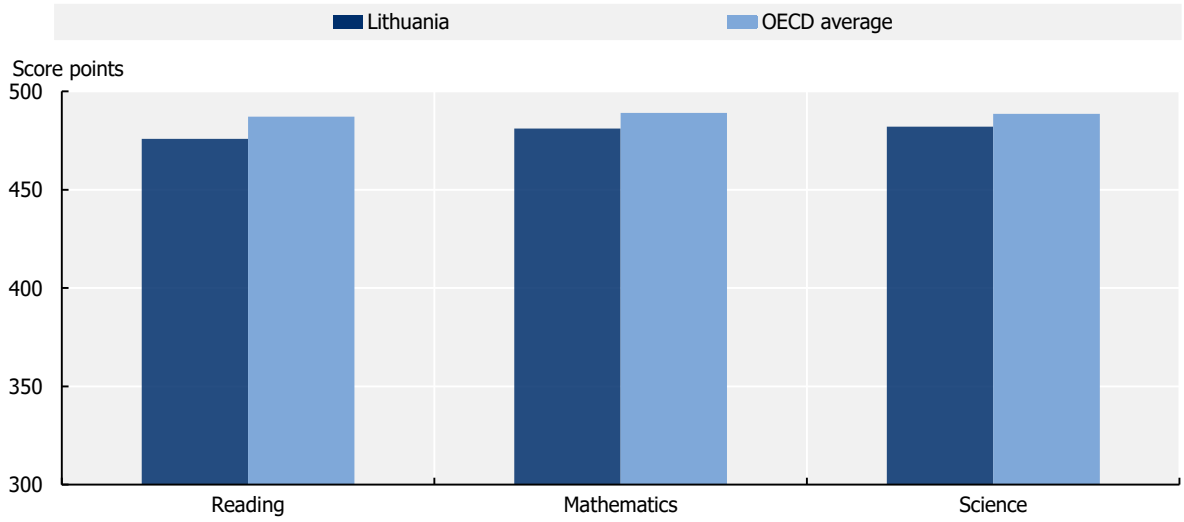
than the OECD average (OECD, 2022[1]). In Lithuania, women are more likely to leave VET early compared to men (a difference of 5 percentage points). Similarly, young women in Lithuania are less likely to complete upper secondary VET compared to young men: only 50% of young women completed VET, 10 percentage points lower than for young men, the largest gender gap across the OECD (OECD, 2023[8]). In contrast, young women enrolled in general upper secondary education in Lithuania have high completion rates, 7 percentage points higher than young men (OECD, 2023[8]). National efforts to raise participation in and prestige of VET should consider targeting the specific challenges around young women's perceptions and experiences in VET education.

Learning outcomes

On entry to upper secondary education, 15-year-olds in Lithuania score below the OECD average

In the OECD's Programme for International Student Assessment (PISA) in 2018, 15-year-olds in Lithuania (learners in Grade 9, their penultimate year of lower secondary education) scored below the OECD average in mathematics, reading and science (Figure 1.4). Over the past decade (2009-2018), Lithuania has not experienced significant improvements in performance in reading, mathematics and science (OECD, 2021[9]). While Lithuania's performance is close to the OECD average and in line with that of with a number of other countries at the same level of economic development – notably Croatia, Hungary and the Slovak Republic – it performs significantly below all its neighbouring countries, notably Estonia, Latvia (except for reading) and Poland (OECD, 2019[10]). In 2018, more than a quarter of 15-year-olds in Lithuania (25.6%) scored below Level 2 in mathematics, which is considered the baseline for basic competence. That is a far higher share than in the neighbouring countries of Estonia, where 10% of 15-year-olds scored below Level 2, and Latvia, where the share was 17% (OECD, 2019[10]).

Figure 1.4. Students' performance in reading, mathematics and science, PISA 2018



Source: OECD (2018[11]), PISA 2018 Database, https://www.oecd.org/pisa/data/2018database/, (accessed on 15 April 2023).

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The gap in performance between boys and girls and between students from rural and urban areas is greater in Lithuania than across the OECD

In terms of equity, the association in Lithuania between a student's socio-economic background and their reading performance at age 15 is in line with the OECD average, with 89 points difference between students from the bottom and top quarter of the PISA index of economic, social and cultural status (OECD, 2019[12]). However, Lithuania has relatively large performance differences between students in rural and urban schools that are driven by differences in students' socio-economic status. But it is interesting to note that, although the performance gap between students from rural and urban areas is almost twice as large as in Latvia and four times larger than in Estonia, Lithuania is one of the few countries in which rural students outperform urban students (after controlling for differences in students' social-economic status) (OECD, 2020[13]).

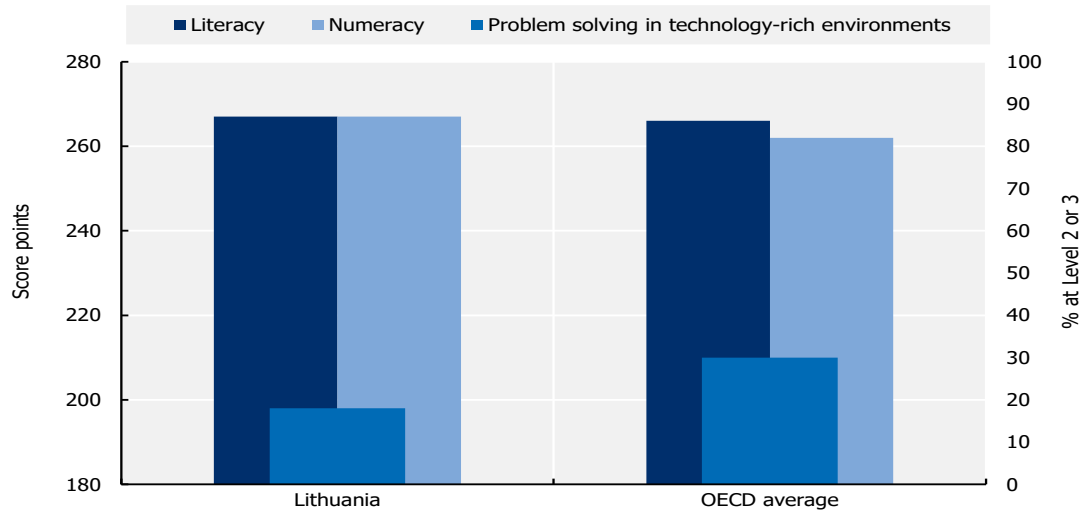
On the contrary, the gender gap in 2018 (measured in terms of the difference between boys' and girls' performance in reading) is slightly greater in Lithuania than the OECD average. While the gender gap in reading favours girls across all OECD countries, in Lithuania the gap is more pronounced, with a difference of 39 score points, compared to 30 score points across the OECD. In neighbouring countries, the gender gap in reading is slightly smaller, a difference of 31 score points for Estonia and 33 for Latvia. In mathematics, boys outperform girls on average across the OECD, but by only five score points. Lithuania is one of the few OECD countries (together with Iceland, Israel, Norway and Sweden) where girls still outperform boys, but by only 2 points (OECD, 2019[12]).

Adults in Lithuania score above the OECD average

The overall picture of performance in the OECD's Programme for the International Assessment of Adult Competencies (PIAAC) shows that adults in Lithuania perform significantly above the OECD average in numeracy and slightly above the average in literacy (Figure 1.5). Compared to other OECD countries, Lithuania has fewer adults with very low levels of skills (at Level 1 or below), although there are also fewer adults with skills at higher levels compared to the OECD average. Performance among adults is relatively equitable, with age, gender and socio-economic background having a smaller impact on performance than the average across the OECD (OECD, 2021[9]).

Figure 1.5. Snapshot of performance in literacy, numeracy and problem solving (PIAAC)

Mean proficiency scores of 16-65 year-olds in literacy and numeracy (primary axis), and the percentage of 16 65 year-olds scoring at Level 2 or 3 in problem solving in technology-rich environments (secondary axis)



Source: OECD (2012, 2015, 2018[2]), Survey of Adult Skills (PIAAC) (2012, 2015, 2018), Survey of Adult Skills (PIAAC) – PIAAC, the OECD's programme of assessment and analysis of adult skills (accessed on 15 April 2023).

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Upper secondary education, especially VET, seems to play a modest role in contributing to adult skills

Among all the countries that participated in PIAAC in 2016, in Lithuania, attaining upper secondary education provides the smallest positive contribution across the OECD to an individual's performance (OECD, 2012, 2015, 2018[2]). In particular, VET seems to contribute far less to the skills and knowledge acquisition than in other countries. According to PIAAC, recent upper secondary VET graduates have lower literacy, numeracy and problem solving skill levels than VET graduates in most other OECD countries. In both literacy and numeracy, young VET graduates in Lithuania performed at almost the same level as those who did not complete upper secondary education (around 260 score points) (Vandeweyer and Verhagen, 2020[14]).

It seems that Lithuania's above-average scores in PIAAC are being driven by high shares of attainment overall. In 2015 (the year Lithuania participated in PIAAC), only 8% of 25-64 year-olds in Lithuania had not attained upper secondary education, and 39% had attained tertiary education (compared to 22% on average across the OECD countries that participated in PIAAC), and 39% had attained tertiary education (compared to 35%) (OECD, 2016[15]). Put simply, because so many adults in Lithuania complete upper secondary and tertiary education, which is associated with higher levels of performance in all countries, this drives up the country's average scores. In contrast, the positive contribution of completing upper secondary education to an individual adult's learning outcomes is significantly less than in other countries (see Chapters 3 and 4).

Transitions into further education and work

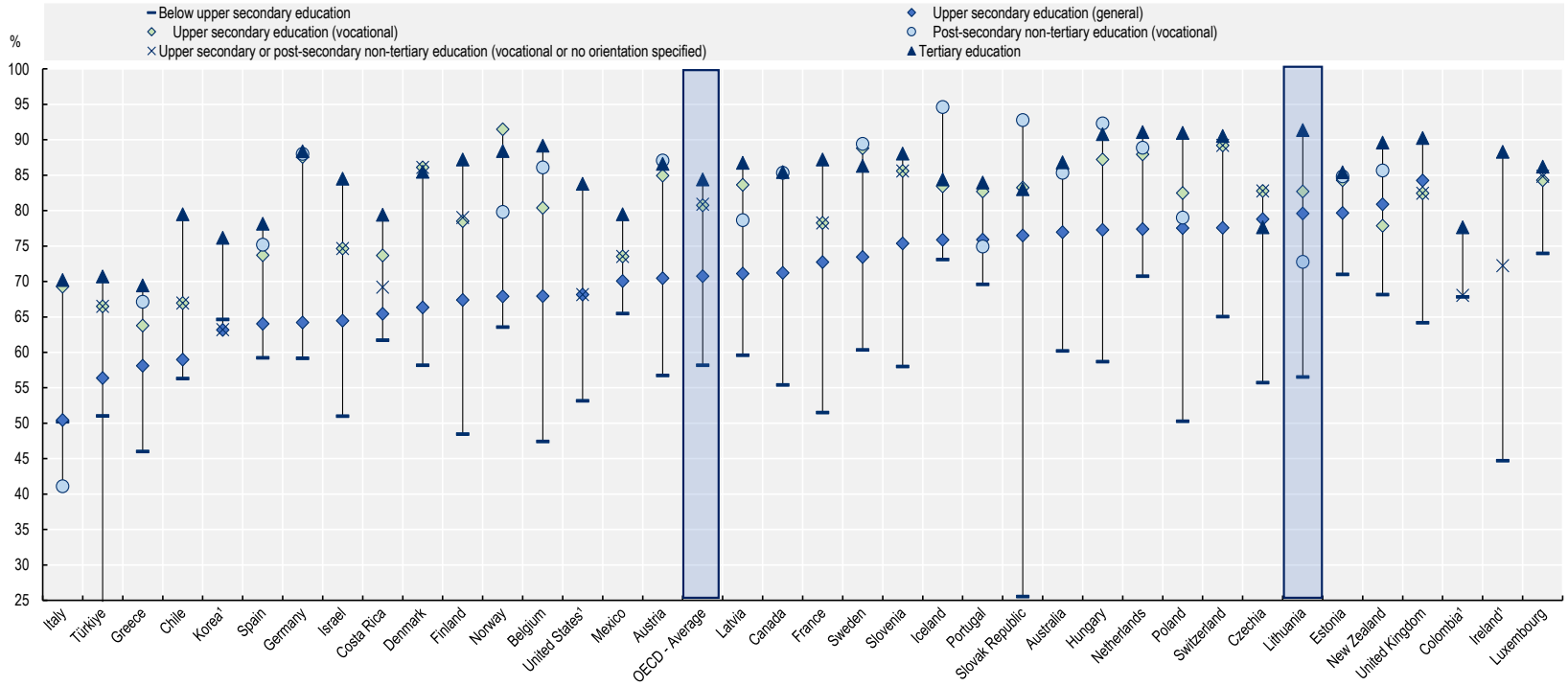
Transitions into tertiary education are high, but only for general upper secondary graduates

In 2020, 50% of 20-year-olds were enrolled in tertiary education, compared to the OECD average of 39%. In the same year, among 25-34 year-olds, the rate of tertiary attainment was 58%, well above the OECD average of 47% (OECD, 2022[1]). However, transitions into tertiary education are virtually non-existent for VET upper secondary graduates. While 97% of upper secondary vocational students have direct access to tertiary education, in 2022 only 1.7% of all VET graduates entered tertiary education, compared to 57.8% of general upper secondary graduates (Beleckienė, Kazlavickas and Palevič, 2022[3]). To access a state-funded place in tertiary education, VET upper secondary students must pass the Matura that assesses general subjects and compete directly with general upper secondary students, who have more time to acquire the skills and knowledge assessed in the Matura examinations. The significantly lower performance of VET students in these examinations shows that it is virtually impossible for VET students to achieve the bar to access tertiary education at present (see Chapters 3 and 4).

Employments outcomes are very positive for tertiary graduates, but less so for VET graduates

Compared to the OECD average, overall employment outcomes are positive for young people who attain upper secondary education in Lithuania (Figure 1.6). However, the upper secondary vocational qualification does not give young people a significant advantage on the labour market. Employment rates for recent upper secondary VET graduates in Lithuania (83%) are similar to the OECD average but are 9 percentage points lower than for tertiary graduates, one of the largest differences across the OECD. In most OECD countries, young people with upper secondary vocational education as their highest level of attainment have an advantage entering employment compared to their peers who have completed upper secondary general education as their highest level of education. However, in Lithuania, the upper secondary VET programme confers only a very limited advantage for its graduates to access the labour market. In 2021, the employment rate of vocational graduates was 83%, only 3 percentage points higher than the 80% employment rate of general graduates, the smallest advantage across all OECD countries except for New Zealand and the United Kingdom.

Figure 1.6. Employment rates of 25-34 year-olds, by educational attainment and programme orientation (2021)



Notes: [1] Data on upper secondary or post-secondary non-tertiary education are not available for vocational education. When data on students who attained post-secondary non-tertiary vocational education are not available, joint data on students who attained upper secondary or post-secondary non-tertiary vocational education are used. *Countries are ranked in ascending order of the employment rate of 25-34 year-olds who attained general upper secondary education.*

Source: OECD (2022[1]), *Education at a Glance 2022: OECD Indicators*, https://doi.org/10.1787/3197152b-en

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Priority areas for upper secondary education in Lithuania

As the final stage of schooling, upper secondary education plays a critical role in ensuring that young people have the knowledge and skills that will enable them to engage successfully in work, adult life and lifelong learning. Given the wide variations in young adults' needs, interests and aspirations, effectively fulfilling this complex function means providing diversity in how they spend their time. Yet this defining feature of upper secondary education – greater choice and differentiation in learning options in contrast to lower levels of schooling (OECD/Eurostat/UNESCO Institute for Statistics, 2015[16]) – also carries with it significant risks for equity. The OECD Above and Beyond: Transitions in Upper Secondary Education project provides comparative analysis on how systems can effectively meet diverse learner needs and promote equitable outcomes through effective pathway design and the use of assessment and certification as gateways to varied trajectories of lifelong learning (Box 1.3).

Lithuania achieves limited returns on its investment in upper secondary education

Lithuania has successfully achieved the first hurdle that many countries face in developing an effective upper secondary education system. The country has one of the highest rates of upper secondary attainment across the OECD (OECD, 2022[1]). Yet the education system, and more critically its young people, are currently receiving limited returns on the high investment in upper secondary education. Upper secondary education in Lithuania is associated with the smallest increase in learning outcomes across countries that participate in PIAAC (OECD, 2012, 2015, 2018[2]). At present, vocational upper secondary education is not an effective bridge into training, post-secondary education or work (OECD, 2022[1]). The data shows that young learners currently vote with their feet, with national targets to increase VET enrolment continually missed, perhaps reflecting the weak preparations for future progression that it provides.

Upper secondary education requires purposefully designed pathways that promote deeper skills acquisition

Upper secondary education in Lithuania needs to focus on creating differentiated pathways, where learners can acquire deeper, more specific skills to follow their interests and strengths and, crucially, which provide them with valued skills and knowledge on the labour market. This report provides suggestions for transforming the country's currently underdeveloped vocational pathway to become a purposefully designed pathway into employment or technical education. The report also suggests how the country's upper secondary certification (the Matura) can recognise a broader range of skills and knowledge at different levels.

Investing in assessment expertise is essential for a national certification to continually adapt to the needs of education and society

When it was first developed, Lithuania's Matura transformed assessment at the end of upper secondary education and entrance to tertiary education, creating a unified, standardised system for all students. However, the OECD team heard from stakeholders that today the examination items are sometimes predictable and focus on knowledge reproduction rather than assessing deeper reasoning and skills application. The introduction of a new competency-based curriculum creates the impetus to revise some parts of the Matura so that it drives the learning that the students, teachers and employers believe really matters for young people. The report suggests how Lithuania can continually invest in assessment expertise.

Box 1.3. Above and Beyond: Transitions in Upper secondary Education project

The OECD's Transitions in Upper Secondary Education project develops analysis on how upper secondary education can be designed to meet diverse learner needs and promote equitable outcomes by developing comparative analysis on pathways and assessment and certification. Countries can engage with the project through a range of flexible options that contribute to the project's evidence base and mobilise its knowledge to support national policy making and reforms.

Figure 1.7. Analysis to support upper secondary transitions

Pathways	Assessment and Certification
Supporting smooth transitions into, through and out of upper secondary education by understanding the role of, and how to promote: • foundational skills and knowledge • depth of knowledge and skills and specific competencies • an emerging sense of future ambitions.	Promoting learning that matters and providing effective passports for the future by analysing how to: • assess a wide range of knowledge and skills in reliable and valid ways • recognise breadth of student achievement.

Source: OECD (2023[17]), Above and Beyond, https://www.oecd.org/education/aboveandbeyond/ (accessed on 1 June 2023).

Strengthening pathways in upper secondary education

Lithuania places significant importance on creating valued vocational upper secondary education that is attractive to young people and provides the country's economy with strong technical skills to drive production and innovation. The country has set successive targets to raise enrolment in vocational education and has made major investments in the infrastructure of vocational schools. Despite these policies, vocational enrolments remain below the country's targets, and there are gaps in some sectors of the labour market where there are not enough graduates with the technical skills to meet national needs.

It is important to strengthen vocational education so that it becomes a distinct and respected option that enables young people to access high-quality employment or further education. This report suggests three essential actions to strengthen upper secondary pathways (see Chapter 3):

- reviewing how young people transition into vocational education, including orientation mechanisms
- rethinking how the design of vocational education can shift away from the current model, where VET has largely been added on to the existing general programme, to create valued vocational pathways through upper secondary education
- building clear pathways for progression out of upper secondary education and strategies to improve the quality of vocational programmes to support and encourage VET students to transition to higher levels of education.

Issue 1: Reviewing students' transitions and orientation into upper secondary education

In most OECD systems, when students transition from lower to upper secondary education, it is the first time that they are actively engaged in making decisions that start to define their future pathways. Many factors influence students' experiences in upper secondary education and beyond, but a smooth transition from lower secondary education is the first and essential step in a successful journey through upper secondary education and into further education and/or employment.

One feature of a smooth transition into upper secondary education is when all (or almost all) students transition at the expected time (Perico e Santos, 2023[6]). Although entrance into upper secondary education in Lithuania is currently automatic and most students transition to this level of education, the system provides little support and guidance to students in choosing among general and vocational programmes. As a result, this makes it difficult for young people to make informed decisions about the upper secondary programme that is likely to best meet their needs and interests. There are few systematic tools or support to help students develop an accurate understanding of the possibilities that vocational programmes open into employment or further education. In practice, this means that vocational education tends to be the default option for students with low grades, and often from disadvantaged backgrounds, which contributes to its low prestige.

Policy makers in Lithuania are concerned that enrolment in vocational education remains lower than the average across the OECD. Additionally, with automatic entrance to upper secondary education combined with no monitoring of student knowledge and skills at this transition point, there is no way to ensure that all students are being supported to succeed in the next level of education. Improving student guidance to support transitions into upper secondary education would make students in Lithuania more aware of the options available to them and would enhance their motivation. It might also encourage more students to understand the value of vocational education and the opportunities it offers for the future, while helping to reach a better alignment in the labour market between supply and demand of skills. The current plans to introduce a threshold for entrance into upper secondary education using the examination in Grade 10 will help ensure that all students have the skills they need before transitioning. However, if the threshold is not accompanied by targeted support to the students who fail the exam, grade repetition and loss in motivation might affect students' transitions and enrolments in upper secondary education.

Table 1.2. Summary of policy options for strengthening transitions and orientation into upper secondary education

Policy Options	Recommendations
Issue 1: Reviewing students' transitions and orientation into upper secondary education	
1.a. Making personalised transition recommendations for each student based on a wide range of information	• Monitoring students' learning outcomes as they transition into upper secondary education • Carefully considering how the new threshold can influence transitions and how it can be used to provide additional support • Reconsidering the sources of information for transition decisions • Considering how information is combined to develop a personalised recommendation for each student • Counsellors should be external from the school and provide a non-binding recommendation
1.b. Ensuring that students and their guardians play an informed role in transition decisions	• Developing career-related learning from an early stage to promote subject and career exploration • Ensuring that students and their families are supported through accessible, transparent and up-to-date information
1.c. Reconsidering the structure of schooling to facilitate transitions into upper secondary education	• Exploring options to provide some VET in general schools • Promoting co-operation between general and vocational schools • Considering restructuring the education system to facilitate students' transitions

Issue 2: Creating valued vocational pathways through upper secondary education

Currently in Lithuania, VET is almost designed as an "add-on" to the general upper secondary programme, with general and vocational students studying a similar set of subjects and being examined in the same way in the Matura. While the reforms that will be implemented in 2023/24 will provide VET students with more choice and flexibility to adapt the curriculum to their needs and interests, the overall structure of the VET system does not encourage completion or enable learners to acquire the skills that they need for either employment or continuing education.

On the one hand, vocational upper secondary students who find the general curriculum content very demanding or uninteresting are required to dedicate at least 17 hours a week to general subjects (compared to 25 hours for general students). At the end, they take the same Matura examinations for upper secondary certification as general students, and the Matura will become even more demanding when all examinations are set at state level from 2024, replacing school-level examinations (see Chapter 3). On the other hand, because the Matura provides access to tertiary education, any high performers in vocational education who want to pursue tertiary education do not have an incentive to remain in education for the third year to obtain the vocational certification after passing the Matura. The design of the current vocational pathway is not equipping either group of students with the general or vocational skills that they need to continue their studies or to join the labour market. In systems with more than one programme at the upper secondary level, the status of vocational education is promoted by developing a distinctive identity and ethos that means it is not judged by the values of the academic track, but by the unique value of its own qualifications on the labour market (Raffe et al., 2001[18]).

This report suggests that Lithuania could consider designing two separate upper secondary VET options: 1) a more work-based programme that gives students extra support to meet minimum requirements in general subjects and prepares students to enter high-quality options in the labour market or post-secondary options at ISCED 4 (and a potential pathway into tertiary education); and 2) another more technically oriented programme that gives access to technically focused employment or the new vocationally oriented ISCED 5 tertiary qualifications. Providing clear, distinct and diverse pathways in upper secondary education would allow students to study content that is more tailored to their needs and aspirations while ensuring that upper secondary vocational graduates are more prepared and specialised for lifelong learning and employment. These changes could help improve the attractiveness of VET and the outcomes of vocational students.

Table 1.3. Summary of policy options for creating valued vocational pathways through upper secondary education

Policy Options	Recommendations
Issue 2: Creating valued vocational pathways through upper secondary education	
2.a. Providing more flexibility in vocational education to adapt to students' needs and abilities	• Advancing current reforms to provide greater flexibility and adaptability in the content for vocational students • Reviewing the level of demand and breadth and depth of learning in mathematics and Lithuanian to ensure that it aligns with the needs and future ambitions of all students • Considering the demand and content in other subjects • Moving the Matura back to the end of the third (or fourth) year for VET students • Providing advice about different levels and subject choice as part of the personalised recommendation for upper secondary transitions • Creating more diversity in VET programmes

Policy Options	Recommendations
2.b Creating a more work-based VET option that promotes acquisition of foundational skills	• Introducing a new vocational option with more work-based learning • Supporting employers to engage with apprenticeships • Ensuring that students are well supported to develop essential foundational skills
2.c. Providing a technically focused and a more academically oriented vocational upper secondary option	• Providing stronger preparation in technically focused VET • Ensuring that general content promotes strong technical skills

Issue 3: Designing pathways with clear and sequential progression out of upper secondary education

One of the reasons why vocational education in Lithuania is not attractive for young people is that it does not offer strong pathways into either employment or further education. National data show that the share of learners who have acquired upper secondary vocational education and continue studying at tertiary level is decreasing, falling from 36% in 2014 to 17% in 2021 (Beleckienė, Kazlavickas and Palevič, 2022[3]). The factors for this include the major disadvantages that VET students experience compared to their peers in general education in succeeding in the Matura examination that gives access to tertiary education. Moreover, VET does not confer a significant advantage to enter the labour market compared to general education.

In order to make vocational education a more attractive option to students, Lithuania could consider building clear options for progression out of upper secondary vocational education into further education by rewarding vocational qualifications for entrance into post-secondary vocational programmes, at the new ISCED 5 level in particular, and by building sequential programmes at ISCED 4 and 5 that allow students to build upon their qualifications and enhance their technical skills. At the same time, Lithuania will also need to consider improvements to the quality of upper secondary vocational education to ensure that its value is recognised by employers, creating a clear pathway for specialists to enter the labour market with strong VET skills.

Table 1.4 Summary of policy options for designing pathways with clear and sequential progression out of upper secondary education

Policy options	Recommendations
Issue 3: Designing pathways with clear and sequential progression out of upper secondary education	
3.a. Ensuring clear and diverse options of progression from upper secondary vocational education into further education	• Rewarding upper secondary vocational qualifications for entrance into tertiary education • Creating ISCED 4 as a clear option for progression and a sequential programme from ISCED 3 • Creating alternative pathways for progression for students who do not have access or need additional support • Ensuring students understand their options in upper secondary education and the consequences for the future
3.b. Improving the quality of upper secondary vocational education to ensure its value is recognised by employers	• Ensuring VET teachers receive high-quality preparation in pedagogy • Attracting new, highly skilled individuals with vocational skills into teaching • Providing teachers with continuous professional development to continually build their professional skills and knowledge • Increasing the involvement of employers in VET programmes • Improving and expanding the quality assurance system in VET

Consolidating Lithuania's upper secondary certification to meet learners' diverse needs and promote higher-order, complex learning

The Matura is a respected and highly valued national certification in Lithuania. Its introduction over a decade ago radically changed young people's experiences at the end of upper secondary education by introducing a single examination for upper secondary certification and tertiary entry, promoting fairness and reliability. Today, however, there are national concerns that the Matura items are predicable, tend to assess knowledge reproduction over competencies and are not particularly engaging or stimulating. These challenges are particularly acute now, as the country has started to implement a new curriculum which is explicitly oriented towards competency development. Evidence and experience from countries internationally consistently highlight that it is essential to align certification and assessment with the curriculum if the curriculum on paper is to become the curriculum that students learn in classrooms (OECD, 2013[19]). This concern is especially prevalent in upper secondary education, where the stakes attached to upper secondary certification mean that assessment at this level invariably influences to a large extent where and how teachers and students focus their time and energy in the final phase of schooling.

Issue 1. Supporting continual improvement and high-quality assessment

When the Matura was introduced in 1998, it was a major step change in certification of upper secondary education and tertiary selection in Lithuania. It introduced a common examination for all young people seeking to enter tertiary education, ending the variability in entrance requirements across different tertiary institutions that had existed previously (OECD, 2017[4]). Stakeholders reported to the OECD team that when the state Matura examinations were first introduced, they were perceived to be innovative, engaging and assessing higher-order, complex skills.

In 2022, at the time of the OECD team's visit to Lithuania, stakeholders expressed several challenges related to the Matura examinations. In 2022, there was a dramatic and unexpected fall in the results for the state Matura in mathematics, with 35% of candidates failing the examination (NSA (National Education Agency), 2022[20]). This created challenges for managing entry to tertiary education, since passing the state Matura in mathematics is a requirement for all the tertiary options. In the OECD's workshops with teachers and students in 2022, both groups expressed the view that the Matura was not assessing what learners could do and was dominated by the assessment of knowledge recall. Students also shared the perception that the Matura items are predictable and rarely engaging. The country is planning to implement wide-ranging reforms to the Matura (See Box 1.1). Lithuania could consider how to develop a clear, nationally relevant vision for the Matura so that the planned reforms are able to effectively address some of current challenges that are associated with it.

Table 1.5. Summary of policy options for supporting continual improvement and high-quality assessment

Policy Options	Recommendations
Issue 1. Supporting continual improvement and high-quality assessment	
1.a. Supporting the developers of the Matura to produce high-quality items that fulfil their purpose	• Developing clear specifications to guide item development and teaching and learning • Supporting the examinations team in the National Agency for Education custodians of the national standards set out in the specifications • Ensuring that the results of technical analysis are used to drive improvements • Introducing adjustments to promote consistent standards from year to year • Using the technical review process, as well as continuous review, to develop engaging items that assess competencies

Policy Options	Recommendations
1.b. Developing continuous review, research and evaluation to ensure that the Matura remains fit for purpose	• Undertaking reforms as part of an established review and evaluation cycle • Developing a process for continuous review, research and evaluation • Developing the examinations team in the National Agency for Education as an independent centre of assessment expertise • Investigating the reasons for the mathematics 2022 results
1.c. Making the most of the new digital examinations	• Identifying the objectives for the new digital examinations • Being cognizant of the equity and fairness challenges of introducing digital assessment • Determining a national approach for implementation

Issue 2. Introducing alternative types of assessment

One important consideration in the Matura's design is the range of assessment activities that students undertake. While the Matura currently draws on some different types of assessments (a project, art portfolios and oral examinations in foreign language examinations), the reliability and take-up of these assessments could be reinforced. Less than 1% of upper secondary students currently take the project as part of their upper secondary certification, and tertiary institutions do not take it into account for selection because of concerns about reliability.

Many countries have found that, as they have implemented competency-based curricula, it has led to the recognition that some competencies, in particular social-emotional skills like planning, self-reflection, investigation and collaboration, can be more readily assessed through assessments when students have to plan their work over a period of time or engage with their peers. Internationally, evidence suggests that projects can contribute to academic learning and the development of wider competencies and can be engaging and motivating for students (Drummond, 2017[21]; Kingston, 2018[22]). In Lithuania, strengthening the project assessment might help to motivate upper secondary students while developing and giving greater prominence to their organisational skills, which the tertiary sector and employers report are currently weak upon completion of upper secondary education.

Part of efforts to strengthen the project will mean reviewing its design to make it more accessible to a wider range of students, teachers and schools. Another important issue is concern about the reliability of marks from the project component, which mean that it is not considered for tertiary selection. The report discusses steps that Lithuania might take to promote greater reliability in the Matura components that will remain from 2023 onwards. It also considers the potential value and model of other types of alternative assessments that might be gradually and progressively introduced in the future.

Table 1.6. Summary of policy options for introducing alternative types of assessments

Policy options	Recommendations
Issue 2. Introducing alternative types of assessment	
2.a. Reviewing and refining the current project component	• Strengthening the value of a project assignment for young people • Redesigning the project assessment to encourage greater student take-up • Considering the project assignment for vocational upper secondary students
2.b. Strengthening the reliability of alternative assessments	• Introducing more "controlled assessment" for the project • Developing a robust model to moderate internal assessments • Providing teachers and schools with support for assessment
2.c. Considering other types of alternative assessment	• Identifying skills that cannot easily be assessed through written examinations • Developing governance arrangements to ensure broad representation and consensus decisions

Issue 3. Providing more flexible choices and options within the Matura

Upper secondary examinations and qualifications are young people's passport to a range of different pathways, including continuing education at tertiary and non-tertiary post-secondary level, employment and lifelong learning. This means that upper secondary qualifications need to be both responsive to a broad range of prior learning – candidates may have studied different content such as general or vocational and different subjects – and facilitate access to a diverse range of future pathways.

Achieving all these objectives is clearly challenging for any examination and certification, and it is the reason why many education systems provide choices and options within their national examination for upper secondary certification. Many systems, for example, provide examinations at different levels and examinations linked to students' specialisation choices and also frequently provide distinct certification for general and vocational students as part of overall upper secondary certification. The Matura in Lithuania might draw on some of these practices to provide an examination that is more differentiated to the needs of different groups of students.

Table 1.7. Summary of policy options for providing more flexible choices and options within the Matura

Policy options	Recommendations
Issue 3. Providing more flexible choices and options within the Matura	
3.a. Defining the purpose, structure and consequences of a more modular approach to assessment	• Defining the function of the new intermediate assessments • Addressing the learning and well-being challenges of overassessment
3.b. Supporting a better match between course and examination choices	• Providing greater alignment across course and examination choices • Moving forward with plans to provide Lithuanian and mathematics at general and higher levels • Working proactively with tertiary education partners to determine how they will set requirements for selection • Supporting students to make informed subject and level choices
3.c. Meeting the needs of vocational upper secondary students in the Matura	• Ensuring that the new examinations are accessible for VET students • Developing a dedicated upper secondary certification for vocational students

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2 The Context of Upper Secondary Education in Lithuania

This chapter provides an overview of the context for upper secondary education in Lithuania. It outlines the socio-economic context, notably the labour market that young people transitioning from school to work enter. It presents the structure of upper secondary education in Lithuania in a comparative international perspective, highlighting the comparative brevity of upper secondary programmes and analysing the transition mechanisms from lower to upper secondary education. It briefly describes how upper secondary institutions are organised and funded and then discusses the main trends in upper secondary education, including participation, attainment, and completion. The chapter also outlines the curriculum, teaching and assessment in upper secondary education and the learning outcomes of different student groups and graduates emerging from international assessments. Finally, it provides an overview of the outcomes of upper secondary graduates, both into further education and employment.

Introduction

Despite having one of the highest attainment rates of upper secondary education among OECD countries (OECD, 2022[1]), upper secondary education in Lithuania seems to play a relatively modest role in shaping young adults' knowledge and skills compared to in other OECD countries (OECD, 2012, 2015, 2018[2]). There are currently concerns in the country around the skills that students have both when entering and leaving upper secondary education. Higher education institutions and employers reported to the OECD team that upon completion of upper secondary education, many young people still lacked skills to enable them to function effectively in the workplace and in higher education. Evidence also shows that upper secondary vocational graduates tend to perform consistently lower than general graduates and have a harder time finding employment compared to vocational graduates in other OECD countries (Vandeweyer and Verhagen, 2020[3]; OECD, 2022[1]). While participation and completion of general upper secondary education are very high, enrolment in vocational education in Lithuania is lower than the national targets, and Vocational Education and Training (VET) students are more likely to leave their programme before completion (OECD, 2022[1]). The lack of graduates with strong vocational skills has an impact on the labour market, which is characterised by a considerable skills mismatch (OECD, 2022[4]).

Socio-economic context

Economic growth has been relatively strong over the past the decade

Over the past decade, annual Gross Domestic Product (GDP) growth in Lithuania has tended to be above the OECD average. The impact of the COVID-19 pandemic on economic growth was comparatively mild, falling by just 0.02% in 2020 compared to a decline of 4.39% on average across OECD countries (OECD, 2023[5]). Since February 2022, economic growth slowed, hit by declining exports and increased uncertainty (OECD, 2023[5]).

Structural unemployment remains a persistent challenge

Unemployment rates in Lithuania tend to be slightly higher than across the OECD on average (7.5% in 2023 compared to the OECD average of 5%) and compared to neighbouring countries Estonia (5.9%) and Latvia (6.7%) (OECD, 2023[5]). Despite a flexible labour market that tends to adapt relatively easily to evolving challenges, with workers transitioning from old to new jobs more rapidly than in most OECD countries (OECD, 2018[6]), persistently high structural unemployment (estimated at around 6.5%) remains a feature of Lithuania's labour market. During the pandemic, the share of both vacancies and unemployment have increased, suggesting that the mismatch between available jobs and jobseekers has become even more acute (OECD, 2022[4]).

Skills mismatch is considerable

While skills mismatch (i.e. the sub-optimal use of an individual's skills in their occupation, causing a disparity between the supply and demand of labour (Brun-Schammé and Rey, 2021[7]) has been declining over the past few years in Lithuania, it remains considerable. In 2020, around 30% of employed tertiary graduates in Lithuania aged 25-34 were mismatched with their job by field of study and/or qualification level (OECD, 2022[4]). Many workers are either under- or overqualified for their jobs, and the labour market experiences skills shortages, with high-skilled job offers often remaining unoccupied while low-qualified workers have difficulties in finding jobs (OECD, 2022[4]). In particular, Lithuania faces a shortage of workers with medical, and education and training knowledge, as well as transversal skills including cognitive and communication skills, knowledge in business process and resilience, commitment, and self-management (OECD, 2022[8]). These gaps contribute to shortages of well-qualified candidates for occupations such as

health professionals, personal care workers, teaching professionals, and sales workers (OECD, 2022[8]). One of the factors contributing to the skills mismatch is the dominance of general, academic education in Lithuania while vocational education at upper secondary and post-secondary levels remains underdeveloped, resulting in many graduates lacking the specific and technical skills needed for their jobs (see Chapter 4) (OECD, 2021[9]).

Poverty remains a challenge, especially in remote areas

Despite a recent decline in the share of the population living below the poverty line, the at-risk-of poverty rate in Lithuania remains the second highest among European Union (EU) OECD countries. Reducing poverty is an important challenge for Lithuania, and regional differences in GDP per capita and unemployment exceed the OECD average despite the country's small size (OECD, 2022[4]). The population in remote and rural areas is ageing rapidly as the active population is moving to urban areas.

The structure of upper secondary education

Upper secondary education is comparatively short and no part of it is compulsory

The theoretical duration of upper secondary education (ISCED 3) (Box 2.1) in Lithuania is two years (Figure 2.1), except for vocational programmes that usually last three years (with the first two years primarily focused on general education and the third year focused on vocational education). Two years is comparatively short compared to other OECD countries, where upper secondary education is most frequently three years. At 17, young people are comparatively old when they start upper secondary education in Lithuania, compared to other OECD countries where the starting age is most frequently 15 or 16 (Stronati, 2023[10]).

One of the consequences of having a comparatively long lower secondary and short upper secondary cycle is that the upper limit of compulsory education – 16 in Lithuania – occurs before the start of upper secondary education. In contrast, in most OECD countries at least part or all of upper secondary education is compulsory (Figure 2.1). However, analysis of the period of compulsory education and upper secondary participation and completion has tended not to reveal any clear relationship (Perico e Santos, 2023[11]). This finding is borne out in Lithuania, where despite no part of upper secondary education being compulsory, attainment rates are among the highest in the OECD (OECD, 2022[1]).

All upper secondary graduates have access to tertiary programmes at ISCED 6

Lithuania offers different options at the post-secondary level, including higher VET programmes (Figure 2.2). ISCED 6 programmes include both bachelor's degrees offered in universities and professional bachelor's degrees (vocational oriented) offered in colleges. All upper secondary graduates, both from general and vocational programmes, who pass the Matura in at least three subjects (including mathematics and Lithuanian from 2023/24) have direct access to these programmes. On the contrary, short-cycle vocational programmes at ISCED 5 will require a vocational qualification to enter from 2023 onwards. Therefore, upper secondary VET graduates will be able to access them directly, while upper secondary general graduates will need to enrol first in a post-secondary non-tertiary vocational programme (ISCED 4). All tertiary institutions usually set additional entry requirements, both at ISCED 5 and 6, based on the marks from the Matura, so having direct access does not guarantee admission.

Box 2.1. Principal characteristics of upper secondary education, ISCED 2011

The International Standards Classification of Education (ISCED) was developed to provide an international system for classifying countries' education systems, in order to understand and interpret the inputs, processes and outcomes of education systems from a global perspective and ensure comparable data. According to ISCED 2011, the principal characteristics of upper secondary education are:

- programmes at ISCED level 3, or upper secondary education, are typically designed to complete secondary education in preparation for tertiary education or provide skills relevant to employment, or both.
- programmes at this level offer students more varied, specialised and in-depth instruction than programmes at ISCED level 2. They are more differentiated, with an increased range of options and streams available. Teachers are often highly qualified in the subjects or fields of specialisation they teach, particularly in the higher grades.
- programmes classified at ISCED level 3 may be referred to in many ways, for example: secondary school (stage two/upper grades), senior secondary school, or (senior) high school.

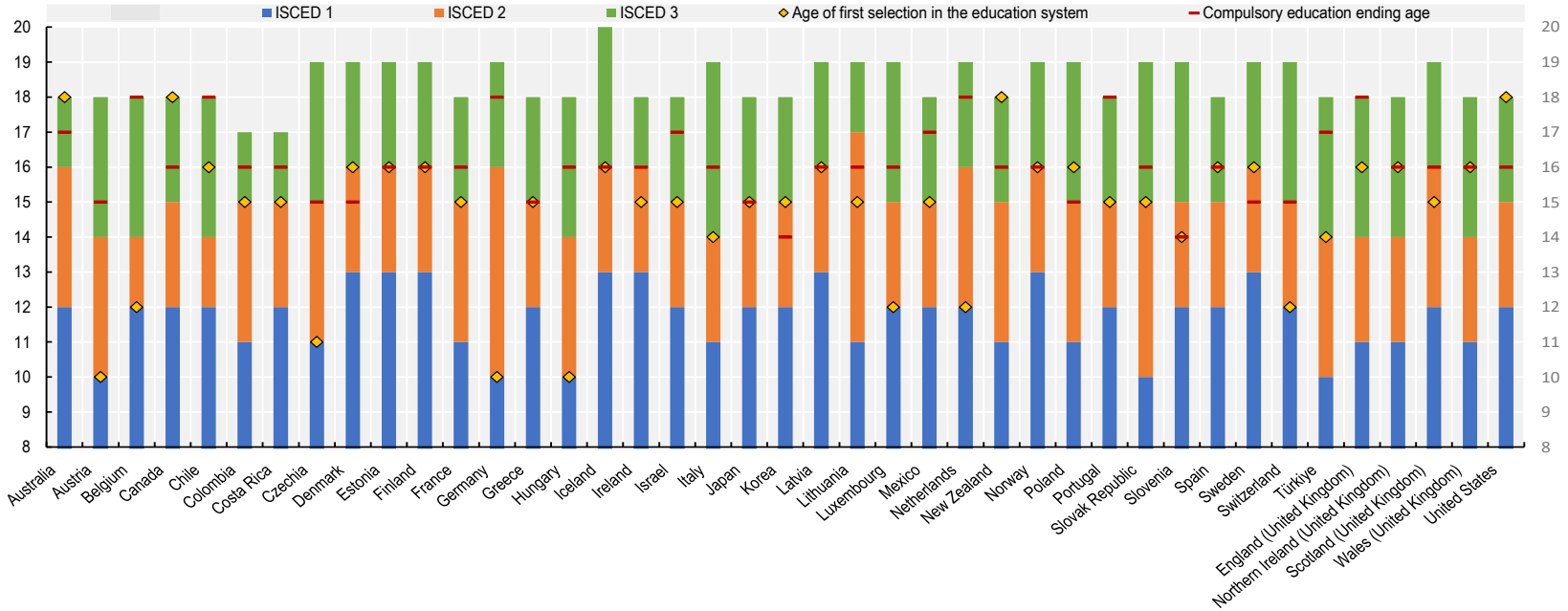
General and vocational upper secondary education

At the upper secondary level, ISCED distinguishes upper secondary education programmes by orientation:

- general education is defined as education programmes that are designed to develop learners' general knowledge, skills and competencies, as well as literacy and numeracy skills, often to prepare participants for more advanced education programmes at the same or a higher ISCED level and to lay the foundation for lifelong learning.
- vocational education is defined as education programmes that are designed for learners to acquire the knowledge, skills and competencies specific to a particular occupation, trade, or class of occupations or trades.

Source: UNESCO Institute for Statistics (2012[12]), International Standard Classification of Education, ISCED 2011, http://uis.unesco.org/en/topic/international-standard-classification-education-isced (accessed on 4 December 2021).

Figure 2.1. Upper secondary education systems across OECD countries



Notes: It is assumed that age references refer to 1 January of the reference year. Ending age of compulsory education might refer to the age that each individual student reaches depending on the birth date, meaning that students can leave school during the school year whenever they turn such age, or it can refer to the age that students have during the school year, meaning that students must complete the school year during which they reached the compulsory ending age. Compulsory ending age refers to education and not training, for example in France the ending age of compulsory education is 16 but training is compulsory up to 18. In the United States, the ending age of compulsory education varies between 16 and 18 depending on the state. *Countries are ranked in alphabetical order.*
Sources: OECD (2022[1]), *Education at a Glance 2022: OECD Indicators*, https://doi.org/10.1787/3197152b-en; OECD (2018[13]), PISA 2018 Database, https://www.oecd.org/pisa/data/2018database/ (accessed on 15 April 2023).

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The first official selection point is at 14 but in practice, this applies to less than 2% of students

At the lower secondary level, students attend different types of school: gymnasia, pre-gymnasia, basic schools and vocational schools (EURYDICE (European Education Information Network), 2022[14]). According to the OECD's Programme for International Student Assessment (PISA), the most common school among 15-year-olds is the gymnasium, with 74% of 15-year-olds enrolled (Figure 2.2). Following a school structure reform in 2004/05, in 11 years the number of gymnasia increased from 90 to 359, while other school types have been progressively phased out (Shewbridge et al., 2016[15]) although some notably basic schools are still found in more rural areas (OECD, 2018[13]).

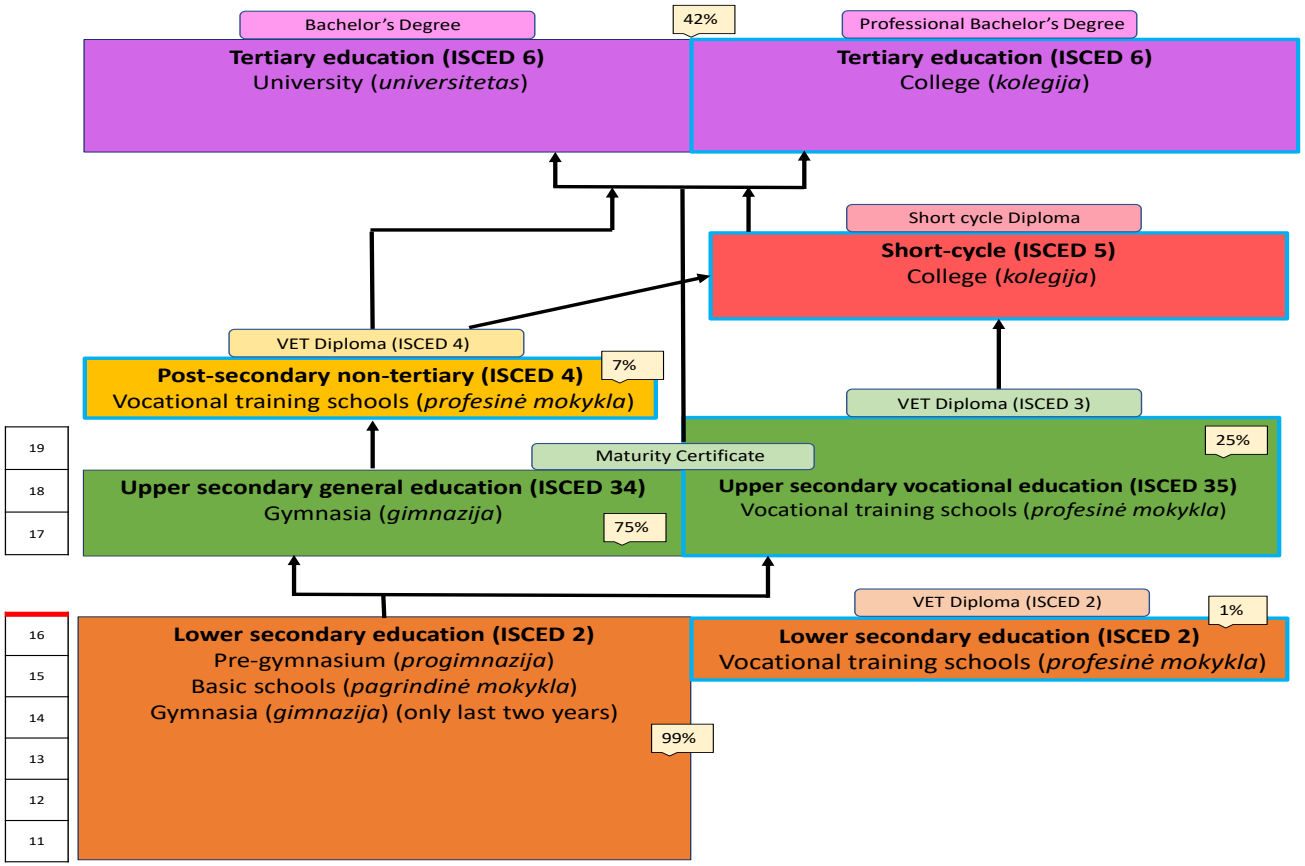
In Lithuania, students can opt to study vocational content at 14, midway through lower secondary education However, very few – 1.8% in 2018 - students take this option (OECD, 2018[13]). Low performance on PISA and high levels of socio-economic disadvantage tends to be the case for students entering vocational education at 14, with more than 50% of them coming from the bottom quartile of the socio-economic distribution[1] (OECD, 2018[13]).

Selection for the vast majority of students occurs at 17, as they transition into upper secondary education

Entry into upper secondary education is the most common point of first selection across OECD countries (Figure 2.1), which is the point when students tend to be oriented towards either vocational or general upper secondary programmes (Box 2.1). This is the case in Lithuania where students can choose between two ISCED 3 programmes – general upper secondary education (*Vidurinio ugdymo programos*) and vocational education (*Profesinio mokymo programos*) (Figure 2.2).

In most countries, the transition into upper secondary education is associated with a move into a different type of educational institution or school. A particular feature of Lithuania's system is that the last two years of lower secondary and upper secondary general education are usually provided by the same institution – gymnasium (*gimnazijos*) (Figure 2.2). Upper secondary vocational education, as well as post-secondary non-tertiary vocational programmes (ISCED 4), are provided in separate vocational schools, (*Technologijų gimnazija)*. This means that for a student moving into vocational upper secondary education, they are required to leave their current school and move to a separate vocational school at the end of Grade 10.

Figure 2.2. Upper secondary education transitions in Lithuania



Notes: The column on the left shows the typical age of students enrolled in that grade and the red line represents the end of compulsory education. The blue border represents vocational programmes. The yellow squares represent the share of students enrolled (for lower secondary and upper secondary: the shares in general and vocational among the total of students enrolled; for post-secondary programmes: the share of 19-year-olds enrolled) International date for ISCED 5 short-cycle programmes is missing for Lithuania.

Sources: OECD (2023[16]), Education GPS; OECD (2022[1]), *Education at a Glance 2022: OECD Indicators*, https://doi.org/10.1787/3197152b-en, (accessed on April 2023).

Entrance into upper secondary education in Lithuania is currently automatic and entirely based on student preferences (but this is planned to change)

Currently, students at the end of Grade 10 are not required to demonstrate through classroom assessments, external examinations or any other kind of assessment that they have met any academic requirements to progress into upper secondary education, i.e. progression into upper secondary is automatic (Perico e Santos, 2023[11]). The current system leads to almost all students in Lithuania (93%) transitioning into upper secondary education at the expected time (age 17), compared to three-quarters (74%) on average across OECD countries (OECD, 2022[1]), with the remaining 7% still enrolled in education but at the lower secondary level. In Lithuania, grade repetition is not a common practice at any stage of the education system, and this might play a role in supporting students' smooth transitions (Perico e Santos, 2023[11]). Students in Lithuania also exercise full discretion in choosing which upper secondary programme they wish to pursue as teachers are not required to provide any recommendation.

During the development of this report there were discussions in Lithuania around the importance of ensuring that students at the end of lower secondary have the basic skills required to succeed in the next levels of education and are oriented to the most appropriate programme for their abilities, interests and ambitions. This reflects concerns about overall levels of student achievement and low enrolment in vocational education. In December 2022, Lithuania passed a law that will affect students' transitions from lower to upper secondary education, including using the results from the Grade 10 national examination to inform transition decisions into upper secondary education (Box 2.2). Chapter 3 discusses transitions into upper secondary education and the proposed changes.

Box 2.2. Recent reform on students' transitions into upper secondary education

Using academic information for entrance into upper secondary education

At the end of 2022, Lithuania passed a new law which will use students' results from the Grade 10 national examination in Lithuanian and mathematics to inform transitions into upper secondary education. The reform will be implemented from 2024. The aim is to assess students' acquisition of basic skills at the end of lower secondary, which are required to be able to access more complex content and succeed in the next levels of education. According to the new law, only those students with a mark above 4 (the national pass grade), will progress directly into upper secondary education. Those with marks below this threshold can retake the examination later in the same school year after receiving additional support at school. If they do not pass the second time, they can either repeat the year in the same school or they can move to vocational lower secondary school (ISCED 2).

It is not clear if the students required to repeat the final year of lower secondary education will still be required to pass the national examination in Grade 10, after having repeated the year to be able to progress into upper secondary education, or if those students directed to lower secondary vocational schools will have the choice of continuing their upper secondary education in either a general or lower secondary school. Chapter 3 discusses the implications of this policy for students and their pathways, including the possibility that repetition rates will increase. Currently, in lower secondary education only 0.6% of students repeated a year in 2020, compared to 2.1% on average across the OECD.

Sources: Republic of Lithuania (2023[17]), Education Law No. I-1489, XIV-1726 Law of the Republic of Lithuania on Education No. I-1489 7, 8, 9, 10, 11, 14, 16, 19, 20, 21, 23, 29, 36... (lrs.lt), (accessed 30 August 2023); OECD (2022[1]), Education at a Glance 2022: OECD Indicators, Table C4.1., https://doi.org/10.1787/3197152b-en (accessed on 15 April 2023).

Governance and funding

General and vocational schools have separate governance

General upper secondary schools in Lithuania are managed by their municipalities. In contrast, vocational schools are managed by the central government. Stakeholders reported that this disparity was another factor that contributed to lower perceptions of the vocational system. It also makes cooperation and collaboration across general and vocational schools more difficult.

The funding system also makes cooperation across schools challenging, and in particular can create incentives from schools to try to retain students rather than advise on learning pathways that best suit the needs of individual students. At the end of Grade 10, gymnasiums that suggest students consider attending a vocational school risk losing funding, which is linked to individual students (see Chapter 3).

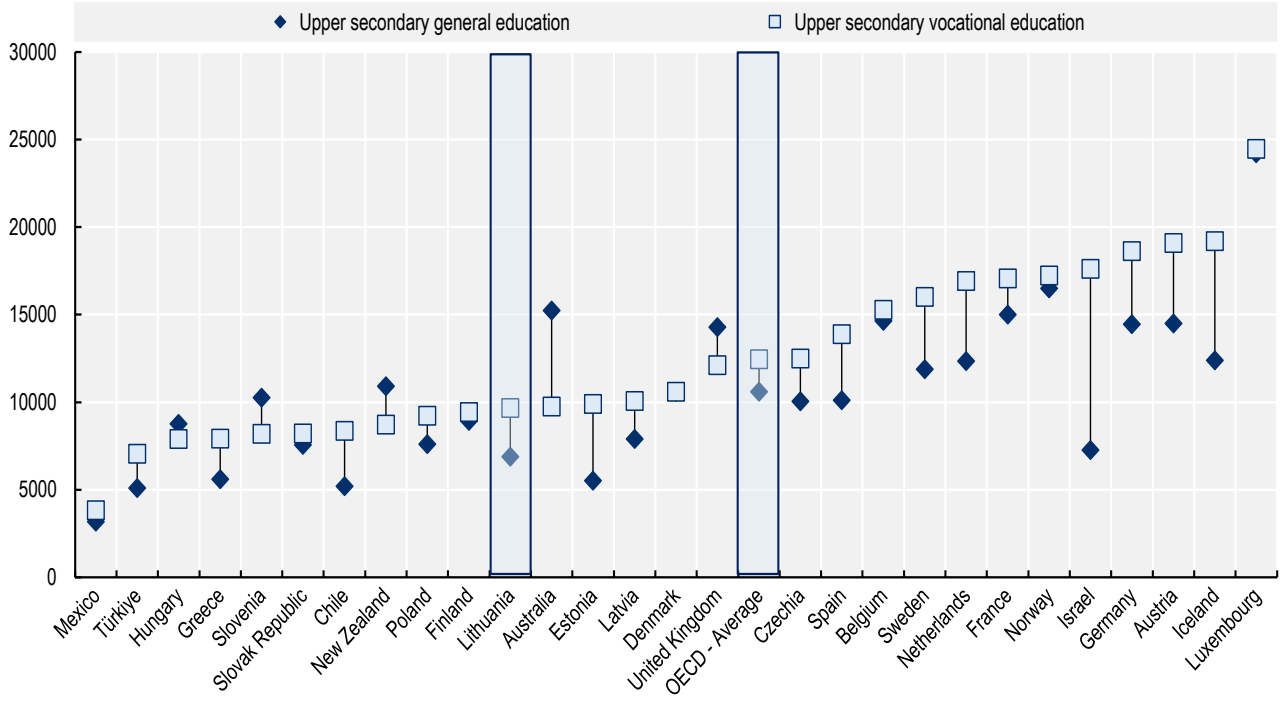
Overall spending on education is low compared to the OECD average but higher for upper secondary education

In 2019, Lithuania spent 8.9 % of its total public expenditure on education, a share smaller than that of its neighbouring countries, Estonia (10.6%) and Latvia (9.5%), and less than the OECD average (10.6%). Spending on lower and upper secondary and post-secondary non-tertiary education is 4.5%, higher than in Estonia (3.7%), in Latvia (3.9%) and the OECD average (4.3%). Annual spending per student in upper secondary education in Lithuania in 2019 was USD 7 662 (OECD, 2022[1]). While Lithuania's annual spending per upper secondary student is lower than the OECD average, its spending per vocational student is very similar to that of Estonia and that of Latvia. Many countries spend more per vocational upper secondary student because of the higher infrastructure costs. Lithuania has recently made significant investments in the infrastructure of its vocational schools which may be driving higher per-student costs (Figure 2.3).

Some countries, especially those with historically well-developed VET systems, leverage private funding from employers to cover some of the costs of upper secondary vocational education compared to general education. In Germany, and the Netherlands for example, where employers cover most of the cost of work placement for VET students, private funding accounts for at least 37% of funding for VET. In contrast, in Lithuania private funding for VET accounts only for 7.6%, lower than across the OECD on average (11.2%) (OECD, 2022[1]). Increasing the share of private funding in VET can help schools provide practical training, because it is very costly for them to continuously update content to reflect the labour market and requires significant investments in training and equipment (OECD, 2017[18]).

Figure 2.3. Total expenditure on educational institutions per full-time equivalent upper secondary student

USD Purchasing Power Parity



Source: OECD (2022[1]), *Education at a Glance 2022: OECD Indicators*, Table C4.1., https://doi.org/10.1787/3197152b-en, (accessed on 15 April 2023).

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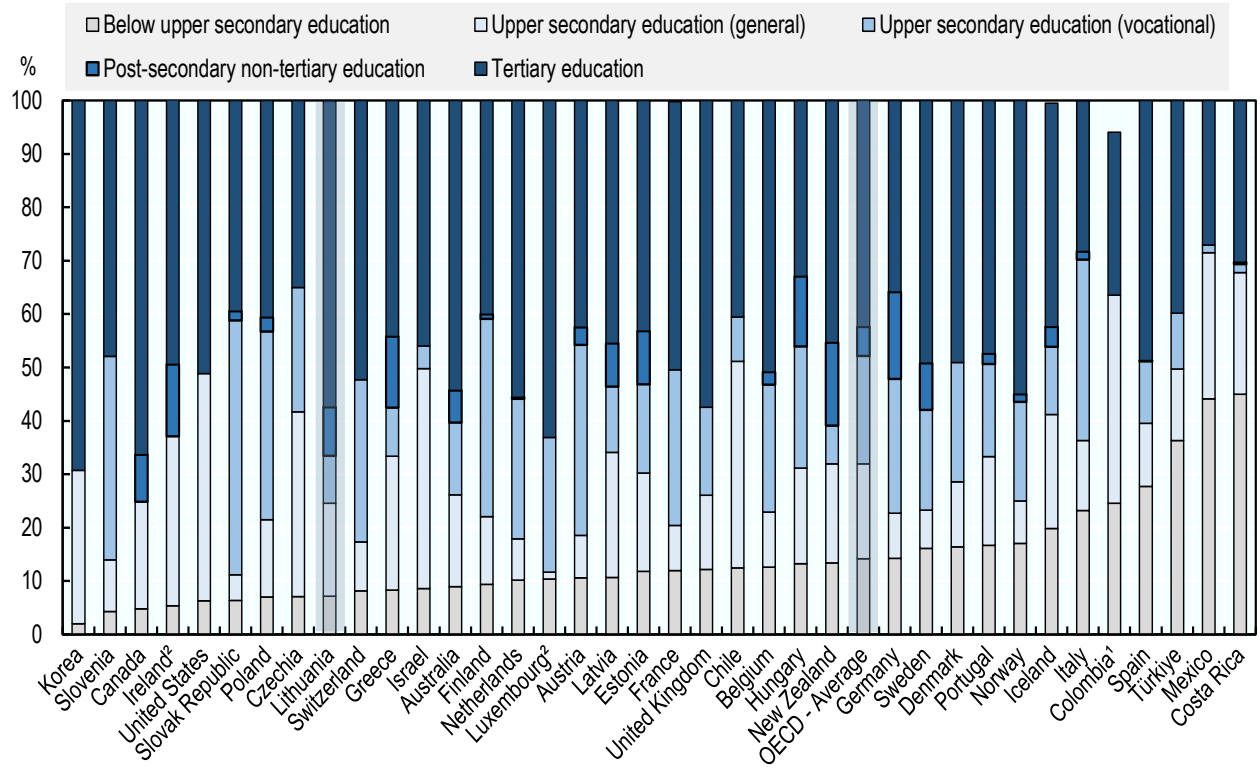
Participation in upper secondary education

Attainment of upper secondary education is very high

Lithuania has consistently been able to ensure that young people both successfully transition into upper secondary education and remain in the cycle until successfully completing. Lithuania has one of the highest rates of upper secondary attainment across the OECD, having 93% of 25-34 year-olds who attained at least upper secondary education compared to an OECD average of 86% (Figure 2.4). Attainment of upper secondary education has been consistently high over time and translates into high rates of tertiary attainment. The share of 20-24 year-olds who attained at least upper secondary education in Lithuania increased from 87% in 2010 to 93% in 2020 (OECD, 2017[19]; OECD, 2021[20]).

Figure 2.4. Educational attainment of 25–34 year-olds (2021)



Notes:1 Upper secondary general education includes both general and vocational upper secondary education.
2 Upper secondary general education represents both upper secondary and post-secondary non-tertiary education.
Countries are ranked in ascending order of the share of 25–34 year-olds who attained below upper secondary education.
Source: OECD (2022[1]), *Education at a Glance 2022: OECD Indicators*, https://doi.org/10.1787/3197152b-en, (accessed on 15 April 2023).

Participation in upper secondary education is high

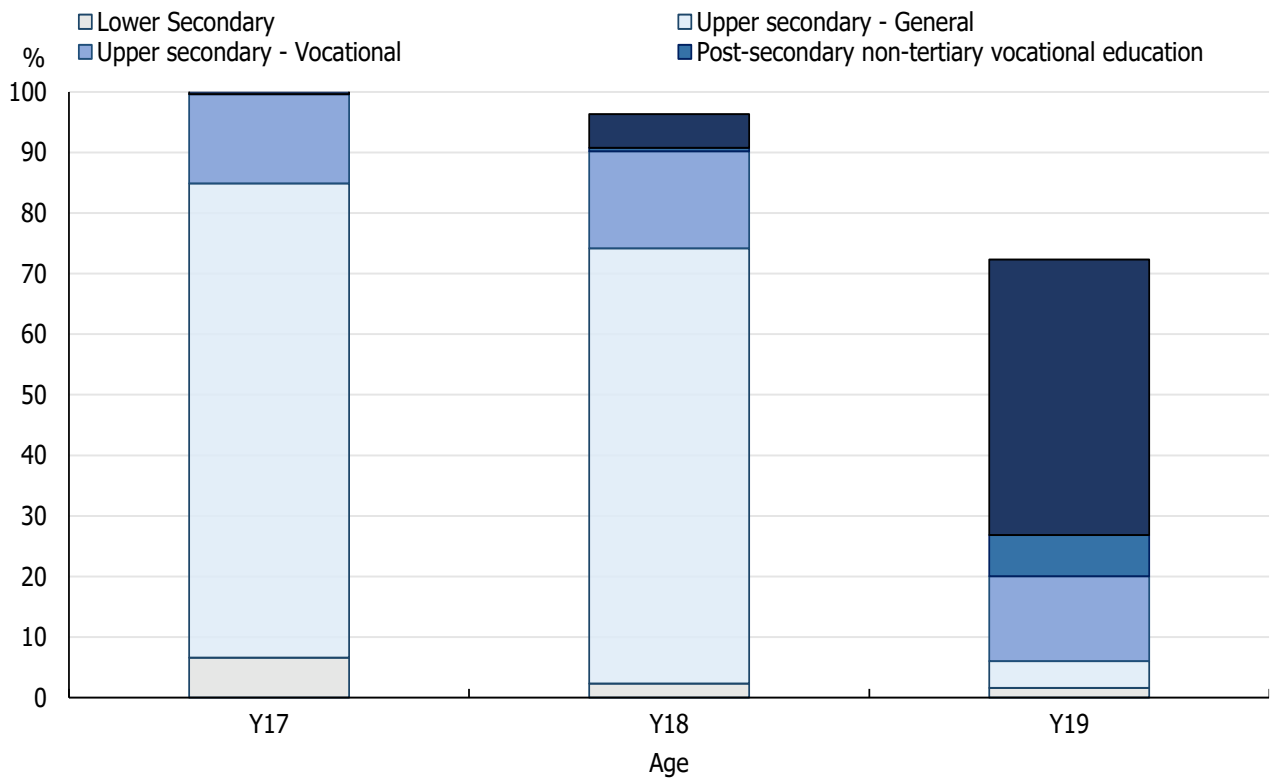
In line with high attainment overall, participation in education among 17-19 year-olds (the phase of upper secondary education) in Lithuania is high (Figure 2.5). Despite compulsory education ending at 16, 100% of 17-year-olds were enrolled in education in 2020, of which 93% successfully transitioned and were enrolled in upper secondary education (either general or vocational). Automatic progression into upper secondary education and the absence of any certification until the end of upper secondary education could be factors encouraging this high participation in Lithuania.

Transitions through upper secondary are comparatively smooth

Student transitions through upper secondary education in Lithuania are relatively smooth and linear, with students transitioning at the expected time to the subsequent grade (OECD, forthcoming[21]). In practice, this means that most students in Lithuania are enrolled in the grade that corresponds to their age. One factor contributing to smooth transitions is low repetition rates, as repetition results in students not progressing with their cohort, possibly making students more vulnerable to non-completion (OECD, 2021[20]). Smooth transitions could also be supporting students' completion of upper secondary education. Almost all students in Lithuania complete upper secondary education at the expected time, with only 4%

of 19-year-olds still enrolled in general upper secondary education (Figure 2.5) and, in contrast to other OECD countries, there is limited change in completion rates two years after programmes' theoretical duration (Figure 2.7). The current plans to change entrance into upper secondary education, with the introduction of a threshold in the Grade 10 examination, could impact transitions into upper secondary education and potentially enrolments as well (see Chapter 3).

Figure 2.5. Enrolment rates of 17-19 year-olds by level of education

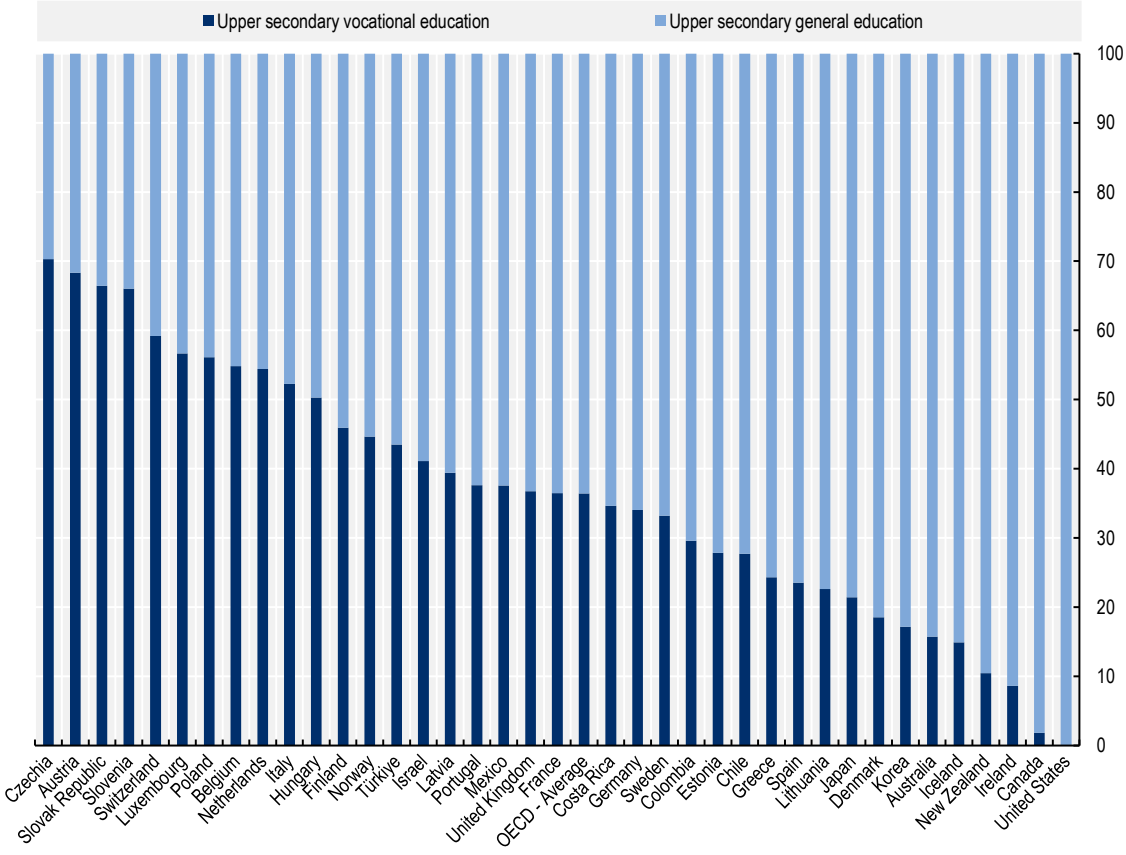


Source: OECD (2021[20]), *Education at a Glance 2021: OECD Indicators*, https://doi.org/10.1787/b35a14e5-en, (accessed on 15 April 2023).

Participation in upper secondary vocational education is lower than national targets

In Lithuania, 23% of 15-19 year-olds are enrolled in vocational education and training (VET) compared to the OECD average of 36% (Figure 2.6). In countries with historically well-developed VET systems at the lower and upper secondary levels, such as Austria, the Netherlands and Switzerland, more than 50% of students are enrolled in VET (Figure 2.6). One of the key policy concerns of stakeholders during the OECD team's mission to Lithuania in October 2022 was the comparatively low share of students enrolled in vocational upper secondary education. This has also been a recurrent policy priority in Lithuania over the past decade (OECD, 2017[19]). Successive policies and targets have aimed to increase upper secondary VET enrolment, such as the large investment made in 2007-2013 on VET physical infrastructure and the opening of 42 sectoral practical training centres between 2012 and 2015 (OECD, 2017[19]). However, despite these investments, participation has not increased significantly in recent years and the target set in the 2013 Strategic Plan – that 33% of upper secondary students would be enrolled in VET by 2017 - was not achieved. Enrolment in upper secondary VET has been relatively stable (at around 25%) since 2013 (OECD, 2022[1]).

Figure 2.6. Share of students aged 15-19 enrolled in upper secondary, by programme orientation



Notes: Upper secondary vocational education includes upper secondary school and work-based vocational education (ISCED 2011 level 3 programme 5_SW).
Countries are ranked in ascending order of the share students aged 15-19 enrolled in upper secondary vocational education.
Source: (OECD, 2021[20]), *Education at a Glance 2021: OECD Indicators*, https://doi.org/10.1787/b35a14e5-en, (accessed on 15 April 2023).

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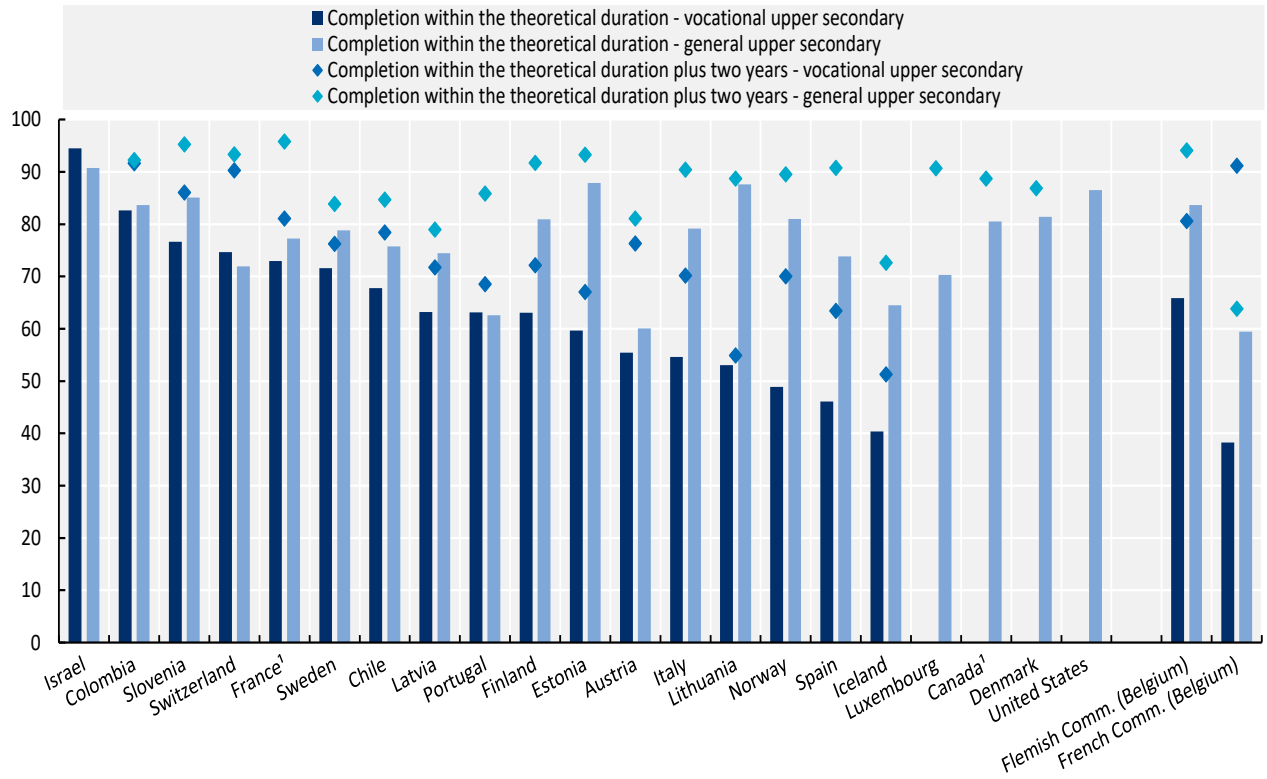
Completion of upper secondary education is high but lower for VET programmes

Upper secondary completion rates measure the proportion of the students who enter an upper secondary programme and who ultimately graduate from it (OECD, 2020[22]). Completion rates of upper secondary education are around 90% in Lithuania for students in general programmes (Figure 2.7). While completion rates in general programmes are among the highest among OECD countries (almost 90%), only 55% of VET students graduate by the theoretical duration of the programme plus two years. Lithuania has the widest gap between completion rates in general and vocational programmes across the countries that provided data. One of the reasons for this disparity might be the poor perceptions of vocational education, and in particular, the low value that some occupations seem to place on vocational qualifications – it was reported to the OECD team that a vocational qualification is often not required for employment in a given sector (see Chapter 3). However, it is important to note that VET students who leave their programme after two years can still certify completion of upper secondary by successfully passing the Matura.

Figure 2.7. Upper secondary completion rates, by timeframe and programme orientation on entry (2021)

Per cent, true cohort data only



Notes: The data presented here come from an ad hoc survey and only concern initial education programmes. The reference year (2021, unless noted otherwise) refers to the year of graduation by the theoretical duration plus two years. 1 Year of reference differs from 2021.
Countries and other participants are ranked in descending order of the completion rate within the theoretical duration of vocational upper secondary students.
Source: OECD (2023[23]), INES 2023 ad hoc survey on upper secondary completion rate.

The gender gap in participation and completion of upper secondary education is slightly more pronounced than across the OECD on average

As in the case across the OECD on average, upper secondary VET in Lithuania is more popular among men, with 29% of men enrolled compared to 16% of women. This gender gap in Lithuania is slightly higher than the OECD average (OECD, 2022[1]). In Lithuania, young women are more likely to leave VET early compared to young men (a difference of 5 percentage points). In contrast, across the OECD on average, men are more likely to leave early (7 percentage points gap). Similarly, young women in Lithuania are less likely to complete upper secondary VET compared to young men: only 50% of young women completed VET, 10 percentage points lower than for young men, the largest gender gap across the OECD (OECD, 2023[23]). In contrast, young women enrolled in general upper secondary education in Lithuania have high completion rates, 7 percentage points higher than young men (OECD, 2023[23]). National efforts to raise participation in and prestige of VET should consider targeting the specific challenge around young women's perceptions and experiences in VET education.

Teaching, learning and the curriculum in upper secondary education

Lithuania is implementing a new competency-based curriculum in general education

In 2020, Lithuania started updating the general curriculum framework for primary, lower and upper secondary education (ISCED 1-3) and in 2022 started implementing a new competency-based curriculum. The previous curriculum for certain subjects, such as mathematics, was found to cover less content and be less demanding compared to other OECD countries. While competencies such as problem solving and critical thinking were mentioned in the curriculum, student performance did not demonstrate strong performance in these skills in international assessments (e.g. PISA) (OECD, 2021[9]).

The new curriculum aims to equip students with competencies that young people need to succeed in the twenty-first century. The new curriculum guidelines introduce competence-oriented education covering knowledge (subject, interdisciplinary, procedural and epistemic), skills (cognitive, metacognitive, emotional, social and practical) and values (personal, interpersonal and societal) (National Agency for Education, 2019[24]; OECD, 2021[9]). The curricula for upper secondary VET programmes are updated on an ongoing basis, as professional standards are updated (Eurydice, 2019[25]). The introduction of the new curriculum intensifies the need to address the reported focus on knowledge memorisation rather than application of skills (OECD, 2019[26]). Part of encouraging a shift in teaching and learning in line with the curriculum will require ensuring alignment between its aims and the knowledge and skills assessed by the country's national examination for upper secondary certification - the Matura (see Chapter 4).

The upper secondary curriculum aims to promote breadth of student choice

Like in most OECD countries, Lithuania's upper secondary curriculum aims to promote breadth of learning (Stronati, 2023[10]), with students in both general and vocational education required to study at least eight general subjects. In addition to their eight general subjects, vocational students must also pursue a vocational specialisation, and students in general education frequently add elective courses.

In 2023, as well as implementing a new curriculum, Lithuania will introduce new requirements for the subjects students study. Both general and vocational students will be required to study for fewer hours overall. In particular, the number of compulsory subjects for vocational students may fall significantly – to five – as well as reducing the minimum number of hours that they spend in total in school. Vocational students will also be given greater choice so that they can choose across several subjects. Compulsory subjects, mathematics and Lithuania will be provided at two levels for all students (see Chapter 3).

There are two types of teachers at the upper secondary level in Lithuania: general and vocational teachers

General teachers teach general content across both general and vocational schools, with some teachers working in both types of schools during the same year because there are not enough hours in individual schools (OECD, 2017[19]). General teachers usually represent around 30% of the total workforce in vocational schools (Vaitkute, 2016[27]).Vocational teachers teach vocational subjects in vocational schools.

Upper secondary general teachers are required to hold a tertiary certification and a teacher qualification regardless of which type of school they teach in. Vocational teachers can qualify via two routes: with a tertiary and teacher qualification as for general teachers, or with an upper secondary certification and a vocational qualification (ISCED 3 or above), three years of work experience in their occupational area, and a 120-hour course on teaching and psychology delivered by accredited teacher development institutions within the first year of their teaching activity (Shewbridge et al., 2016[15]).

All teachers are required to take continuing professional development and to designate at least five days a year to it. Initial teacher education and continuous professional development are regulated by the Ministry

of Education and Science (MoES). VET schools are responsible for organising professional development for vocational teachers and can use school funding for it (OECD, 2021[9]).

While the OECD Teaching and Learning International Survey (TALIS) only provides data on teachers in lower secondary education in Lithuania, the data about teacher demographics is likely indicative for the profession overall. TALIS 2018 indicated that the teaching workforce in Lithuania is ageing, with an average age of 49.9 compared to an average across the OECD of 44.1 (OECD, 2019[28]). The renewal of the teaching force could represent an opportunity to ensure that new VET teachers have minimum levels of relevant work experience in their chosen occupational field (see Chapter 3).

Certification at the end of upper secondary education in Lithuania

The Matura determines upper secondary certification and tertiary entrance

In Lithuania, the Matura currently serves the function of certification of upper secondary education and selection into tertiary education. The introduction of the Matura in 1998 replaced entrance examinations that were previously organised by each higher education institution. This change is widely perceived to have brought important improvements in the objectivity and reliability of higher education selection procedures (OECD, 2017[19]).

As in many other OECD countries, the Matura is a composite performance-based certification process with a number of different components. Currently, it includes student performance in national-level external examinations, school-based examinations, teachers' marks from classroom work, and an optional project. From 2023 onwards, reform of the Matura will remove the school-based examinations, with all examinations designed and administered at the national level to provide externality and promote reliability (see Chapter 4).

There is no separate certification for upper secondary vocational students

Students in general and vocational education have the same requirements for upper secondary certification and for tertiary selection. This means that while students in vocational education have fewer hours dedicated to general subjects, they are currently required to take the same examination and meet the same requirements for completion of upper secondary education. For students who wish to receive certification in their vocational subjects, they remain in their vocational school for an additional six to 18 months to complete their vocational studies and the requirements to certify their vocational content. The fact that vocational students receive their upper secondary certification before the completion of their vocational programme might be one factor encouraging non-completion of vocational programmes (Figure 2.7).

Certification at the end of upper secondary education is not currently promoting student engagement or the acquisition of higher order skills

While the Matura was an important step forward when it was introduced, promoting fairness and more consistent standards across schools, it was repeatedly reported to the OECD team from a wide range of stakeholders that the examination in its current form is not focusing on the competencies that young people need to succeed in twenty-first century in Lithuania. Teachers from across the school system indicated that they perceive the Matura to be assessing students' knowledge, rather than what they can do. Students in upper secondary education preparing for the Matura reported that its examination items are predictable – with the same types of items each year, which follow the same format and are not always engaging or stimulating.

A number of stakeholders reported to the OECD team that one of the challenges in raising learning outcomes in Lithuania is weak student motivation. The data about the contribution of upper secondary

education to young people's competencies – where completing upper secondary education appears to have a relatively limited impact on what one knows and can do, and where employers indicated that the signalling value that they attached to upper secondary certification is weak – might partly explain the reportedly low levels of motivation. Young people's perceptions of what they are required to learn during upper secondary education might also be influencing student motivation. In the workshops with the OECD team, young people reported that they did not believe that what they learnt at school was useful for life. This seems to echo teachers' views that the Matura does not effectively assess what their students can do, but rather what they know. Teachers and students reported that the current Matura requires that they cover a vast range of material – and that this breadth translates to relatively shallow learning, with a new topic being covered in each lesson.

Learning outcomes in upper secondary education

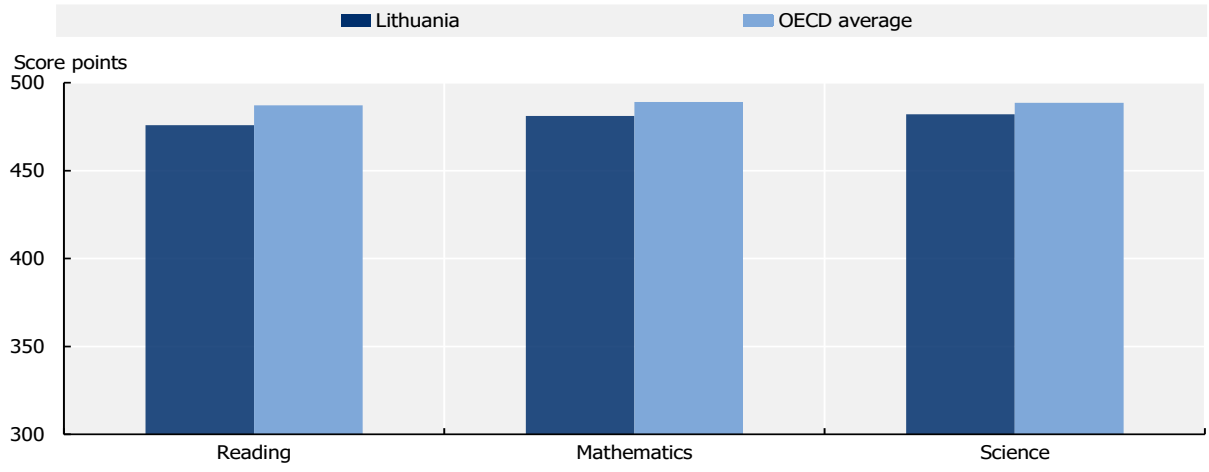
On entry to upper secondary education, 15-year-olds in Lithuania score below the OECD average

In the PISA 2018, 15-year-olds in Lithuania (learners in Grade 9, their penultimate year of lower secondary education) scored below the OECD average in mathematics, reading and science (Figure 2.8). Over the past decade (2009-2018), Lithuania has not experienced significant improvements in performance in reading, mathematics and science (OECD, 2021[9]).

While Lithuania's performance is close to the OECD average and in line with that of a number of other countries at the same level of economic development – notably Croatia, Hungary and the Slovak Republic – it performs significantly below all its neighbouring countries, notably Estonia, Latvia (except for reading) and Poland (OECD, 2019[29]).

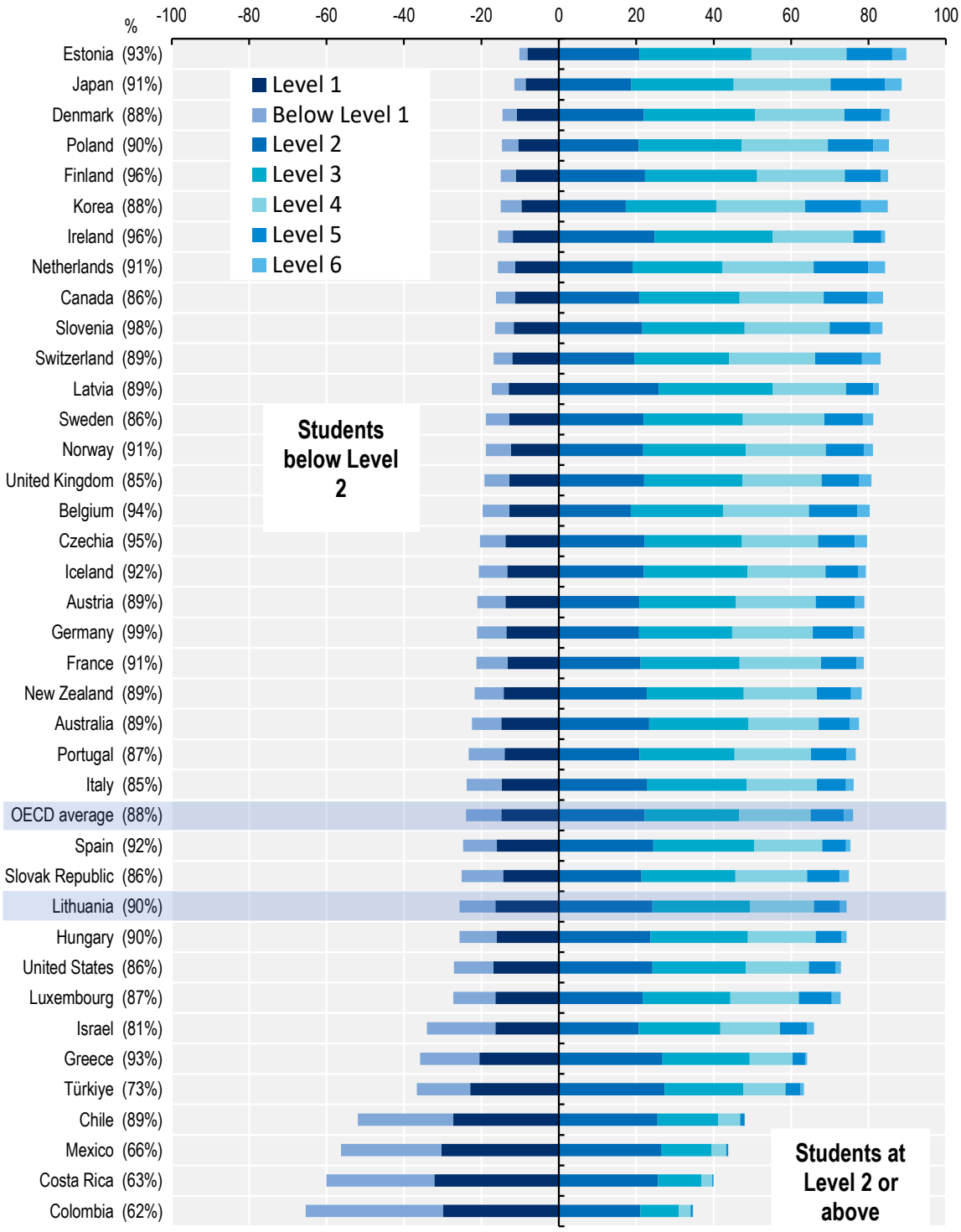
In 2018, more than a quarter of 15-year-olds in Lithuania (25.6%) scored below Level 2 in mathematics, which is considered the baseline for basic competence. That is a far higher share than in the neighbouring countries of Estonia, where 10% of 15-year-olds scored below Level 2, and Latvia, where the share was 17% (Figure 2.9). PISA also shows that a very small minority (8.4%) of 15-year-old students in Lithuania are high performers (performing at Levels 5 or 6) in any of the three PISA domains (Figure 2.9). In Estonia, almost double this share of students are high performers (16%) and 10.9% on average across OECD countries (Figure 2.9).

Figure 2.8. 15-year olds performance in reading, mathematics and science, PISA 2018



Source: OECD (2018[13]), PISA 2018 Database, https://www.oecd.org/pisa/data/2018database/ (accessed 15 April 2023).

Figure 2.9. Students' proficiency in mathematics

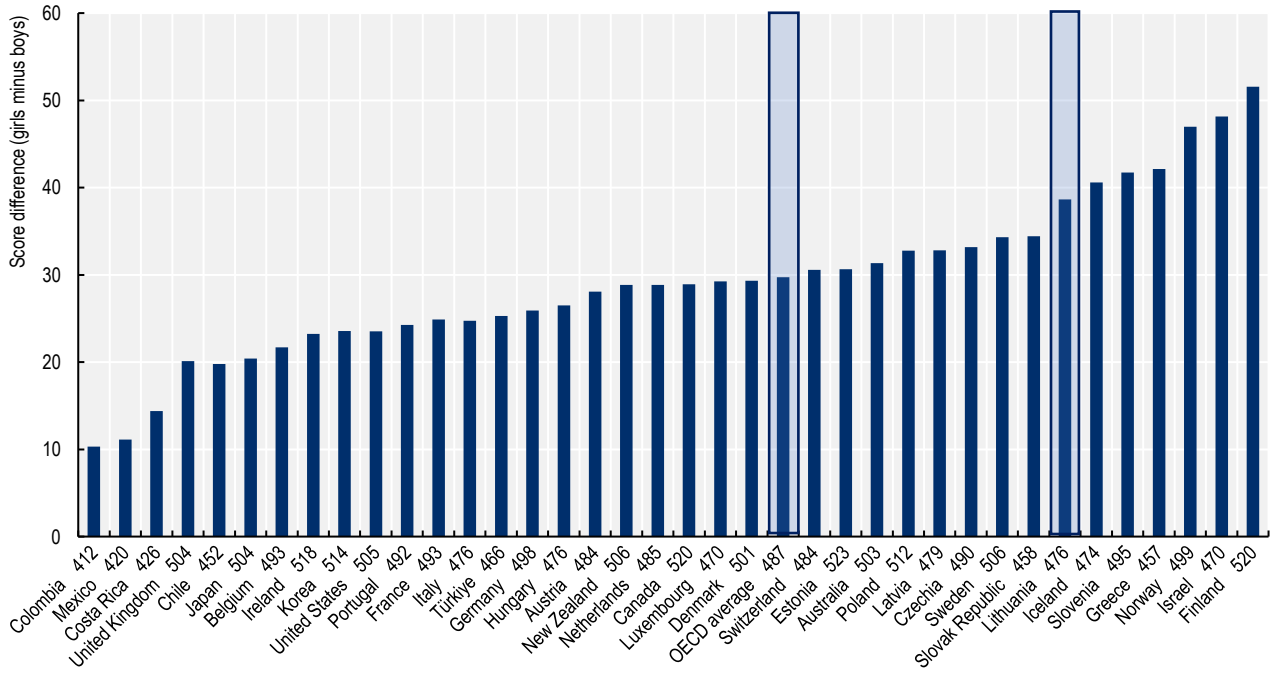


Notes: Coverage Index 3 is shown in parenthesis next to the country/economy name.
Countries and economies are ranked in descending order of the percentage of students who performed at or above Level 2.
Source: OECD (2019[29]), PISA 2018 Results (Volume I): What Students Know and Can Do, https://doi.org/10.1787/5f07c754-en., Figure I.6.1 Students' proficiency in mathematics.

Girls outperform boys in both reading and mathematics

The gender gap in 2018 (measured in terms of the difference between boys' and girls' performance in reading) is slightly greater in Lithuania than the OECD average. While the gender gap in reading favours girls across all OECD countries, in Lithuania the gap is more pronounced, with a difference of 39 score points, compared to 30 score points across the OECD. In neighbouring countries, the gender gap in reading is slightly smaller, a difference of 31 score points for Estonia and 33 for Latvia (Figure 2.10). In mathematics, boys outperform girls on average across the OECD, but by only five score points. Lithuania is one of the few OECD countries (together with Iceland, Israel, Norway and Sweden) where girls still outperform boys, but by only 2 points (OECD, 2019[30]).

Figure 2.10. Gender gap in reading performance



Notes: The mean score in reading is shown next to the country/economy name. All differences are statistically significant.
Countries and economies are ranked in ascending order of the score-point difference related to gender (girls minus boys).
Source: OECD (2018[13]), PISA 2018 Database, https://www.oecd.org/pisa/data/2018database/ (accessed 15 April 2023), Tables I.B1.4 and II.B1.7.1.

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The socio-economic gap between regions puts students from rural areas at a disadvantage

In terms of equity, the association in Lithuania between a student's socio-economic background and their reading performance at age 15 is in line with the OECD average, with 89 points' difference between students from the bottom and top quarter of the PISA index of economic, social and cultural status (OECD, 2019[30]).

However, according to PISA, Lithuania has relatively large performance differences between students in rural and urban schools that are driven by differences in students' socio-economic status. While the performance gap between students from rural and urban students is almost twice as large as in Latvia and

four times larger than in Estonia, after controlling for differences in students' social-economic status Lithuania is one of the few countries in which rural students outperform urban students (OECD, 2020[31]). This underscores the importance of reducing poverty levels in rural areas as part of efforts to promote higher, more equitable outcomes nationally. Closing the socio-economic gap is challenging as rural students perform comparatively poorly also on national examinations and the Matura, which is required to enter tertiary institutions. While the majority of urban students who study tertiary education enrol in universities, students coming from rural areas tend to study in colleges, from which graduates experience lower earning and higher rates of unemployment (OECD, 2017[19]).

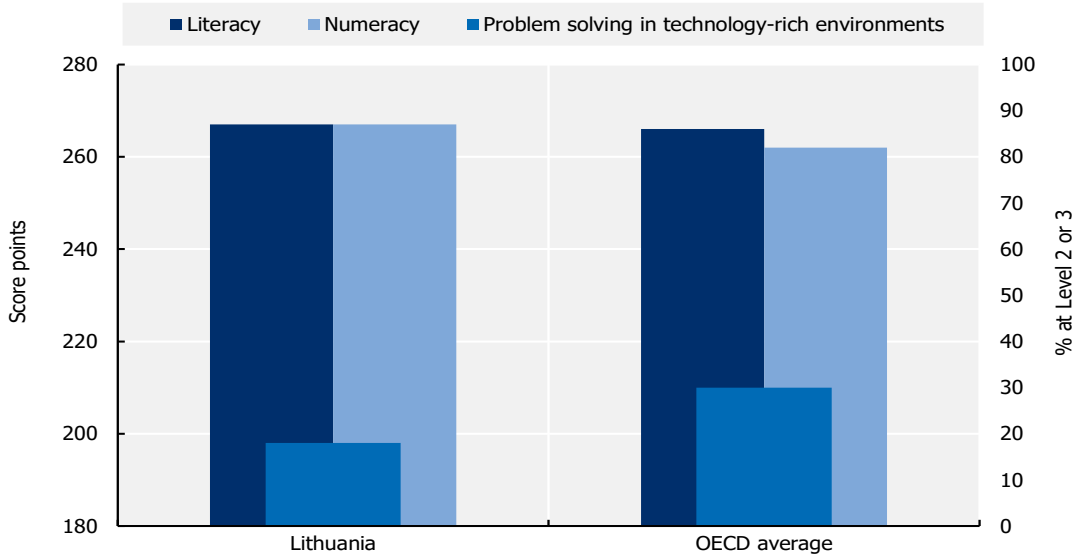
Since 15-year-olds in Lithuania are still enrolled in lower secondary education and only 1% of students is enrolled in vocational education at this stage, it was not possible to explore the performance differences in PISA between general and vocational students.

Adults in Lithuania score above the OECD average

The OECD's Programme for the International Assessment of Adult Competencies (PIAAC) shows that adults in Lithuania perform significantly above the OECD average in numeracy and slightly above the average in literacy (Figure 2.11). Compared to other OECD countries, Lithuania has few adults with very low levels of skills (at Level 1 or below), although there are also fewer adults with skills at higher levels compared to the OECD average. Performance among adults is relatively equitable, with age and socio-economic background having a smaller impact on performance than the average across the OECD (OECD, 2021[9]). The third domain of PIAAC – problem solving in technology-rich environments – assesses problem solving and basic computer literacy skills. In Lithuania, only 18% of adults reached the highest levels (Level 2 or 3), which is almost half the proportion of adults reaching this level across the OECD on average (30%). At these levels, tasks might involve multiple steps or operations, and the user might have to respond to unexpected events, evaluate the relevance of items, and avoid distractors (OECD, 2016[32]).

Figure 2.11. Snapshot of performance in literacy, numeracy and problem solving (PIAAC)

Mean proficiency scores of 16–65 year-olds in literacy and numeracy (primary axis), and the percentage of 16–65 year-olds scoring at Level 2 or 3 in problem solving in technology-rich environments (secondary axis)



Source: OECD (2012, 2015, 2018[2]), Survey of Adult Skills (PIAAC) (2012, 2015, 2018), Survey of Adult Skills (PIAAC) - PIAAC, the OECD's programme of assessment and analysis of adult skills, (accessed on 15 April 2023).

Upper secondary education seems to play little role in contributing to adult skills

Looking across Lithuania's performance in PISA and PIAAC would seem to suggest that the final stages of school and education play an important role in raising levels of learning, in particular addressing basic learning gaps and creating more equitable performance. However, among all the countries that participated in PIAAC in 2016, in Lithuania attaining upper secondary education provides the smallest positive contribution across the OECD to an individual's performance on these assessments (Figure 2.12). It should be noted that Lithuania's upper secondary cycle is slightly shorter than all the other PIAAC countries on average, so it might be expected that it plays a less significant role in bringing up learning outcomes than in other countries.

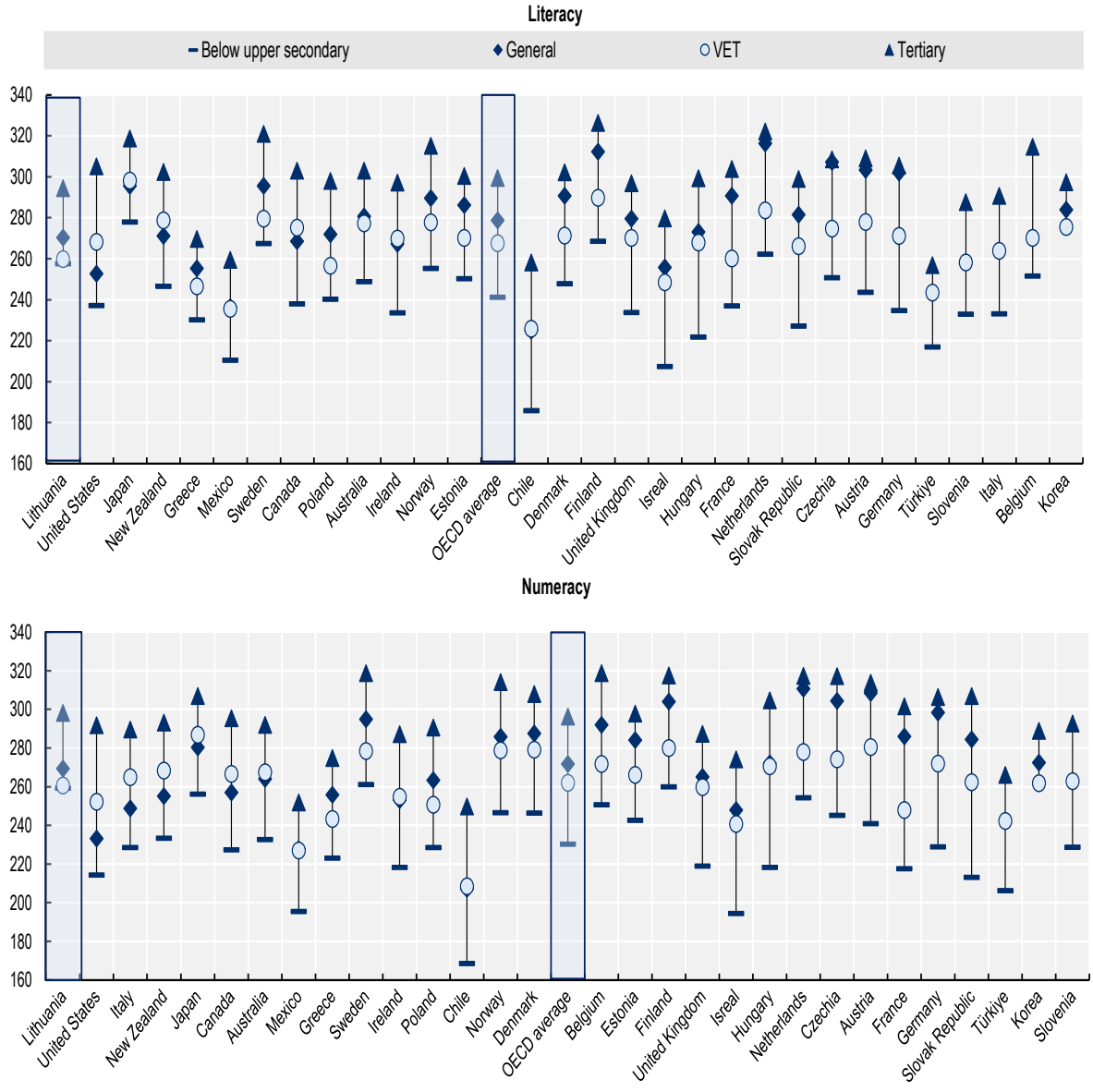
Rather than upper secondary contributing significantly to raising literacy and numeracy skills of adults, it seems that Lithuania's above-average scores in PIAAC are being driven by high shares of attainment overall. In 2015 (the year Lithuania participated in PIAAC), only 8% of 25-64 year-olds in Lithuania had not attained upper secondary education, and 39% had attained tertiary education (compared to 22% on average across the OECD countries that participated in PIAAC), and 39% had attained tertiary education (compared to 35%) (OECD, 2016[33]). Put simply, because so many adults in Lithuania complete upper secondary and tertiary education, which is associated with higher levels of performance in all countries, this drives up the country's average scores. In contrast, the positive contribution of completing upper secondary education to an individual adult's learning outcomes is significantly lower than in other countries. There is significant scope for Lithuania to strengthen the impact that upper secondary education has on young people's learning, so that it capitalises more on its achievements in terms of high participation and completion of upper secondary education (see Chapters 3 and 4). This would also help Lithuania to realise far greater positive contributions to learning outcomes from its investments in upper secondary education.

The results from PIAAC are reinforced by the views of national stakeholders. Higher education institutions and employers reported to the OECD that upon completion of upper secondary education, many young people still lacked skills to enable them to function effectively in the workplace and in higher education. They noted that young people often lacked independent study and organisational skills, and relational skills to work with others. Higher education institutions highlighted specific skill gaps around literacy and numeracy and noted the need to provide catch-up and reinforcement classes for students in their first year.

VET graduates have low skill levels

The skill level of 16-34 year-olds upper secondary graduates in Lithuania is not consistently high. According to PIAAC, recent upper secondary VET graduates have lower literacy, numeracy and problem-solving skill levels than VET graduates in most other OECD countries (Vandeweyer and Verhagen, 2020[3]). In both literacy and numeracy, young VET graduates in Lithuania performed at almost the same level as those who did not complete upper secondary education (around 260 score points) (Figure 2.12). This underscores the urgency for Lithuania to raise the quality of its vocational upper secondary pathways (see Chapter 3).

Figure 2.12. Differences in literacy and numeracy proficiency in PIAAC for individuals aged 16-34 by educational attainment, including VET



Notes: Includes individuals aged 16 to 34. General represents upper secondary general education (ISCED 3) while VET includes both ISCED 3 and ISCED 4.

Countries are ordered in ascending order by the difference in the scores between adults who attained upper secondary general education and those who did not attain upper secondary education.

Source: Vandeweyer and Verhagen (2020[3]), "The changing labour market for graduates from medium-level vocational education and training", OECD Social, Employment and Migration Working Papers, No. 244, OECD Publishing, Paris, https://doi.org/10.1787/503bcecb-en.

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Transitions into further education and employment

Many upper general secondary graduates transition into tertiary education

In Lithuania, all students passing the Matura examination at the end of upper secondary education can access a state-funded place in tertiary education, and around half do so. In 2020, 50% of 20 year-olds were enrolled in tertiary education, compared to the OECD average of 39%. In the same year among 25-34 year-olds, the rate of tertiary attainment was 58%, well above the OECD average of 47% (OECD, 2022[1]). Tertiary education is an attractive option as its attainment is well-rewarded in the labour market in Lithuania, with 91% of tertiary graduates employed in 2021, one of the highest shares among OECD countries, and well above the OECD average (84%) (OECD, 2022[1]).

Few vocational upper secondary graduates progress into tertiary education

In Lithuania, 97% of upper secondary vocational students are enrolled in programmes that have direct access to tertiary education, compared to 70% on average across OECD countries (OECD, 2022[1]). Ensuring access routes from upper secondary VET into higher levels of education is important for student pathways, and can help encourage parity of esteem across general and vocational upper secondary education and equal opportunity to all students regardless of the programme they are enrolled in. However, it is challenging for VET students in Lithuania to successfully enrol in tertiary education, since they have to compete with general students who have more time acquiring the skills and knowledge assessed in the Matura examinations that is required to access a state-funded place in tertiary education. In 2022, 57.8% of all general graduates entered tertiary education in contrast to only 1.7% of VET graduates (Beleckienė, Kazlavickas and Palevič, 2022[34]). This is driven by far fewer shares of VET students taking the state Matura examinations required for tertiary entry in the first place, and their significantly lower results in the state Matura examinations in all subjects when they do take them (Lithuania National Agency for Education, 2022[35]) (see Chapter 4).

Until recently, VET students have had limited post-secondary options

As tertiary education is theoretically open to VET graduates but in reality, difficult to access, the only other option for VET graduates to continue education has been post-secondary non-tertiary programmes (ISCED 4). While some students do access this route (3% of 20-24 year-olds were in ISCED 4 in Lithuania in 2020 (OECD, 2022[1]), it is a relatively underdeveloped pathway in Lithuania and the progression from ISCED 3 is not always clear. Stakeholders reported to the OECD team that students taking upper secondary VET qualifications receive an ISCED 3 qualification while graduates from upper secondary general education who complete the same qualification after their Matura in a gymnasium receive an ISCED 4 qualification for the same programme. As well as being confusing, this provides limited options for VET graduates to deepen their sector-specific skills in post-secondary non-tertiary education. Employment outcomes from the ISCED 4 programmes are also very low (Figure 2.13).

Lithuania has recently introduced vocationally oriented tertiary qualifications at ISCED 5. A new law plans to facilitate access for VET graduates into these programmes, which should expand the range of post-secondary pathways for VET graduates (see Chapter 3).

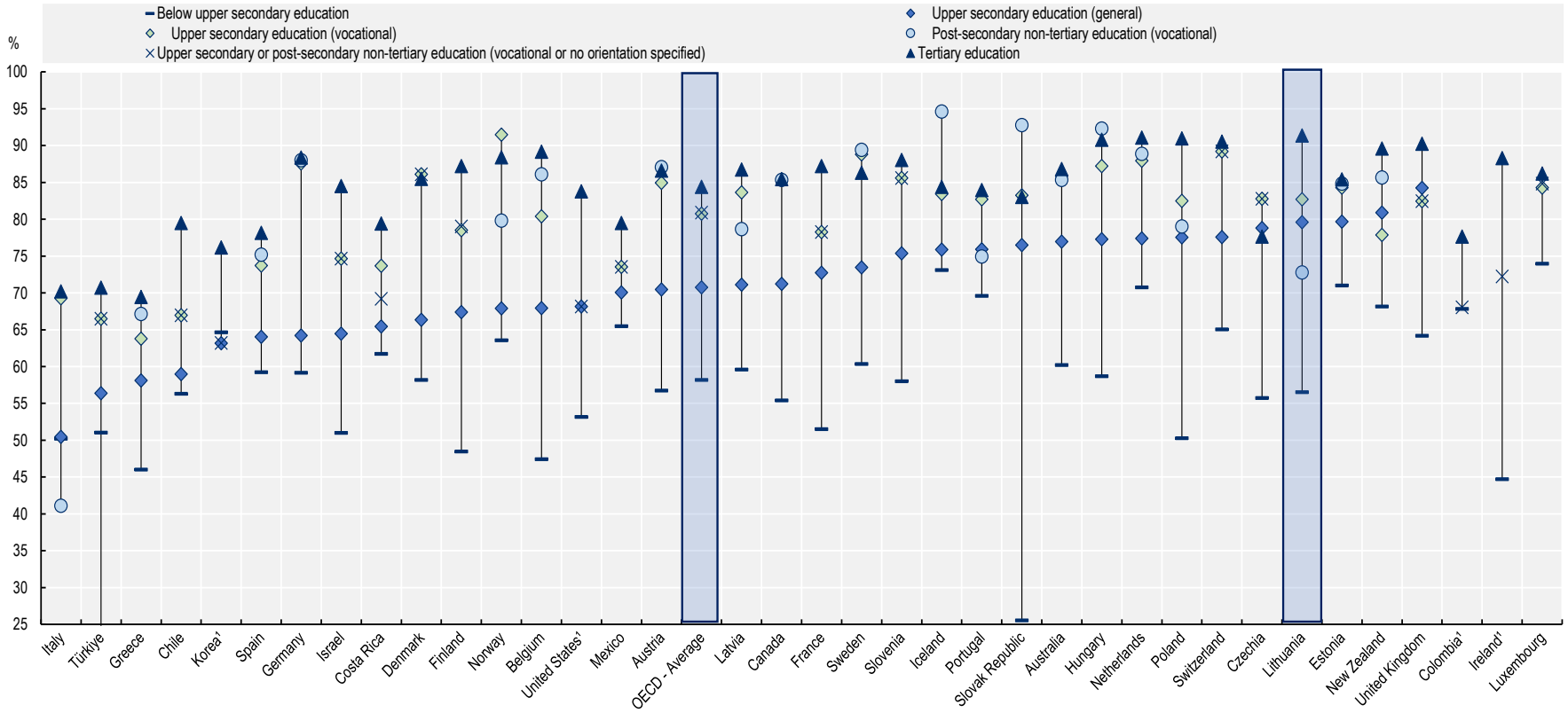
An upper secondary vocational qualification provides little advantage on the labour market

Compared to the OECD average, overall employment outcomes are positive for young people who attain at least upper secondary education in Lithuania. The only exception is for post-secondary non-tertiary (ISCED 4) vocational graduates, who show employment rates lower than those of all upper secondary

graduates. Lithuania is one of only three OECD countries where post-secondary non-tertiary graduates have lower employment outcomes than general upper secondary graduates.

However, the upper secondary vocational qualification does not give young people a significant advantage in the labour market. Employment rates for recent upper secondary VET graduates in Lithuania (83%) are similar to the OECD average but are 9 percentage points lower than for tertiary graduates, one of the largest differences across the OECD, and only 3 percentage points higher than for general graduates. In most OECD countries, young people with upper secondary vocational education as their highest level of attainment have an advantage entering employment compared to their peers who have completed upper secondary general education as their highest level of education. This is because vocational upper secondary education intends to build occupation specific skills that will enable graduates to immediately access the labour market while general education is intended to be preparation for tertiary education (Box 2.1) (UNESCO Institute for Statistics, 2012[12]). However, in Lithuania the upper secondary VET programme confers only a very limited advantage for its graduates to access the labour market. In 2021, the employment rate of vocational graduates was 83%, only 3 percentage points higher than the 80% employment rate of general graduates, the smallest advantage across all OECD countries, where the difference is 10 percentage points on average (Figure 2.13).

Figure 2.13. Employment rates of 25–34 year-olds, by educational attainment and programme orientation (2021)



Notes: 1 Data on upper secondary or post-secondary non-tertiary education are not available for vocational education. When data on students who attained post-secondary non-tertiary vocational education are not available, joint data on students who attained upper secondary or post-secondary non-tertiary vocational education are used.
Countries are ranked in ascending order of the employment rate of 25–34 year-olds who attained general upper secondary education.
Source: OECD (2022[1]), Education at a Glance 2022: OECD Indicators, https://doi.org/10.1787/3197152b-en.

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Notes

[1] In PISA, a student's socio-economic status is estimated by the PISA index of economic, social and cultural status (ESCS), a composite a composite measure that combines into a single score the financial, social, cultural and human-capital resources available to students. In practice, it is derived from several variables related to students' family background that are then grouped into three components: parents' education, parents' occupations, and an index summarising a number of home possessions that can be taken as proxies for material wealth or cultural capital, such as possession of a car, the existence of a quiet room to work, access to the Internet, the number of books and other educational resources available in the home. In PISA the terms "advantaged students" and "disadvantaged students" refer respectively to those students coming from the top and bottom quartile of the ESCS scale (OECD, 2019[30]).

3 Strengthening pathways in upper secondary education

Despite the considerable efforts to raise enrolment in vocational education and improve its attractiveness, Lithuania has yet met its national targets and the lack of graduates with strong vocational skills creates gaps in some sectors of the labour market. This chapter discusses how Lithuania can strengthen pathways in upper secondary education. First, it focuses on how to improve students' transitions and orientation into upper secondary education. Second, it discusses how to create valued vocational pathways through upper secondary education by developing a distinct programme that balances general and specific skills. Third, it focuses on options to design pathways with clear and sequential progression out of upper secondary education and improve the quality of vocational programmes to support and encourage students in vocational education to transition to higher levels of education.

Introduction

Lithuania places significant importance on creating valued vocational upper secondary education that young people are attracted to and provides the country's economy with strong technical skills to drive production and innovation. The country has set successive targets to raise enrolment in vocational education and has made major investments in the infrastructure of vocational schools. Despite these policies, vocational enrolment remains below the country's targets and there are gaps in some sectors of the labour market where there are not enough graduates with technical skills to meet national needs.

This chapter suggests options for strengthening pathways in upper secondary education. It suggests reinforcing vocational education so that it becomes a distinct and respected option that enables young people to access high quality employment or further education. It focuses how young people transition into upper secondary education. It also discusses how the design of vocational education can shift away from the current model where Vocational Education and Training (VET) has largely been added on to the existing general programme, to create a distinct programme that balances general and specific skills. Finally, it discusses options for building clear pathways for progression out of upper secondary education and strategies to improve the quality of vocational programmes to support and encourage VET students to transition to higher levels of education.

Issue 1: Reviewing students' transitions and orientation into upper secondary education

In most education systems, when students transition from lower to upper secondary education it is the first time that they are actively engaged in making decisions that start to define their future pathways. Many factors influence students' experiences in upper secondary education and beyond, but a smooth transition from lower secondary education is the first and essential step in a successful journey through upper secondary education and into further education and/or employment.

One feature of a smooth transition is when all (or almost all) students transition into upper secondary education at the expected time (Perico e Santos, 2023[1]). While entrance into upper secondary education is currently automatic in Lithuania and most students transition to this level of education, the system provides little support and guidance for students to choose across general and vocational programmes. This makes it difficult for young people to make informed decisions about the upper secondary programme that is likely to best meet their needs and interests. There are similarly few systematic tools or support to help students develop an accurate understanding of the possibilities that might vocational programmes open up for them into employment or further education. In practice, this means that vocational education tends to be default option for students with low grades, contributing to its low prestige.

The current system of automatic entrance into upper secondary education in Lithuania combined with the absence of monitoring students' knowledge and skills at this transition point is not supporting all students to achieve their potential during upper secondary education. Improving student guidance to support transitions into upper secondary education in Lithuania can make students more aware of the options they have and enhance student motivation. It can also encourage more students to understand the value of vocational education and the opportunities that it offers for the future while helping to reach a better alignment in the labour market between supply and demand of skills. By making vocational education a valued choice as part of students' personalised pathways, improving transitions into upper secondary education can help to raise the prestige of vocational education and support national enrolment targets.

The current context: transitions into upper secondary education

Entrance into upper secondary education in Lithuania is currently automatic and entirely based on student preferences

While at the end of lower secondary education in Grade 10, students are required to take a national assessment, entrance into upper secondary programmes in Lithuania is automatic. Automatic entrance means that students are not required to demonstrate through classroom assessments or external examinations that they have met any academic requirements to progress into upper secondary education (Perico e Santos, 2023[1]). Currently the national assessment in Grade 10 does not carry any stakes and students who complete lower secondary education can directly transition into upper secondary education. Recently however, there have been national discussions around the importance of ensuring that students at the end of lower secondary have the basic skills required to succeed in the next levels of education and that they are oriented to the programme that best reflects their abilities, interests and ambitions.

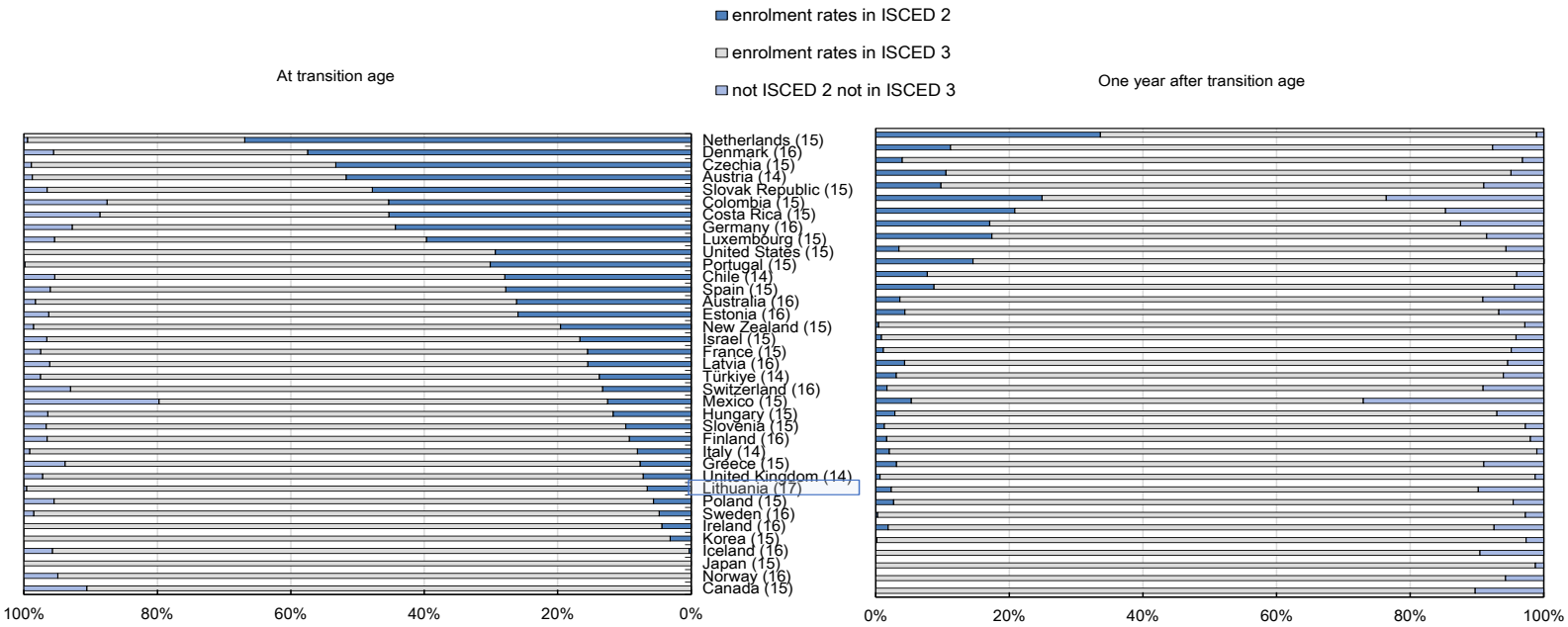
Most students currently experience a "smooth" transition into upper secondary education

One feature of a smooth transition is when all (or almost all) students transition into upper secondary education at the expected time (Perico e Santos, 2023[1]). Figure 3.1 shows the enrolment rates at different levels of education at the theoretical age of transition in each OECD country and one year after. The theoretical transition age refers to the age when students are typically expected to enter upper secondary education in each country. In only 10 OECD countries do more than 90% of students transition at the expected transition age, of which Lithuania is one. In the current system almost all students in Lithuania (93%) transition into upper secondary education at the expected time (17). In some countries a large share of students do not transition into upper secondary education at the expected time, suggesting an unsmooth transition. This might be driven by entrance requirements to transition into upper secondary education and pedagogical practices such as repetition (Perico e Santos, 2023[1]). In Lithuania, where students experience smooth transitions, less than 1% of students repeat a grade during lower secondary education (OECD, 2018[2]).[1]

A smooth transition supports students to stay in education and complete upper secondary education

Transition points, especially at the secondary level, can create vulnerabilities for students to disengage and perhaps even leave education prematurely. This is not the case in Lithuania, where as well as transitioning into upper secondary education at the expected time, nearly all young people remain in education at the transition point. In 2020 in Lithuania, 100% of 17-year-olds and 96% of 18-year-olds were in education, even after the end of compulsory education (16). The high rates of enrolment in upper secondary contribute to high levels of attainment of upper secondary education which are among the highest across the OECD (OECD, 2022[3]). In contrast, in some countries, enrolment rates in education decline at transition points, and this could be related to different reasons like strict entrance requirements or complex selection systems. One factor contributing to the smooth transitions in Lithuania is likely to be that students currently do not face any entry requirements (e.g. passing an external examination) or selection to enter upper secondary education.

Figure 3.1. Share of students enrolled in lower or upper secondary education at transition age and one year after transition age



Notes: The number in parenthesis represents the theoretical age of transition into upper secondary education for each country. The left panel shows enrolments rates in ISCED 2 and ISCED 3 at the theoretical transition age, so the theoretical age during the first year of upper secondary education. The right panel shows enrolments in ISCED 2 and ISCED 3 one year after the theoretical transitions age, so the theoretical age during the second year of upper secondary education. It is assumed that age references in the enrolment data refer to 1 January of the reference year. For Australia, 30 June is used as the reference date for ages in both enrolments and population data for all education levels except pre-primary, which has the reference date 1 July for enrolments.

Countries are ranked in descending order of the share of students enrolled in lower secondary education (ISCED 2) at transition age.

Source: OECD (2021[4]), *Education at a Glance 2021: OECD Indicators*, https://doi.org/10.1787/b35a14e5-en.

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Less than a quarter of students aged 15-19 transition into vocational upper secondary education in Lithuania

The freedom that individual students are given in Lithuania in choosing the programme of their choice when transitioning into upper secondary education results in few students deciding to enrol in VET. The comparatively low levels of upper secondary students enrolled in vocational education in Lithuania, 23%, compared to 36% on average among OECD countries, is perceived to be one of the key challenges in upper secondary education by policy makers in Lithuania (OECD, 2022[3]).

A low number of graduates with vocational or technical skills has implications for the labour market as the demand for certain jobs are not met. Stakeholders in Lithuania reported to the OECD Review team that many sectors in the labour market need more specialists with vocational skills. Evidence shows that there are not enough graduates with vocational or technical skills to meet the future demand and, if they do not increase, Lithuania will experience a shortage of medium-skilled workers over the next decade, such as service and market sales workers, plant and machine operators and assemblers, and craft and related trades workers (Cedefop, 2020[5]). The data also shows the need to increase VET enrolment in fields of increasingly strategic importance for Lithuania such as environmental protection and information and communication technologies (OECD, 2021[6]).

Indicators of learning outcomes show that almost a quarter of students lack basic competencies upon entry into upper secondary education

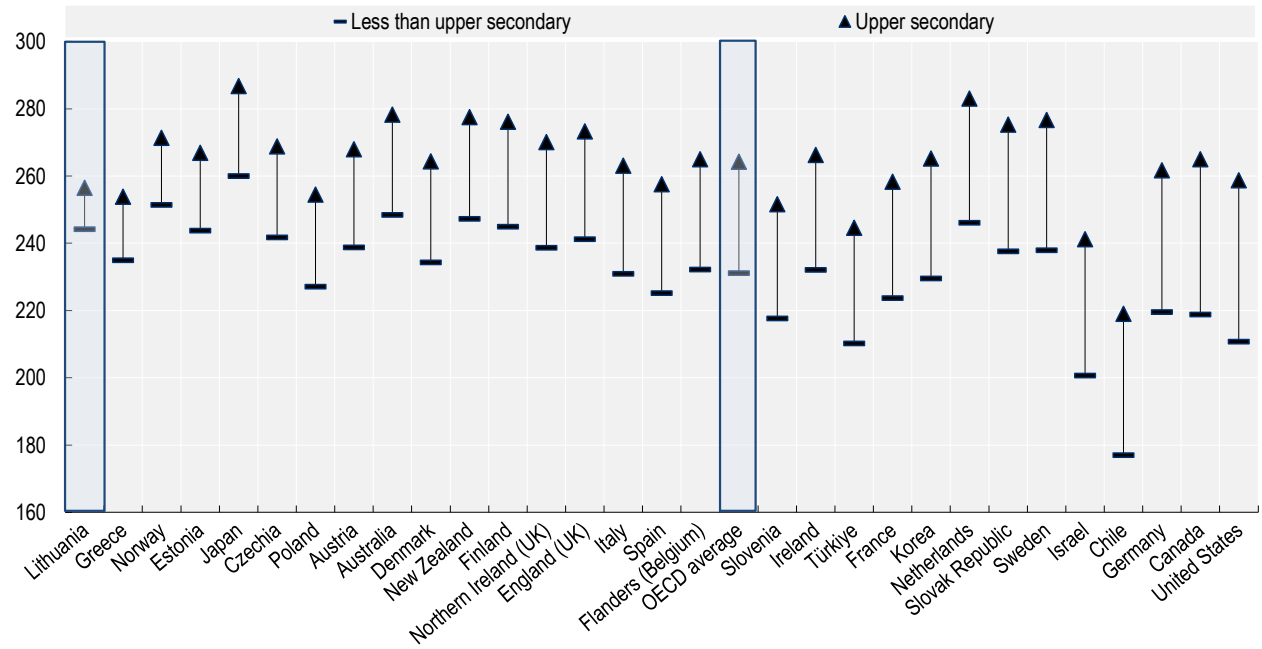
A year before entry to upper secondary education, 15-year-olds in Lithuania perform below the OECD average in all domains in the OECD Programme for International Student Assessment (PISA) in 2018 (see Chapter 2) and around a quarter of them performed below the Level 2 proficiency level (24% in reading, 26% in mathematics and 22% in science) (OECD, 2019[7]). PISA Level 2 is usually considered the minimum level of competency that students need for success in life and work, and students who perform below Level 2 are considered “low performers”. Since students in Lithuania are automatically promoted into upper secondary education, these data suggest that a quarter of students entering this level lack the fundamental skills to succeed in life and work. This is confirmed by results in the Grade 10 assessment, where in 2022 over 40% of students in mathematics scored below 4 which is considered the national pass grade in (NSA (National Agency for Education), 2022[8]).

The contribution of upper secondary education to young adults’ skills is modest

While young adults in Lithuania perform around the OECD average in literacy and numeracy in the OECD Programme for the International Assessment of Adult Competencies (PIAAC), upper secondary education seems to play a more modest role than in other countries in contributing to young adults’ skills (Figure 3.2). This is likely due to the design, pedagogy and resources in upper secondary education, but it might also be related to the fact that a quarter of the students who enter do so with low skills which are not effectively addressed during upper secondary education. In particular, the results from the state Matura suggest that gaps in students’ mathematics knowledge and skills in Grade 10 are not effectively addressed by the end of Grade 12. In 2022, 93% of students passed the Matura state-level exam in Lithuanian but only 65% passed mathematics. The results are even lower in vocational schools, where 71% of students passed Lithuanian but only 19% passed mathematics (NSA (National Agency for Education), 2022[8]). It should also be noted that Lithuania’s upper secondary cycle is slightly shorter than all the other PIAAC countries on average, so it might be expected that it plays a less significant role in bringing up learning outcomes than in other countries.

Figure 3.2. Differences in literacy proficiency, by educational attainment in PIAAC

Adults aged 25-65



Note: Countries are ranked in ascending order by differences in the scores of adults who attained upper secondary education and those who did not.
Source: OECD (2012, 2015, 2018[9]), Survey of Adult Skills (PIAAC) (2012, 2015, 2018), Survey of Adult Skills (PIAAC) - PIAAC, the OECD's programme of assessment and analysis of adult skills, (accessed on 15 April 2023).

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From 2024, entrance into upper secondary education will depend on examination results

At the end of 2022, Lithuania passed a new Law which will introduce a threshold based on students' results from the Grade 10 assessment which will be used as an examination to determine access to upper secondary education which will be implemented from 2024. The purpose is to assess students' acquisition of basic skills at the end of lower secondary which are required to be able to access more complex content and succeed in the next levels of education. While the exact measures that the new Law will introduce were still underdevelopment at the time of this Report's publication, the new Law will likely mean that only those students with a mark above 4 (the national pass grade) in the Grade 10 national assessment will progress directly into upper secondary education. Those with marks below this threshold can retake the examination later in the same school year after receiving additional support at school. If they do not pass the second time, they can either repeat the year in the same school or they can move to vocational lower secondary school (ISCED 2) (Republic of Lithuania, 2023[10]).

The structure of lower and upper secondary education discourages enrolments in vocational education

In Lithuania, most lower secondary students are enrolled in a gymnasium school (around 75%) where they can stay after completion of lower secondary (Grades 5 to 10) to attend general upper secondary education (Grades 11-12) (see Chapter 2). However, students wishing to attend a vocational programme for upper

secondary education must move to a vocational school part way through the gymnasium. During workshops with the OECD, students reported that this structure discourages them from enrolling in VET because they have to leave the institutions that they are familiar with and their friends. In 2020, only 8.6% of students already enrolled in a gymnasium decided to enrol in a VET institution after completion of lower secondary education (Beleckienė, Kazlavickas and Palevič, 2022[11]).

Additionally, there are fewer vocational schools than gymnasia and in rural areas these are often located further away from the student's home, sometimes requiring them to attend a boarding school. In the regions of Aukštadvaris and Žeimeliai for example, there are no VET institutions available (Beleckienė, Kazlavickas and Palevič, 2022[11]). This creates a disincentive not only for students to enrol in upper secondary vocational education but also for their parents or guardians to encourage them to do so, since they are generally reluctant to send their 16-year-olds away from home.

Students in Lithuania lack guidance and support to help them identify the most appropriate upper secondary programme

Students transitioning into upper secondary education need guidance and support to realise their agency and exercise their choice. Young people's choices are often influenced significantly by their parents' pathways and occupations and are not always based on all the relevant information available (Perico e Santos, 2023[1]). At present there is little support to choose between upper secondary programmes in Lithuania, meaning that students are not fully aware of the potential pathways that vocational education might open and the opportunities it can offer for their future. Consequently, when making their choice, the practical challenges related to VET can dominate student decision-making, such as leaving their current school and having to attend a boarding school, while reliable and up-to-date sources of information about the potential employment and educational pathways after VET can be difficult to access. Different stakeholders to the OECD team noted that one consequence of the lack of information about VET means that only students with a strong conviction that academic learning does not suit them choose it, contributing to low enrolments.

Lithuania is introducing guidance counsellors from Grade 1

The agreement on national education policy in Lithuania established that by 2024 all learners must be provided with career guidance, vocational information, and counselling service (Beleckienė, Kazlavickas and Palevič, 2022[11]). Lithuania is planning to develop a network of career guidance specialists who would support students to develop a sense of their strengths and interests starting from Grade 1. Providing students with time to develop their meta-cognitive skills and self-awareness is essential to empower young learners so that they can exercise their agency and make informed decisions about their pathways later at high stakes decision points such as entry into upper secondary education.

VET is not perceived to be a rigorous learning option

Stakeholders reported to the OECD Review team that VET in Lithuania is not valued as highly as general education. Although many OECD countries report the same trend in the attractiveness of VET (Kuczera and Jeon, 2019[12]), in Lithuania there is a prevailing view that VET is an easier and less rigorous option than general education rather than a pathway where students can develop specific skills. In a survey on the perception of VET conducted in 2018 among European countries, 90% of respondents in Lithuania reported the perception that it is easier to get a qualification in vocational education than in general education (compared to 63% on average among European Union, EU, countries) (Tolstych, 2018[13]). During the OECD workshops with students and teachers, both reported that parents play a significant role in shaping their children's choices and that they usually encourage their children to pursue general education as they believe it offers more opportunities for the future.

Policy options for student transitions and orientation into upper secondary education

Considering the planned changes to the upper secondary transitions in Lithuania, the text below discusses how upper secondary transitions can be designed to become a useful moment where students, teachers and guardians come together to reach a personalised decision for each learner. This section also describes how information and careers guidance can also be used to help students and their families recognise the positive contributions that vocational education can make to their future pathways so that it becomes an active and valued choice for students. These changes to transition policies would need to be accompanied by the measures suggested in Issue 2: Creating valued vocational pathways through upper secondary educationto improve the quality and design of the vocational programme so that it is a high-quality option.

Option 1.a. Making personalised transition recommendations for each student based on a wide range of information

Put very simply, systems for transitions into upper secondary education need to help ensure that learners are oriented towards the programmes, subjects and levels that best suit their individual needs and interests and that support national economic goals. Yet, each learner has multifaceted talents, needs, and interests that change and evolve over their education and lifetime. Enabling learners to access the best pathways for them is very challenging. As learners transition into upper secondary education, one way to help ensure that programme choices are responsive to individual students and their needs is to draw on a wide range of information about learners across different contexts so that orientation decisions are as informed as possible. Most OECD countries where there is more than one type of upper secondary programme (as in Lithuania), draw on a wide range of information to guide student transitions from lower to upper secondary education (Perico e Santos, 2023[1]). This section discusses the sources of information that Lithuania might draw on so that each student can be supported to identify the programme that is likely to best respond to their needs and interests.

Monitoring student learning outcomes as they transition into upper secondary education

Upper secondary education is a distinctively different phase of learning compared to lower levels in most countries (OECD, 2020[14]). Upper secondary education focuses on more complex content, deepening learning and providing students with different learning options based on their interests (Stronati, 2023[15]). To ensure that learners have acquired the foundational skills in primary and lower secondary education– in many countries referred to the phase of “basic education” – to access upper secondary curricula, most countries use academic information to some degree to monitor student achievement as learners move into upper secondary education. Countries tend to use this information either to ensure that students have met basic requirements to enter upper secondary education, and/or to select or orient students to different upper secondary programmes (Perico e Santos, 2023[1]). Some countries also use this information diagnostically so that students can receive specific support or attend dedicated learning programmes in upper secondary education to address any identified gaps in basic skills.

Under its current system, Lithuania is the only OECD country that does not monitor learning outcomes as students move into upper secondary education. The country has automatic promotion into upper secondary education – which means that it does not set requirements to enter this phase of education - and it does not systemically draw on academic information to inform student transitions into upper secondary education. Countries that automatically promote students to enter upper secondary education, such as Australia, Ireland and Türkiye, still usually set requirements or standards based on academic achievement to determine whether students have met the required level and use this information to direct learners to specific programmes in upper secondary education (Perico e Santos, 2023[1]).

Given the recognised need for all young people to complete upper secondary education to be able to integrate successfully into the modern global economy, education systems should aim to ensure that all students can transition into upper secondary education (OECD, 2015[16]). Yet at the same time, transition systems need to monitor student skills to ensure that they have foundations to succeed with the more complex content at this level, and where different options exist, equitably orient students to the option that is most likely to support their needs. Achieving these two policy aims is a complex balancing act. In Lithuania, as a first step, collecting and monitoring some form of information about learning outcomes as students transition into upper secondary education will help to ensure that transitions are grounded in at least one source of information about learners' strengths and areas where they might need more support. The new Law that was recently passed makes provisions for this, by drawing on information on student achievement in the national assessment that students already take at the end of Grade 10 in mathematics and Lithuania as part of the process for transitions into upper secondary (see Chapter 2). However, it will need to be accompanied by appropriate supports and pedagogy so that students are able to master basic competences and strengthen their foundational skills before the end of initial schooling. Issue 2 discusses approaches that Lithuania could consider providing this support (see Issue 2: Creating valued vocational pathways through upper secondary education).

Carefully considering how the new threshold can influence transitions and how it can be used to provide additional support

According to the new Law, from 2024 entrance into upper secondary education will be conditional on passing the Grade 10 assessment. Only those students with a mark above 4 will be able to enrol in upper secondary programmes. Those below this threshold can retake the examination and if they fail again, they can decide either to repeat the last year of lower secondary education in the same school or to move to a lower secondary VET school (Republic of Lithuania, 2023[10]). While this new change might set some requirements around student skills upon entry to upper secondary education, it will not provide students with the support that they need to improve their knowledge and skills (see Issue 2: Creating valued vocational pathways through upper secondary education). Lithuania will need to carefully consider how to provide targeted support to those students who are not ready to transition into upper secondary education and how to limit the risks associated with grade repetition or automatically directing students with low grades into VET.

While the current system is characterised by smooth transitions into upper secondary education, it is possible that with the new threshold a small minority of students will fall out of the system. Higher rates of repetition tend to lower the share of students who transition at the expected age and can also have negative effects on students' well-being and motivation, increasing the likelihood of early school leaving (Perico e Santos, 2023[1]). Evidence shows that grade repetition can also be costly for education systems, since students stay in school for one extra year, and is ineffective in raising learning outcomes (OECD, 2018[17]). Lithuania could consider using more flexible alternatives to grade repetition adapted to the specific circumstances of individual students (Perico e Santos, 2023[1]). In the United States, when learning gaps are identified, students are usually offered academic support and guidance instead of being retained (OECD, 2018[17]). In New Zealand and the United Kingdom, repetition is limited to specific subjects or modules with targeted educational assistance, allowing students to move on to the next education level while still addressing their learning gaps (Stronati, 2023[15]).

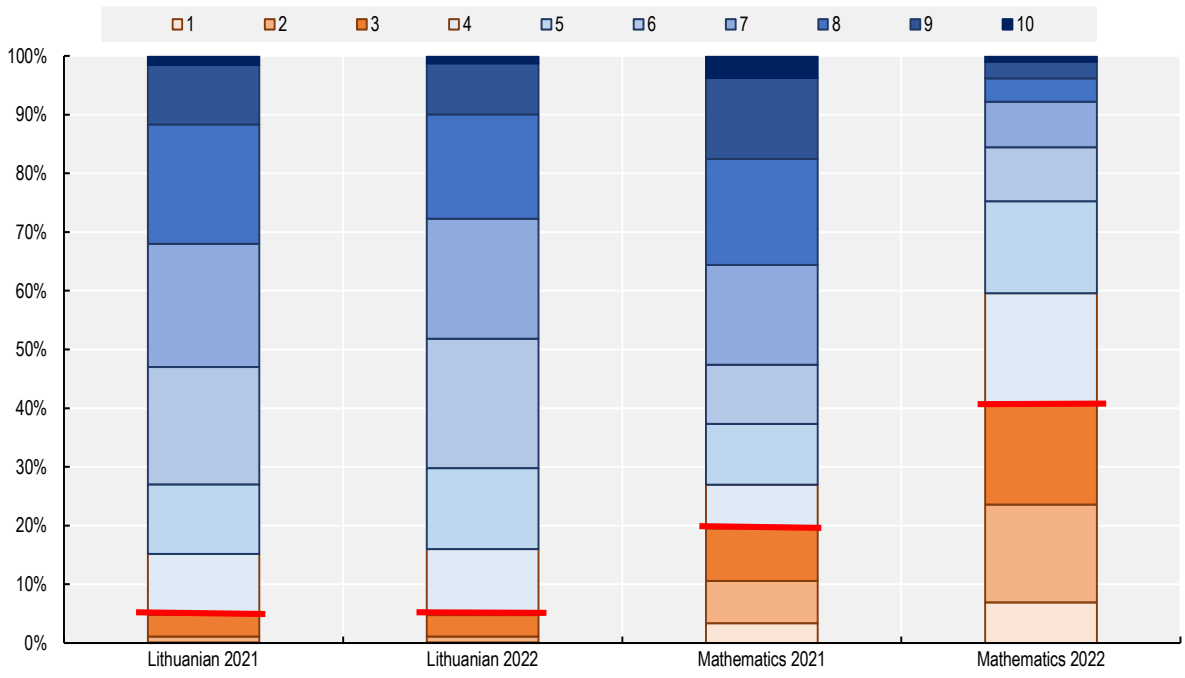
The inconsistency between the results across years makes it difficult to predict the share of students that would need to receive additional support and repeat the grade. Figure 3.3 shows the performance of students in the Grade 10 examination in Lithuanian and mathematics. The results over the past two years are highly variable. While less than 5% of students received a mark below 4 in Lithuanian in the past two years, the results for mathematics are inconsistent going from 20% with a mark below 4 in 2021 to 40% failing in 2022. The variability in the results from the Grade 10 examination raises questions about how far it is an reliable and valid measure of student learning outcomes that can be used for high stakes purposes.

Lithuania will need to carefully explore the factors that led to the dramatic fall in mathematics results in 2022 in Grade 10, including understanding how far similar changes regularly occur or how far it was a one-off event. The state Matura results in mathematics showed a similar trend in 2022 which led to many national discussions. Chapter 4 focuses on the Matura and discusses how the country might respond to the 2022 maths results, including by creating a national investigation into the state Matura mathematics results and recent variations in performance.

Lithuania has the longest lower secondary education cycle across OECD countries (together with Germany), with a duration of six years. The end of lower secondary education at 16 marks also the end of compulsory education. Lithuania could consider using the standardised tests in Grades 6 and 8 to identify students with learning difficulties and intervene before they reach the end of lower secondary education. In France for example, national assessments are used diagnostically to provide a precise overview of each student's skills in French and mathematics in order to help teachers implement personalised support (Ministère de l'Education Nationale et de la Jeunesse, 2023[18]).

Figure 3.3. Share of students by result from the Grade 10 assessment in Lithuanian and Mathematics (2022 and 2021)

The red lines represent the threshold that will be introduced by the new Law



Source: NSA (National Education Agency) (2022[19]), Rezultatai PUPP (PUPP Results), https://www.nsa.smm.lt/egzaminai-ir-pasiekimu-patikrinimai/pupp/ (accessed on 2 May 2023).

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Reconsidering the sources of information for transition decisions

While Lithuania's new Law on transitions into upper secondary education will draw on more sources of information than in the past, it will still be limited to two sources – student performance in the Grade 10 examination and student and guardian views. It is important to note that student and guardian views will

be significantly constrained by student performance in the Grade 10 examination for some students (i.e. those that perform below the threshold).

In contrast, most OECD countries use a combination of sources of information to inform student transitions into upper secondary education. Countries typically draw on academic information, students' preferences, and teachers' recommendations because guiding students to different programmes requires a broad perspective on a student's interests and aptitudes and carries high stakes for their future (Perico e Santos, 2023[1]).

Lithuania might consider expanding the sources of information that will inform transition decisions. The new Law proposes to use information from the Grade 10 examination that will provide external, objective information about student performance. External forms of assessment play a particularly important role in high stakes decisions as they are more objective and reliable than teachers' judgements (Bol et al., 2014[20]). In the Netherlands for example, a country with early selection into lower secondary programmes at the end primary education, after experimenting with both examinations and teachers' judgements for student progression, it was found that the former can provide an important challenge or counterweight to teachers' biases towards certain groups of students (Bureau for Economic Policy Analysis, 2019[21]). The importance of objective, external information is especially important in Lithuania given national concerns about the reliability of teachers' assessments (see Chapter 4).

However, student performance in the Grade 10 assessment will only provide a single snapshot of student performance over a couple of hours on a single day in two subjects. Countries which do use information from examinations often complement this with teachers' classroom assessments, which can provide a broader, and arguably more valid perspective on student learning and development. Classroom assessments can generate important information about student performance as they can be based on multiple assessments of different skills and knowledge at different times over an extended period of schooling (Galla et al., 2019[22]).

Lithuania might consider drawing on the following sources of information to provide a rounded perspective on an individual student at the time of transition and provide the basis for informed decisions about programme choice:

- students' academic information from the Grade 10 examination to provide a reliable and objective measure of student achievement
- students' academic information from previous classroom assessment results to provide information on a wider range of skills and knowledge
- suggestions to students from teachers on the upper secondary programme which will best support their learning needs and aspirations provided as guidance and which is not binding
- the views of students and their guardians

Considering how information is combined to develop a personalised recommendation for each student

Aside from the sources of information that transition decisions are based on, how information is combined to make decisions is also arguably even more important to create an equitable system where learners can access the educational options that best suit them (Perico e Santos, 2023[1]). In Lithuania, the new career guidance counsellors could provide thoughtful, informed advice to students and their families to help them develop achievable yet ambitious aspirations and understand how to realise them.

During Grades 9 and 10, counsellors could be required to have multiple discussions with every student expressly to start thinking through their options for upper secondary education, and to begin identifying their interests and ambitions. Counsellors could be expected to systematically consider the information that students share with them and combine it with different sources of information, including academic

information and teachers' recommendations, to make a personalised recommendation for each student. Counsellors might share the recommendation for each student with them and their guardians during an individual meeting during Grade 10. Sharing the recommendation during a meeting would provide the setting to discuss how the counsellor reached this decision, outline the potential future pathways it will open for the student and respond to their questions.

Counsellors should be external from the school and provide a non-binding recommendation

It is fundamental to ensure that counsellors are able to reach decisions that are focused on individual student needs that they are independent from the school administration. The latter is important because of the competitive funding system between schools based on the number of students enrolled in Lithuania (OECD, 2016[23]) which might impede school staff's ability to provide impartial advice. In the past teachers from the school were responsible for providing career guidance. With the new reforms and the introduction of counsellors, the Ministry of Education will finance the initiative, but the municipalities will manage the funds and decide how to organise it (Beleckienė, Kazlavickas and Palevič, 2022[11]).

The advice from counsellors could be part of the placement process as a non-binding recommendation to ensure that students and their guardians have a say in the programmes that students enter. In France and in some regions of Germany (the latter in the case of transitions from primary into lower secondary education), when academic information and/or recommendations by teachers and schools are taken into account, students and guardians have the final say on the programme that students attend. These systems create the space for students and families to challenge decisions when they are oriented towards pathways that do not reflect their interests or preferences (Ministère de l'Education Nationale et de la Jeunesse, 2022[24]; Grewenig, 2021[25]).

Option 1.b. Ensuring that students and their guardians play an informed role in transition decisions

Giving students the autonomy to decide which upper secondary programme they attend is key to helping them start defining their individual pathway towards areas they are interested in and ensuring that they have the necessary skills to do so. This autonomy is also important for developing students' personal sense of agency and the metacognitive skills that are essential for navigating the unstructured worlds of work and further education when they leave school (Perico e Santos, 2023[1]).

In Lithuania, students currently exercise a large amount of freedom in choosing their upper secondary programme. However young people, like all individuals, need to be supported through accessible information and multiple opportunities to discuss their options. Without this guidance, young people are likely to fall back on preconceived notions of pathways that are not informed by an accurate understanding of different programmes and their pathways into further education and employment (Perico e Santos, 2023[1]). To increase VET enrolments in a way that is sustainable and equitable, it is fundamental to provide students with information that enables them to actively decide whether they want to enrol in it. The following section considers how students can be empowered through information and guidance to make informed decisions about their upper secondary transitions.

Developing career-related learning from an early stage to promote subject and career exploration

Based on the OECD's meetings in Lithuania and workshops with students and teachers, students in Grade 10 do not seem to be sufficiently informed about vocational education. However, they know that practically they will need to leave their current school (if they attend a gymnasium) to enrol in a vocational school and they are likely to be surrounded by negative opinions about VET from family and friends (Tolstych, 2018[13]). Moreover, students in Lithuania do not receive any career-related learning in lower grades. In workshops

with the OECD, students reported that in practice, they start to form an opinion on VET only when there is the immediate pressure of transitioning into upper secondary education. It is crucial to give students plenty of time to build informed opinions and think about their choices. Early student guidance can benefit students by increasing their engagement in school and by providing adequate time for personal reflection to plan for the future (Covacevich et al., 2021[26]). Evidence shows that carefully planned guidance interventions as early as primary school can boost children's career awareness and ambition, as well as diminish career gender stereotyping and help them acquire a better sense of their career-related skills (Hughes, 2021[27]).

Lithuania is already planning to introduce in 2024 a new career-related guidance system starting from Grade 1 and, if effectively implemented, this could help students to build more accurate and informed opinions on VET. As well as information, career-related education can also include practical activities designed to give pupils a wide range of experiences of education, transitions and the world of work so that they can develop views based on their own first-hand experiences (Primary Careers Resources, 2022[28]). A career guidance system could, for example, encourage students to explore different subjects and areas of learning.

In Lithuania, all students, regardless of current academic performance, could be given the chance to take some vocational subjects at the lower secondary level before they transition to upper secondary education. Since in Lithuania VET school infrastructure has received significant funding in recent years, learners might enjoy visiting and learning in its different setting, including simulated work environments. This would likely facilitate students' choice of upper secondary programme as they would be able to make a more informed decision in Grade 10 based on their practical experience of vocational education. Other ways to inform decisions on different options include organising school visits, in particular in VET schools, for both students and their guardians and organising meetings with employer representatives to explain the different options and share student outcomes from both general and vocational uppers secondary programmes in terms of progression to post-secondary education and employment.

Ensuring that students and their families are supported through accessible, transparent, and up-to-date information

It is important to ensure that students' and their families' decisions about upper secondary pathways are supported through accessible, transparent, and up-to-date information and guidance to understand the options available and their consequences for the future. While accurate, useful and accessible student guidance and careers information is difficult to provide, it is important because research suggests that students and their parents tend to make decisions based on biases or their personal experiences rather than objective decisions about the labour market outcomes associated with different pathways (Mann et al., 2020[29]).

As part of the suggested meetings between the new career counsellors, students and potentially their guardians (see Option 1.a. Making personalised transition recommendations for each student based on a wide range of information), some of these meetings could be devoted to providing up-to-date and accurate information on labour market outcomes by different upper secondary programmes. The meetings could also be used to discuss the perceptions of students and their families of different options, using data to challenge perceptions where they are inaccurate.

To enable career counsellors to lead these kinds of discussions, it is essential that there is easily accessible digital information on the labour market, in particular showing the current gaps in labour market skills and educational outcomes by different programmes. In Scotland, on a website dedicated to career guidance, parents can find information on how to help their children discover their interests and identify a pathway that aligns with their skills and knowledge (Skills Development Scotland, 2022[30]).

Currently in Lithuania, students and families are provided information about vocational programmes through school-based advising and the website developed for their use, AIKOS (Open Information, Counselling and Guidance System). However, the website does not include information about the labour market outcomes of different study programmes and training. Similarly staff in schools, who are responsible for advising students on their career opportunities, do not have information on employment outcomes and earnings. The new reforms plan to offer counsellors a training programme and other tools, such as up-to-date labour market information and data (Beleckienė, Kazlavickas and Palevič, 2022[11]). Lithuania could also expand the existing website, AIKOS, with the same information to ensure equitable access to information for all students and their guardians.

Option 1.c. Reconsidering the structure of schooling to facilitate transitions into upper secondary education

The current structure of the education system in Lithuania discourages enrolment in vocational education as students are required to leave the institution they are familiar with, and in some areas even their home, to move to a vocational school. To address the current structural barriers and disincentives to VET enrolment, Lithuania could consider promoting more interactions between vocational and general schools and facilitate the transition to VET. This section explores different options, some are measures that could be implemented in the short to medium term by building on the current reforms, such as offering part of some VET programmes in general schools or encouraging co-operation between general and vocational schools. Other options could be implemented over the long term such as changing the structure of the system.

Exploring options to provide some VET in general schools

The education system in Lithuania does not encourage students to enrol in VET as in most cases, students must leave their current school (if they attend a gymnasium) and move to a vocational school. In some cases, especially for students living outside the main urban areas where most vocational schools are located, deciding to attend vocational upper secondary education requires going to a boarding school. Currently, as part of a pilot that aimed to facilitate the exploration of VET, students in some general schools are given the chance to attend a few vocational classes in the closest vocational school. However, stakeholders reported to the OECD that students have to arrange by their timetables themselves to enable this as well as the travel to the other school. Sometimes clashes between different timetables or long travelling time between schools make it impossible for them.

Among OECD countries, the organisation of VET in the upper secondary system differs greatly depending on the country's historical, social, and geographical context and needs (Stronati, 2023[15]). Some countries provide many different VET programmes while others do not provide it as a distinct programme. Some countries organise vocational and general programmes in the same building (such as Sweden) and others in separate buildings (such as Germany). To make it easier for students to enrol in VET and address the practical challenges Lithuania could consider a range of different institutional set-ups, some of which might exist alongside each other:

- Developing well-designed programmes that bridge vocational and general education

  Lithuania could consider developing clearly defined programmes that bridge VET and general education, where students would be required to develop both strong general skills and some vocational. For example, it could provide specific programmes, such as technically oriented VET programmes for students with strong mathematics and science skills and/or interest. In this model students, who live in areas where vocational schools and gymnasia are close together (e.g. in cities), could attend general classes with general students and then have the VET classes at the closest vocational school (see Issue 2: Creating valued vocational pathways through upper

secondary education). In contrast to the current pilot, students would be enrolled in a specific and well-designed vocational programme which would include a timetable and a defined set of subjects.

- Providing practical VET content as a defined residential programme

  In rural areas, where there are additional challenges as vocational schools tend to be located far from young people's homes, Lithuania could allow students to start VET in a gymnasium for the first two years to receive general education together with the theoretical part of the vocational training in the school. At the same time the practical part of the vocational training could be delivered in blocks in the closest vocational school. Sweden in 2018, launched a pilot of ten branch schools, which offer specialised VET programmes in areas where either there are not enough students interested in VET, or the cost of provision is too high to justify the creation of full VET schools (Kuczera and Jeon, 2019[12]). Under this pilot, VET schools can send their students for at least six weeks to a branch school obtaining the part of their education and training that cannot be provided in the local school. Lithuania could implement a similar model in gymnasia located in areas where VET schools are too far for students to commute. The timetable and travelling would be managed by the two schools in co-operation as part of the same vocational programme.

- Creating a longer, sequential VET programme

  To address the issue of VET provision in rural areas, Lithuania could also consider providing a longer and sequential VET programme, that starts in the gymnasium and them moves to a VET institution when students are older. In the Norwegian 2+2 VET system, vocational students spend the first two years of upper secondary education in the same school with general students and then in the last two years, they receive vocational training separately, usually in the form of an apprenticeship (CEDEFOP, 2017[31]).

  Lithuania could consider applying a similar model, since the current system is already similar (2+1 instead of 2+2). Students could start VET in a gymnasium for the first two years and then move, when they are 18, to a vocational institution for two years like in the Norwegian model (which at this point, may involve them moving away from home). This could encourage more students to enrol in vocational education as they would not need to leave the gymnasium earlier than their peers and they would avoid enrolling in a boarding school at a young age when the closest VET school is too far from home. This option could be merged with the previous option inspired by the Sweden example by letting students stay in the gymnasium for two years while receiving some, more theoretical, VET training in blocks during the first two years and then requiring them to move to a VET school only for the third and last year of the programme. It is important to note that in both options students who decide to enrol in VET but stay in a gymnasium for logistical reasons, should attend a programme where the content is adapted to their needs (see Issue 2: Creating valued vocational pathways through upper secondary education).

Promoting co-operation between general and vocational schools

Increasing the attractiveness of, and enrolments in, VET, in a small country like Lithuania requires a strong school network and co-operation across vocational and general schools, so that they can work together flexibly to meet students' needs. This is particularly important given the foreseen decrease in the student population that Lithuania is facing related to demographic trends (OECD, 2023[32]). Reducing the number of schools but creating stronger co-operation and connections across schools could enable Lithuania to provide students with different options and diverse pathways that can still accommodate their interests and needs.

Currently in Lithuania, co-operation between general and vocational schools can be challenging since the former are managed by municipalities and the latter by the Ministry of Education (OECD, 2016[23]). In addition to this, the funding system based on the number of students that attend a school creates competition between schools and can create disincentives for schools to encourage students to move to

VET schools at the end of Grade 10. Estonia, which had a similar setting, where students enrolling in upper secondary general education would remain in the same school and general schools were managed by municipalities, created the so-called "clean gymnasia" (offering only Grades 10-12) while introducing state gymnasia that are managed by the Ministry of Education (Box 3.1). The common governance of general and vocational schools could help reinforce the links between the two types of schools and facilitate sharing of equipment and infrastructure (Musset, Field and Mann, 2019[33]).

Other potential strategies to improve co-operation across general and vocational schools include:

- Creating specific programmes that bridge vocational and general education (see Exploring options to provide some VET in general schools).
- Creating a twinning scheme between general and local vocational schools where they are required to develop co-operation programmes / activities in at least some areas (e.g. common sports day, bringing teachers together for professional learning).
- Creating funding incentives to encourage and reward collaboration (Kuczera and Jeon, 2019[12]).
- Publishing and recognising examples of good school co-operation.
- To incentivise good practices among schools, Lithuania could also consider reviewing, in the context of school evaluations, how schools support students to make informed decisions.

Lithuania could introduce compulsory training and information campaigns to schools about the importance of transitions decisions being individually tailored to each student. Providing independent and personalised recommendations for each student will also support this (see Option 1.b. Ensuring that students and their guardians play an informed role in transition decisions).

Box 3.1. Transitions into upper secondary education and the school network in Estonia

A context similar to Lithuania

Historically, schools in Estonia have been providing education from primary education to upper secondary education. As in the case of Lithuania, if students decide to enrol in general education when transitioning to upper secondary education, they can remain in the same school. On the contrary, if they want to attend vocational education, they must enrol in a vocational institution. This creates a disincentive for students and almost two-thirds of lower secondary graduates decided to continue their studies in the same school and enrolled in general education in 2022.

In resemblance with the Lithuanian system, schools in Estonia have an incentive to encourage students to enrol in general education. The co-operation between general and vocational schools is challenging as, the former are usually managed by municipalities, the latter by the Ministry.

OECD recommendations

To reduce the risk of bias in the student's decision on whether to pursue general education or VET, an OECD review from 2019 recommended to separate upper secondary institutions (Grade 10-12) from basic schools (Grade 1 to 9) and to modify the governance of schools by giving to the Ministry full responsibility for Grades 10-12 and leaving the management of basic schools to municipalities. This separation would help to establish Grade 9 as a point where students decide on their programme choice, without any default option of simply staying in the same school. Furthermore, it was suggested to take advantage of local synergies to pursue collaboration between upper secondary general schools and VET schools, and merge general and VET schools where it is useful to do so.

On its way to success

Since 2010, Estonia started creating "state gymnasiums", which offer only upper secondary education, and their number already reaches more than 20, covering all Estonian counties. At the same time, Estonia started separating upper secondary education (gymnasia) from previous level of education (basic education schools). In the academic year 20220/2023, 158 so-called clean gymnasia (offering only Grades 10-12) started operating.

Source: Musset et al (2019[33]), Vocational Education and Training in Estonia, OECD Reviews of Vocational Education and Training, 10.1787/g2g9fac9-en; Ministry of Education and Research, Republic of Estonia (2023[34]) Secondary education, https://www.hm.ee/uldharidus-ja-noored/alus-pohi-ja-keskharidus/keskharidus (accessed on 1 August 2023).

Considering restructuring the education system to facilitate students' transitions

Transitions are delicate moments in a student's journey through education because they have to invest socially and emotionally to adjust to a new environment, new expectations, and new adults. This consumes student energy and resources, and it makes transitions a moment of vulnerability for students. Consequently, student grades tend to fall at transition points during schooling (OECD, 2018[17]). While some transitions cannot be avoided and are important so that students can attend institutions suited to their increasing maturity and educational needs, it also makes sense to minimise transitions where possible.

The current structure in Lithuania creates two major transitions very close to each other for some students, at Grade 8, when students move into the gymnasium and then in Grade 10, for students who enrol into upper secondary vocational education. Concentrating transitions for students who move into upper secondary vocational education while their peers in general education have fewer transitions seems an unfair disadvantage for vocational students. This is particularly challenging for vocational students who already tend to have lower school achievement in general subjects. Vocational students are also more likely to leave their programme before completion. In 2022, 60% of vocational students in Lithuania completed their programme in contrast to 90% of general students (OECD, 2023[35]).

The structure of upper secondary education in Lithuania also creates distinctive for other reasons. In comparison to other OECD countries, Lithuania is an outlier as students start upper secondary education later at 17 (OECD average starting age is 15) and they stay for a shorter amount of time, two years (OECD average duration is three years) (Stronati, 2023[15]).

Given the current disincentives for students to enroll in VET after completing lower secondary education in a gymnasium, Lithuania could consider adjusting the duration of school cycles to better coincide with the structure of lower and upper secondary education and minimise the disruptive transitions that students wishing to choose vocational education experience. The upper secondary cycle could be extended to three years and remain located in the gymnasia and vocational schools, while the lower secondary cycle could be shortened to three years and moved to the pre-gymnasia. This new structure, more in line with the other OECD countries, would enable students to decide more objectively between general and vocational education when transitioning from lower secondary education. Students wishing to attend a vocational school would be no longer obliged to leave their current gymnasium and the rest of their cohort. It would also help to reduce the incentives that gymnasia might currently feel, to either retain students whose interests might be well supported by a vocational school and conversely to require low-performing students to leave to maintain publicly high results in the state Matura examination (see Exploring options to provide some VET in general schools for other examples on how to minimize students transitions).

Issue 2: Creating valued vocational pathways through upper secondary education

Currently in Lithuania, VET is almost designed as an "add-on" to the general upper secondary programme with general and vocational students studying a similar set of subjects and being assessed in the same way. While the reforms that will be implemented in 2023/24 will provide VET students with more choice and flexibility to adapt the curriculum to their needs and interests, the overall structure of the VET system does not encourage completion or enable learners to acquire the skills that they need either for employment or continuing education.

On one side, vocational upper secondary students who find the general curriculum content very demanding or uninteresting are required to dedicate at least 22 hours a week to general subjects (compared to 28 hours for general students). At the end, they take the same Matura examinations for upper secondary certification as general students. The Matura will become even more demanding when all the examinations are set at state level from 2024, replacing the school level examinations (see Chapter 4). On the other side, any high performers in vocational education who want to pursue tertiary education do not have an incentive to remain in education for the third year to obtain the vocational certification after passing the Matura because the Matura provides access to this level of education. It should be noted however that very few vocational graduates – around 2% each year- access tertiary education as they have to meet the same requirements as students in general education despite having less time devoted to general education and having to cover vocational content at the same time.

The design of the current vocational pathway is not equipping students with the general or vocational skills that they need for the future, either to continue their studies or to join the labour market. In systems with more than one programme at the upper secondary level, the status of vocational education is promoted by "keeping it separate from the academic track and helping it to develop a distinctive identity and ethos, so that it is not simply judged by the values of the academic track" but also by the distinctive value of its qualifications on the labour market ((Raffe et al., 2001[36]), p. 179). This issue considers how Lithuania could create vocational upper secondary pathways with its own valued, distinctive identify and ethos.

The issue suggests that Lithuania consider designing two separate upper secondary VET options. One more work-based that gives students extra support to meet minimum requirements in general subjects and prepares students to enter high quality options in the labour market or post-secondary options at ISCED 4 (and a potential pathway into tertiary education) (see Issue 3: Designing pathways with clear and sequential progression out of upper secondary education). Another programme, more technically oriented as a pathway into technically focused employment or the new vocationally oriented ISCED 5 tertiary qualification that Lithuania is introducing. Providing clear, distinct and diverse pathways in upper secondary education would allow students to study content that it is more tailored to their needs and aspirations while ensuring that upper secondary vocational graduates are better prepared and specialised for lifelong learning and employment. These changes could help improve the attractiveness of VET and the outcomes of vocational students.

The Current context: upper secondary vocational pathways

The general content for VET students is not tailored to their interests or needs

In Lithuania, students enrolled in general and vocational education are required to study a similar set of subjects from compulsory categories (Table 3.1.). The main difference between the general and vocational curriculum is that general students decide between level A (advanced) and B (general), while vocational students usually only take subjects at the B level as they need to dedicate their time also to VET subjects. Level A and B differ in the amount of teaching hours and the amount of content that is covered rather than the depth of learning and degree of mastery required to demonstrate proficiency. In contrast most systems

that provide some subjects at different levels, often a national language and mathematics, use the different levels to provide varying levels of demand or depth of study across the different options (Stronati, 2023[15]).

As well as having to study a similar set of general subjects as students in general education, vocational students have compulsory vocational content linked to the specialisation they choose. Cumulatively, this creates a lot of teaching hours. OECD data on net teaching time shows that Lithuania is one of the few countries where vocational students spend more hours in the classroom over a school year than their peers in general education (OECD, 2022[3]).

VET students have to meet the same requirements as general students for upper secondary certification and eligibility for tertiary education

To complete upper secondary education, general and vocational students take the Matura examination, after two years of upper secondary education. Students can decide in which subjects they want to take examinations, except Lithuanian which is compulsory (and mathematics if they wish to attend tertiary education), and which type of examination depending on their aspirations and plans. In the current system students can decide if they want to take a school level or a state level examination in a specific subject. The state level examinations are organised externally to the school by the Department of National Examination within the National Education Agency and so are perceived as more reliable and are recognised for entrance into tertiary education. However the content assessed in both examinations is the same.

To obtain the upper secondary certification (*Brandos atestatasm,* the Maturity certificate), students need to pass examinations in at least two subjects, including Lithuanian, and have passing grades in all subjects from classroom assessment (Table 3.1.). To enter tertiary education, students need state level examinations at least in three subjects, including Lithuanian and mathematics. Tertiary institutions set their own grade requirements for entrance depending on the subject of the degree and institution.

Table 3.1.Upper secondary curriculum and certification – current system

Subjects		Levels at which subjects are taken		Matura examinations	
		Levels	VET	USE certification 2 subjects	Tertiary entrance 3 subjects
Compulsory	Ethics / religion	Single level		School level	State level
	Lithuanian Language	A (advanced) or B (general)	B (general level)	School level Compulsory	State level Compulsory
	Foreign languages	A or B	B	School level	State level
	Social sciences (at least one from History or Geography)	A or B	B	School level	State level
	Mathematics	A or B	B	School level	State Compulsory
	Sciences (at least one from biology, physics or chemistry)	A or B	B	School level	State
	Physical education (at least one from basketball, football, athletics)	A or B	B	School level	State
	Arts or Technological learning (at least one from arts, music or technological skills)	A or B	B	School level	State
	Vocational subject		Vocational specialisation	Assessed and certified separately	

Subjects		Levels at which subjects are taken		Matura examinations	
		Levels	VET	USE certification 2 subjects	Tertiary entrance 3 subjects
Electives	E.g. psychology, economics, business, ICT to advanced physics, biology, etc.	Defined by school teaching capabilities. .		No examination	No examination
	Project	Optional	Optional	Municipal level, teacher committee	Municipal level, teacher committee
Total general curriculum hours		Minimum 28 hours Maximum 35 hours	Minimum 22 hours Maximum 35 hours		
Total examined subjects				2 subjects Passing grades from continuous assessment in all subjects	3 subjects

Source: Adapted from national information and stakeholder meetings in Lithuania

The new system provides more flexibility and choice for vocational students

Table 3.2. summarises the new curriculum and certification system in upper secondary education in Lithuania which will be introduced in 2023/24. The new curricula will be more differentiated, requiring vocational students to take fewer general subjects than previously and allowing for greater choice over subjects. Overall, the new requirements will reduce the number of compulsory subjects and hours that all students need to take but will give students space to add more if they wish. In the new system, subjects will be all taught at the same level for all students. With the exception of Lithuanian and mathematics which will be offered to all students at two levels – basic and extended – giving students the chance to study at different levels of difficulty and depth in contrast to the current A and B levels.

The Matura will also change as the school level examinations will be abolished and only state level examinations will be available to students. This change reflects the perception that the school level examinations were not to be reliable with wide variations across the country. Upper secondary certification will be conditional on passing at least two state examinations, including Lithuanian, while entrance to tertiary education will be conditional on passing at least three examinations, including both Lithuanian and mathematics (Table 3.2). Both levels of mathematics and Lithuanian will give access to tertiary education, but students taking the basic level will need a higher mark than those in the extended level. The Matura reform will result in vocational and general students taking a qualification that is equally recognised, given the external objectivity of state examinations compared to the old school level examinations (which students in the vocational programme tended to take).

Table 3.2.Curriculum and examinations – new system 2023/24

Subjects		GEN	VET	State-level Matura Examinations
Core / compulsory	Lithuania Language	Compulsory	Compulsory	Compulsory Intermediate and final examination Basic and extended level
	Mathematics	Compulsory	Compulsory	Compulsory for tertiary entrance only Intermediate and final examination Basic and extended level
	Physical education	Compulsory		No examination
	At least one foreign languages	Compulsory	At least two subjects from	Intermediate and final examination

Subjects		GEN	VET	State-level Matura Examinations	
			foreign languages, mathematics, science and technology group; and social sciences group		
Electives (depending on programme)	At least one from science and technology group	Compulsory		Intermediate and final examination	
	At least one from social sciences group	Compulsory		Intermediate and final examination	
	At least one from moral education	Compulsory	Optional	Intermediate and final examination	
	At least one from arts group	Compulsory	Optional	Intermediate and final examination	
	Defined by school teaching capabilities. E.g. psychology, national security and defense, law, history of art, geographic information systems, astronomy, etc.	Optional	Optional	No examination	No examination
	Project	Optional	Optional		
Total general curriculum hours		Minimum 25 hours Minimum 8 subjects	Minimum 17 hourrs Minimum 5 subjects		
Upper secondary certification				At least two subjects including Lithuanian	
Tertiary entrance				At least three subjects including Lithuanian and mathematics	

Source: Adapted from national information and stakeholder meetings in Lithuania

Upper secondary vocational students might not have an incentive to stay in school to complete their vocational programme

After taking the Matura examination for upper secondary certification and tertiary entrance, vocational students have to stay in school for an additional year to focus on vocational content and take a vocational examination (*Asmens įgytų kompetencijų vertinimas*, Assessment of competencies acquired by individuals*)* for their vocational qualification (*Profesinio mokymo diplomas,* the VET diploma). However, not all VET students remain in school for this additional year. In 2022, only 61% of vocational upper secondary students completed their programme compared to the OECD average for VET students of 70%, and far less than students in general programmes (90%) (OECD, 2023[35]). It is important to note that since in Lithuania VET students are required to take two examinations, it is likely that these students who do not complete their programme have an upper secondary qualification but did not complete their third year to get also the VET qualification.

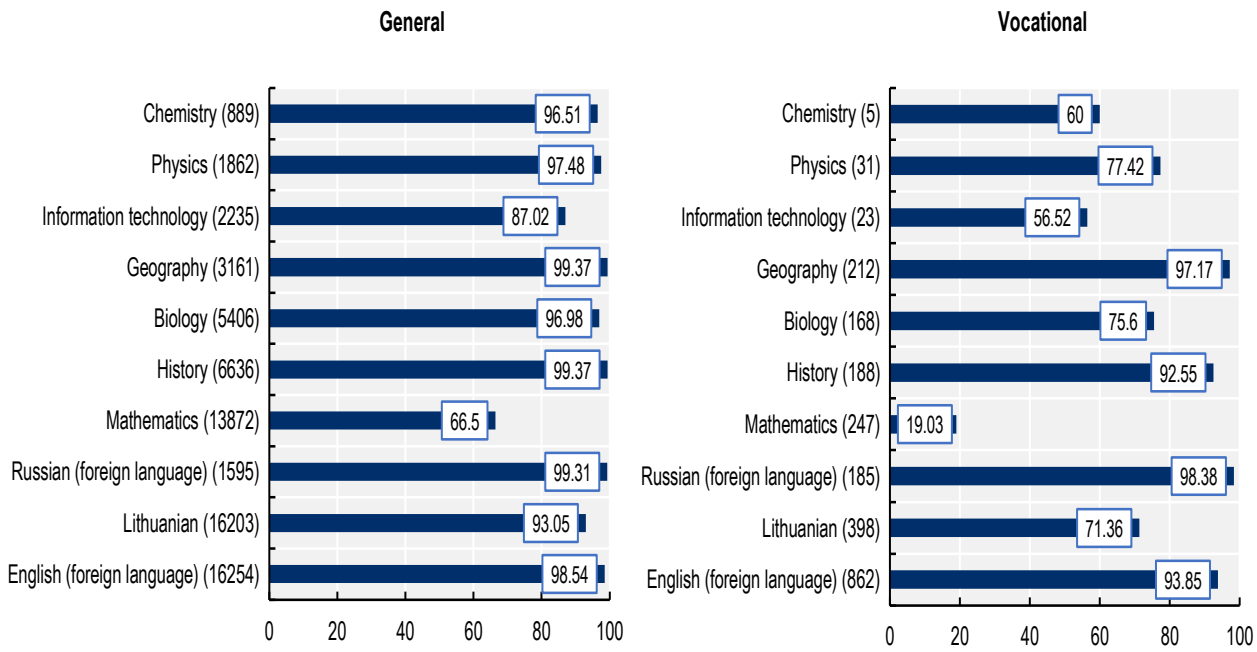
Few VET students achieve a solid basis in foundational general skills

While vocational students share the same curriculum, hours and examination as students in general upper secondary education, they perform significantly less well. In most countries, VET students tend to perform less well in general academic content, reflecting their generally lower achievement on entry into upper secondary education (OECD, 2018[2]), however the difference in Lithuania is particularly significant. According to the OECD's Survey of Adult Skills (PIAAC), 16–34 year-old graduates from upper secondary VET in Lithuania have lower literacy, numeracy and problem-solving skill levels than VET graduates in most other OECD countries. Lithuania is the only country across OECD countries where the skill levels of VET graduates are not significantly higher than those of lower secondary graduates (Vandeweyer and Verhagen, 2020[37]).

The weak learning outcomes of VET students in general subjects also emerges from the results of the different Matura examinations that both general and vocational students take. Figure 3.4 shows that the share of VET students who passed the state-level Matura examinations was lower than the share of general students for all subjects. In 2022, less than 20% of VET students passed mathematics compared to 67% of general students, and 71% passed Lithuanian compared to 93% of general students.

To some extent, these results reflect the fact that VET students tend to have lower achievement in general subjects upon entry to upper secondary education and they do not attend the advanced courses that the Matura examinations covers. However, it likely also reflects a broader misalignment between the expectations, content and the provision for VET students in general content. As a result of the significantly lower performance of VET students in general content, these students face a major disadvantage to access to tertiary education with very few – less than 2% in 2022 - meeting the requirements (Beleckienė, Kazlavickas and Palevič, 2022[11]). Comments by stakeholders during the OECD mission and evidence from previous OECD reviews (OECD, 2017[38]; OECD, 2021[6]) confirm that the teaching quality of the general education curriculum in VET institutions is relatively low. VET students' weak foundational skills might also influence their outcomes on the employment market.

Figure 3.4. Share of students who passed their national level Matura examinations by subjects and programme orientation (2022)



Note: numbers in parenthesis represent the number of students taking the exam.
Source: NSA (National Education Agency) (2022[8]), Rezultatai Brandos Egzaminai (Matura Results), Nacionalinė švietimo agentūra - » Rezultatai (smm.lt) (accessed on 2 May 2023).

StatLink https://stat.link/25ziwn

Vocational graduates are not well prepared in vocational content

While VET students internationally tend to perform less well in general subjects than general education students (OECD, 2018[2]; OECD, 2016[39]) , often reflecting both course structure and orientation systems into VET (Perico e Santos, 2023[1]), in Lithuania VET students also have poor outcomes on the labour

market. Among 25-34 year-olds with upper secondary education as their highest level of attainment in Lithuania, the employment rate of vocational graduates in 2021 was only three percentage points higher than the employment rate of general education graduates (83% and 80% respectively). In contrast, across the OECD on average, the employment rate of vocational upper secondary graduates was 10 percentage points higher than that of general upper secondary education graduates and as much as 20 points in countries with stronger VET systems such as Austria, Germany and Italy (OECD, 2022[3]).

Stakeholders, including representatives of businesses, reported to the OECD Review Team that vocational students do not receive sufficient nor specialised training at the upper secondary level. Partly as a consequence, employers report that they do not place high value on VET qualifications. The latter is likely to be one reason why VET graduates in Lithuania do not have significantly stronger labour market outcomes than their peers from general upper secondary programmes.

Compared to other OECD countries, Lithuania does not offer highly specialised VET programmes at the upper secondary level. For the first two years of their programme, students spend most of their time learning general content that is assessed in the Matura, that tests only general subjects. The VET specialised content is delivered 30% with theoretical training in school and 70% with practical training in school, in a training centre or in the workplace. Curriculum regulation requires students to spend between 110 and 220 hours in a workplace or, if it is not available, at a sectoral practical training centre. The weak outcomes in foundational skills of vocational graduates might also impact their experiences on the labour market because basic literacy and numeracy are equally important in a professional setting.

Policy options for creating valued vocational pathways through upper secondary education

The section below discusses three policy options to help Lithuania create vocational pathways of high quality that equip students with a mix of a strong general and vocational skills. As well as suggesting how more flexibility might be introduced to the existing programme it also outlines possibilities for creating two separate vocational programmes, one that is more work-based and another more school-based. By providing greater space to be tailored to students' needs and future plans, these programmes could promote better outcomes in terms of completion of upper secondary, labour market integration and future engagement with lifelong learning.

Option 2.a. Providing more flexibility in vocational education to adapt to students' needs and abilities

In Lithuania, the vocational upper secondary programme requires students to dedicate a significant amount of time to general education content and to be assessed by the same examination as general education students. The upper secondary system is comparatively prescriptive and gives students limited freedom to choose and adapt the content and format of learning to their needs, abilities and ambitions. While the curricula and examination reforms will create greater choice and flexibility these are not likely to provide the degree of differentiation that most systems provide for upper secondary students.

Providing more choice and differentiation within vocational programmes would enable Lithuania to cater more effectively to a wider range of student profiles, including both higher and lower performers and create the basis for more valuable, targeted VET programmes with better outcomes for learners. Generating better outcomes for learners as well as being able to attract a broader range of learners across the achievement spectrum would help contribute to raising perceptions of vocational education in the country. Lithuania could consider different options to give more choice and flexibility at the upper secondary level, especially to those students who struggle with general content and might thrive with a different learning approach to successfully complete upper secondary education.

Advancing current reforms to provide greater flexibility and adaptability in the content for vocational students

The introduction of the new curriculum and changes in the course requirements seems to be a positive step forward for Lithuania. The changes mean that VET students will be required to take fewer general subjects and have more choice and flexibility over the general subjects they want to study. However, it will be crucial to carefully consider how they will spend the extra time that this will create.

The additional time creates the opportunity for the VET programme to be more responsive to different student profiles. For example, for some students, the additional time might be devoted to more vocational content, or for others it might be used to provide extra support for those students who need it to cover basic skills and competences. Some possible options that Lithuania might consider include:

- Providing more support in foundational subjects. For students who are identified as struggling in core subjects, notably mathematics and Lithuanian, upon entry to upper secondary education (see Issue 1: Reviewing students' transitions and orientation into upper secondary education) or during the programme, they could be provided with additional learning time and support to ensure that these basic skills are mastered by the end of upper secondary education.
- Creating space for more work-based learning. The additional time could be used to expand work-based learning for VET students which is currently limited in Lithuania (see Option 2.b Creating a more work-based VET option that promotes acquisition of foundational skills).
- Providing deeper and broader teaching in certain subjects, notably mathematic and sciences, to enable some VET students to pass the Matura for tertiary entrance. Currently, VET students in Lithuania have very limited opportunities to pass the state Matura examinations and access tertiary education because these examinations cover more content than VET students typically cover. For those VET students who wish to enter tertiary education, the additional time could be used by enabling them to cover the same content, or attend the same classes, as general upper secondary students.

Reviewing the level of demand, and breadth and depth of learning in mathematics and Lithuanian to ensure that it aligns with the needs and future ambitions of all students

Lithuania's decision to introduce two levels in mathematics and Lithuanian for the state Matura examination and related teaching at these levels will already help to make content more accessible for a broader range of students. As part of the curriculum reform, Lithuania might also consider more explicitly the essential skills that all the country's young people should develop by the end of upper secondary education. As part of this work, Lithuania might look at how standards are articulated in other international systems and the national context, including discussions with post-secondary education providers and employers. This work might initially focus on mathematics and Lithuanian given their fundamental importance for success in work and social life.

The national consultations and review of international standards would aim to understand if the current level of demand, and depth and breadth of learning in upper secondary education accurately reflects the diverse working and learning contexts in which young people will need to use foundational skills in their future lives. In particular, are expectations in mathematics and Lithuanian set at the right level so that learners are expected to achieve basic, foundational skills, while still providing space to stretch the highest achievers? The currently weak performance of VET students in general subjects (Figure 3.4) might suggest that the learning expectations are currently set at a level which is not accessible for lower performers or that teaching does not provide sufficient support. The work to review the level of demand could be undertaken alongside the investigation of the dramatic fall in mathematics results in 2022 (see Chapter 4).

As part of undertaking this work, Lithuania might find that the current level of demand and depth of learning for mathematics and Lithuanian, even after the introduction of two levels in the Matura, does not provide enough flexibility to reflect the spectrum of learners and their future aspirations. Lithuania could consider introducing more flexible requirements in mathematics and Lithuanian so that the full cohort is able to achieve the requirements while providing space for some learners to learn and achieve at higher standards.

Many countries provide scope for students to meet requirements in foundational skills, such as literacy and numeracy, in a variety of ways. In Australian states, many Canadian provinces, New Zealand and the systems in the United Kingdom, minimum requirements that all students are expected to meet are defined and provide students with multiple opportunities to certify their competence during their upper secondary education. All these systems also provide options for students to continue to study and achieve at higher levels if they wish (Australia Education Council, 2020[40]; New Zealand Qualifications Authority, 2020[41]; UCAS, 2020[42]). Other systems offer these core subjects at multiple levels. For example, Ireland offers Irish and mathematics at three levels – Foundational, Ordinary and Higher, while Korea has four options in mathematics and schools in Japan provide six (Stronati, 2023[15]).

Any change to the content of mathematics and Lithuanian for vocational (and perhaps also general students) would need to be reflected in the Matura examinations. For example, foundational qualifications in the core skills of mathematics and Lithuanian might be provided or more levels in the Matura examination introduced. In Ireland, the end of upper secondary examination, the Leaving Certificate, is provided at three levels in Irish and three levels in mathematics (Ireland National Council for Curriculum and Assessment (NCCA), 2022[43]).

Considering the demand and content in other subjects

As well as providing support to enable students to master key skills in mathematics and Lithuanian, the country should consider whether content in all subjects is accessible for all students. One option is to consider introducing multiple levels for all or more subjects. In Sweden, for example, upper secondary students can choose courses at different levels for English, history, physical education and health, mathematics, science, knowledge of religion, civics and Swedish (Stronati, 2023[15]). Ireland offers at least two different levels for all subjects, Ordinary and Higher (Ireland National Council for Curriculum and Assessment (NCCA), 2022[43]). This can help students who find general content very demanding to achieve success and create the motivation to engage with education while developing the foundational skills that they will need for life and allow other students to pursue higher levels depending on their skills, interests and aspirations.

Another option to consider is changing the content of VET programmes so that rather than doing individual subjects, like economics or chemistry, students would do subject areas, like social sciences or sciences. Students would do less and different content than in the general programme, but they would still cover enough content to build strong bases in general skills. In France for example, the general curriculum for students enrolled in the vocational programme (*Baccalauréat professionnel)* includes subject groups such as physics-chemistry, history-geography-moral and civic education, applied arts and artistic culture, physical and sports education (Ministère de l'Éducation nationale et de la Jeunesse, 2022[44]).

Any changes in content would also have to be reflected in the state Matura examinations. Particular consideration would need to be given to how examinations taken at different levels will interact with certification of the completion of upper secondary education and eligibility for tertiary entrance. If steps are taken to introduce more composite courses in studies like social sciences or the natural sciences for VET students, then corresponding examinations would need to be developed.

Moving the Matura back to the end of the third (or fourth) year for VET students

To encourage accessibility and completion among VET students, Lithuania could consider postponing the Matura to the end of the three-year programme (or even possibly after four years if Lithuania considers the structural changes suggested to the length of vocational education suggested in this report (see Issue 1: Reviewing students' transitions and orientation into upper secondary education)). Putting the Matura examination back would give students who found the general content demanding, or entered with initially low general skills, more time to build strong foundations. For all VET students, it would give them an incentive to stay in school to complete the programme and it would increase their chances to get the marks in the Matura they need to access tertiary education.

One of the likely reasons that completion of vocational education is currently significantly lower than general education is because students achieve their upper secondary certification before the end of the vocational programme and since vocational qualifications are not well-valued on the labour market, they are able to integrate into the labour market without completing their vocational programme. Moving the Matura back to the third or fourth year of vocational programmes would require some revisions to the vocational upper secondary curriculum to allow students to keep studying general content in the third year while spreading vocational content spread throughout the three years. The Matura and the vocational examination could be recognised together in a single qualification similar to the *bac professionnel* in France (see Chapter 4). This could be implemented alongside the suggestions in Issue 1 to address the current challenges in the provision of vocational education in rural areas (see Issue 1: Reviewing students' transitions and orientation into upper secondary education).

Hungary provides an interesting example for Lithuania. In the past, it had a similar structure to Lithuania, where vocational students enrolled in a technical and academically oriented track (Box 3.2) were being prepared primarily in general content with only some vocational content for the first four years and then had to stay an extra year to achieve the vocational qualification. Since many students were leaving after the first four years, the Hungarian government consolidated it as a five-year programme, with both the general and vocational qualifications at the end of the five years.

It is important to note that Hungary also offers a shorter vocational programme (3 years), less academically oriented and more practical oriented, for those students who do not wish to continue their studies. This option promotes completion as it does not expect students to spend five years in school to receive a vocational qualification and offers more flexibility in the delivery and learning (EURYDICE (European Education Information Network), 2022[45]). Option 2.b Creating a more work-based VET option that promotes acquisition of foundational skills discusses how Lithuania could also consider creating a more work-based, perhaps shorter VET option. Evidence suggests that longer VET programmes could have a negative effect on outcomes of students who enter these programmes with low levels of skills, as it increased their probability of leaving before completion (Hall, 2012[46]).

Box 3.2. Upper secondary education in Hungary after the reforms

Diverse options in upper secondary education

In 2022, around 56% of upper secondary students were enrolled in a vocational programme in Hungary. Upper secondary education typically starts from Grade 9 in Hungary with three different programmes. Based on the VET 4.0 strategy introduced by the government in 2019, the structure of the vocational education system changed starting from 2020/2021. The previous two types of vocational schools – vocational upper secondary school and secondary vocational school – were replaced by the Technicums (*technikum*) and the Vocational schools.

- **Technicums:** The duration of the training in technical schools is five years. The new name "Technicum" is clearer and makes the programme more attractive to parents and students who tend to associate this word to high-quality vocational training. The knowledge and skills acquired in the Technicums enable graduates with good results to continue their studies in a similar sector in tertiary education. In the first two years, students are provided with sectoral knowledge, followed by two years of dual training. Then students start the final year of practical training, during which they can get an employment contract providing them with the opportunity to earn while acquiring a qualification. At the end of the five years, students take their upper secondary school leaving examination in four compulsory subjects, with the vocational examination of the technical vocational qualification as their fifth subject. If students successfully pass the exam, they receive the upper secondary school leaving certificate and the certificate of the technical qualification.
- **Vocational school**: The duration of the training in the vocational school is three years. After the first year of providing sectoral knowledge, dual training takes place in the next two years mainly within the framework of an employment contract. After graduation, the opportunity to obtain the upper secondary school leaving examination certificate or even the certificate of the technical qualification is open here as well, but students need to enrol in another two-year programme. In 2020 the length of this programme was reduced from four to three years together with the overall teaching time in class. The new structure still allows students to acquire minimum standards in general education, but it makes the programme more engaging and relevant. The aim of this reform was to help students enter more easily the labour market while making the programme more attractive and decreasing early school leaving.

Source: EURYDICE (European Education Information Network) (2022[45]), National Education Systems, https://eacea.ec.europa.eu/national-policies/eurydice/national-description_en (accessed on 1 February 2023).

Providing advice about different levels and subject choice as part of the personalised recommendation for upper secondary transitions

Increasing diversity and flexibility for students needs to be accompanied by more support to help them understand the options available and make informed choices. Evidence from PISA 2018 showed that among countries that participated in the survey, one in five young people had misaligned education and career expectations (i.e. they underestimated the levels of education typically required to secure professional or managerial positions) (Mann et al., 2020[29]). Since Lithuania is already strengthening its student guidance system advice about different programmes, Matura options and levels can be integrated to this process. As part of the personalised recommendation students get in Grade 10 to decide which upper secondary programme they want to attend (see Issue 1: Reviewing students' transitions and

orientation into upper secondary education), students should also receive information on the different specialisations, elective subjects, the level of demand for Lithuanian and mathematics and the Matura examinations they might take at the end of the two years. This advice should be based both on students' aptitudes for the subject and future ambitions.

Creating more diversity in VET programmes

Most countries that distinguish between general and vocational education offer multiple upper secondary programmes (Box 3.3). Twenty-four OECD countries distinguish between more practically oriented vocational programmes and more academically oriented vocational programmes (Stronati, 2023[15]). The former options usually offer more work-based training, are designed to provide direct entry to the labour market and might not provide direct access to tertiary education. However, these programmes typically provide access to non-tertiary post-secondary education which individuals might use as a pathway into tertiary education (Kis, forthcoming[47])). Examples include both the EUD and New apprenticeships programmes in Denmark, the vocation-specific track in Estonia and the vocational schools in Hungary (Box 3.2,Box 3.3). The more academically oriented options are designed to meet the needs of students with solid general skills and have a strong interest in technical subjects. These programmes usually give direct access to all or some tertiary options. Examples include the EUX programme in Denmark, the comprehensive track in Estonia and the *Technicums* in Hungary (Box 3.2,Box 3.3). Lithuania could consider introducing two separate upper secondary vocational programmes, one that offers a more work-based training and another one that has a more technical focus. These two options are discussed below.

Box 3.3. Diverse VET programmes in upper secondary education

Denmark

- **EUX**: is a combination of the vocational (journeyman's test) and general education programmes as it leads to a vocational qualification, and it gives access to higher education (ISCED Level 6). It was introduced in 2012 and lasts four-year or three-and-a-half-year. By 2018, 42 different technical VET fields (approximately half of all programmes) and all business programmes had implemented EUX.
- **EUD**: is the mainstream vocational path involving apprenticeship. EUD leads to a journeyman's test or a similar examination testing vocational knowledge, skills and competences. The programme duration is 4 years for students who completed lower secondary school less than two years ago and 3.5 years for students who finished their lower secondary education more than 2 years ago. The first phase of the programme, the" basic programme", involves education and training in schools. In the second phase, the "main programme", students enter apprenticeship, spending most of their time training in companies but with some further education and training in schools. EUD graduates can continue their education at professional academies in fields related to their EUD qualification (at ISCED Level 5). They do not have direct access to programmes at ISCED level 6.
- **New Apprenticeships**: provide students with an opportunity of alternating school and work-based learning from day one. This can be attractive to students who prefer more applied learning. After a year in the enterprise, students on the New Apprenticeship scheme are assessed to check if they have the required competences, and if they are ready to continue their programme alongside mainstream apprentices (from EUD/EUV). New apprenticeships and EUD/EUV lead to the same qualifications.

Estonia

- **Comprehensive track:** This is a 3-year programme of which at least 35 percent is practical training including both school workshops and work placements. Graduates receive both a qualification of completion of upper secondary education and an occupational qualification following separate examinations. Programme completers who in addition pass a state examination can also enter higher education, and an optional further year in school is available to prepare for this examination. Students can also select more general education subjects during their studies to prepare for the State examination.
- **Vocation-specific track:** This is a 2.5-year programme including both vocational and general education. At least 50 percent of the programme is practical training including both school workshops and work placements. Graduates receive both a certificate confirming the completion of the programme (which is different from upper secondary qualification that can be obtained in the comprehensive VET track) and a vocational qualification following separate examinations. They can continue into upper secondary general education or further vocational programmes (but not tertiary education).

Source: CEDEFOP (2018[48]), Vocational education and training in Europe: Denmark. VET in Europe Reports, Vocational_Education_Training_Europe_Denmark_2018_Cedefop_ReferNet.pdf (europa.eu); Danske Erhvervsskoler og -Gymnasier (2021[49]), Elever på eux,, Elever på eux | Danske Erhvervsskoler og -Gymnasier (deg.dk); Ministry of Children and Education (2023[50]), Overview of vocational education and training, Overblik over erhvervsuddannelser | Børne– og Undervisningsministeriet (uvm.dk); Statistics Denmark (2023[51]), Upper secondary education, Upper secondary education - Statistics Denmark (dst.dk); Cedefop (2019[52]), Vocational Education and Training in Europe: Estonia, cedefop.europa.eu/en/print/pdf/node/30788.

Option 2.b Creating a more work-based VET option that promotes acquisition of foundational skills

Upper secondary education is the last opportunity within formal schooling to ensure that young people acquire the necessary knowledge and skills that they will need throughout their lives (OECD, 2015[16]). It is a government responsibility to support all students to build these skills before they leave school. As they are entering upper secondary education, PISA shows that around 25% of students in Lithuania do not reach the minimum level of proficiency in reading, mathematics and science (OECD, 2018[2]). Results from PIAAC suggests that upper secondary education does not manage to close this skills gap for all students, with upper secondary completion making the smallest contribution to young adult's skills across participating countries. Results show that 16–24 year-olds who completed upper secondary education in Lithuania scored just 14 points higher in literacy than their peers who did not, compared to 42 on average across OECD countries (OECD, 2016[39]). Young VET graduates in Lithuania performed only one point higher than those who did not complete upper secondary education, in both literacy and numeracy (see Chapter 2).

To make good progress in their learning, all learners need to receive appropriate support and be able to engage with content that is accessible for their individual level. To respond to growing concerns about students' low level of skills in Lithuania and strengthen their opportunities to acquire specialised vocational skills, the country could consider introducing a more practically and work-based VET option. This option would aim to build solid basic general skills while preparing students with highly specialised training to join the labour market.

Introducing a new vocational option with more work-based learning

Programmes including work placements have been widely recognised as an effective means of equipping individuals with both generic and job relevant skills by combining learning and work (OECD, 2010[53]). Evidence shows the growing labour market importance of transversal skills (Deming and Kahn, 2018[54]). It also suggests that many transversal skills are more effectively learnt in workplaces than in classrooms (OECD, 2010[53]). Moreover, VET graduates who have been more exposed to work-based learning (WBL) have stronger labour market outcomes than those without it (Bratberg and Nilsen, 1998[55]; Van der Klaauw, Van Vuuren and Berkhout, 2004[56]).

In Lithuania, the highest employment rates of vocational graduates are among those who were already employed while completing a VET qualification (Beleckienė, Kazlavickas and Palevič, 2022[11]). In 2016, Lithuania's vocational graduates (16-34 years old) who completed a traineeship during their studies had much higher employment (78%) than their counterparts with no work experience (65%). However, work-based learning (WBL) is limited in Lithuania, with students only required to complete 110-220 hours in either a company (as an unpaid traineeship) or a school-based workshop simulating working conditions (CEDEFOP, 2019[57]). Almost 30% of upper secondary VET graduates (15-34 years old) in 2016 reported that they had undertaken no work experience during their studies (Musset, 2019[58]).

A new VET programme with more work-based learning could provide more space for WBL in Lithuania and expand the existing apprenticeship provision. In the current system, apprenticeships have a role in reducing unemployment among adults, but they are not advertised or encouraged among younger people who might equally benefit from them (OECD, 2021[6]). Many OECD countries offer these types of programmes at the upper secondary level. Since 2007 in Estonia, VET programmes can also be offered as apprenticeships, with at least two-thirds of the programme being devoted to work-based learning. Usually the school, enterprise and apprentice sign a contract that includes an individualised curriculum specifying the learning outcomes. In order to complete the programme, students need to pass a professional or vocational examination. In 2017 there were about 1300 apprentices, 700 more compared to the previous year (Musset, Field and Mann, 2019[33]). Since 2011 in Sweden, students in vocational programmes can attend a mainly 'school-based education' or 'apprenticeship education'. The content,

qualification and goals of the two paths are the same. In school-based VET programmes, students are required to do a work placement of at least 15 weeks. In apprenticeship, students should spend at least half of their learning time in the workplace (Kuczera and Jeon, 2019[12]).

In Lithuania, the introduction of a new VET programme, where WBL presents a more significant portion of the programme would complement school-based learning by enabling students to develop professional skills and transversal skills such as teamwork, communication and negotiation that are particularly difficult to develop in the classroom (OECD, 2012[59]). Lithuania could look at other countries, such as Denmark and Estonia (Box 3.3), to design a programme that gives the same qualification as the other VET option but that includes more work-based learning and perhaps the option to complete the programme as an apprenticeship.

Supporting employers to engage with apprenticeships

Despite efforts, Lithuania does not yet have a strong apprenticeships system. The country's current goal is reaching 40 000 apprenticeships by 2026. Financial barriers for employers have been identified as the main obstacle for implementing successful and popular apprenticeships (OECD, 2021[6]). Following OECD's previous recommendations, Lithuania has decided to invest EUR 90 million until 2026 to provide employers and apprentices with financial incentives. Additionally, Lithuania announced in March 2023 the launch of a national initiative called "The apprenticeship – a new opportunity for me!" that aims to increase the attractiveness of VET by encouraging students to take part in apprenticeship. The funding of the project, consisting of over EUR 10 million, were allocated from the EU funds for Economic Recovery and Resilience Facility. The goal is to provide support for 3866 apprentices, who have been accepted to study in full formal initial or continuing VET programmes, to train in companies for up to 9 months. (CEDEFOP, 2023[60]).

Other challenges to apprenticeships in Lithuania include the absence of non-financial incentives to encourage apprenticeships among the many micro-sized firms. These could include measures 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[38]; OECD, 2021[6]). Many other OECD countries offer a range of financial and non-financial incentives to employers to offer apprenticeships. Norway for example, offers a direct subsidy per apprentice depending on their characteristics (such as age, disability, school performance, migration status, gender, previous education) and sector characteristics. The Norwegian Directorate for Education also provides free resources for apprentice instructors on their website, including short films showing how instruction can be carried out in practice. Apprenticeship training agencies support small and medium-sized enterprises (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 (Kuczera, 2017[61]). Lithuania might consider how such non-financial incentives and supports could be provided to employers, especially SMEs. The Qualifications and VET Development Centre (QVETDC or KPMPC) in Lithuania has recently launched a website for promoting apprenticeship to companies and VET providers (KPMPC, 2023[62]).

Finally in Lithuania, greater involvement of industry in teaching and training in vocational schools could help students to acquire industry-relevant skills. This could include recruiting industry professionals on a part- or full-time basis to teach in VET programmes (OECD, 2017[38]; OECD, 2021[63]). Since students from rural areas face a disadvantage in accessing sectoral practical training centres, Lithuania could increase subsidised transport for VET students in rural areas to access sectoral practical training centres, particularly if they are unable to find work placements (OECD, 2017[38]; OECD, 2021[6]).

Ensuring that students are well supported to develop essential foundational skills

While a new VET programme that is more work-based will provide more space for professional learning, sufficient time will still need to be devoted to general skills. General skills are important for employability in the short and long term and young people's ability to engage with learning and career changes throughout their lives (Vandeweyer and Verhagen, 2020[37]). A well-qualified electrician for example needs to be familiar with basic mathematical and physical laws. Moreover, strong foundational skills can help students in accessing further education and training. General education does not necessarily require classroom settings and can take place in informal environments and the workplace (Kuczera and Field, 2018[64]).

Most countries that provide work-based vocational upper secondary programmes provide a strong basis in foundational skills (Stronati, 2023[15]). In Hungary, students enrolled in vocational schools (3-years-programme) dedicate 17 hours per week to general education in the first year, and then 7 hours per week in the last two years. This time is divided among subjects such as Hungarian, a foreign language, mathematics, sciences, social sciences sports and economics (Eurydice, 2023[65]). Lithuania could draw on the examples of other countries that already have similar programmes, as well as national consultations with teachers, curriculum experts, tertiary and non-tertiary education providers and employers to determine the content and range of general skills that would be most appropriate for a work-based VET programme in Lithuania.

As well as ensuring that learning expectations in key subjects are accessible and reflect national demands, Lithuania will need to ensure that all learners are given sufficient support to reach these requirements. This will likely involve providing different levels of support at different points and tailoring it to student needs. Option 1.a. Making personalised transition recommendations for each student based on a wide range of information discussed ways in which the existing programme could be adapted to provide more support for those students who need it. The creation of a specific VET programme with a more work-based focus would provide more opportunities to develop an approach tailored to student needs. In Sweden, young people with weak skills in key national subjects on entry to upper secondary education receive specialised support through national Introductory Programmes (Kuczera and Jeon, 2019[12]). Sweden's experience underlines the importance of carefully considering the delivery of such support to avoid creating stigma for students with low achievement which might hinder effective engagement with such support. Communication and discussion around such learning programmes might focus on encouraging all teachers, students and their guardians to recognise and respect the diversity of students' learning and development trajectories and an education system's responsibility to provide multiple opportunities for learners to acquire basic skills. Careful thought will also need to go into how such programmes are provided. Rather than bringing together students with low achievement in a separate programme, a more flexible approach where students might attend additional hours of support to complement their normal learning hours might be effective.

Consideration should also be given to how skills are taught. Some students might have chosen the vocational track because of negative experiences within a standard school-based setting. These students might be demotivated by a curriculum with a substantial school-based academic component and traditional approach (Vandeweyer and Verhagen, 2020[37]). The new work-based VET programme might incorporate different pedagogical approaches that are inclusive for a diversity of learners, such as greater integration of applied and theoretical aspects of learning and opportunities to access concepts through a range of learning approaches. In England for example, young people who have not achieved their initial upper secondary qualifications - GCSEs - in mathematics or English can take functional skills courses, more focused on real work application for skills (UCAS, 2020[42]).

In some OECD countries that offer more than one programme in upper secondary education and set similar requirements for completion for general and vocational students, such as France, Germany, Italy, the Netherlands, the general content is adapted to different VET programmes. In the Netherlands, for example, students in the general programme learn Dutch language and literature, while those in the vocational

programme focus on literacy skills (EURYDICE (European Education Information Network), 2022[45]). In Italy, where English is a compulsory subject for all students, in general education it entails learning the language, the culture and the literature while in vocational programmes the focus is on learning the language and the vocabulary associated with the programme's professional specialisation (MIUR, 2018[66]). Lithuania might consider implementing this approach progressively, starting first with mathematics and Lithuanian, as they will have to do this to make it accessible for all students (see Option 2.a. Providing more flexibility in vocational education to adapt to students' needs and abilities), and then expanding the approach into other general subjects. This approach would require specific supports, resources and notably professional development for VET teachers (see Issue 3: Designing pathways with clear and sequential progression out of upper secondary education).

Option 2.c. Providing a technically focused and a more academically oriented vocational upper secondary option

In Lithuania, students with strong or average school performance, who are considering pursuing post-secondary education and have an interest in technical subjects, do not have an incentive to enrol in vocational education. The VET programme requires that they stay in school for an additional year after passing the Matura to get a qualification that is not highly valued in the labour market. Additionally, accessing tertiary education is next to impossible for VET students to access as the VET programme does not expose them to the content that is assessed in the state Matura. Providing a more technically focused and academically oriented vocational option could help meet the needs and ambitions of these students and provide a more tightly focused and tailored programme so that learners are better prepared to continue education or enter the labour market.

Providing stronger preparation in technically focused VET

Lithuania could introduce a more technically oriented vocational option to improve the attractiveness of VET and meet the needs of different students. This new option would provide a stream of graduates with strong general and technical skills ready to enter higher VET programmes (colleges or the new ISCED-5 programmes) and to specialise in Science, Technology, Engineering and Mathematics (STEM). This option might require students to meet specific standards in general subjects, such as mathematics, related to the specialisation they choose. Denmark for example, launched a reform of the VET system in 2015 that included increasing performance requirements in Danish and mathematics to gain access to vocational schools (CEDEFOP, 2018[48]). Setting standards for entry into VET ensures that students have the required skills to be successful in the programme while helping improving the perception of vocational education. Rather than setting a specific numerical threshold based on student achievement for entry to the more school-based VET, guidance counsellors might inform students with solid foundational skills about the merits of this more programme as part of the process of developing a personalised recommendation for each student at the end of Grade 10 (see Option 1.a. Making personalised transition recommendations for each student based on a wide range of information).

As well as the need to meet current and forecasted gaps in the labour market (see Chapter 2), national data also shows the need to increase VET enrolment in fields of increasing strategic importance for Lithuania such as environmental protection and information communication technologies (ICT) (OECD, 2021[6]). While this more school-based VET programme would provide a solid basis in general skills, sufficient time in work-based learning will also be important. Lithuania could consider implementing a structure similar to the EUD programmes in Denmark or the *Technicums* in Hungary where students first focus on building strong general and technical skills and then build on them with theoretical training in school and practical training with employers (Box 3.2,Box 3.3). This dual structure would require Lithuania to develop strong partnerships with employers and specific industries to guarantee students good

placements and effective training during their work-based learning (see Option 2.b Creating a more work-based VET option that promotes acquisition of foundational skills).

Since in some rural areas there are few vocational schools, Lithuania could consider delivering this technical/vocational option jointly with general schools, at least for the beginning of the programme when students are still young to avoid that they must move away from home (see Option 1.c. Reconsidering the structure of schooling to facilitate transitions into upper secondary education).

Ensuring that general content promotes strong technical skills

Currently in Lithuania, it is very challenging for VET students to pass the state-level Matura examinations (Figure 3.4). The Level B subjects that VET students take in general education put them at a distinct disadvantage in the state level examinations (which tend to be based on content in the level A courses). The introduction of a more school-based vocational programme could provide the space and flexibility to provide deeper and broader content in technical general subjects, especially in mathematics, sciences and ICT where few VET students currently pass the Matura (Figure 3.4).

This new VET option could include adapted pedagogy to focus on technical skills. In developing this new programme, Lithuania might be inspired by the new *Technicums* in Hungary which provide a high-quality vocational programme that incorporate a strong basis in general skills (Box 3.2). Similarly in Italy, technical schools offer vocational preparation in 11 areas, such as information and communications technology, tourism, agri-food system, fashion, sustainable mobility, energy efficiency, across the economic sector and technological sectors. At the end of the programme, students take the State examination with two parts. The first part is common to the three upper secondary programmes and the second part is specific for each programme (CEDEFOP, 2019[67]).

Issue 3: Designing pathways with clear and sequential progression out of upper secondary education

One of the reasons why vocational education in Lithuania is not attractive to young people is that it does not offer strong pathways into either employment or further education. National data shows that the share of learners who have acquired upper secondary vocational education and continued studying at higher levels is decreasing, falling from 36% in 2014 to 17% in 2021 (Beleckienė, Kazlavickas and Palevič, 2022[11]). While the VET programme gives access to tertiary education, VET students face a disadvantage in accessing it. Entrance into tertiary programmes (including universities of applied sciences/colleges which are more vocationally oriented) is almost entirely based on the grade from the Matura state-level examinations. Few vocational students take these examinations and those that do tend to perform poorly compared to general students, as they dedicate less time to general content (NSA (National Education Agency), 2022[19]). Similarly, VET does not seem to give a significant advantage in entering the labour market compared to general education: among young people with upper secondary education as their highest level of attainment, the shares of employed vocational and general upper secondary graduates in 2021 were almost the same (83% for vocational graduates and 80% for general graduates) (OECD, 2022[3]). This is probably related to the low quality of the vocational programmes at upper secondary level which are not highly specialised and provide limited work-based learning and weak preparation in general content and in skills, such as communication and independent working (see Issue 2: Creating valued vocational pathways through upper secondary education).

In order to make vocational education a more attractive option to students, Lithuania could consider building clear options for progression out of upper secondary vocational education into further education by rewarding vocational qualifications for entrance into post-secondary vocational programmes (particularly at the new ISCED 5 level) and by building sequential programmes at ISCED levels 4 and 5

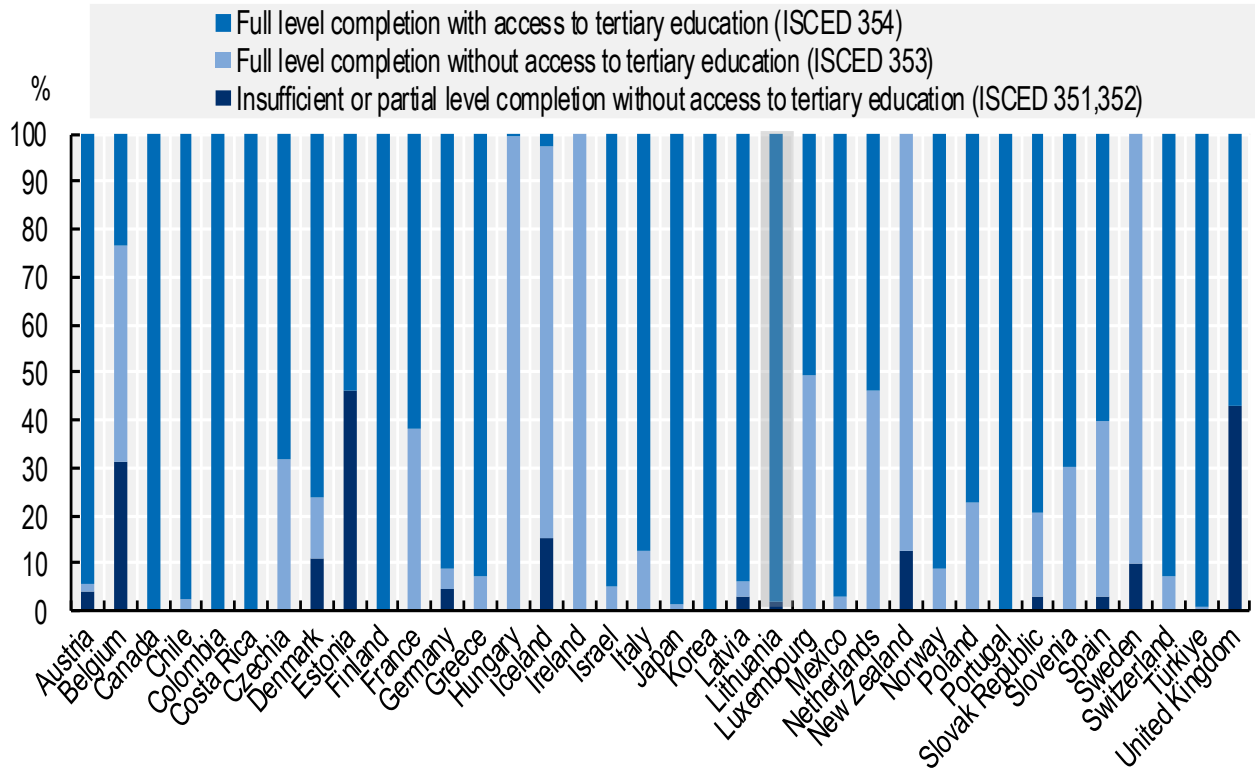
that allow students to build upon their qualifications and enhance their technical skills. At the same time, Lithuania will also need to consider improvements to the quality of upper secondary vocational education to ensure that its value is recognised by employers, creating a clear pathway for specialists to enter the labour market with strong VET skills. To do so, Lithuania could consider: 1) ensuring that vocational teachers receive high-quality and specific initial and continuous professional training; 2) attracting new and highly skilled teachers in VET schools; 3) increasing the involvement of employers in VET programmes; and 4) putting in place quality assurance mechanisms to monitor and collect data on the quality of work-based learning (WBL) and vocational programmes. These measures will need to be considered alongside suggestions to revisit the content of the vocational programmes to provide students with stronger foundations in both general and technical skills (see Issue 2: Creating valued vocational pathways through upper secondary education).

The current context of progression pathways out of upper secondary education in Lithuania

Access to tertiary education is open to all upper secondary graduates

After completion of upper secondary education, around half of the students in Lithuania enrol in tertiary education in Lithuania. In 2020, 50% of 20-year-olds were enrolled in tertiary education, compared to the OECD average of 39%. In the same year the rate of tertiary attainment among 25–34 year-olds was 58%, well above the OECD average of 47%. In Lithuania – as in around a third of OECD countries– almost all upper secondary graduates can access all tertiary programmes at ISCED Level 6 (Kis, forthcoming[47]). All learners in upper secondary in Lithuania can theoretically take the state Matura which enables them to access upper secondary education. Upon completion of upper secondary education, 94.1% of vocational upper secondary students in Lithuania have direct access to tertiary education, compared to the average of 73.7% across the OECD (Figure 3.5).

Figure 3.5. Distribution of students enrolled in upper secondary vocational education by type of vocational programme (2020)



Notes: Vocational programmes sufficient for level completion, with eligibility to tertiary (ISCED 354) include all vocational programmes insufficient for level completion, without direct access to tertiary education (ISCED 351).
Countries are ranked in descending order of the share of students' enrolment in upper secondary vocational programmes sufficient for level completion, with eligibility to tertiary education (ISCED 354).
Source: OECD (2022[3]), *Education at a Glance 2022: OECD Indicators*, https://doi.org/10.1787/3197152b-en.

StatLink https://stat.link/j6yckt

Until recently, selection into tertiary education was very difficult for upper secondary vocational students

Until 2022, students in Lithuania wishing to apply to tertiary education followed the same procedure for both bachelor's degrees provided in universities (ISECD 6) and vocationally oriented programmes provided in colleges (ISCED 5). If students wanted to be eligible for tertiary education, they were required to take state-level Matura examinations in at least three subjects, including Lithuanian and mathematics. However, vocational students typically opted for B-level courses which covered less content than the A-level courses that the state Matura examinations are based on. This choice reflected the fewer hours of general content that vocational students were required to take and the need to leave space for vocational content. However, compared to their peers enrolled in general education, it put them at a disadvantage for entering tertiary education. The high bar set by these requirements for vocational students to enter tertiary education was likely the central reason why very few vocational students used the pathway from vocational education into tertiary education. While the pathway was technically open, in practice it would have required additional learning time outside normal school hours to cover the examination content (see Chapter 4). In 2022,

57.8% of all general graduates in Lithuania entered a university or college, compared to only 1.7% of all upper secondary VET graduates (Table 3.3). More general students attempted to enter tertiary education, but the chances of admission were lower for vocational students, with five out of ten vocational students admitted, compared to almost nine out of ten general students.

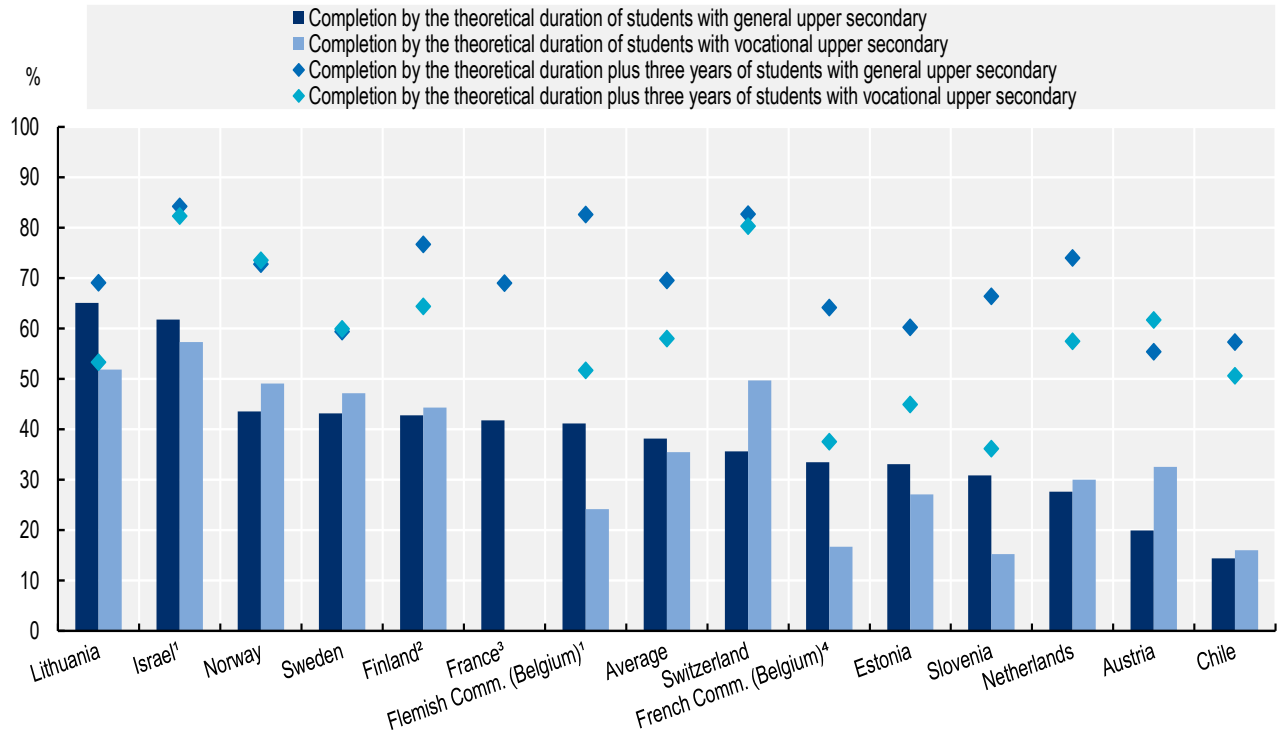
Table 3.3. Share of students who attempted to enter tertiary education and succeeded by programme orientation (2022)

	Upper secondary general graduates	Upper secondary vocational graduates
Attempted to enter tertiary education	66.9%	3.2%
Succeeded	57.8%	1.7%

Note: All shares refer to the total of general or vocational graduates.
Source: Beleckienė, Giedrė; Kazlavickas, Liutauras; Palevič, Mariuš (2022[11]), Vocational Education and Training in Lithuania 2021, Government Strategic Analysis Center (STRATA), https://strata.gov.lt/wp-content/uploads/2022/09/PMBA2021_EN_web.pdf.

Additionally, once upper secondary VET graduates enter tertiary education, they struggle to complete their studies compared to general graduates. Lithuania has the widest gap between vocational and general graduates in completion of tertiary education, with a difference of 13 percentage points, compared to 3 percentage points on average across OECD countries that provided the data (Figure 3.6). However, tertiary education completion rates by the theoretical duration of the programme in Lithuania are the highest for both general and vocational graduates, except for VET graduates in Israel.

Figure 3.6. Completion rate of full-time students who entered a bachelor's or equivalent programme, by students' upper secondary programme orientation (2017)



Notes: 1. Completion rate of students who entered a bachelor's programme does not include students who transferred to and graduated from short-cycle programmes. 2. If the student has completed both upper secondary general and vocational education or if the data on previous education is missing, the student is reported under upper secondary vocational. 3. Year of reference differs from 2017. Refer to the source table for details. Data on students from vocational upper secondary programmes have been withdrawn due to small sample size. 4. Data refer only to the *hautes écoles* (HE) and the *écoles des arts* (ESA), representing about 60% of entrants to bachelor's or equivalent programmes.
Countries and economies are ranked in descending order of completion rate by the theoretical duration of students with general upper secondary education.
Source: OECD (2019[68]), *Education at a Glance 2019: OECD Indicators*, Figure B5.2. https://doi.org/10.1787/f8d7880d-en.

In 2018, Lithuania decided to introduce short-cycle programmes (ISCED 5) at the tertiary level provided jointly by vocational schools and colleges (EURYDICE (European Education Information Network), 2022[45]). However, the provision of such programmes did not start until the academic year 2022/2023, as it was challenging for Lithuanian institutions to develop and implement a distinctive programme at this level and to attract students (OECD, 2023[69]). Since 2023, for the first time, the upper secondary vocational qualification will be required for entry into tertiary education, and work experience will be recognised. While grades from the A-level subjects and state-level Matura examinations will still be a requirement, grades from the B-level subjects and from the school level examinations will be considered for entry into ISCED 5 programmes. Students will also be required to pass the vocational examination and hold a vocational qualification. General graduates will no longer have direct access and will need to obtain an ISCED 4 qualification in order to enter an ISCED 5 programme. Also, professional experience will count for the first time, but only if it is relevant and lasted at least one year.

There is no clear difference and interaction between upper secondary (ISCED 3) and post-secondary (ISCED 4) VET programmes

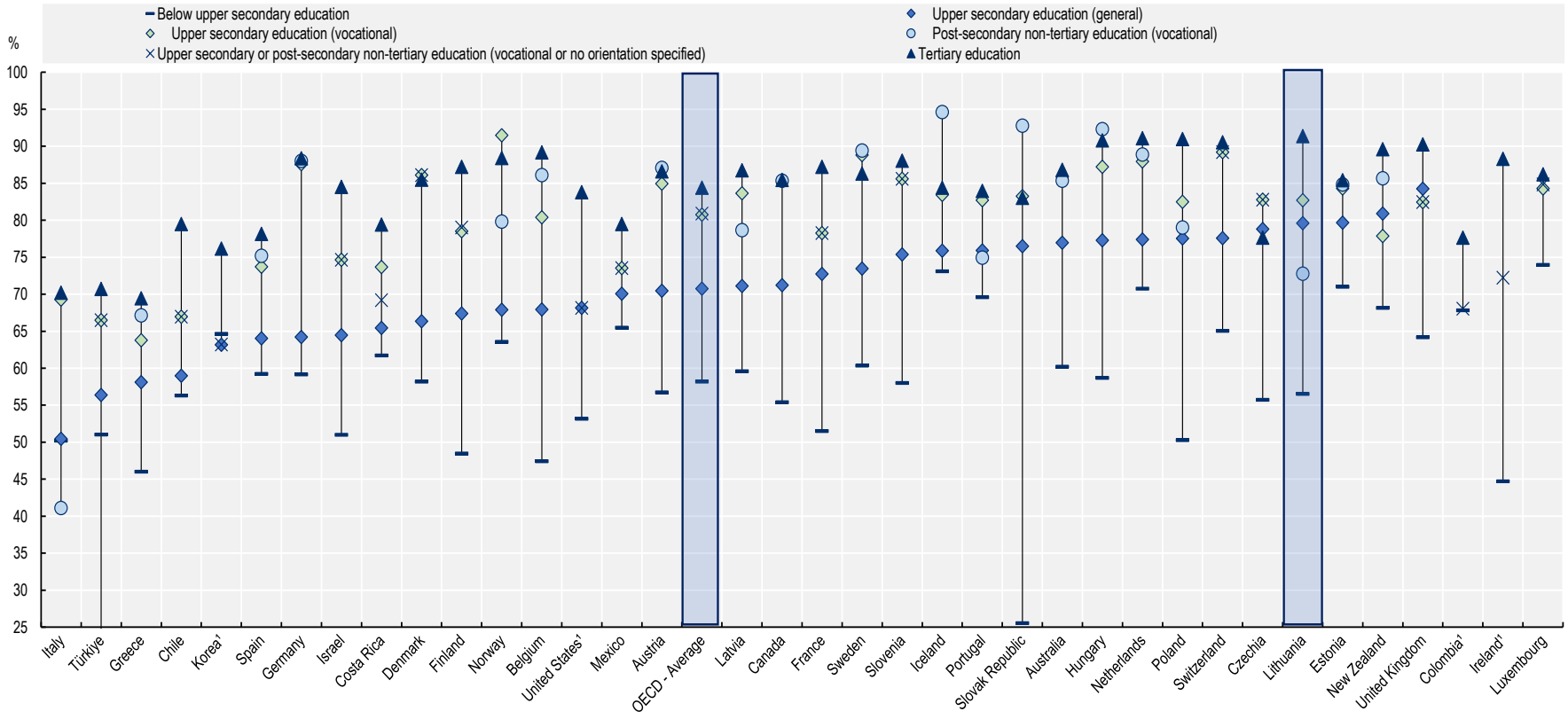
Building clear progression pathways for VET students is a fundamental step to improve their outcomes and the attractiveness of vocational education. Lithuania has already made an effort to improve vocational pathways, since it has recently introduced programmes at ISCED level 5. However, there are still significant challenges in the design and implementation of these programmes, as stakeholders also mentioned to the OECD team. Access to tertiary education for graduates from vocational post-secondary non-tertiary (ISCED 4) programmes is better than for those from vocational upper secondary programmes (ISCED 3): 41.3% of graduates from ISCED 4 programmes entered a tertiary programme in 2021 (Beleckienė, Kazlavickas and Palevič, 2022[11]). This result is surprising because there is no clear distinction between these two programmes. The main difference between graduates from ISCED 3 and ISCED 4 programmes is the place where graduates acquired upper secondary education. For ISCED 3 programmes, students attended a VET institution; for ISCED 4 programmes, students attended a general school and then moved to a VET institution, seeking a further qualification after having completed upper secondary education.

Upper secondary vocational qualifications do not provide an advantage in entering the labour market

Currently in Lithuania, the upper secondary vocational qualification does not give young people a significant advantage in entering the labour market. Unlike in most OECD countries, among young people with upper secondary education as their highest level of attainment, the employment rate of vocational graduates in 2021 was 83%, only 3 percentage points higher than the 80% employment rate of general graduates (Figure 3.7). In contrast, on average across the OECD, the employment rate of vocational graduates was 10 percentage points higher than that of general graduates and as much as 20 percentage points higher in countries with stronger VET systems, such as Austria, Germany and Italy (OECD, 2022[3]).

Outcomes of post-secondary non-tertiary (ISCED 4) graduates are lower than those of all upper secondary graduates, and Lithuania is one of only three OECD countries where post-secondary non-tertiary graduates have lower employment outcomes than general upper secondary graduates (Figure 3.7). National data shows that the employment rate of graduates from the ISCED 5 programmes in 2021 (63.4%) was 8.1 percentage points higher than that of upper secondary vocational graduates (Beleckienė, Kazlavickas and Palevič, 2022[11]).

Figure 3.7. Employment rates of 25–34 year-olds, by educational attainment and programme orientation (2021)



Notes: 1. Data on upper secondary or post-secondary non-tertiary education are not available for vocational education. When data on students who attained post-secondary non-tertiary vocational education are not available, joint data on students who attained upper secondary or post-secondary non-tertiary vocational education are used. *Countries are ranked in ascending order of the employment rate of 25–34 year-olds who attained general upper secondary education.*

Source: OECD (2022[3]), Education at a Glance 2022: OECD Indicators, https://doi.org/10.1787/3197152b-en.

VET teachers receive little training and few incentives

Recent analyses show that the need for a more capable and empowered teaching workforce has been a persistent challenge in Lithuania for decades (OECD, 2017[38]; OECD, 2021[6]). Two types of teachers work in vocational schools: general teachers, who can work in both general and vocational schools at the same time, and vocational teachers, who work exclusively in VET schools (OECD, 2017[38]). General teachers usually represent a minority in VET schools, around 30% of the total workforce (Vaitkut, 2016[70]). All teachers are required to have a tertiary education and a teacher qualification, regardless of which subject they teach. However, vocational teachers can also qualify by completing upper secondary education and vocational qualification, three years of work experience in their occupational area, and a 120-hour course on teaching and psychology delivered by accredited teacher development institutions within the first year of their teaching activity (Shewbridge et al., 2016[71]).

Initial teacher education (ITE) and continuous professional development (CPD) are regulated by the Ministry of Education and Science (MoES) with the aim of ensuring quality in vocational provision. All teachers are required to take continuing professional development and have at least five days a year to dedicate to it. VET schools are responsible for organising continuous vocational training and can use school funding for it. While almost all vocational teachers in Lithuania have a professional qualification in their area of specialisation, more than 40% have no prior relevant work experience (Vaitkut, 2016[70]), and about 30% of vocational teachers in 2015-16 lacked a pedagogical qualification (OECD, 2017[38]). While there is universal participation in professional development, 43% of teachers reported a lack of relevant training, compared to the OECD average of 38% (OECD, 2021[6]).

VET spending allocated to improving teacher qualifications has been reduced from 0.23% in 2017 to 0.15% in 2020 (Beleckienė, Kazlavickas and Palevič, 2022[11]). At the same time, more than half of all teachers in Lithuania in 2021 were aged 50 or above, making it more challenging for them to adjust to the changes in curricula and to new demands, such as the use of digital technologies (OECD, 2021[6]). The older age profile of teachers in Lithuania, compared to other OECD countries, reflects the limited attractiveness of a teaching career for youth and working professionals. This limited attractiveness of teaching also reflects broader challenges including reduced salaries (with the demographic trends and declining student numbers causing pressures on the school network and lower salaries for teachers), lack of support and limited opportunities for career progression incentives to excel. (OECD, 2021[6]).

The involvement of employers in VET programmes is weak

In Lithuania, employer and business associations engage in supporting school-based vocational education programmes by participating in the boards of VET schools, collaborating in the development of qualifications, and by participating in the assessment of VET students (OECD, 2017[38]). However, in practice the involvement of employers in the governance of VET institutions is lower than stipulated in national regulations. In 2018, employers were involved in the governance of only 15 out of 70 VET schools in Lithuania (Cedefop, 2019[72]; National Audit Office of the Republic of Lithuania, 2020[73]). While Lithuania established a network of 42 sectoral practical training centres in 2015 with the goal of raising the attractiveness of VET and improving the quality of practical training of VET students and teachers, employers' engagement in the training centres has been limited (National Audit Office of the Republic of Lithuania, 2020[73]). Stakeholders representing businesses also reported that the VET curriculum is not updated often enough to keep up with changes in the labour market and is not sufficiently driven by fast-changing business requirements (OECD, 2021[6]). Finally, industry professionals are not highly engaged in the teaching process in VET schools, although this could help students learn more about the latest practices and technology (OECD, 2021[6]).

The quality assurance system in VET is not strong

In Lithuania, the Qualifications and Vocational Education and Training Development Centre (KPMPC) is responsible for the development of standards and quality assurance of VET qualifications (OECD, 2017[38]). KPMPC is responsible for external quality assurance and establishes the procedures for development, modification, evaluation and validation of formal vocational training programmes for VET. While VET institutions are required to develop their own internal quality assurance mechanisms and self-evaluate, KPMPC provides methodological support in this regard. KPMPC has also developed mechanisms to support the ex-post monitoring of learning outcomes of formal vocational education through a set of questionnaires designed to measure the satisfaction of students, teachers, graduates and employers (KPMPC, 2020[74]). In contrast, general schools undergo external evaluations. The current arrangement means that there is no monitoring, internal or external, of the general teaching and learning in vocational schools.

Since Lithuania lacks a system and a consistent approach across vocational institutions to monitor the quality of school-based and work-based VET learning and collect data, it is challenging for policy makers to ensure that funds and policies in VET are directed effectively and efficiently (OECD, 2021[6]). The new compulsory state level examinations will provide some reliable and comparable information on the preparation of students on general subjects, but there will be no information on the level of preparedness in vocational education.

Policy options for designing pathways with clear and sequential progression out of upper secondary education

Granting direct access to tertiary education for all students that complete upper secondary education might, in principle help improve the attractiveness of vocational programmes as many students value the fact that they can keep many options open for the future when transitioning into upper secondary education (Kuczera and Jeon, 2019[12]). However, direct access on its own does not guarantee an easily accessible route to tertiary education for upper secondary vocational graduates (Kis, forthcoming[47]), as they might face additional requirements or struggle to complete their studies after entering. The following section discusses two policy options to help Lithuania create pathways out of upper secondary education and support VET graduates in the transition to higher levels of education and the labour market. It first discusses the importance of ensuring clear and sequential progression in VET by rewarding vocational qualifications and offering opportunities to build on previous studies or strengthen specific skills to meet entry requirements. It then explores options to improve the quality of vocational programmes to ensure that their value is recognised by employers. These options include ensuring vocational teachers receive high-quality training, attracting new and highly skilled teachers in VET schools, increasing the involvement of employers in VET programmes and implementing quality assurance mechanisms.

Option 3.a. Ensuring clear and diverse options of progression from upper secondary vocational education into further education

Providing upper secondary vocational graduates with pathways into both post-secondary education (including tertiary education) and high-quality employment helps to ensure that young people are able to access a range of valued options and to improve the perception of VET. While VET programmes are often mainly designed for direct entrance into the labour market, in many countries they also provide a route into higher levels of education, including post-secondary programmes leading to highly paid jobs (Kuczera and Jeon, 2019[12]). In Lithuania, since the employment rates for VET graduates in 2021 were 9 percentage points lower than for tertiary graduates (one of the largest differences among OECD countries) (OECD, 2022[3]), it is important to enable VET students to access higher levels of education, if they want to.

Even if all students in Lithuania have direct access to tertiary education, less than 2% of VET students transition to tertiary education (Beleckienė, Kazlavickas and Palevič, 2022[11]). This is explained, on the one hand by the fact that the admission mechanisms of tertiary institutions are based almost entirely on the Matura results, and on the other hand, by the lack of clear options for progression and alternative options to build upon previous studies and meet requirements. It is important to keep VET separate from general education and help it to develop a distinctive identity and ethos, so that it is not simply judged by the values of the academic track (Raffe et al., 2001[36]). Lithuania could consider rewarding more vocational qualifications and work experience in the process of admission for VET post-secondary programmes, both at the tertiary and non-tertiary level, while lowering the requirements for general education. It is also fundamental to ensure that all vocational students can build strong foundations in general content and have opportunities to engage with more complex content (if they want), by building strong links between upper secondary VET and post-secondary options. This can be done by carefully designing clear pathways with sequential options that can help students build upon their skills and by providing alternative options to strengthen foundations and general skills or meet requirements for entrance into higher levels.

Rewarding upper secondary vocational qualifications for entrance into tertiary education

Vocational systems can be made more attractive and beneficial to students if they provide secondary (and post-secondary non-tertiary) vocational students with an effective pathway to tertiary qualifications, including those with that provide higher VET offered by universities of applied science (or colleges in Lithuania) (OECD, 2017[38]). Cross-country experience also shows that upper secondary VET programmes with weak progression into post-secondary options tend not be attractive to either students or employers (Kuczera and Jeon, 2019[12]). In Denmark for example, weak opportunities for transition from apprenticeship to post-secondary education have been suggested as one cause of falling participation in youth apprenticeship programmes (Jørgensen, 2017[75]).

In Lithuania, upper secondary graduates from vocational education can access tertiary education, provided by colleges or universities. To date however, few upper secondary graduates follow this pathway, with only about 1-2% of vocational graduates entering tertiary education directly after completing their vocational programme in recent years (OECD, 2017[38]). According to Lithuania's national statistics, in 2015 only 0.5% of vocational students entered tertiary education in vocationally oriented colleges (ISCED 5) and 0.4% in universities providing bachelor's and master's degrees (ISCED 6) (Beleckienė, Kazlavickas and Palevič, 2022[11]). This is explained, partly, by the tertiary admission system that is entirely based on the state Matura results in general subjects, for which VET students receive less preparation (see Issue 2: Creating valued vocational pathways through upper secondary education). However, recent changes that will require a VET qualification in the selection to ISCED 5 programmes should help to facilitate access to VET tertiary options for graduates from upper secondary VET.

In many OECD countries, higher VET is often provided at ISCED level 5. While these short courses are often initially designed for students with a vocational orientation or experience from upper secondary education, it is common among OECD countries that VET graduates compete for entry to vocationally oriented tertiary programmes with those coming from general programmes (OECD, 2020[76]). This is why it is important to recognise the value of vocational qualifications in the admission process, to facilitate transition from upper secondary VET to post-secondary programmes, while ensuring that there is a sufficient supply of vocational options at the tertiary level. With the new reform, Lithuania will reward vocational qualifications, as it will require VET for entrance into the ISCED 5 programmes (see Chapter 2). However, stakeholders reported to the OECD team that the general education requirements are still quite high, especially for VET students. Lithuania could consider revising the admission criteria for post-secondary options to facilitate entrance for VET students, while ensuring that they have the minimum level of skills needed to succeed in these programmes.

Stakeholders also reported that restricting access to ISCED 5 programmes to general students could potentially cause a drop in enrolment, as not many students attain upper secondary vocational education and not all of them wish to pursue an ISCED 5 qualification. To improve the quality of short-cycle programmes, it is fundamental to expand participation. In addition, while this new reform represents an effort to reward vocational qualifications, there is a risk that these programmes will be perceived as an easier and less attractive option. Internationally, it is rare to restrict access to general graduates, and countries tend to use alternative strategies to help vocational students progress into tertiary education. Access can be restricted to students with the relevant VET qualification when programmes require essential prior knowledge and skills, as is the case in Switzerland, where a relevant vocational upper secondary qualification is a prerequisite for entering a professional education and training college or taking a professional examination (Kis, forthcoming[47]). Instead of requiring a vocational qualification, Lithuania could encourage tertiary education institutions to reward it (Field and Guez, 2018[77]) with some incentives, such as the following:

- Vocational students could be given priority to access specific programmes that build on their previous studies. For example, students applying to an ISCED 5 programme in the same field as their upper secondary VET qualification could receive additional points.
- Efforts could be made to ensure that upper secondary VET students are able to access ISCED 5 programmes and are not crowded out by graduates from general education. For example, a share of state-funded places in ISCED 5 institutions could be reserved for vocational students to encourage them to pursue higher levels of education.

Creating ISCED 4 as a clear option for progression and a sequential programme from ISCED 3

Employment in high-skill occupations is expected to continue to increase at a faster pace than in medium-skill occupations. This implies that there will be an increased need for higher-level vocationally oriented qualifications (at ISCED level 5 and above) and for easy pathways between medium-level VET and these higher-level qualifications (Vandeweyer and Verhagen, 2020[37]). As a response, many countries introduced post-secondary vocational programmes that enable VET students to develop more advanced technical and professional skills and acquire additional skills (Kuczera and Jeon, 2019[12]). In addition to helping meet the demand for high-level skills, effective pathways can help increase the attractiveness of VET, support lifelong learning, reduce inequalities and promote social inclusion and mobility (Field and Guez, 2018[77]). In Germany and the Netherlands, where there is a strong and clear articulation between upper secondary and post-secondary VET programmes, upper secondary VET graduates represent more than 30% of all students in post-secondary VET (Kuczera and Jeon, 2019[12]).

Lithuania could consider creating a clear option for progression and sequential programmes from upper secondary VET to post-secondary non-tertiary education (OECD, 2023[69]). In the current system there is no clear distinction between ISCED 3 and ISCED 4 vocational qualifications. Clear and sequential progressions could be built by providing students the option to top up an ISCED 3 programme with an ISCED 4 and/or ISCED 5 programme that then can be followed by an ISCED 6 programme in a college. Lithuania could carefully consider the role and design of ISCED 4 programmes to help both vocational and general upper secondary students progress to higher levels of education.

Even if countries have opened access to post-secondary education to VET graduates and to people with work experience, the actual use of this non-traditional access route is still relatively low (Cedefop (2019), 2019[78]). In practice, many barriers hinder smooth pathways between mid-level VET and higher levels of education, including fragmented education systems with limited transparency. When building pathways for progression, Lithuania should make sure that the content and level of VET programmes is clear for all stakeholders involved. This requires the development of a clear national qualifications framework that

allows for an easy mapping of VET qualifications and the provision of relevant career guidance (Field and Guez, 2018[77]).

Creating alternative pathways for progression for students who do not have access or need additional support

When providing diverse options in upper secondary VET, many countries provide two types of programmes, one with integrated academic content that typically includes some vocational training and leads to a qualification that gives eligibility to tertiary education and another that offers more work-based training and may not automatically offer eligibility for tertiary education (see Issue 2: Creating valued vocational pathways through upper secondary education). For students graduating from these programmes who wish to continue into higher-level programmes, countries usually offer alternative programmes or options to take additional academic courses or qualifications. The discussion in Issues 1 and 2 suggested how Lithuania might revise its upper secondary VET pathway to create these two distinct options. A consequence of this change would be the need to reconsider pathways out of the new upper secondary VET programmes. As in most countries, the more school-based option might provide direct access to tertiary education, in particular at ISCED level 5, where selection would recognise VET qualifications (see above). On the contrary, the more work-based option might not provide direct access to tertiary education but could be connected to different post-secondary non-tertiary education options (ISCED 4).

In some countries, where VET students do not have direct access to tertiary education, post-secondary non-tertiary programmes (ISCED 4 programmes) are commonly used to bridge upper secondary VET to tertiary programmes (UNESCO Institute for Statistics, 2012[79]), such as the college preparation programmes in Canada or the programmes leading to a university or university of applied sciences entrance qualification in Germany (Kis, forthcoming[47]). Lithuania could strengthen its post-secondary non-tertiary education (ISCED 4) so that it becomes a real pathway for vocational graduates from the work-based option to either build on their skills or enter tertiary education. At the same time, ISCED 4 programmes could be designed for general students who are interested in acquiring relevant vocational skills and then entering the labour market or accessing an ISCED 5 programme.

Since vocational students need to dedicate their time both to vocational and general content, getting the same academic preparation as general students might require extra time or effort. For this reason, drop-out in tertiary education among VET students is a common issue among OECD countries (OECD, 2019[68]). Lithuania could consider establishing support measures or additional options for entry into tertiary education embedded in the upper secondary vocational programmes to give VET graduates opportunities to fill potential gaps in their knowledge or skills and help them to succeed. In the Netherlands, upper secondary (MBO) VET institutions provide extra lessons or additional projects to support the transition of VET graduates into post-secondary programmes (Field and Guez, 2018[77]). In Switzerland and Norway, students following the apprenticeship programme may opt to take additional academic courses, designed specifically for VET students to qualify for entry into tertiary education (Kuczera and Jeon, 2019[12]; Cedefop, 2013[80]).

Ensuring students understand their options in upper secondary education and the consequences for the future

Providing more pathways and programmes needs to be accompanied by strong guidance, as students need to be aware of these options and their entrance requirements (see Issue 1: Reviewing students' transitions and orientation into upper secondary education and Issue 2: Creating valued vocational pathways through upper secondary education) (Vandeweyer and Verhagen, 2020[37]). It is also important to make students aware of the opportunities that higher levels of education offer and the consequences for their future when enrolling in specific programmes that might hamper their progression.

Option 3.b. Improving the quality of upper secondary vocational education to ensure that its value is recognised by employers

Compared to Lithuania, upper secondary VET in other OECD countries confers a considerably greater advantage for its graduates, both in the labour market and in tertiary education (OECD, 2022[3]). As a foundation for subsequent pathways, upper secondary VET programmes need to offer higher quality training, while reflecting the needs of the labour market (Field and Guez, 2018[77]). In order to make VET a more attractive pathway to students and employers and an effective option into higher levels of education, Lithuania will need to consider making the programme content and design more tightly focused on acquiring both strong foundational general skills and specific vocational skills. Revising the design of upper secondary VET will also require building in more space for WBL (see Issue 2: Creating valued vocational pathways through upper secondary education). These measures focused on the design of upper secondary vocational programmes will need to be completed by approaches to ensure that the quality of VET provision is high. First of all, Lithuania could consider ensuring that all VET teachers receive more high quality initial and continuous professional training in vocational skills and teaching. Incentives could also be developed to attract new, highly skilled individuals from vocational fields in VET schools. Increasing the involvement of employers in VET programmes would also contribute to strengthening the alignment between VET programmes and labour market needs to improve VET graduates' employment outcomes. Finally, Lithuania should put in place comparable quality assurance mechanisms across general and vocational upper secondary education, such as monitoring and collecting data, to ensure the quality of vocational programmes, including WBL.

Ensuring VET teachers receive high-quality preparation in pedagogy

Upper secondary VET in Lithuania is not promoting young people to acquire either strong foundational skills in general subjects or strong specific vocational skills. In addition to adapting the general content of VET programmes to provide more flexibility to cater to student needs, including providing greater academic support for those students who need it and allowing academically oriented students to pursue academically demanding programmes (see Issue 2: Creating valued vocational pathways through upper secondary education), raising the quality of teaching in general skills will likely provide students with a stronger basis in these transversal competencies to support progression into further education or the labour market.

Teachers in Lithuania do not seem to receive sufficient preparation in pedagogy. In particular, teachers of general subjects in VET schools do not receive any specific preparation to help them adapt their teaching approaches to the needs of their students. Younger teachers in Lithuania reported a lack of preparedness for teaching in some areas (OECD, 2019[81]). One challenge is the quality of ITE, which in Lithuania is focused on traditional subjects and curriculum content, with limited focus on the actual teaching process (Shewbridge et al., 2016[71]). Research has found that there is gap between teachers' theoretical and practical knowledge related to the limited time for trainee teachers' practice teaching (one semester) and the lack of current teachers' involvement in delivering ITE (Varanauskas, 2020[82]). In order to improve ITE, Lithuania could increase practical training and involve current teachers in the development of the study programmes (Varanauskas, 2020[82]). Given the recent changes in the curricula, Lithuania should also ensure that ITE prepares new teachers to teach the new social and emotional, cognitive, creativity, civic, cultural and communications skills and competences that students will need to develop (OECD, 2021[6]).

Specific modules during ITE might focus on differentiation and pedagogical approaches to help teachers identify and respond to the different needs and learning styles of their students. In particular, teachers of general content in the more work-focused VET option may have students who have experienced limited success with traditional approaches to teaching and learning in lower secondary education. To be able to best support those students, their teachers need to receive specific pedagogical training so that they can identify differences in students' learning styles and develop teaching approaches to create classrooms and activities that are inclusive for a range of different learners.

Attract new and highly skilled individuals with vocational skills into teaching

Despite many changes and reforms to the system, Lithuania has struggled to attract sufficient numbers of new candidates into the teaching profession. The attractiveness of the teaching profession overall is low, and the challenge is particularly acute in VET and STEM. Low enrolment in teaching programmes and few graduates entering the profession have contributed to teacher shortages in several fields of VET, for science, technology, engineering and mathematics (STEM) and in rural areas (OECD, 2021[6]). PIAAC showed that in Lithuania, high-performing students usually do not choose teaching as a profession, as it found that teachers' numeracy skills were lower than those of other tertiary graduates in Lithuania, as well as lower than the average level of teachers in other OECD member countries (OECD, 2016[39]). Lithuania has struggled in particular to attract and retain young teachers and teachers with strong pedagogical and professional qualifications and experience in lower secondary education, with similar findings very likely applying to VET. Almost 30% of lower secondary education teachers below the age of 51 in Lithuania stated 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[83]) While they are lower secondary education teachers, they likely provide a broad indication of sentiment across the teaching profession. Several factors have limited the attractiveness of the teaching profession to youth, teachers and professionals. The OECD Skills Strategy review developed specific recommendations for Lithuania to attract and empower teachers (OECD, 2021[6]). Among these, the most relevant for attracting more VET teachers include:

- Improving career progression opportunities by, for example, linking teachers' salaries to their responsibilities and performance rather than to tenure, and using pay increases or bonuses linked to appraisal processes (and potentially certification). Lithuania could also introduce systematic national financial incentives, for example in the student-funding formula, for teaching in subjects in which there are teacher shortages, such as STEM and VET, and in rural and disadvantaged schools.
- Developing and promoting diverse pathways for students and working professionals to become teachers. To increase the intake of skilled students and professionals into initial teacher training, in addition to academic achievement, selection processes could consider candidates' motivation, prior non-formal work experience, and skills and attitudes. Since from 2020 those studying to become teachers receive "motivation scholarships", Lithuania could target these scholarships to high-performing students and specialisations in which there are shortages (e.g. STEM and VET). The government could also actively promote teaching as a career using multimedia channels, as well as through expanded career guidance services.
- Creating more flexible ways to bring industry professionals into the classroom by, for example, inviting them to workshops or allowing them to teach only a limited number of hours per year or per week without becoming qualified teachers or providing them with opportunities to acquire teacher training in a flexible way while on the job. This requires strong engagement between VET schools and employers (see below).

Providing teachers with CPD to continually build their professional skills and knowledge

While all teachers theoretically participate in CPD, many teachers report that they are not always able to access relevant training (OECD, 2021[6]). Being able to access relevant CPD is particularly important for VET teachers to keep their industry knowledge and skills up to date with industry trends (OECD, 2021[63]). Lithuania could also introduce more innovative forms of professional development, especially for VET teachers. While traditional training in the form of courses or seminars can be effective (Hoban and Erickson, 2004[84]), school-embedded professional development, tends to have a larger impact on teaching practices and can significantly reduce the cost of training (OECD, 2021[6]).

Increasing the involvement of employers in VET programmes

Strong co-ordination between VET and the labour market encourages better understanding of how jobs and skill needs are changing and how VET programmes could be responsive to these changes. Strong involvement of employers in VET also facilitates the implementation of WBL (Vandeweyer and Verhagen, 2020[37]) and fosters innovation in VET programmes (Kuczera and Jeon, 2019[12]). Issue 2 has already discussed how to increase WBL in VET by creating financial and non-financial incentives for employers (see Issue 2: Creating valued vocational pathways through upper secondary education). Aside from WBL, employers and partners can be involved at different stages and in different processes of VET programmes, such as in curriculum design, application, and feedback phases (KOF Swiss Economic Institute, 2016[85]). Evidence shows that when looking at the different processes in which employers can be involved, the main features of VET in top performing countries are that employers are involved in:

- setting qualification standards
- deciding when a curriculum or qualification update is needed
- determining the design and content of assessment for qualification (Vandeweyer and Verhagen, 2020[37]).

Lithuania could consider how it can enhance the involvement of employers in some or all of these aspects when developing and updating vocational programmes. This co-ordination between the VET system and employers can happen at different levels and be organised in various ways. Effective arrangements should enable social partners to provide their input into vocational programmes regularly, in a timely manner and in all relevant areas (Kuczera and Jeon, 2019[12]). Among OECD countries it is common to introduce bodies responsible for bringing together key stakeholders within each sector to identify their specific skill needs and then coordinate with the education system (Vandeweyer and Verhagen, 2020[37]). Lithuania could introduce such bodies for improving the design of vocational programmes and could use the existing network of practical training centres to engage with local employers to help students find an apprenticeship and expand WBL. In the United Kingdom, for example, the Greater Manchester city region created an Apprenticeships Hub that aims to improve information and guidance services for young people, build capacity among education providers and engage employers (OECD/ILO, 2017[86]).

Improving and expanding the quality assurance system in VET

Since Lithuania does not have a consistent approach among institutions for monitoring the quality of WBL, it is challenging for policy makers to ensure that funds and policies in VET are directed effectively and efficiently. Lithuania could consider expanding existing administrative datasets with details on students' WBL activity to inform policy and ensure the quality of WBL. Lithuania could also start collecting additional data, such as administrative data from VET institutions on the quantity and type of WBL undertaken by students, to better inform policy in this field. Then the quality assurance agencies responsible for VET could develop and implement a framework for monitoring the quality of WBL as part of their activities (OECD, 2021[6]).

Lithuania also needs to take steps to ensure that quality assurance of VET programmes is comparable to the current measures for general education. Quality assurance of the vocational content of VET programmes might focus on reviewing and helping vocational schools to collect and monitor regular indicators on student outcomes, such as progression into post-secondary education and employment, as part of their own self-evaluation. The framework might include other quality indicators, such as the share of teachers with relevant work experience in the VET field that they are teaching and the average hours of CPD that teachers have engaged in over the past year. It is imperative to take steps to ensure that there is oversight of the quality of teaching for general subjects in VET schools, which does not currently appear to be the case. Given the fundamental importance of foundational skills for the future work, education and life opportunities of VET students, the Ministry needs to make it a priority to ensure that quality assurance mechanisms are in place. This is also crucial to send the message across the education system about the importance of both vocational and general education.

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Notes

[1] In some countries such as Austria, Germany and the Netherlands where a high share of students does not transition at the expect time to a large extent this just reflects the design and structure of the education systems, particularly the longer length of certain educational programmes, notably vocational.

4 Consolidating Lithuania's upper secondary certification to meet learners' diverse needs and promote higher-order, complex learning

Lithuania's upper secondary certification – the Matura – transformed teaching and learning when it was introduced, by providing a trusted, reliable and objective measure of student achievement. A decade later, while the Matura continues to be a respected national institution, the country is reviewing its design so that it consistently promotes higher-order skills for all students. This chapter considers three key issues in the Matura – item development and analysis; assessing a broader range of skills in reliable and valid ways; and providing greater flexibility to be responsive to learners' personalised pathways. Each issue is presented first in terms of the wider context that influences the issue, followed by options that provide recommendations for the country to consider.

Introduction

The Matura is a respected and highly valued national certification in Lithuania. Its introduction over a decade ago radically changed young people's experiences at the end of upper secondary education by introducing a single examination for upper secondary certification and tertiary entry, promoting fairness and reliability. Today however, there are national concerns that the Matura items are predicable, tend to assess knowledge reproduction over competencies and are not particularly engaging or stimulating. These challenges are particularly acute as the country has started to implement a new curriculum which is explicitly oriented towards competency development. Evidence and experience from countries internationally consistently highlights that aligning certification and assessment with the curriculum is essential if the curriculum on paper is to become the curriculum that students learn in classrooms (OECD, 2013[1]). This concern is especially prevalent in upper secondary education, where the stakes attached to upper secondary certification mean that assessment at this level invariably influences to a large extent where and how teachers and students focus their time and energy in the final phase of schooling.

This chapter presents three issues and related policy options to help Lithuania create a more engaging certification that effectively assesses the competencies that young people need for future success in post-secondary education and employment. It discusses how Lithuania can encourage the development of high-quality assessment items as well as medium to longer term processes to consolidate national assessment expertise and promote a Matura that remains fit for purpose over the long term. Issue 2 focuses on alternative types of assessment in the Matura such as projects, performances, investigations and extended essays. It discusses how the reliability and take-up of the existing project within the Matura could be supported as well as suggesting other types of alternative assessments that could be introduced in the future to promote a broader range of competency acquisition. Finally, Issue 3 discusses how the Matura can promote greater flexibility and options so that it is responsive to a broad range of prior learning – candidates may have studied different content such as general or vocational and different subjects – and supports student access and selection to a diverse range of future pathways.

Issue 1. Supporting continual improvement and high-quality assessment

When the Matura was introduced in 1998, it was a major step change in certification of upper secondary education and tertiary selection in Lithuania. It introduced a common examination for all young people seeking to enter tertiary education, ensuring objectivity and fairness for selection into tertiary education and ending the variability in entrance requirements across different tertiary institutions that had existed previously (OECD, 2017[2]). Stakeholders reported to the OECD team that when the state Matura examinations were first introduced, they were perceived to be innovative, engaging and assessing higher-order, complex skills.

In 2022, at the time of the OECD team's visit to Lithuania, stakeholders expressed several challenges related to the Matura examinations. In 2022, there was a dramatic and unexpected fall in the results for the state Matura in mathematics, with 35% of candidates failing the examination (Nacionalinė švietimo agentūra, 2022[3]). This created challenges for managing entry to tertiary education since passing the state Matura in mathematics is a requirement for tertiary selection. In the OECD's workshops with teachers and students in 2022, both groups expressed the view that the Matura was not assessing what learners could do and was dominated by the assessment of knowledge recall (see Chapter 1). Students also shared the perception that the Matura items are predictable and rarely engaging.

The country is planning to implement wide-ranging reforms to the Matura (see Chapter 1). This issue considers how Lithuania can develop a clear, nationally relevant vision for the Matura so that the planned reforms are able to effectively address some of current challenges that are associated with it.

The current context: design, development and analysis of Matura items

Design and specification

Item developers for Lithuania's Matura examinations are currently guided by syllabus documents for subject courses when developing items. However, there is no document or guidance that specifies the expected relationship between the curriculum and the Matura such as an examination specification. Clear specification of what the examination is designed to assess provides important guidance to guide item developers towards identifying and creating the most appropriate type of item to assess the competencies to be assessed. It also sets the expectations to drive analysis and evaluation of the Matura results so that the examination agency can assess how far the examination fulfilled its agreed purposes. With the implementation of the new curriculum in 2022, national experts in the examination team in the National Agency for Education are working with the country's curriculum officials to develop examination specifications for future versions of the Matura.

Item development

The Matura's items are developed by national experts that are contracted by the National Agency every year. Experts developing the items tend to be subject, rather than assessment, experts. The experts are typically from the school network or tertiary institutions although Lithuania does not currently have any institutions that provide courses or programmes on assessment specifically. Once the new items have been developed, a separate group of experts reviews the tasks.

Tasks

All the tasks on the state Matura examinations are pen and paper-based, aside from oral examinations in foreign languages (see Issue 2). Items tend to include a combination of selected-answer multiple-choice questions, short-answer closed responses and some open-ended questions, such as essay writing on the Lithuania language and literature paper. Currently, digital technologies are only used for marking scripts. Under the planned reforms to the Matura, the intermediate examinations that students take at the end of Grade 11 will be delivered digitally.

Results

Students taking the state Matura receive one of four grades: fail (15 marks and below); satisfactory (16-35 marks); basic (36-85 marks) and advanced (86-100 marks). In Lithuania, the marks required to pass the examination and the cut-off marks between the grade boundaries are the same every year and are set out in the examination programme. This means that every year candidates need 16 marks for a pass mark and 35 marks for a basic grade in all subjects. The grade thresholds are set out in the new examination specifications.

Over the past five years, the results in most subjects have tended to be stable (Table 4.1) with the exception of mathematics. Results in mathematics fell dramatically in 2020 in the context of the COVID-19 pandemic. Results also fell significantly in 2022. The causes of the 2022 fall in results as well as the consequences for the education system and the Matura were the subject of significant national discussion at the time of the OECD team's visit to Lithuania in October 2022. Further back, there has been a general decline in mathematics results since 2016, when tertiary institutions made the state Matura examination in mathematics a compulsory requirement for tertiary entry.

Table 4.1. State Matura examination results, 2018-2022

	2022		2021		2020		2019		2018	
	Entries	Pass Rate	Entries	Pass Rate	Entries	Pass Rate	Entries	Pass Rate	Entries	Pass Rate
Mathematics	14 418	64.6%	15 149	84.8%	15 241	67.6%	16 487	82.1%	17 043	87.2%
Lithuanian Language and Literature	16 822	92.2%	16 660	91.4%	17 243	89.3%	17 904	90.8%	18 602	91.3%
English Language	17 622	98.37%	18 107	97.92%	18 022	99.0%	19 155	97.9%	20 633	99.1%
History	7 533	99.2%	8 490	98.7%	8 458	99.8%	8 510	98.8%	10 023	95.3%
Geography	3 842	99.2%	3 346	98.0%	3 203	99.0%	2 727	96.2%	3 849	96.2%
Biology	5 752	96.2%	5 582	97.2%	5 404	97.7%	5 786	97.6%	6 344	98.7%
Physics	1 898	97.2%	1 951	97.0%	2 050	94.7%	2 371	96.8%	2 506	97.7%
Chemistry	915	96.4%	996	94.6%	1 069	97.4%	1 263	97.8%	1 385	98.5%

Source: Nacionalinė švietimo agentūra (2022[3]), Rezultatų analizės, https://www.nsa.smm.lt/egzaminai-ir-pasiekimu-patikrinimai/brandos-egzaminai/rezultatai/ (accessed on 28 February 2023).

Analysis of results

Each year, the examination team in the National Agency for Education produces a range of analysis on the Matura results by subjects. The analysis includes:

- Matura entries disaggregated by gender, type of school, school location, minority language, etc.
- Matura results disaggregated by gender, type of school, school location, minority language, etc.
- Distribution of student marks.
- Analysis of individual item including the mean, standard deviation, facility index and discrimination index, intended and achieved weighting.

The analysis is shared with item developers. Schools also receive a report on the performance of their school compared with the national and regional averages.

Policy options for supporting continual improvement and high-quality assessment

The section below discusses three options for Lithuania to consider creating a national system that promotes independent assessment expertise and drive a Matura that is based on high-quality assessment. The options also suggest steps for Lithuania to put in place processes that will encourage continual improvement of assessment practice and the Matura over time.

Option 1.a. Supporting the developers of the Matura to produce high-quality items that fulfil their purpose

This option considers how the development of the Matura can be designed and supported so that the system is able to produce quality items that reflect the new demands set out in the country's curriculum. It discusses the support and guidance that is provided at the start of the item development process and how the system can be supported to exploit assessment research and analysis to drive continual improvements.

Developing clear specifications to guide item development and teaching and learning

Specifications for certifications such as the Matura are essential to set out for item writers what should be included in an assessment. In conjunction with other documents, they help to guide an assessment's

development to help ensure that it is a valid assessment of what is set out in the curriculum. Specifications also have important functions for other stakeholders. For teachers, they set out what they need to know about a certification including what the assessment will cover. For students and parents, they help them to understand what a certification covers.

The new specifications that Lithuania is developing for its new Matura examinations will serve a critical function to help item developers, teachers and students develop a common understanding of what the revised examinations will be based on, in line with the implementation of the new curriculum. Given the role of the new specifications and the different audiences that they will serve some important features of examination specifications include:

- A common template across subjects – so that teachers and learners can identify commonalities in the assessment across different subjects.
- Readability - written in plain language, formatted so that they are easy to read and navigate, with a combination of summary sections and details.
- A clear and succinct summary upfront if possible – which is easily understandable by students and their parents.
- All the necessary detail that teachers need to be able to teach the course and explain to students how it will be assessed.

Lithuania's new specifications for the Matura subjects seem to fulfil many of these features. They will be based on the curriculum and will describe the nature of an item task (e.g. closed answer item), the skills to be assessed, number of marks, the time that candidates will have to complete the task, cognitive areas being assessed, distribution of points by level of achievement and how and by whom the candidates performance will be assessed (National Agency of Education, 2022[4]). However, while the new specifications are useful, item writers and teachers will need to know more about the level of skill to be demonstrated at different levels e.g. basic, general and advanced, the types of command words (e.g. analyse or evaluate) that will be used for different levels, and some indication of what would distinguish an appropriate level of response at each level. Currently in the specification, the breakdown of how items will cover knowledge and understanding, application and higher thinking skills in the Writing task is the same for both the General and the Advanced Level. For example, in the Writing task from the Lithuanian language and literature specification, the specification does not provide guidance around how to interpret command words like "analyse" and "discuss" or the level of skill to be demonstrated at the General level compared with the Advanced Level (National Agency of Education, 2022[4]). Greater explanation of the broader learning aims and objectives (either within the specifications or in an accompanying document) could support teachers as they implement the new curriculum. Providing this broader articulation of learning objectives in the specification is important to help avoid narrow teaching focused on examination content.

It also should be noted that specifications are usually complemented by a suite of support and guidance documents, and training events for teachers. For item writers specifically, as well as specifications they are normally supported by more detailed documents to guide them in the development of items. These documents direct the team of item writers to ensure that all course content is sampled over time, without becoming predictable. This more detailed specification or blueprint of the assessment might include broad parameters for each item including the specification / syllabus content to be assessed; the predicted level of demand; the type of question to be used; and the skills to be assessed. Lithuania could consider developing documents, resources and training for the specifications that provide greater detail on the requirements and levels of skill to be demonstrated across different levels of achievement, and separately, more information on the broader learning objectives that the Matura is assessing.

Supporting the examinations team in the National Agency of Education as custodians of the national standards set out in the specifications

A challenge in many countries in the development of items is effectively managing the output of the subject specialists who develop the items. Subject specialists developing items often are and should be, nationally respected experts in their subject. However, this can make it difficult for examination bodies to raise questions about items if there are concerns that they do not accurately reflect the specification. Examination and qualifications bodies might use governance arrangements as well as their policies and procedures to clearly state their responsibilities for maintaining the quality and standards of items and papers.

It is important the examinations team in the National Agency has and exercises its powers to ensure that the national specifications are appropriately implemented in each assessment event and across subjects – to ensure that item developers respect the national specifications rather than individual ideas about what should be assessed – and more fundamentally to maintain standards. These responsibilities and processes might be set out in national law or a policy document. For example, the Welsh qualifications body, WJEC, clearly sets out that the WJEC strategic management team and Board of Directors are responsible for putting in place appropriate procedures to ensure that standards are maintained in each subject examined from year to year (WJEC, 2018[5]).

Examination bodies might also use a collective review procedure to scrutinise and approve items from each subject to ensure that they reflect what is in the specification and to maintain standards. This body might include both subject specialists and representatives from the National Agency for Education to ensure that its policies and practices are respected. As part of the item and paper development process, the Welsh qualifications body, WJEC forms a committee that includes the chief examiners and WJEC staff. The committee is responsible for reviewing papers to ensure that the challenge and level of demand are maintained over years and that papers meet the requirements of the assessment criteria as set out in the specification and that they are of consistently high-quality (WJEC, 2018[5]).

Ensuring that the results of technical analysis are used to drive improvements

The most immediate and regular stage of review and evaluation in an assessment system is the on-going technical review of how an assessment functions at each assessment event. In the case of Lithuania, this refers to the technical analysis of items and results after students have taken the state Matura each year. This kind of review aims to assess how far an assessment is fulfilling its purposes and how far individual assessments across each subject are doing what is set out in the specification.

Typically, examination agencies will develop technical analysis across all subjects every year or following each assessment series to see how far the assessment performed its intended functions. This tends to include analysis of overall papers and analysis of individual items in the papers. Analysis generally tends to cover the following categories:

- Data on entries and across a range of student categories - such as gender, type of school, subject.
- Distribution of student marks- including mean mark and mark distributions by both item and paper.
- Analysis of individual item including mean, standard deviation, facility index and discrimination index, intended and achieved weighting.
- Bespoke analysis of items and papers - such as MCQ distractor analysis.
- A report by subject on each examination.

Lithuania already produces much of this analysis. In the future, the examinations teams in the National Agency for Education could consider what other sources of data it has access to, perhaps from other government bodies, and might be able to integrate into its analysis, either systematically or as ad-hoc research (see Option 1.b. Developing continuous review, research and evaluation to ensure that the

Matura remains fit for purpose). In some countries for example, examination bodies might use proxy indicators of socio-economic background that are collected by other government bodies or other information about students from national databases.

More immediately however, the examinations team in the National Agency might consider more supports for stakeholders to use the results from their existing analysis. Items writers and those working on examination development need support and guidance to be able to interpret results and use data from technical analysis so that it feeds into the development of future papers. For example, guidance might include information about how to interpret each category of data. This might set out what the information complied in national reports means, and how it can be interpreted including what a low or a high value signifies for an item, paper or examination. This kind of information is likely to be particularly important for item writers who are not statisticians or even necessarily familiar with statistical analysis.

Introducing adjustments to promote consistent standards from year to year

Internationally, most examination systems aim to maintain standards over time, so that an “A” or “20/20” grade awarded one year, equates to approximately the same standards the following year. This helps an education system to monitor standards over time and is essential for the credibility of an examination and its associated qualification (Baird et al., 2018[6]).

In Lithuania, the cut or boundary marks to achieve a given grade – pass, basic, general or advanced - remain the same each year. This approach makes it challenging to maintain standards over time because while item developers predict the level of demand or difficulty of a particular item when it is developed, in reality, candidates might find the item harder or easier than expected. Cumulatively, across a paper this means that examinations vary in terms of difficulty over years. At present, Lithuania does not seem to have a system to manage this variation. It might be one of the factors that led to the dramatic decline in mathematics results in 2022 – the paper may have been significantly more difficult than in previous years. In other subjects in Lithuania, the results seem fairly consistent over years (Table 4.1). Since this kind of stability is very difficult to achieve without any kind of adjustment process, this might reflect that the examinations in other subjects are highly predictable. The high predictably of the examinations was one of the concerns that students and teachers reported to the OECD Review team.

In order to avoid a situation where examination items are either highly predictable or there are dramatic changes in results between years, many examination systems use specific procedures to maintain standards over time (Baird et al., 2018[6]). These different approaches tend use qualitative information, like reviewing scripts from different candidates across the ability range and over previous years and quantitative information, such as statistics on the grade distribution from current and previous years. Some systems such as Ireland and England (United Kingdom) combine both quantitative and qualitative information:

- Ireland’s Leaving Certificate uses a similar approach to Lithuania whereby each grade corresponds to a pre-determined percentage rank of marks obtained (e.g. a Grade 4 is always related to a mark between 60-69%). Since it is impossible to ensure that the examination questions in a given year will be identical in demand compared to a previous year, Ireland has embedded a standard-setting process in the marking process. As marking is being undertaken, the distribution of results are compared with statistics from previous years’ results. If marking indicates that a distribution considered inappropriate in comparison with previous results is being observed, adjustments are made to the marking scheme to achieve changes in the distribution of raw marks and subsequent grades (Baird et al., 2018[6]).
- In contrast in England, for the two sets of main upper secondary examinations – GCSEs and A-Levels – the boundary or cut marks are adjusted for each examination event, in a process known as awarding. After the examination scripts have been marked, an Awarding committee that includes the main examiners for the specific subject meet to scrutinise scripts and recommend

grade boundaries for specific grades, often those at the top and bottom. The Awarding committee draws on their professional judgement of the quality of the current students' work in this year's scripts compared to previous years, accounting for changes in demand in the paper, and statistical data showing how the marks awarded in the current examination compare with those awarded in previous years (AQA, n.d.[7]).

Lithuania might draw on these models as well as those of other countries to develop its own model for adjusting the natural variance of examination papers' difficulty over years. A specific challenge in Lithuania of introducing a new approach is that schools and students may feel that, in contrast to the current system, any new system that introduces adjustments to marking or cut scores after candidates have completed their examinations might make it less clear what a candidate must demonstrate to achieve a given mark. This makes the suggestions in Option 1.a. around providing greater clarity about what is required to achieve different performance marks in the examination specifications even more important (see Option 1.a. Supporting the developers of the Matura to produce high-quality items that fulfil their purpose).

Using the technical review process, as well as continuous review, to develop engaging items that assess competencies

Lithuania can use the process of technical review as well as continuous review to identify where there is scope to introduce new types of items and improve existing items. Lithuania might also consider developing national research on items, perhaps by sampling items across all subjects to review them against a series of nationally agreed research questions. Leading this work from the National Examination Centre would also contribute to its reputation as a centre of excellence and expertise in assessment. These questions might include:

- How far are current questions assessing a good mix of skills, including both knowledge recall and higher-order, more complex skills as set out in the curriculum and subject specifications? Lithuania might start with this question in preparation for the introduction of the new curriculum to review how far the current Matura items are assessing the competencies in the new curriculum. This review would enable the examinations team in the National Agency for Education to identify if there is a need to progressively introduce more items that explicitly aim to assess complex skills and competencies.
- Ensuring consistency in terms of the type and mix of skills that are assessed across different subject papers. Stakeholders reported a perception to the OECD team that papers in some subjects such as foreign languages and English tend to focus more on complex skills than others, such as history where there is greater emphasis on knowledge recall by testing facts and dates.
- How far do items and sources use up-to-date materials that reflect young people's experiences and which are interesting and engaging? Stakeholders, in particular students, reported to the OECD team that the items in the Matura tended not to be especially interesting and stimulating. Reviewing items with this question in mind could help to identify opportunities to use more modern questions and source materials that are engaging for young people.
- Analysing the achievement of different groups of students on the Matura to explore equity. Researching the performance of different groups of students such as those in rural and urban schools, in gymnasia (general school) and vocational schools, potentially requesting proxy data on socio-economic background and analysing the achievement across different groups.

Option 1.b. Developing continuous review, research and evaluation to ensure that the Matura remains fit for purpose

Like many upper secondary systems internationally, the Matura in Lithuania is the subject of significant national debate in society and at the political level. This context puts considerable pressure on the Matura

system to respond to several challenges – notably the dramatic fall in mathematics results in 2022 and the examination's perceived emphasis on knowledge recall rather than higher-order skills – and to introduce wide-ranging reforms. In this context, developing the independence of the Matura as an assessment instrument – and the body that is responsible for it, the examinations team in the National Agency - is critical so that reforms are based on objective evidence and analysis. This section considers how Lithuania can use the opportunity of the introduction of a new curriculum to engage in more research, independent review and evaluation to develop an independent assessment culture and ultimately to drive high-quality assessment.

Undertaking reforms as part of an established review and evaluation cycle

A qualifications and assessment system should reflect the needs and the context in which it operates. Within a national or federal system, and more broadly across jurisdictions and nations, social, cultural, economic, technological and policy contexts will change. It would be unreasonable, for example, to expect a certification designed 30 years ago to remain fit for purpose for today's context. On the other hand, introducing significant changes to high stakes school certifications and assessments can be costly in terms of people and financial resources, can be difficult for education systems to implement, and often requires fairly major programmes of awareness-raising and engagement with stakeholders, including certification users like employers and higher education.

To take account of this, a national examination and assessment system may have a broadly agreed review cycle, perhaps lasting five to 10 years. This cycle is often used flexibly, either shortening or lengthening it in response to government priorities, available budget or other factors. The important thing is that there is a review cycle and that every so often, students, teachers, the public, and stakeholders such as employers and receiving institutions know that time will be taken for a significant programme of review, and potentially revision or reform, of the certifications and their assessments. Less frequently than individual certification or certificate review will be whole system review; these will often be conducted in response to perceived issues with the existing system that suggest a more major overhaul may be needed. Often, such reviews result in significant changes, or what we might call reforms, to the certifications and assessment system, such as the introduction (or abolition) of alternative types of assessment, changes to the grading scale, reduction (or increase) in the number of subjects available, or even changes to the name of the certification, perhaps intended to signal a paradigm shift in approach. Given the cost and difficulty of implementing such significant changes, such system reforms often happen only in response to a perceived crisis in the certifications system.

Lithuania appears to be at such a point in the certifications lifecycle with its Matura. There are many individual changes that are planned to be introduced to the certification and examination (see Chapter 1). To help ensure that these changes achieve their intended impact, and that individual changes work together coherently by supporting each other it is important that there is some conceptualisation and planning of these changes as part of a broader and deeper look at the design of the certifications and assessment system. In the future, changes might be planned for as part of an overall review and reform programme that is co-ordinated across stakeholders including the National Agency of Education, the Ministry, teachers and schools. This approach is also important to promote the technical independence of the examinations team in the National Agency and the Matura so that reforms are based on evidence and technical review.

Developing a process for continuous review, research and evaluation

As part of creating a regular review process, internationally examination agencies or Education Ministries tend to have a mid- to long-term programme of certifications and assessment evaluation. This is a planned programme that constitutes part of a longer term process of gathering evidence into issues such as the

quality of marking, incidences of malpractice, or use of reasonable adjustments or special arrangements. The findings from this evaluation programme can be fed into the next certifications reform cycle.

A programme of mid- to long-term research may include drawing on a broad range of different sources of information and activities, such as:

- Student, school and stakeholder surveys to gather national evidence on the perceptions and confidence in national examinations and certifications. In England (United Kingdom) for example, over the past 20 years, Ofqual, the qualifications regulator, has commissioned and published the results of an annual survey of perceptions of upper secondary qualifications (A levels and GCSEs) and other qualifications. The survey seeks the views from a wide range of national stakeholders including school leaders, teachers, the general public, parents, students, employers and higher education institutions in England. The survey asks for stakeholders' general perceptions and their confidence in national qualifications and the examination system. The results are made available on the national government website (YouGov, 2022[8]).
- National or regional benchmarking or comparability studies. Studies of this nature review might review the comparability of a qualification over time, or between subjects.
- Benchmarking against international standards. Countries may have the opportunity to engage in international studies that compare qualifications across different countries or that benchmark qualifications against international frameworks such as the European Qualifications Framework. However, these opportunities can be more difficult for countries to fit into their own programme of planning since they depend on the involvement of other entities and countries.

Lithuania might consider establishing a programme of review activities for the Matura that enables the examinations team in the National Agency for Education to undertake research across several issues of technical and public interest. This might include reviewing how far Matura papers effectively assess competencies as set out in the national curriculum, comparability across subjects, introducing more alternative forms of assessment (see Issue 2. Introducing alternative types of assessment) and ensuring that the Matura meets the needs and fairly reflects the skills of vocation upper secondary students (see Issue 3. Providing more flexible choices and options within the Matura). For example, inter-subject comparability was a particular concern for Ofqual, the qualifications regulator in England (United Kingdom) around 2015 and an extensive programme of benchmarking activities was carried out, included comprehensive literature gathering and reviews, research based on gathering and analysing data, and implementation of an international comparability study in which other countries were invited to take part (Ofqual, 2019[9]).

At the same time as using this kind of information to investigate specific issues of concern, the examinations team in the National Agency should ensure that at least some of this evidence about how individual certifications such as the Matura and the overall assessment and certifications system is continually gathered so that there is an existing evidence base to inform any initial conversations about potential reforms. This would help to ensure that reforms are rooted in assessment evidence and help to strengthen the examinations team in the National Agency as an institute for technical assessment expertise.

Developing the examinations team in the National Agency as an independent centre of assessment expertise

In a project looking at standing setting in national or regional certifications across 20 systems, it was found that national examinations are commonly run by an arm's length body set up by a government education ministry (Baird et al., 2018[6]). This governance arrangement helps to promote decisions that are based on evidence and technical expertise about a certification and encourage the independence of national or regional bodies responsible for national assessment and certifications systems. It also helps certifications

and examination bodies to be national centres of technical assessment research and evidence and crucially, to be widely perceived as such across the education system so that they are central actors in any assessment and certifications reform.

In Lithuania, the institutional arrangements – with the examinations team in the National Agency for Education constituted as a separate body from the Ministry – support its independence. Yet, the examinations team does not seem to be in the driving seat of the current set of proposed Matura reforms. More broadly, discussions with stakeholders across Lithuania suggested that the examinations team in the National Agency is not currently perceived as the national and leading centre of assessment and certifications expertise. There are several actions that stakeholders across Lithuania's education system could undertake together to help consolidate the examinations team in the National Agency as respected centre of technical assessment expertise that would be a valuable resource for the entire education system:

- Clarifying its role within the certifications and assessment system (discussed directly below).
- Ensuring that the examinations team in the National Agency is in law, and in practice is perceived to be, the custodian of the national standards set out in the specifications (see Option 1.a. Supporting the developers of the Matura to produce high-quality items that fulfil their purpose).
- Consolidating the examinations team in the National Agency as a national leader of assessment expertise and analysis by supporting it to undertake more technical reviews of Matura events and continuous review of the assessment and certifications systems, as well as longer term research that seeks to identify best practice and ensure that the examination team's work is at the forefront of thinking on assessment (see Option 1.a. Supporting the developers of the Matura to produce high-quality items that fulfil their purpose).
- Ensuring that the examinations team in the National Agency has the responsibility, and staff with relevant expertise, to lead in communicating to students, their guardians and the general public about the role of the Matura and how it functions.

Clarifying the roles of relevant stakeholders in the development, administration and reform of the Matura would help to ensure that each actor occupies a role that best reflects its specific assets. In most cases, the certifications and assessment body is responsible for the day to day running of the certifications system including the development, marking, grading and analysis of results for each examination event. This body also undertakes a combination of regular, ad-hoc and mid- to long-term evaluation and research of the assessment and certifications system to provide an evidence base for regular adjustments to certifications across assessment events and for more significant reforms.

National policy making bodies such as the Ministry of Education are responsible for the overall policy for assessment and certifications. This means that where there are issues of national concern, such as the 2022 mathematics results, key stakeholders including the National Agency and the Ministry might come together to determine a national strategy to investigate the reasons for the issue. Once the process has started, the examination body would lead the review, undertaking the research independently, sharing findings and conclusions with all the relevant stakeholders so that the examination board can provide the Ministry of Education with recommendations for action that have the support of major stakeholder groups. The Ministry, with responsibility for overall policy, would then determine the appropriate response based on the technical assessment evidence. Similarly, where reform of a certification is being considered, the Ministry will be the initial sponsor of the reform with the examinations body providing evidence and technical expertise that informs decision-making and implementing the policy.

To reflect the examination team in the National Agency for Education's role as the national centre of expertise in assessment and certifications, it should have a more proactive role in communicating to students, parents and the general public about the Matura and its role in their future. This could include publishing case studies about young people with a positive story to tell about it. The same communication work could focus on communicating to non-technical experts, such as students and their families and guardians how the assessment and grading works. This would help to develop greater assessment

knowledge within the general public and position the examinations teams in the National Agency as the leader of assessment and certifications in the country. This kind of communication will be especially important when the future reforms to the Matura are introduced.

Investigating the reasons for the Maths 2022 results

In 2022, over a third of Grade 12 students in Lithuania failed the mathematics examination for the state Matura. Stakeholders reported to the OECD that this had to led to national reflections about what should happen to mathematics examination. Looking at the mathematics results over the past decade, the results are variable (Table 4.1). Aside from the 2022 situation, one of the factors leading to this variability was the decision by tertiary institutions to make the state Matura examination in mathematics compulsory for tertiary entrance. This decision resulted in a significant rise in the shares of students taking the paper and fall in the overall results.

In the context of national discussions around the 2022 results, undertaking research and evaluation can help to establish some of the factors that have led to the variability in mathematics results in recent years, and possible policy changes for the future. In other countries, when an issue occurs during an examination series that endangers student, public or policymaker confidence in the certifications, they are often followed by a focused programme of research and evaluation, sometimes conducted within a very short timescale, with a view to establishing whether immediate change is needed. For example, in 2019, Ofqual the qualifications and examinations in England, carried out a series of studies in response to school concerns about standards in newly introduced reformed upper secondary (A level) mathematics qualifications. An extensive programme of technical evaluation projects resulted in an overall conclusion that no immediate action was required, but that there may be implications for longer term practices (Ofqual, 2019[9]). In Lithuania, taking the time to undertake an independent investigation of the 2022 results – and perhaps also mathematics results over the past decade given recent variability – will help to ensure that there is adequate evidence and time to fully consider the issue. The examinations team in the National Agency for Education might work with selected tertiary institutions on this research and more broadly to build centres of expertise in assessment and qualifications research in the country. The independence and rigour of the investigation will also help to reinforce the technical independence of the examinations team.

Supporting assessment reform and renewal

This section has set out some of the crucial activities that will help to support continual improvement and renewal of Lithuania's upper secondary certification so that it remains fit for purpose. The complexity and challenge of a high stakes national certification are significant, and as well as all the investments in technical development, it also requires extensive consultations and discussions with national actors. Research reviewing examinations across nine jurisdictions has found that three conditions are necessary for reforms to progress and be successful - dissatisfaction with the current system, an accepted alternative and majority stakeholder support. Achieving all these, particularly the last two which are particularly challenging and underscores the length and concentrated effort required for successful examination reforms, notably to provide sufficient time for stakeholder consultation and communication to secure agreement on an accepted alternative (Isaacs, 2018[10]).

Box 4.1 discusses some aspects of the decade-long development of the new upper secondary certification in Hong Kong. The case of Hong Kong also highlights some of the continuing challenges and reviews that continue to be conducted on an on-going basis to support the new certification. Hong Kong's experience also illustrates the importance of systems being realistic about the likelihood of getting change right the first time and the need for immediate post-reform review and amendments made in response to feedback. Recent reform of the Queensland Certificate of Education in Australia also provides an example of the use of review immediately after implementation of reforms. Following the introduction of new subjects in 2019-2021, a review was initiated and the Queensland Curriculum and Assessment Authority has already

planned for a more systematic evaluation reporting in 2025 once the new qualifications have been in place for a while. It is notable that the findings of this evaluation are scheduled 13 years after the initial parliamentary enquiry that eventually led to the reforms (QCAA, 2023[11]).

It is important to recognise that there are many aspects of certification reform and continuous improvement that have not been discussed here, notably the major support and investment in teachers' assessment literacy. There are also broader points around the wider context, where there needs to be an understanding across all actors, including politicians, senior stakeholders, parents, the media, students – that examination reforms rarely get it right first time. There is a risk that some stakeholders may not react favourably to changes at first. Undertaking skilful and well-resourced communication is important to prepare systems and provide support in this context.

Box 4.1. Reforming the Hong Kong Diploma of Secondary Education Examination

In 2012, Hong Kong introduced the new Hong Kong Diploma of Secondary Education Examination (HKDSE), replacing the former Hong Kong Certificate of Education Examination as certification for completion of secondary education, and the Hong Kong Advanced Level Examination as the main credentials for university admission in Hong Kong.

The new certification reflected over a decade of planning

The new HKDSE aligned with the new academic structure that had been introduced in 2009, and for which planning had started in 2000. The original proposal for the reform was set out in the Education Commission in 2000 focused on standards-based education. While there was a general understanding of the need for the new curriculum, there was also some resistance for its direction and diverse views around how it would be assessed. It took over a decade of discussion and consultation to reach agreement on the model for the new curriculum's assessment.

The principles of the new certification

After multiple rounds of discussions, the Education and Manpower Bureau published the Action Plan on The New Academic Structure for Senior Secondary Education and Higher Education, setting out the principles and the way forward for the new examination system. The specific issues that the new certification aimed to address included:

- Aligning certification at the end of upper secondary education with new curriculum.
- Being responsive to learner diversity, especially the country's two official languages - Chinese and English).
- Creating a broader, more flexible learning experience (in contrast to the previous streaming of learners into either sciences or arts).
- Facilitating student transitions into multiple pathways including tertiary education in Hong Kong and internationally.
- Serving the essential function of student certification.

The new HKDSE model

The new HKDSE model that was introduced in 2012 introduced a series of important changes, such as standards-referenced reporting with candidates' results reported against a set of prescribed levels of achievement based on typical performances at those levels; greater choice in papers including the use of differentiated papers in English and optional extended parts in mathematics to reflect student diversity; and the introduction of school-based assessment in some subjects.

The new model was a major change and over time, has been associated with further calls for review. These issues tended to focus on ensuring the maintenance of standards. The new certification had been introduced alongside changes to the structure of upper secondary education which was reduced from seven to six years while participation and completion of this level of education increased, leading to concerns about students covering the same breadth and depth of content in a shorter period while ensuring that the content was accessible for all learners. The introduction of school-based assessment, in an educational context that had previously been very examination-focused, was also challenging.

Several rounds of reviews have been undertaken to respond to emerging challenges, and as a consequence, changes introduced such as changing examination paper structure to better reflect the depth and breadth of the new curricula and simplification of school-based assessment and greater guidance for teachers about how to undertake it.

Source: Tong, C., C. Lee and G. Luo (2020[12]), "Assessment reform in Hong Kong: developing the HKDSE to align with the new academic structure", *Assessment in Education: Principles, Policy and Practice*, Vol. 27/2, pp. 232-248, https://doi.org/10.1080/0969594X.2020.1732866 (accessed on 6 November 2023).

Option 1.c. Making the most of the new digital examinations

Like many OECD countries, Lithuania currently uses digital technology to mark scripts but the examinations for the Matura continue to be delivered as pen and paper tests. As part of the Matura reforms, the country plans to introduce digital examinations for the intermediate examinations that students will take in Grade 11. While digital technologies can provide many potential benefits for student assessment, notably facilitating delivery, creating more inclusive assessment and enhancing the assessment of skills, they are also associated with challenges, not least being lengthy and costly to implement. This option sets out some of the considerations for Lithuania as it moves towards introducing high stakes digital examinations.

Identifying the objectives for the new digital examinations

As a first step towards introducing digital examinations, Lithuania will need to carefully consider the policy rationale and objectives that it wishes to achieve. Possible objectives might range from enhancing the delivery of the examination, for example by enabling it to be delivered more flexibly and be less dependent on teacher and school space availability to using new approaches to enhance the assessment of skills. Across different systems, some of the benefits that emerge from the use of digital technologies for high stakes assessments include:

- Improving delivery. Digital technologies might contribute to more resilient examination systems where delivery can be maintained even in the context of significant disruption such as school closures. The environmental impact can also be reduced by decreasing the need for the printing and distribution of examinations papers (Pickering, 2022[13]).
- Improving the experience for users. Possibilities to provide more engaging content such as animations or recordings that might promote greater student engagement (OECD, 2021[14]). Digital environments might enable students to have greater control of content, enabling them to manipulate it themselves to meet their needs such as being able to listen to a recording multiple times or pause an animation. There is also the potential for digital assessments to be tailored to candidates' needs, for example sign language can be integrated into questions (OECD, 2022[15]) or incorporate text-to-speech features for learners with reading or language disabilities (Gane, Zaidi and Pellegrino, 2018[16]).
- Enhancing the assessment of skills by assessing existing content in new ways, and in some cases, assessing new skills. For example, the simulations of real-world contexts that technology can

provide may make it easier to assess the integration of disciplinary conceptual knowledge and practical application of knowledge that most education curricula now emphasise (Gane, Zaidi and Pellegrino, 2018[16]).

- More extensive feedback. Digital assessments can capture more information beyond student results to include how learners engage with different types of questions and content, for example if they spend more time on certain questions or the strategies that they employ for problem-solving (OECD, 2021[14]). This information can provide richer feedback that teachers and schools who can use this information formatively to inform teaching and learning for future cohorts (Pickering, 2022[13]). The information can also be used to generate greater insights on the performance of examination papers and individual items to support continuous improvement in assessment design (see Options 1 and 2).

Some of these benefits are associated with most digital examinations – such as a system that is more resilient to external disruptions and reducing the environmental impact – but others will largely depend on how Lithuania develops and defines its digital examinations. Since some of the challenges currently associated with the Matura are that items are reported to be predictable and unengaging, one objective could be to exploit the capacities of digital technologies to create a more engaging format. Another issue in Lithuania that stakeholders reported was the dominance of items that assess knowledge recall, especially in some subjects so another objective of the new digital examinations could be provide a more balanced assessment of different skills.

Being cognizant of the equity and fairness challenges of introducing digital assessment

While digital tools can enable enhanced skills assessment, developing valid, reliable and fair digital assessments can be challenging, and perhaps more challenging than traditional pen and paper tests (OECD, 2021[14]). One of the key issues for education systems to consider is fairness and equity, with digital assessments raising new and different issues in contrast to analogue assessments, including:

- Ensuring equitable access to digital infrastructure. Most education systems have heterogenous information technology infrastructure across different school settings where there is a range of different providers, and different pupil-to- device ratios. The most commonly cited issue for countries is around ensuring that all learners are able to access a device, especially when a full cohort is sitting an examination at the same time. Some systems have addressed this challenge through Bring Your Own Device systems such as Finland and New Zealand (Pickering, 2022[13]), but this is also associated with challenges in terms of ensuring equitable access for all learners, ensuring compatibility of devices and potential security concerns.
- Accounting for learners' differential experiences with digital technologies. Differences in learners' access to, and use of, digital environments including different user interfaces and gaming technologies might lead to achievement differences on digital assessments. An important design element to reduce differential item functioning (i.e. when items do not perform as expected for learners of the same ability but different backgrounds) is to provide effective tutorials at the beginning of items or an assessment that quickly teaches the necessary mechanics for test-takers less familiar with the user interface. Items should also be analysed for such differential functioning with continuous efforts made to limit achievement differences associated with learner background including gender and other typical categories but also gaming experiences (OECD, 2021[14]).
- Variations in teacher and school support. Teachers will vary in their fluency with digital technologies and digital assessments. Within a country, schools will also differ in how far technology is regularly used in the classroom. These differences might mean that students receive unequal support to prepare for digital assessments (Ofqual, 2020[17]).
- Possibilities for compromised security. Security might be compromised by cyber security attacks which could be localised or affect an entire country. In this case, there is a risk not just to the

examination system but also to student personal data security. Digital technologies can also lead to new risks of malpractice, fraud or other cheating, which can create unfairness. These new risks may drive the need for changes to the role of invigilators or an increased use of technology to monitor students' activity during assessments (Ofqual, 2020[17]).

Determining a national approach for implementation

Despite the many challenges associated with developing digital examinations, many countries have started to introduce some elements of digital assessment to their education systems. Since 2019, all the subjects in Finland's Matriculation Examination at the end of upper secondary education have been entirely digital (Board, 2023[18]). The introduction of digital technology was motivated by the desire to assess skills in different ways and to ensure greater coherence with young people's daily lives and their post-school experiences. Students use their own digital devices which must first pass a compatibility test. If students do not have access to their own device, schools provide one for them. Assessments are encrypted and sent to schools in advance of the examination to avoid problems with rural power cuts (Pickering, 2022[13]).

Norway has also recently started to develop digital examinations in upper secondary education (Box 4.2). As well as drawing on the experiences of other countries, Lithuania can also draw on its own experiences of digital assessment for national assessments in Grades 2, 4, 7 and 8.

The experiences of countries that have introduced digital technologies to high stakes national assessments highlight several important factors, notably: clearly outlining the objectives of the digital examinations and articulating the specific value the digital technology is expected to provide; understanding the equity and fairness challenges and taking appropriate steps to address them; starting small and building up. As part of the development of its new digital assessments, Lithuania will need to carefully consider which skills will be assessed by the digital examinations and which will be assessed by pen and paper assessments. The introduction of the digital assessments could become the focus on a national review.

Box 4.2. Insights from Norway's experiences in introducing digital examinations in upper secondary education

Norway's digital examinations for its national upper secondary examinations were introduced to create better alignment with the new curriculum and to increase reliability and validity of student results. In December 2022, Norway shared its experiences and insights in developing the digital examinations in a webinar with OECD countries organised by the OECD Above and Beyond: Transitions in Upper Secondary Education project.

The examinations have been initially developed as pilots in Norwegian, mathematics and English, with local teachers involved from the start. The pilot began with a pre-pilot with a small group of students, followed by a main pilot with a larger group of students, with feedback loops and analysis after both.

The new digital English examination has several components, including reception, mediation, interaction, and free writing. Previously, the pen and paper English exam consisted of two written texts, short and long. The new format enables students to demonstrate understanding of English, even if for those individual students, production in English (i.e. writing) is more challenging which was not possible with the previous examination.

Norway reflected that the process of designing question items for digital assessments was very complex, and had to account for the need to minimise distractions and ensure alignment on the screen for readability and accessibility. With multiple choice items, there was also a need to add more items for validity. The new digital systems created possibilities to enhance accessibility, for example by including options with captions or sign language for candidates with hearing impairments when using recordings.

Key challenges highlighted by Norway included working with stakeholders, internal capacity, and understanding how technology redefines subjects and assessments. Student feedback has been largely very positive, however some teachers and universities feel candidates have to be able to demonstrate their abilities in a non-digital context i.e. with pen and paper and without calculators. To allow time to adjust, the introduction of fully digital exams has been postponed to 2024.

Source: OECD (2022[15]),Digital Examinations in Upper Secondary Education Webinar: Spotlight on Norway, 13 December 2022, OECD Above and Beyond: Transitions in Upper Secondary Education.

Issue 2. Introducing alternative types of assessment

One important consideration in the Matura's design is the range of assessment activities that students undertake. While the Matura currently draws on different types of assessments - a project, art portfolios and oral examination in foreign language examinations - the reliability and take-up of these assessments could be reinforced. At the same time, Lithuania might consider if other types of assessment could be introduced to assess students more effectively, and promote a broader range of, competencies. As well as considering the potential value of these different types of assessments in Lithuania, this issue also considers how their validity and reliability can be promoted.

The current context: the range and type of assessments in the Matura

The Matura serves two purposes: certification and selection into tertiary education

Like in other systems, the Matura in Lithuania serves the purpose of certifying student learning against expected learning standards (OECD, 2015[19]). As in other systems, particular importance is attached to certification at this point because it marks the end of schooling. In Lithuania, the Matura is the first certification provided to young people after 12 years of schooling. It provides a record of their achievement to future employers, trainers and critically to tertiary education institutions for selection purposes. Using upper secondary certification for the dual purpose of certifying learning and providing the means for tertiary selection is common internationally and is the case in 20 systems across the OECD (OECD, 2019[20]).

The Matura is a composite certification predominantly based on external, written examinations

The Matura is a composite certification which means that it draws on several different types of assessment instruments (Table 4.2.). At the end of upper secondary education, many education systems across the OECD use a range of assessment instruments for certification because it enables them to assess different competencies in different contexts (Stobart, 2021[21]). This is increasingly important as countries' upper secondary curricula have evolved to include a wide range of cognitive and social-emotional competencies as well as values and attitudes (OECD, Forthcoming[22]). Assessing such a broad range of learning expectations necessitates assessment instruments where students can demonstrate both the acquisition and application of knowledge and skills in a wide range of contexts, including those that are unfamiliar (OECD, 2019[23]).

The assessment instruments that systems draw on internationally tend to differ in two main categories:

- The actors who develop, administer and mark the assessments. The main differentiation is that actors are either external to the school, such as national, provincial, state or locally based examination institutions, or internal to schools, such as groups of teachers or individual classroom teachers. It is not always the same organisation that is responsible for both developing and marking an assessment. In Sweden for example, schools administer and mark assessments that are developed at the national level (OECD, 2013[1]).
- The type of assessment used. Different types of assessment include written examinations, investigative projects, extended assignments, experiments, portfolios of work and performances.

Lithuania's Matura is predominantly based on external, written examinations. While schools and teachers currently develop school-based examinations, it was reported to the OECD team that the marks are so variable and influenced by local factors that they are not perceived to be a reliable measure of student achievement. The marks from school-based examinations do not play any part in tertiary selection. As part of the current Matura reforms, all examinations will be developed at the state level from 2024 onwards, by the examinations team in the National Agency for Education.

Table 4.2.Upper secondary certification in Lithuania – current model and planned changes

	Current Matura Model	New Mature Model
Components	National level examinations School-level examinations Teacher marks from classroom work Optional project	National level examinations Optional project
Subjects	State-level - biology, chemistry, physics, geography, information technologies, history, mathematics, and foreign languages School-level – minority (native) languages (musicology, arts, and technology) Lithuanian can be taken as either state or school-level exam Students may take up to six examinations	State-levels examination in all subjects Lithuanian and mathematics to be provided at general and advanced levels
Sequencing	All examinations at end of Grade 12	Intermediate digital examination at the end of Grade 11 Final examination at the end of Grade 12
Certification	Students must pass school-level examinations in Lithuanian and an optional subject to receive the School Leaving Certificate	Students must pass two state-level examinations including Lithuanian and an optional subject to receive the School Leaving Certificate
Tertiary entrance	Students must pass examinations in Lithuania, Mathematics and an optional subject to be eligible for tertiary entry For tertiary entry, students' average mark from five selected subjects must be <7 for universities and <6 for colleges (VET orientation)	Students must pass examinations in Lithuania, Mathematics and an optional subject to be eligible for tertiary entry Tertiary entry requirements to be defined

Sources: Adapted from national information and stakeholder meetings in Lithuania
Note: The optional project does not contribute towards upper secondary completion or tertiary entrance at present.

There are a few exceptions to the central, written examinations in Lithuania's Matura

Aside from the centrally-developed, written examinations, the Matura also includes:

- A project assessment. Introduced in 2017, students can optionally decide to take a project assignment, which can replace a national (or school-level) examination at present. Very few students – around 100 on average each year – opt to undertake the project assessment. The examinations team in the National Agency is not involved in assessing, grading or overseeing projects, and assessment and grading takes place at the municipal level by a committee which includes teachers.
- Oral examinations in foreign languages. The current oral examination includes a monologue by the candidate and a dialogue between two students assessed by teachers.
- Art examinations. The arts examinations follow the syllabus and assessment criteria developed by the National Agency for Education. The examination is organised, conducted and evaluated by local commissions of teachers.

During discussions with stakeholders in Lithuania, it was reported to the OECD team that the project assessment is generally perceived to be well-designed and engaging for students. There was also broad recognition that it is assessing competencies that are important for young people's learning and future development. However, the absence of state-level marking means the grades are not perceived to be reliable and tertiary education institutions do not take the results into account for selection purposes. Stakeholders also reported to the OECD team that the project is a particularly challenging exercise and that at present, it tends to be only the most capable and dedicated students who opt to do it.

In contrast, the foreign language oral examinations are taken by nearly all students (61% in 2023 among those who took the Matura) because foreign languages, and in particular English, are considered essential in Lithuania. Stakeholders reported to the OECD that the oral assessment in English was generally recognised to be well-designed, requiring students to apply their linguistic skills in different contexts. However, discussions also revealed that there are challenges around the reliability of these assessments. In 2021, the examinations team in the National Agency for Education undertook a one-off research project reviewing teacher-assessed marks in Lithuanian and mathematics (Grade 10) for moderation purposes. This process found that almost all the marks would have been different if they had been awarded centrally by the examinations team, suggesting that the reliability of these assessments could be reinforced.

Policy options for introducing more alternative types of assessments

The section below provides three options for Lithuania to consider a broader range of alternative types of assessments i.e. assessments other than traditional written tasks produced under examination conditions, to the Matura with the objective of promoting and assessing a wider range of skills. The options also consider approaches to support the validity and reliability of alternative assessments by discussing different approaches to moderation.

Option 2.a. Reviewing and refining the current project component

Projects can contribute to academic learning, the development of wider competencies and be engaging and motivating for students (Drummond, 2017[24]; Kingston, 2018[25]). In Lithuania, while it was reported to the OECD team that the current project is perceived to be well-designed and to assess some competencies that are not assessed through the written examinations, it is not seen as a reliable measure of student achievement and very few – less than 1% of students opt to take it. In Lithuania, strengthening the project assessment might help to motivate upper secondary students while developing and giving greater prominence to their organisational skills that the tertiary sector and employers report are currently weak upon completion of upper secondary education.

Strengthening the value of a project assignment for young people

When well-designed and implemented, projects have the potential to support a range of cognitive and non-cognitive competencies. The open-ended and student-driven nature of projects can encourage learning beyond individual subjects, requiring students to discover and construct information for themselves (Kokotsaki, Menzies and Wiggins, 2016[26]). This type of learning might be considered particularly important in upper secondary education to enable students to follow their interests and develop some of the socio-emotional skills such as planning, persistence and organisation which are especially important when young people enter higher education and employment. Stakeholders from tertiary institutions noted to the OECD team their perception that school leavers in Lithuania tend to lack these independent learning skills, and these comments were reinforced by students.

Some research suggests that the project-based pedagogy supports student learning and achievement. For example, the students from a project-based learning course on government and politics in the United States scored significantly higher in standardised assessments compared with traditionally taught students, and demonstrated deeper understanding of course content which enabled them to them apply it in a novel situation to solve a complex problem (Kingston, 2018[25]). Considering student projects as part of upper secondary courses and certification specifically, research from England (United Kingdom) finds a positive relationship between the performance of students who take the Extended Project Qualification (Box 4.1) and their achievement in the country's general upper secondary certification – A-Levels. The research found that the A-level results of student who had also completed the project qualification achieved higher marks that their peers who did not, even when accounting for other factors, notably prior

performance in national examinations at 16 years (GCSEs), except in mathematics and foreign languages. The research concluded that there are specific, transferable skills that students developed while undertaking the project that they transferred to their subject-based examinations (Drummond, 2017[24]).

One of the ways in which projects seem to promote higher levels of achievement is by developing the social-emotional competencies that are recognised as important contributors to general academic performance (OECD, 2021[27]). Social-emotional competencies also promote young people's ability to navigate the choices and challenges of life when they leave the unstructured school setting. Projects develop these skills by requiring students to plan, organise their time and work, and structure enquiry to solve problems and produce a final output. The upper secondary education project in Sweden is designed to provide a setting for students to draw together their learning across a number of subjects and demonstrate that they are ready for work or further education (Skolverket, 2022[28]) (Box 4.1). In England, the Extended Project Qualification is seen to promote student's self-regulation, by building learners' agency and self-awareness. During the project, learners are reported to make discoveries about themselves, their aptitudes and their learning preferences which enables them to optimise their approach towards learning (Stephenson and Isaacs, 2019[29]).

Feedback from students across a range of contexts internationally has also shown that students tend to engage well with projects – they are excited to work on projects, enjoy working on them and are engaged in their learning when undertaking projects (Grossman et al., 2021[30]). Research from England found that the projects seem to be catalyst for learner engagement (Stephenson and Isaacs, 2019[29]). This feedback is particularly relevant for Lithuania where students reported to the OECD team that the Matura examination questions tended to be predictable and unengaging. These views might be at least partially driving the perceived lack of student motivation that many teachers reported to the OECD team.

While countries' experience has highlighted the significant potential of projects for student learning, engagement and development, it also indicates that projects require significant structuring and scaffolding by teachers, as well as student prior knowledge, in order to realise these positive benefits. Students need to be clearly guided to avoid acquiring misconceptions or developing incomplete, or disorganised knowledge, as well as to keep focused on relevant information and topics (Kokotsaki, Menzies and Wiggins, 2016[26]). Students might also need to be directed and promoted to prompt higher-order skills, for example by teachers encouraging them to think deeply about their results or assumptions.

Redesigning the project assessment to encourage greater student take-up

One of the reasons cited for the low take-up of the project in Lithuania was that it tends to be very challenging and only accessible to the most capable and motivated students. This likely relates to the evidence that projects need to be accompanied by significant guidance, direction and teacher scaffolding in order for students to experience positive contributions to their learning. Given the potential contribution of the project for student development and their enjoyment of learning, Lithuania might consider steps that could be taken to make the project accessible to a wider range of students while remaining challenging for the highest achievers.

Providing more explicit national guidance around the project, including expectations in terms of the project's nature, a teacher's role and the development process for a project could help to guide students more explicitly through their project's development. The same guidelines could also help to promote equity, so that students with more resources and home support are not unfairly privileged by the assessment. Box 4.3 provides examples of the guidance that is provided for projects in England (United Kingdom) and Sweden. The examinations team in the National Agency for Education might develop guidance that covers some of the following areas:

- Clearly specifying what students are expected to produce for the project. This could include listing what kinds of production can be provided for the project such as a written report, video, presentation, photographs, object, etc. In Scotland for example, guidance on the Scottish

Baccalaureate Interdisciplinary Project sets out that the five mandatory pieces of evidence that candidates have to submit, for example to show evidence of planning before the project and evaluation after it has been produced. The aim of capturing this evidence of the process (rather than just the product) to better capture the skills that students demonstrate during the project (SQA, 2019[31]).

- The amount of time that students are expected to devote to a project, for example in terms of total hours or the approximate length of any pieces of written evidence that are to be assessed. Guidance on the Scottish Baccalaureate Interdisciplinary Project provides templates that candidates can use to record their evidence if they wish and for the teacher to make comments and grade (SQA, n.d.[32]).
- A teacher's role in supporting each student in the development of their project including the types of support and guidance, and how many hours of support. This should also specify whether the candidates can only submit their project once, or whether they are allowed to redraft after initial comments from the teacher.
- The expected process that students and their teachers will progress through to develop each project. Specific guidance might be provided for both teachers and students for the project. Guidance for teachers might also include like example projects with external moderator comments which can be made available to read online, or via face to face or online training sessions. The Scottish Qualifications Authority (SQA) provides a separate website with materials for teachers (SQA, n.d.[33]). It also provides extensive materials for candidates an information pack for students and video case studies of previous candidates' experiences (SQA, n.d.[32]).
- Projects might be written up in "controlled conditions" in normal classroom time, to ensure that students have the same time and access to the same resources. Teachers might also have regular meetings to talk to the student about what they have done and to certify that they are satisfied that is it the student's own work.

Revisiting some parts of the project assignment by providing further guidance, scaffolding and support as suggested above is likely to make the project more accessible and might encourage greater uptake. In England (United Kingdom), 13% of A-level students took the optional Extended Project Qualification in 2014/15 (Drummond, 2017[24]).

In the future, Lithuania could consider making a project compulsory for all students. In a few systems - such as Sweden or the International Baccalaureate – completing a project-like assignment is a compulsory requirement for all students (Skolverket, 2022[28]; International Baccalaureate, 2022[34]). However, this is likely to raise many issues around equity in terms of the support and resources that students receive from their schools.

Box 4.3. Projects as part of upper secondary courses and certification

Extended Project Qualification, England

The Extended Project Qualification was introduced in 2008 as a single piece of work to assess a wide range of skills and require a high degree of planning, preparation and autonomous working. The project is usually taken alongside the main general upper secondary qualification (A-levels).

To develop and deliver their project, students are required to:

- Choose an area of interest – this might develop and extend from one or more of their study areas or it could be an area of personal interest or activity outside their upper secondary studies.
- Draft a title and aims of the project for formal approval by their centre (normally their school).

  Plan, research and carry out the project.
- Deliver a presentation to a non-specialist audience.
- Provide evidence of all stages of project development and production for assessment. All projects must produce a written report, and the exact length will depend on the nature of the project and other evidence provided. For example, a project with only a written report must have a report of around 5000 words while projects that include an artefact can submit a shorter report of at least 1000 words.

The specifications for the Extended Project Qualification note that students receive 120 guided learning hours to help them to develop their project. Of which, 30 hours are expected to focus on teaching skills for the project. The specific skills to be taught depend on the student and their project, and likely include research skills; skills or techniques around risk assessment, ethical conduct and research methodology; information technology; project management; the format and structure of academic research; referencing and preventing plagiarism, and presentation skills. The remaining hours of guided learning are devoted to students' independent work, individual supervision and guidance.

Diploma Project, Sweden

As part of both upper secondary general and vocational studies, all students in Sweden must complete a diploma project (*gymnasiearbete*). The purpose of the diploma project is for a student to tie together their learning across all their subjects and demonstrate their preparedness for higher education or employment. The diploma should be related to the content of their particular study programme, and can be undertaken individually or in groups, but each student is assessed individually. Students are required to plan, carry out and evaluate their own tasks.

Students have a teacher that is appointed to oversee their project, including helping them to determine the focus of the project and the tasks involved. There is separate guidance for students undertaking the diploma project in a vocational and general upper secondary programme. For vocational students, vocational students can carry out their project in the workplace or they might set up and run their own business. The Swedish National Agency of Education provides examples of the kinds of projects that students might undertake.

Source: AQA (2015[35]) , LEVEL 3 EXTENDED PROJECT QUALIFICATION Level 3 Extended Project Qualification (EPQ) 2013 onwards, (accessed 28 February 2023). Eurydice (2022[36]), Teaching and learning in upper general and vocational secondary education Sweden, https://eurydice.eacea.ec.europa.eu/national-education-systems/sweden/teaching-and-learning-upper-general-and-vocational-secondary, (accessed 2 February 2023). Eurydice (2022[37]), Glossary | Sweden, https://eurydice.eacea.ec.europa.eu/national-education-systems/sweden/glossary#G, (accessed 2 February 2023). Skolverket (2022[28]), High school work - Swedish National Agency for Education, https://www.skolverket.se/undervisning/gymnasieskolan/laroplan-program-och-amnen-i-gymnasieskolan/gymnasiearbetet, (accessed 2 February 2023).

Considering the project assignment for vocational upper secondary students

Specific consideration should be given to the place of the project for students in vocational upper secondary education in Lithuania. At present, few to no vocational students undertake the project. This is likely because of it is not rewarded as part of the vocational qualification and its perceived difficulty which means that only the highest academically achieving students decide to take it. As part of the country's ambitions to improve the parity of esteem in which vocational education is held, steps could be taken to ensure that the project is accessible and rewarding for vocational students.

In line with the suggestions that the general content and related assessments that vocational students study should not merely replicate what general upper secondary students do, but be adapted to the reduced hours and vocational-focus of their course (see Chapter 3), the same principles should apply to the project assignment. This could be done in two different ways. Either the guidance and requirements of the project assignment could be sufficiently flexible and broad to encompass both general and vocational topics. In this case, the output that candidates are required to produce would have to be very open, for example, it might enable vocational students to investigate a research question in a sector where they are interested. Or the assessment could focus on the process, (rather than the product itself, similar to the Scottish Baccalaureate Interdisciplinary Project discussed above). Alternatively, there could be specific, separate project guidance for vocational and general students. In this case, the project requirements and process could be tailored and contextualised for different vocational areas. For example, vocational students might be required to demonstrate skill in a vocational setting or develop a business plan. The examinations team in the National Agency for Education could develop templates for tailored projects that either schools and students were required to follow, or to guide them. In Sweden, all students are required to produce a diploma project for their upper secondary certification, with slightly different requirements and guidance for general and vocational students (Box 4.3).

Option 2.b. Strengthening the reliability of alternative assessments

The design of the Matura as a "composite" certification means that it includes different types of assessments – the project (discussed in Option 2.a. Reviewing and refining the current project component), oral examinations in foreign languages, school-based examinations and teacher marks from classroom assessment. Each of these types of assessments includes some element of internal assessment, meaning that students' classroom teachers, and in the case of the project, a committee of teachers at the municipal level, mark student work (and in some cases also set and administer the assessments). There are concerns about the reliability of these marks which has led to the school-based examinations and marks from teachers' classroom-based assessment being phased out of the Matura from 2023. Concerns about the reliability of the marks from the project mean that it is not considered for tertiary selection. This section discusses steps that Lithuania might take to promote greater reliability in the Matura components that will remain from 2023 onwards.

Introducing more "controlled assessment" for the project

Perhaps the greatest disincentive for students to take the project is that the marks are not considered by tertiary institutions because they are not perceived to be reliable. The measures suggested in Option 2.a. to make the project more accessible for all students and more equitable through greater precision of the project focus and guidelines for its development will help to promote greater reliability (see Option 2.a. Reviewing and refining the current project component).

Lithuania could also consider how the project is marked so that tertiary institutions have confidence that the marks provided are an accurate reflection of student achievement. In the short term, one option to consider is introducing more "controlled assessment" which refers to the central assessment body – in this case the examinations team in the National Agency for Education - having some control over the key

stages of the project's development to promote greater reliability in the project marks. At one end of the scale, the examinations team in the National Agency could determine most of the main stages in the project's development, including judging/marking and grading the assessment. In this case, the examinations team would replace the current committee of teachers in each municipality that are responsible for marking student projects. In the short term, this could help to promote reliability of marks from the project and assure tertiary institutions of the accuracy of the marks across different schools.

Given the individual nature of the project, the school and a student's individual teacher would likely remain responsible for administering the assessment. Clear and specific guidance provided by the examinations team in the National Agency could set out conditions that schools or teachers are required to provide when students are completing the project, including the extent of teacher support and guidance to promote consistent conditions across different schools and classrooms (see Option 1.a. Supporting the developers of the Matura to produce high-quality items that fulfil their purpose).

Developing a robust model to moderate internal assessments

While a more centrally controlled model of the project would contribute to some aspects of its reliability, having the examinations team in the National Agency for Education mark all projects might become burdensome if an increasing share of students undertake the project. Some education stakeholders also feel that there is a specific learning and assessment value in having summative assessments marked by teachers. One of specific benefits include enhanced assessment validity because internal assessment can address educational aims which externally set and marked examinations taken under controlled conditions cannot assess. Another perceived benefit is that reliability might be improved because teachers can conduct assessments over multiple occasions in different settings rather than one-off, time-pressured examinations. Finally, there can be benefits to the education systems because teachers will develop assessment literacy by undertaking their own assessments for certification purposes (Black, n.d.[38]).

In New Zealand, there is wide support for the combination of internal and external assessment in the country's end of upper secondary certification – the National Certification of Education Achievement - among teachers and students because stakeholders believe it enables assessments to be more authentic, especially in subjects with practical components like languages, and it provides students with different ways to demonstrate success (NZCER, 2018[39]). Similarly, Hong Kong a country where national certification was previously based entirely on external assessments introduced school-based assessments to enhance the validity of assessment in biology, chemistry and physics. The teacher-assessed components of the examinations were introduced to promote a more reliable assessment of each student and encourage positive "backwash" on teaching and learning by requiring students to engage in meaningful activities, reinforce curriculum aims and good teaching practice (O'Donnell, 2019[40]).

However, as Lithuania's experience shows, and as international research shows, when teachers assess their students, this raises concerns about reliability as the assessments and standards that teachers apply can differ (Cuff, 2018[41]). In Lithuania, the response to these concerns has been to remove much of the internal teacher assessment, however this means that the system cannot draw on the potential benefits of internal assessments which is especially important in subjects where part of the achievement requires an authentic demonstration of skills – such as languages or science (O'Donnell, 2019[40]). It also means that the lack of perceived and actual lack reliability in teachers' marks has not been directly addressed. To support students' learning, and critically in upper secondary education, to support learners to demonstrate achievement in line with national standards, teachers need a strong understanding of what those standards are. While the precise reasons for the lack of reliability in teachers' marks are not known in Lithuania, putting in processes to improve teachers' understanding and ability to apply national standards should also be seen as critical to strengthening overall pedagogy in the country.

To promote more reliable teacher assessments, Lithuania could consider drawing on, and combining some of the moderation models that are used internationally (Box 4.4). These models might be applied first to

modern language oral examinations – where there is an established tradition of teachers assessing their own students in Lithuania. In the future, the model might be extended to the project, and potentially to the assessment of other skills that cannot be assessed by written examinations, such as practical science skills (see Option 2.c. Considering other types of alternative assessment).

In choosing the moderation approach that works best for the country, Lithuania might draw on approaches that work directly with teachers to build their assessment literacy and provide strong external checks on internal marks to ensure reliability. In Queensland (Australia), where 75% of the marks in the country's upper secondary certificate are teacher-assessed, the country uses a two-staged moderation model:

- First, the state awarding body, the Queensland Curriculum and Assessment Authority (QCCA) works with teachers to validate their assessment tools before they are used with learners.
- Second, in Queensland, after young people have completed the assessment, teachers give provisional marks for student work and schools internally moderate their own student work. Then QCAA assessors review a sample of student work from internal assessments in every school to check that teachers have accurately and consistently applied the marking guide when marking student work, and this process confirms the final mark that students receive (Queensland Curriculum and Assessment Authority, 2023[42]).

In Lithuania, the first stage of this process might be accompanied by other activities to build teachers' assessment literacy such as teacher discussions around different types of assessments, their advantages and disadvantages and their level of demand in relation to expected national achievement levels.

Box 4.4. Moderation – approaches and models

Moderation approaches can be broadly classified into two main approaches:

- Statistical moderation scales the results of teacher assessment using student results from an externally assessed test or examination.

  One concern that some educators have with statistical moderation is that by scaling student results from teacher-based assessment to the external test results, the benefits of the teacher-based assessment in terms of capturing different types of learning and achievement that are might not be captured by an external examination, are lost.
- Social moderation tends to be characterised as involving human judgement.

  Within social moderation, countries use, and sometimes combine, multiple models, which are discussed below.

Types of social moderation: inspection and verification models

This involves written evidence – in the form of all or a sample of student scripts - being submitted to a central awarding body for review. The moderator or verifier might also visit the examination centre for practical or ephemeral evidence such as to see student artefacts or view a student performance:

- Inspection: an external moderator reviews a sample of student work and following this review, has the power to change student marks.
- Verification: an external verifier reviews a sample or all the examples of student work, but the verifier only makes recommendations to the school or examination centre to change the marks themselves (rather than the verifier actually doing this themselves). If a verifier finds that marks deviate too much from expected standards, additional guidance or feedback are given to the school that year or in subsequent years. If malpractice is suspected further investigation might be conducted with appropriate sanctions taken if necessary, which at the extreme end could mean a school losing its approval for a qualification or subject.

One the challenges of inspection and verification is that moderators or verifiers, as diverse individuals with different experiences and perceptions, might not be able to ensure a fully standardised approach across different schools.

Group moderation

Group moderation involves a group of people coming together to discuss standards:

- Consensus moderation: where a group of teachers are required to come together to discuss their marking and judgement of student work, and to reach consensus on the decisions they have made.
- Consortium or area moderation: like consensus moderation but here there is also an external moderator who brings the group together and has ultimate say on assessment decisions.

Consensus moderation is very costly in terms of finances and resources and requires a lot of teacher time. However, it is often considered effective for promoting teachers' professional development and fostering innovation while achieving the required levels of assessment standards (Daly et al., 2011[43]).

In both social and statistical moderation, the sampling approach needs to be carefully planned. In general, the more resource-intensive a moderation mode is, the lighter the sample tends to be. For example, social moderation models that are relatively resource-intensive might tend to have a lighter sample while statistical moderation, being less resource-intensive to implement, can have a much larger

sample. Some experts have suggested that this means that statistical moderation is more 'robust' because sampling rates can be very high, up to 100% (Cuff, 2018[41]).

In terms of sampling, systems take different approaches. For example, some plan a structured sample of schools, subjects and candidates across the mark range, and also add in an additional share of 'random' audits of quality. Some systems operate a risk-based approach, which can sometimes effectively function as a rewards-based approach, for example, a school with more internal moderators who have undergone training/certification might be sampled less than a school with fewer certified internal moderators.

Source: Daly et al. (2011[43]), Principles of Moderation of Internal Assessment, Centre for Education Research and Policy, AQA , www.cerp.org.uk, (accessed on 28 February 2023). Cuff (2018[41]), International approaches to the moderation of non-examination assessments in secondary education, Ofqual, (accessed on 28 February 2023).

Providing teachers and schools with support for assessment

By definition, moderation is an ex-poste activity. Ensuring the reliability and validity of internal assessment also requires greater support and activities long before any assessment takes place to ensure that teachers have a good understanding of expected standards and how learners demonstrate those standards. This is important for the quality of internal assessments but more critically so that teachers can support their students to achieve in line with the expected national standards. Stakeholders in Lithuania shared examples with the OECD team about how external national assessments in primary and lower secondary were used to help teachers develop a common understanding of expected achievement. Similar activities could be introduced in upper secondary education such as:

- Providing more exemplars of student work at different achievement standards across all subjects.
- Developing communities of practice – both online and in-person - so that teachers can share practices and insights.
- Creating fora for item developers, national markers and the examinations team in the National Agency for Education to share advice and insights with teachers and schools before the Matura examinations and also after to discuss results. (This should be accompanied by clear guidance and controls about what item developers and markers can share about the Matura before it has been made public).
- Providing training courses in assessment literacy for teachers.
- Providing a range of sample assessment instruments and assessment templates that are easily accessible to teachers (e.g. online). As discussed above, teachers might also work with the examinations team in the National Agency to externally validate assessment instruments before they are used with learners.

Option 2.c. Considering other types of alternative assessment

Beyond the three types of alternative assessment that Lithuania will have from 2023 onwards – the project, oral examinations in foreign languages and the art portfolio - there are skills which cannot readily be assessed in a typical written examination. There is broad consensus in the field of science educators for instance, that practical science skills – where students are involved in manipulating and/or observing objects and materials to understand how a particular phenomenon works – is very challenging, if at all possible, through traditional summative assessments such as written examinations (Erduran et al., 2020[44]). Going beyond subject-specific skills, as countries have implemented competency-based curricula, this has led to the recognition that some competencies, and in particular, social-emotional skills

like planning, self-reflection, investigation and collaboration, might be more readily assessed through assessments when students have to plan their work over a period of time or engage with their peers.

Identifying skills that cannot easily be assessed through written examinations

Lithuania could consider which of the skills that the country's upper secondary students are expected to develop across its upper secondary curricula might be assessed more effectively through alternative forms of assessment. For example, a review of high-performing countries in science in PISA 2015 found that 12 out of 19 systems had provide some kind of hands-on assessments or investigation to assess practical science skills (O'Donnell, 2019[40]). In Ireland, many newer and social science subjects in the country's end of upper secondary certificate, the Leaving Certificate, now incorporate some type of coursework that contributes to students' final marks. The coursework contributes a minimum of around 20-30% of the Leaving Certificate marks and includes student research projects (e.g. in Geography, History and Economics) and practical skills examinations (e.g. in Engineering). The coursework, which is anonymised and marked externally by the State Examinations Commission, enables students to demonstrate proficiency in course content and skills that are not easily assessed by the end-of-course examination (Education, 2021[45]).

In Lithuania, subject, curriculum and assessment experts could work together to identify which skills might be more effectively assessed through alternative forms of assessments – such as practical assessments or coursework. This work could be developed progressively, starting with a limited set of subjects providing a small overall percentage to student's final Matura marks. It would be important to ensure that a broad range of stakeholders reflecting subject and assessment expertise and policy making insights are able to work together to identify those skills that could be assessed in alternative forms and the most appropriate modes of assessment that could be used.

Developing governance arrangements to ensure broad representation and consensus decisions

Decisions about which parts of a qualification are assessed through different assessment types – either externally or internally, or through different types of tasks such as projects, investigations or extended essays – tend to involve a broad range of stakeholders. These stakeholders will typically combine a range of subject expertise, technical assessment expertise and policy power. In Hong Kong, as well as involving a range of subject and assessment specialists, there are efforts to ensure that there is regular turnover in external committee members through an open invitation to nominations from school leaders on a regular basis (Tong, Lee and Luo, 2020[12]). In Scotland (United Kingdom), the Scottish Qualifications Authority (SQA) uses a series of committees and structures to promote broad representation and consensus-based decisions, including:

- An overarching decision-making group designed to provide accountability to external stakeholders.
- An internal group that quality assures and provisionally signs off all work for presentation to the external group.
- Advisory groups that provide views on a broad curricular area (intended to ensure coherence between cognate subjects and stop individual subject groups from creating unnecessary and unhelpful differences between similar subjects).
- Subject advisory groups, called Qualification Design Teams, who work at the level of individual subjects (for big developments, these might work at the level of individual qualifications).
- Small, focused working groups, who work on individual qualification developments or even specialist parts of this.

Each of these groups reports to the next level, and each has a defined role and remit, agreed breadth of membership, and defined mechanisms for recruiting members (SQA, 2021[46]).

Issue 3. Providing more flexible choices and options within the Matura

Upper secondary examinations and qualifications are young people's passport to a range of different pathways including continuing education at tertiary and non-tertiary post-secondary level, employment and lifelong learning. This means that upper secondary qualifications need to be both responsive to a broad range of prior learning – candidates may have studied different content such as general or vocational and different subjects – and facilitate access to a diverse range of future pathways.

Achieving all these objectives is clearly challenging for any examination and qualification and is the reason why many education systems provide choices and options within their national examination for upper secondary certification. Many systems, for example, provide examinations at different levels, examinations linked to students' specialisation choices and frequently, provide distinct certification for general and vocational students. This issue discusses how the Matura in Lithuania might draw on some of these practices to provide a Matura that is more differentiated to the needs of different groups of students.

The Current Context: Choices and Options within the Matura

The content levels at which students study and the Matura examinations are not currently aligned

Currently, most upper secondary courses in Lithuania are offered as either general (B) and advanced (A) courses (Table 4.3.). Many OECD countries provide upper secondary students with the opportunity to study content at different levels of depth (Stronati, 2023[47]). However, in Lithuania the difference across the B and A courses is related to the amount of teaching hours and the amount of content that is covered, rather than the depth of learning and degree of mastery required to demonstrate proficiency.

Students can choose between taking a school or a state-level examination for certification. The main difference between the two sets of examinations is the perceived rigour and reliability, which are greater with the state-level examinations. There is no established policy however setting out how the depth, breadth and level of demand across the school and state-level examinations should be differentiated. The state Matura examinations cover the content of the A-level courses but this is not articulated in the curriculum or examination specifications.

Vocational students are put at a disadvantage in the Matura examinations

If students wish to be eligible for tertiary education, they are required to take state-level Matura examinations in at least three subjects. The content for the state-level examinations is based on the A-level courses. This puts vocational students at an automatic disadvantage because vocational students typically take B-level courses, in line with the fewer hours of general curriculum courses that they take to create space for vocational content. This is likely one reason why very few vocational students – just 2% in 2020 - use the pathway from vocational education into tertiary education. Even though the pathway is technically open, in practice it would require additional learning time outside normal school hours to cover the examination content.

Curriculum and certification are not promoting either depth or breadth of learning

Like in most OECD countries, Lithuania's upper secondary curriculum aims to promote breadth of learning, with students in both general and vocational education required to study at least eight general subjects. In addition to their eight general subjects, vocational students must also pursue a vocational specialisation and students in general education frequently add electives (Table 4.3.). In contrast, students are only examined in three to four subjects – typically Lithuania, Mathematics, and one or two other subjects. This creates a situation where students are required to study a wide range of subjects but are only examined

in a narrow set of subjects. Internationally, most systems tend to provide breadth – with students required to study a wide range of subjects on which they are examined – or depth, with students studying a narrow range of subjects at greater depth in which they are certified (Stronati, 2023[47]).

Table 4.3.Upper secondary curriculum and certification – current system

Subjects		Levels at which subjects are taken		Matura examinations	
		Levels	VET	USE certification 2 subjects	Tertiary entrance 3 subjects
Compulsory	Ethics / religion	Single level		School level	State level
	Lithuania Language	A (advanced) or B (general)	B (general level)	School level Compulsory	State level Compulsory
	Foreign languages	A or B	B	School level	State level
	Social sciences (at least one from History or Geography)	A or B	B	School level	State level
	Mathematics	A or B	B	School level	State Compulsory
	Sciences (at least 1 from biology, physics or chemistry)	A or B	B	School level	State
	Physical education (at least one from basketball, football, athletics)	A or B	B	School level	State
	Arts or Technological learning (at least one from arts, music or technological skills)	A or B	B	School level	State
	Vocational subject		Vocational specialisation	Assessed and certified separately	
Electives	E.g. psychology, economics, business, ICT to advanced physics, biology, etc.	Defined by school teaching capabilities. .		No examination	No examination
	Project	Optional	Optional	Municipal level, teacher committee	Municipal level, teacher committee
Total general curriculum hours		Minimum 28hours Maximum 35hours	Minimum 22hours Maximum 35hours		
Total examined subjects				2 subjects Passing grades from continuous assessment in all subjects	3 subjects

Sources: Adapted from national information and stakeholder meetings in Lithuania

There are few options to differentiate pathways to respond to student needs or interests

While curriculum content is provided at levels A and B, as discussed above, this difference relates to the amount of content covered rather than the depth of learning or demand. Similarly, the examinations for certification, and to access tertiary education are the same for all students – vocational and general upper secondary students alike. Furthermore, since upper secondary students wishing to enter tertiary education are required to take state Matura examinations in mathematics and Lithuanian, and English is generally viewed as essential, in practice the typical student will choose no, or perhaps one additional subject in which they are examined.

This structure provides upper secondary learners in Lithuania with relatively limited options to differentiate how they spend their time according to their levels of learning, interests and future ambitions. In contrast internationally, a defining feature of upper secondary education is the option for students to choose subjects or domains where they have a particular interest, as part of a progressive path towards defining their future focus in post-secondary education and employment (Stronati, 2023[47]).

The new system from 2023 onwards will provide greater differentiation and flexibility

In 2023, as well as introducing a new curriculum, Lithuania will introduce new requirements for the subjects that students study and related changes to the Matura examinations (Table 4.4). Key changes relevant to this issue include:

- Reducing hours for all students: both general and vocational students will be required to study for fewer hours overall. In particular, the number of compulsory subjects for vocational students will fall significantly – to 5 – as well as reducing the minimum number of hours.
- Providing more choice for vocational students: as well as reducing the overall hours of general subjects that vocational students are required to take, the changes to the curriculum will provide them with greater choice so that they can choose across several subjects.
- Providing compulsory subjects at different levels: mathematics and Lithuanian examinations will be provided at two levels of difficulty / depth, a general and a higher level.
- Introducing intermediate and final examinations: most subjects will have two examinations, an intermediate examination at the end of Grade 11 which will contribute 40% of a student's marks to the final grade, and a final examination at the end of Grade 12.

Table 4.4. Curriculum and examinations – new system

Subjects		GEN	VET	State-level Matura examinations	
Core / compulsory	Lithuania Language	Compulsory	Compulsory	Compulsory Intermediate and final examination General and higher level	
	Mathematics	Compulsory	Compulsory	Intermediate and final examination General and higher level Compulsory for tertiary entrance only	
	Physical education	Compulsory		Information unavailable	
	At least one foreign language	Compulsory	At least two subjects from foreign languages; mathematics, science and technology group; and social sciences group	Intermediate and final examination	
Electives (depending on programme)	At least one from science and technology group	Compulsory		Intermediate and final examination	
	At least one from social sciences group	Compulsory		Intermediate and final examination	
	At least one from moral education	Compulsory	Optional	Intermediate and final examination	
	At least one from arts group	Compulsory	Optional	Intermediate and final examination	
	Defined by school teaching capabilities. E.g. psychology, national security and defense, law, history of art, geographic	Optional	Optional	No examination	No examination

	information systems, astronomy, etc.				
	Project	Optional	Optional		
Total general curriculum hours		Minimum 18.75 Minimum 8 subjects	Minimum 12.75 hrs Minimum 5 subjects		
Upper secondary certification				At least two subjects including Lithuanian	
Tertiary entrance				At least three subjects including Lithuanian and mathematics	

Source: Adapted from national information and stakeholder meetings in Lithuania

Policy options to provide more flexible choices and options within the Matura

The text below presents Lithuania with three options to expand the range of choices and options within the Matura, including promoting closer alignment between students' curriculum choices and the subjects in which they are examined by the Matura and considering the specific needs of vocational students. It begins by discussing the country's intentions to introduce more modular assessment to the Matura by sharing evidence about the impact of teaching and learning of modular and linear assessment.

Option 3.a. Defining the purpose, structure and consequences of a more modular approach to assessment

Lithuania's state Matura examinations are currently linear, which means that all examinations for each subject are taken at the end of the two years of study (Baird et al., 2019[48]). As part of the proposed reforms to the Matura, Lithuania will introduce intermediate examinations that will assess part of the content for each subject and contribute 40% of a student's final mark in each subject. In some subjects, there will be multiple intermediate assessments. This change will make Lithuania's examinations more modular in nature. In a modular examination, assessment is broken into separate units of assessment which are combined to give an overall result (Baird et al., 2019[48]). As a first step to introducing this reform, Lithuania will need to carefully consider the purpose of the new intermediate examinations to guide the design and implementation of the new examinations.

Defining the function of the new intermediate assessments

Overall, assessment literature finds that there are both advantages and disadvantaged of linear and modular examinations (Table 4.5), rather than one system clearly standing out as being superior to the other (Baird et al., 2019[48]). Research as well as student and teacher experiences suggest that different types of assessment can be beneficial for different types of students and in different contexts. In England, where modular assessment was introduced in high stakes examinations at 16 and 18 years (and later removed), teachers and schools have experience of both modular and linear assessment. In their reflections on the different systems, they noted that modular examinations seem to be more accessible for learners for whom it is more difficult to retain information and to maintain stamina for learning and preparation over the full course (Baird et al., 2019[48]). Teachers in England noted that these challenges tended to be most relevant for lower performing students (Baird et al., 2019[48]). The design of a more modular assessment, whereby learners can revise some content and then be examined in it could suit some learners in both the vocational and general programmes in Lithuania. In particular, the more modular approach could help to promote greater success among vocational leaners cohort in the Matura examinations, who may already be familiar with this approach in their vocational qualifications.

The intermediate assessments could also provide two important systemic functions in Lithuania. First, they provide external, reliable information about student learning during upper secondary education. One of the challenges related to the Matura and assessment in upper secondary education in general is the reliability of school- and teacher-level assessments (see Issue 2. Introducing alternative types of assessment). The external, intermediate examinations could provide a useful indicator for students and teachers of where students are in their learning and how they might perform in the final examinations for the Matura. The results would be helpful for teachers as an external benchmark of expected standards to improve general assessment literacy. For students, the intermediate feedback on their achievement could also help to motivate them by enabling them to track their own progress and this could be useful in Lithuania given the recurrent perception among teachers and other adults that students are not motivated. However, country experience also demonstrates that for students who do not do well in intermediate examinations, the feedback can be demotivating (Baird et al., 2019[48]). Second, the intermediate examination in Lithuania could be used to provide a closer alignment between the curriculum's emphasis on breadth and in contrast, the narrow range of subjects in which students are examined (see Option 3.b. Supporting a better match between course and examination choices).

Table 4.5. Relative benefits of linear and modular examinations

Based on research literature

	Linear examinations		Modular examinations	
	Benefits	Disadvantages	Benefits	Disadvantages
Learning	Long-term retention of information Foster depth of learning More time for the development of subject-specific skills Better subject understanding		Testing when ready Students master a topic before moving on	Less subject coherence Less time for extended writing
Teaching	More time for teaching due to less frequent exams		Greater flexibility Better allocation of staffing and resources Content is covered in manageable chunks	More examinations can be disruptive
Student experience	Overall exam load is lower Maturity when taking examination	High peak of exam stress at end course	Can track progress Frequent feedback to support improvement Short-term targets beneficial Easier to revise	Constant workload to prepare for examinations
System challenges				Complexity of administration

Source: Adopted from Baird et al. (2019[48]), Examination Reform: Impact of Linear and Modular Examinations at GCSE Summary Report, Modular_Linear_GCSE_summary_final.pdf (ox.ac.uk) (accessed on 13 February 2023).

Addressing the learning and well-being challenges of over-assessment

More modular examinations are also associated with a number of limitations, according to the literature (Table 4.5), which is also echoed by teacher and student experiences (Baird et al., 2019[48]). A particularly relevant concern in Lithuania is likely to be student stress and over-assessment. While Lithuania does not have any other high stakes examinations for certification purposes in the earlier years of schooling, many students reported to the OECD team that they perceive the Grade 10 examination to carry high stakes for their future schooling. This is because, while enrolment in either general or vocational programmes is currently theoretically open to all students, in practice some general schools, especially those in the cities

where schools are competing to attract students and their families with high Matura results, might ask students to leave and move into a vocational programme if they achieve low marks in the Grade 10 examination. The emotional stress attached to this is likely quite high for individual students because it means leaving their current school and friends that they have been with for two years, to attend a new institution (see Chapter 3).

Regular, high stakes assessment also means that more learning time is devoted to examination preparation, which some teachers and subject experts feel reduces the time for deeper, cumulative learning that occurs across a longer period. This concern is echoed across all key subjects – notably mathematics, sciences and languages - but is arguably particularly prominent in subjects like the national language, where learners develop maturity and fluency of communication over the full course of study (Hayward, 2007[49]). In Lithuania, some teachers and students already shared the view that a disproportionate amount of teaching time is already devoted to examination preparation in the workshops with the OECD. This situation risks being accentuated with the intermediate assessments without steps to ensure that the examinations focus more effectively on assessing the application of knowledge and other complex skills in the new curriculum (see Issue 1. Supporting continual improvement and high-quality assessment).

At present, Lithuania currently plans to introduce just one intermediate examination which will likely mean that the negative impacts of modular examinations where students and teachers feel that there is constant assessment is likely to be contained. However, in some subjects, there are plans to introduce more than one intermediate examination and these plans should be carefully considered alongside international evidence of the potential benefits and drawbacks of modular examinations. Policy makers in Lithuania should be particularly conscious that, following the introduction of intermediate examinations, learners in Lithuania will face a high stakes examination every year in the last three years of their schooling. Options to offset this stress should be considered including revisiting the procedure for transitions into upper secondary education so that the Grade 10 examination results are not the sole or primary factor that determine transitions (see PP 1) and considering a re-sit policy for intermediate examinations so that learners can make up for low scores if they wish.

Option 3.b. Supporting a better match between course and examination choices

The country's current reforms to the curriculum and Matura provide scope to ensure greater alignment across the courses that students study and at the same time, provide more space for the general upper secondary curriculum to be adapted to diverse needs and interests.

Providing greater alignment across course and examination choices

Lithuania's current configuration of compulsory and examined subjects requires students to study a broad range of subjects while they are only examined in a limited range of them. This system incentivises students to focus on their results in a narrow range of subjects – the three to four where they will be examined – but since the content of the examinations and courses where they are focusing for their examinations is not any greater, they are not gaining any additional depth in their learning, despite the narrowing of their focus.

At a national level, the current approach results in student choices being clustered in three main subjects – Lithuania and Mathematics, which are compulsory and English. In contrast, only 816 students, took chemistry in 2022 (Table 4.6.). Given the national concerns about the shortage of new graduates with technical and scientific skills (OECD, 2021[50]), a national examination structure that promoted a more equitable spread of student choices across a range of subjects could help to create a pipeline of new graduates with the competencies needed in these sectors.

Table 4.6. State Matura examination results, 2022

	Total number of students taking examination	Of which % VET students	Total % of candidates who passed	% of VET students that passed
Mathematics	14 119	1.7%	65.7%	19%
Lithuanian language and literature	16 601	2.4%	93.1%	71.4%
English foreign language	17116	5.0%	98.3%	93.6%
Information Technology	1958	0.7%	86.7%	56.5
Biology	5370	2.4%	96.3%	75.6%
Chemistry	861	0.6%	96.3%	60%
Physics	1893	1.6%	97.1%	77.4%
History	6824	2.8%	99.1%	92.6%
Geography	3373	6.3%	99.2%	97.2%

Source: Nacionalinė švietimo agentūra (2022[51]), Rezultatų analizės, https://www.nsa.smm.lt/egzaminai-ir-pasiekimu-patikrinimai/brandos-egzaminai/rezultatai/ (accessed on 28 February 2023).

The current examination structure also likely affects student motivation in the subjects where they are not examined for the state Matura. Students are currently required to achieve a passing grade in teachers' continuous classroom assessment for upper secondary certification but stakeholders told the OECD team that this is rarely a robust or reliable indication of student achievement and in practice, all students achieve a passing grade with minimal effort. In any case, with the new reforms, this requirement will be removed.

Lithuania could use the examination and curricula reform to promote a more consistent approach in course and examination choices, by either:

- Promoting greater breadth of learning - by requiring students to be assessed for certification in all the subjects that they study. This would result in learners being examined in at least six subjects which is similar to the range of subjects in most OECD countries. Students might take different subjects at advanced or general levels, based on their needs, interests and future ambitions. This would help to ensure that students remain motivated and engaged in almost all their compulsory subjects until the end of upper secondary education. It would also provide an external, robust measure of learning in all subjects which could help to promote fairer, more consistent standards nationally.
- Alternatively, promoting greater depth of study. One option is that students take the new intermediate examinations in a broad range of subjects i.e. all the compulsory subjects that they study in Grade 11, and then based on their examination results, they could have the option of dropping certain subjects and continuing with three to four in which they would take their final examinations. The course content in Grade 12 could be appreciably different from that in Grade 11, not necessarily covering more content but at greater depth than in Grade 11 and with more hours of study to reflect the reduced breadth of study. Student marks from both the intermediate and final examinations could be reflected in the final Matura grade, even in subjects that are dropped in Grade 12.

In either scenario, the government will have to work very closely with the tertiary education sector to develop a clear system for how examinations at higher and general levels, and in the intermediate and final examinations will be considered and rewarded as part of the tertiary selection process.

Moving forward with plans to provide Lithuanian and mathematics at general and higher levels

Lithuania is planning to introduce state Matura examinations on two levels - general and advanced – for Lithuanian and mathematics. Most OECD countries provide at least some upper secondary courses, often those that are compulsory, at different levels. In Sweden, for example, students can select modules in core subjects at different levels in order to meet their requirements (e.g. Swedish 3, Mathematics 2). In Finland, students can choose from Basic and Advanced Mathematics (Stronati, 2023[47]).

The introduction of the new levels for the examinations in Lithuanian and mathematics should help to make sure that content is accessible for a wider range of students, and that the examination suits their needs. This is particularly important in core subjects like mathematics, where in 2022, 34% of Grade 12 students failed the examination (Nacionalinė švietimo agentūra, 2022[51]). The new levels of examination should ensure that all students have a robust, external assessment of the mathematical competencies but that the examination is accessible across a wider range of the ability and importantly reflects the different future needs and ambitions of learners. While all learners need some fundamental mathematical competencies, only those intending to pursue certain careers such as scientific, technological or medical might need a higher level of mathematics.

As Lithuania introduces the new levels, the government will need to ensure that these are carefully matched to teaching. For example, students taking the higher paper need to have had the opportunity to learn content at a deeper level and master more advanced skills to prepare for the paper. This might mean providing different classes at different levels or additional classes for students preparing for the higher Matura paper. This would also require that teachers receive adequate preparation to teach the different courses and it may require more teachers to teach the different levels.

Working proactively with tertiary education partners to determine how they will set requirements for selection

Tertiary selection in Lithuania, as in many OECD countries, significantly influences how and where students and teachers focus their time during upper secondary education. While the tertiary sector in Lithuania in independent, as in other OECD countries, most students attend tertiary education through a state-funded place which makes it critical that the government and tertiary actors work together to determine how the Matura reforms will impact selection. It will be essential that the government initiates discussions with the tertiary education sector early on in its current reforms so that teachers and students have a clear and accurate understanding of how their choices in upper secondary education will impact their chances in tertiary selection.

A central issue will be how the new advanced and general levels will be accounted for in tertiary selection. Tertiary institutions might set specific requirements for certain subjects, for example, students wishing to study medicine might need advanced mathematics while history applicants might only require general mathematics. Certifications at general and advanced levels might be associated with different points for tertiary selection purposes. In the United Kingdom, an independent organisation, UCAS, provides a points calculator which enables students taking upper secondary qualifications across either England, Wales, Northern Ireland or Scotland to enter their qualifications and their grades and see how many points they would receive for their qualifications. Young people can then search across the UCAS website to see the tertiary education programmes they are likely to be able to access with their available points (UCAS, 2013[52]). The government in Lithuania might encourage or require the tertiary sector to create a similar tool, especially for students accessing state-funded places.

Supporting students to make informed subject and level choices

The introduction of different levels, as well as intermediate examinations, and the associated reforms around subject choice will mean that young people in Lithuania and their teachers will need to be supported to understand the options available to them to make informed choices. Lithuania is strengthening its system for student guidance, by introducing student guidance earlier on and developing a new national website to provide accessible information for young people (see Chapter 3). These approaches should be developed to integrate advice about Matura options and levels. As part the process of transitioning into upper secondary education, as well as discussions about whether a general or vocational programme best suits an individual student, students should receive advice on:

- The elective subjects that they will take during upper secondary education, and for the vocational students, their VET specialisation.
- The level of demand – general or higher – that students will take mathematics and Lithuania at. This can focus both on their aptitude for the subject and future ambitions.

As well as providing advice during a face-to-face meeting with a student and their student guidance counsellor, students would be supported to reach informed decisions through clear information about future pathways available on the national career website. In Ireland, for example, the National Careers Portal sets out typical subject choices in the country's upper secondary certification – the Leaving Certificate – according to future career ambitions (CareersPortal.ie, n.d.[53]). While in New Zealand, the Careers New Zealand website provides users with a "Subject Matcher" tool that enables them to see the career paths that are linked with their upper secondary subject choice. A "Choosing School Subjects Action Plan" provides questions and prompts to help young people determine their upper secondary subject choices (careers.govt.nz, 2023[54]).

Option 3.c. Meeting the needs of vocational upper secondary students in the Matura

In theory, Lithuania's pathway from vocational upper secondary education into tertiary education is one of the most open across the OECD. Upon completion of upper secondary education, 94.0% of vocational upper secondary students in Lithuania have direct access to tertiary education, in contrast to 73.7% across the OECD on average (OECD, 2022[55]). In practice, because very few vocational upper secondary students take the state Matura examinations, and even fewer pass them, only a tiny minority can access this pathway. In 2020, just 2% of upper secondary vocational graduates entered tertiary education (OECD, 2022[55]). While the rate of entry into tertiary education is generally much lower for vocational graduates compared with general education graduates in all countries, it is particularly low in Lithuania (OECD, 2022[55]). The text below discusses ways in which the state Matura examination could be revisited to reduce barriers for vocational students to enter tertiary education.

Ensuring that the new examinations are accessible for VET students

One of the major challenges with the removal of the school level examinations and the introduction of only state Matura examinations will be ensuring that the new examinations are provided at a standard that is accessible for most students. This is a significant risk because successfully passing the Lithuanian examination, and another examination of their choice, will be a requisite for certifying completion of upper secondary education. Currently, very few vocational students take the state Matura examinations so the examinations team in Lithuania's National Agency for Education does not have reliable historical information on the performance of this student cohort. Providing the examination at two different levels is an important step to promote accessibility.

The government could also consider providing some subjects at multiple levels. This will be particularly important if the country considers making a broader range of subjects compulsory in the state Matura examinations (see Option 2). In Ireland for example, where the vast majority of the cohort (around 95%)

sits the Leaving Certificate examinations, students can choose from three levels of Irish which is required for certification of upper secondary education, three levels in mathematics - Foundation, Ordinary and Higher, which most tertiary institutions require (OECD, 2023[56]). Similarly, in Japan schools might offer up to six different options for mathematics, while in Korea they offer a choice between three options in mathematics plus one in applied mathematics (Stronati, 2023[47]). The introduction of more levels would help to ensure that students across the ability range and with different aspirations can certify skills in key subjects.

Developing a dedicated upper secondary certification for vocational students

The policy decision in Lithuania to have a single, uniform upper secondary qualification aims to maintain a direct pathway from vocational upper secondary into tertiary education and to promote equity of access. Few vocational students are ever able to access this pathway because they have to perform at the same levels as their peers in the general programme to be able to access it. This is profoundly unfair because the learners in the vocational pathway have less hours learning general subjects. This reduces their opportunities to develop subject-specific skills but also the transversal skills that learners develop across a curriculum of general subjects such as general higher-order skills like analysis, evaluation and the ability to synthesise large amounts of complex information, which are important for success in examinations such as the state Matura examination. In addition, learners in vocational pathways invariably begin with lower achievement in general subjects because this is generally a factor in orientation decisions into upper secondary education.

The quasi-impossibility for vocational students to access tertiary education is significantly impeding the parity of esteem for the vocational pathway and hinders the country's possibility to have a strong pipeline of upper secondary graduates into higher vocational education. Lithuania is currently developing short-course tertiary education (ISCED 5) which is generally designed as an important pathway for vocational learners into tertiary education (see Chapter 3). Graduates from vocational upper secondary programmes are still expected to achieve at the same level as their counterparts from general education in the Matura examination which determines their eligibility to access all tertiary education, including ISCED 5. This means that in practice, students from vocational upper secondary programmes might find themselves crowded out from accessing ISCED 5 places by general upper secondary graduates who do not achieve the grades to access to bachelors programmes in tertiary education (ISCED 6).

In the future, Lithuania will need to give very serious and careful consideration to developing an upper secondary examination and certification that values the skills of vocational graduates and recognises their achievement in general subjects. This could be achieved in different ways:

- Rewarding students' VET courses with points or as a component of the Matura. For example, a student's VET specialisation could replace some of the general courses of the Matura or, to be eligible to access tertiary education, vocational students might need to complete two general courses and their VET specialisation.
- A more flexible Matura that provides a wider range of subjects, including perhaps vocational and/or applied that subjects that bridge general and vocational content. This would have to entail a wider range of assessment approaches but some of these could probably draw directly on existing practices in vocational education. It might be difficult for some schools, especially those in rural areas, to provide a good offer of courses.
- Developing the Matura as a single umbrella certification which includes quite different certifications for different purposes within it. In France for example, students at 18 can take either a *baccalauréat général, baccalauréat technique* or a *baccalauréat professionnel*. While all the qualifications are achieved at the same level in the country's national qualification framework, the content and assessment are distinctly different, with students in the *baccalauréat professionnel* spending time on the job learning. Students in the *baccalauréat professionnel* spend less time in general subjects

> such as French, mathematics, sciences and social sciences than their peers in the other baccalaureate options and take different examination in these subjects. While all the different types of French Baccalaureate provide access to tertiary education, they are each a pathway to different options. Generally the *baccalauréat professionnel* is a pathway to short course, vocationally-oriented programmes – BTS (ISCED 5), the *baccalauréat technique* to short course programmes – BTS and BTU (ISCED 5) and the *baccalauréat général* to bachelor programmes (ISCED 6) (Ministère de l'Education Nationale et de la Jeunesse, n.d.[57])

If Lithuania chose to implement a Matura for vocational students that aimed to provide access to ISCED 5, it would be important to ensure accessible progression from ISCED 5 to ISCED 6 if students wished to pursue this route, either immediately or later in life (see Chapter 3).

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Strengthening Upper Secondary Education in Lithuania

Upper secondary education in Lithuania stands out internationally with one of the highest attainment rates across OECD countries. Yet the country and its young people receive relatively modest returns in terms of learning outcomes for the country's high rates of upper secondary completion. To address this issue, Lithuania is currently undertaking a series of reforms at the upper secondary education level. This report explores how Lithuania, and its young people can achieve higher returns on its investment in upper secondary education and provides Lithuania with policy recommendations to help improve it by strengthening vocational education pathways and by consolidating upper secondary certification.

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