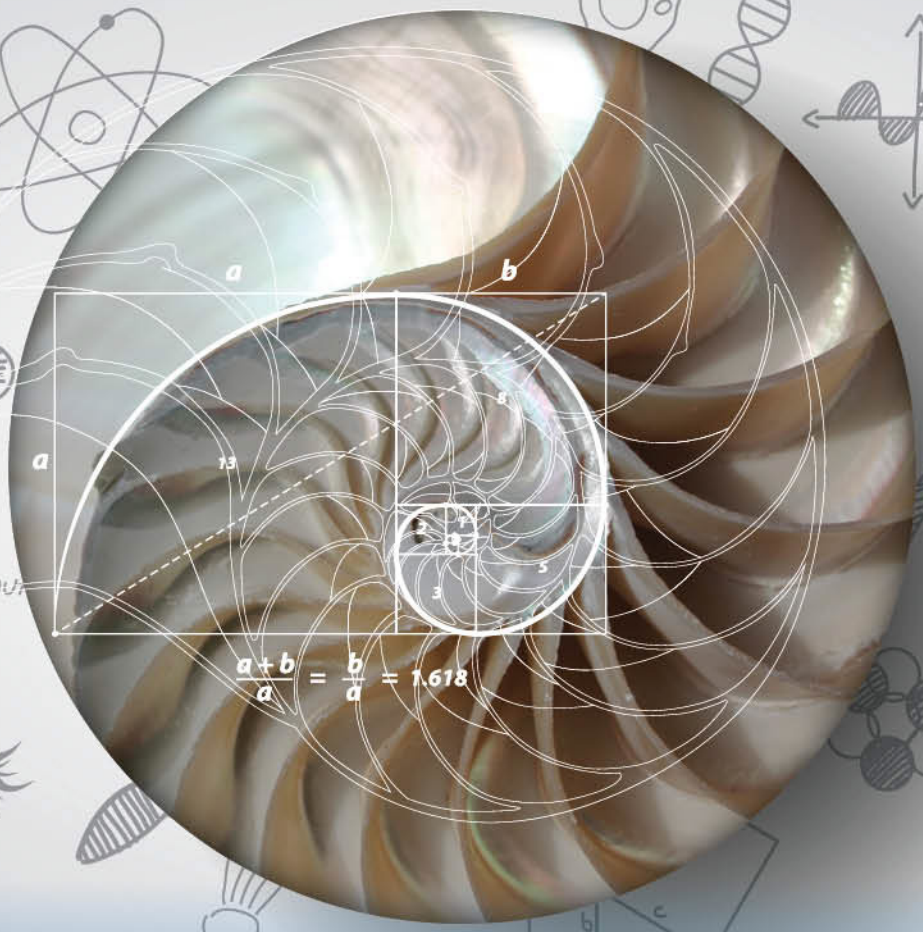
European Commission

Increasing achievement and motivation in mathematics and science learning in schools

Eurydice report



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CHAPTER 6: SUPPORTING LOW ACHIEVERS

Reducing the share of low achievers is essential for achieving the twin goal of having quality and inclusive education systems in Europe. However, in recent decades, the proportion of students who do not have a basic understanding of mathematics or science has not decreased in most European countries. The European target of 15% as the maximum share of underachieving 15-year-old students has been met by only a handful of education systems (see Chapter 1). In addition, as Chapter 1 also showed, individual student characteristics such as socioeconomic background, and to a lesser extent gender, influence the likelihood of underperformance (see also European Commission / EACEA / Eurydice, 2020). Students who perform poorly do not acquire the level of knowledge, skills and competences they might have if personal, educational or social conditions were different. Therefore, it is imperative to analyse what kind of strategies and measures could be successful in reducing low achievement in mathematics and science, and what building blocks are necessary for moving towards more effective and inclusive education systems.

Student support systems are essential for raising achievement levels and addressing individual learning problems and difficulties (see European Commission / EACEA / Eurydice, 2020). However, the kind of support that students receive largely depends on which school they attend. Several studies and reports emphasise the importance of school leadership, a supportive school environment, high-quality teachers and effective classroom learning strategies for successfully reducing low achievement (OECD, 2012; see also Cullen et al., 2018; Dietrichson et al., 2017).

So what could be the role of top-level authorities in this regard? This chapter is devoted to examining top-level frameworks for student support systems and measures in Europe in mathematics and science education. The first step towards supporting low-achieving students is to determine who they are and identify their learning needs. Therefore, the first section examines the different assessment mechanisms through which students who need learning support can be identified. Then the chapter provides a broad overview of top-level frameworks of student support, outlining the main models that exist in Europe. The last section discusses how support is organised in schools across European education systems, and what kind of impact the COVID-19 pandemic has had on this.

6.1. Identifying learning needs

The first step towards developing successful and effective student support is to identify individual problems and learning needs. Given the impact of socioeconomic factors and family background on student achievement, it is important to understand as early as possible which children may require additional support. Continuous monitoring of children's performance is all the more important because learning difficulties – specifically difficulties in mathematics – are found not to be stable over time, as children can outgrow their developmental delays (Gersten, Jordan and Flojo, 2005). This also highlights that the timing of learning support may be even more important than its duration.

European education systems rely on different assessment mechanisms to identify students who need learning support. These are rarely subject specific, and thus are most often not related specifically to mathematics or science achievement. Such assessment mechanisms 'serve to identify students who are at risk of failure, to uncover the sources of their learning difficulties and to plan for an appropriate supplemental intervention or remediation' (OECD, 2013, pp. 140–141).

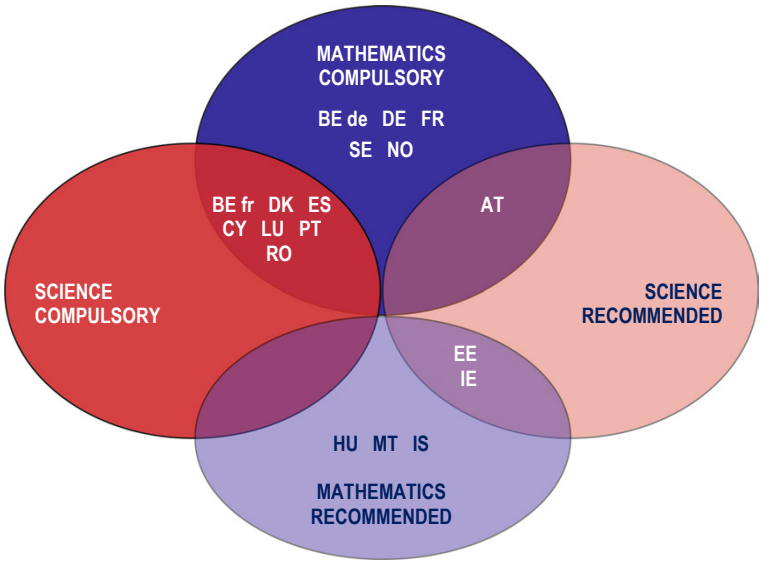
The most common way to identify low-achieving students is ongoing monitoring in the classroom. This most often takes the form of continuous testing and **grading**, which exists in virtually all European education systems. Based on this grade-based or relative achievement approach, low-achieving students are identified either from the final grades they receive or from their achievement levels

relative to others. Examples of the former are low achievers being defined as having a 'score of less than six tenths' (Italy) or as 'having a grade lower than 5 on a scale of 1–10' (Romania). An example of the latter is low-achieving students being defined as those obtaining lower than average results (Croatia). In education systems relying solely on this assessment mechanism, low achievement is often associated with 'school failure', and support is usually provided to avoid grade repetition.

A second assessment mechanism applied in European education systems to identify students' needs for learning support takes the form of **top-level competence-based tests** that aim to identify individual learning needs (see also Chapter 4). On top of the continuous monitoring practice of teachers, these tests provide an additional instrument for identifying low-achieving students and their learning support needs. Where such tests are used, top-level authorities design their content based on the competences and/or learning outcomes specified in steering documents, and students not achieving these competences or learning outcomes should receive additional support. Top-level tests can be offered or imposed by top-level authorities; in the latter case, schools are obliged to implement them in given time periods.

Figure 6.1 shows the education systems in which top-level authorities offer this kind of testing or make it compulsory for students at primary and/or lower secondary level in mathematics and/or science. When tests aiming to identify individual learning needs are compulsory, firstly, top-level authorities specify both the content and the timing of the tests to be organised, and, secondly, participation is compulsory for all students, irrespective of their performance.

Figure 6.1: Top-level compulsory or recommended tests with the aim of identifying individual learning needs in mathematics and science, ISCED 1-2, 2020/2021



No such top-level tests:
BE nl, BG, CZ, EL, HR, IT, LV, LT, NL, PL, SI, SK, FI, AL, BA, CH, LI, ME, MK, RS, TR

Source: Eurydice.

Explanatory note

The figure includes top-level national tests with the aim of identifying individual learning needs, taking place at ISCED 1 and/or at ISCED 2. For all national tests, see Chapter 4, Figure 4.6. The figure shows these top-level tests as they were planned for the 2020/2021 school year. In a few cases, these tests were cancelled due to the COVID-19 pandemic (see Chapter 4, Figure 4.8).

Country-specific notes

Belgium (BE fr), Germany, Spain and **Sweden**: Compulsory tests are carried out at ISCED 1 only.
Ireland, Hungary and **Malta**: Recommended tests are carried out at ISCED 1 only.
Denmark, Cyprus, Luxembourg and **Romania**: Compulsory tests in science are carried out at ISCED 2 only.

As the data reveals, the practice of compulsory top-level testing with the objective of identifying individual learning needs is rare; it does not take place in two thirds of education systems. Only 13 education systems organise such compulsory top-level tests in mathematics, and only seven education systems do so in science. Differences between the subject areas are especially pronounced in primary education, where these tests most often concern the basic literacy and numeracy competences of students. At this level, students' scientific competences are tested in three education systems only (Belgium (French Community), Spain and Portugal).

Several education systems stress the need for early intervention, and therefore organise top-level testing with the objective of identifying individual learning needs in the first and/or second grades of primary education. This is the case in Germany (Berlin-Brandenburg), France, Portugal, Romania and Sweden. These early national tests are often followed by additional ones in later grades.

In **France**, national tests with the aim of identifying learning needs are administered to all students in mathematics, twice in grade 1 and once at the beginning of grade 2. These early tests are followed by another in mathematics at the beginning of grade 6 (and then in grade 10).

In **Portugal**, students take assessment tests in grades 2, 5 and 8. Mathematics competences are tested in all grades in each academic year; however, scientific competences are tested on a rotating basis (i.e. not every year) in grades 5 and 8.

In **Romania**, testing to identify learning needs takes place in every second grade from grade 2 to grade 8 in mathematics, and in grade 6 in science.

In **Sweden**, national support material in mathematics for grades 1–3 (mandatory for teachers to use) is provided for the mapping and evaluation of pupils' knowledge development. According to the Swedish National Agency for Education regulations, the mapping should take place twice in grade 1 and once in grade 3 ([221]). These early tests are followed by a national test in grade 6, which also aims to identify learning and support needs. National tests administered at later stages, however, serve different purposes.

Belgium (French Community), Denmark, Spain, Cyprus, Austria and Norway also organise several compulsory national tests, from grade 3 onwards.

In **Belgium (French Community)**, compulsory national diagnostic tests are organised for grades 3 and 5 (and later at ISCED level 3). They are organised in a triennial cycle, with each subject (mathematics and science among them) tested once every 3 years. Only a representative sample (determined by the steering service, based on the socioeconomic index of the school, the province and the education network) is used for the analysis of results. The purpose of this selection is to evaluate learning in the previous cycle.

In **Denmark**, the aim of the national tests is to strengthen the evaluation culture in primary and lower secondary schools and to have a uniform tool that can be used for evaluation across the country. The national tests – which are organised in grades 3, 6 and 8 in mathematics and in grade 8 in science – supplement other forms of evaluation. The tests may provide an insight into the individual student's level of competence in the tested areas, but the national tests alone do not provide detailed knowledge of the individual student's academic level and learning needs. The results of the national tests can be included in the overall assessment of the students and of the class, along with knowledge of the students from, for example, ongoing evaluation, observations, tests (i.e. diagnostic tests) or assignments.

In **Spain**, there are two tests aiming to identify learning needs in primary education: one in grade 3 (in mathematics) and one in grade 6 (in mathematics and science). There is another test in grade 10 ([222]).

In **Cyprus**, testing takes place in grades 3, 6 and 7 in mathematics, and in grade 7 in science.

In **Austria**, in mathematics, the individual competence measurement PLUS (iKMPLUS) basic modules are compulsory in grades 3 and 4, as well as in grades 7 and 8.

In **Norway**, mandatory numeracy tests are organised in grades 5, 8 and 9.

([221]) The Swedish National Agency for Education's regulations on compulsory national assessment support in Swedish, Swedish as a second language and mathematics, SKOLFS 2016:66 (*Skolverkets föreskrifter om obligatoriska nationella bedömningsstöd i svenska, svenska som andraspråk och matematik i årskurs*).

([222]) Law 8/2013 of 9 December, for the improvement of educational quality, was in force in 2020/2021. A new legal framework for national testing entered into force in the 2021/2022 academic year.

Belgium (German-speaking Community) and Luxembourg run one compulsory competence-based test per education level.

In **Belgium (German-speaking Community)**, primary schools regularly take part in the VERA (*Vergleichsarbeiten*) 3 test for mathematics in grade 3, which is a top-level test, the results of which are communicated to the schools, teachers and parents. A similar test (VERA 8) is organised in secondary schools for grade 8.

Besides compulsory tests that schools and teachers have to use as an assessment tool when identifying students' learning difficulties and their learning support needs, countries can also recommend that national test results are used for such purposes on a voluntary basis. In some education systems (e.g. in Estonia, Ireland and Iceland), the use of multipurpose national tests is recommended for identifying students' learning needs (see also Chapter 4, Section 4.3.2).

In **Estonia**, national tests in mathematics and science take place at the beginning of grades 4 (primary education) and 7 (beginning of lower secondary education). These are sample-based electronic tests in which approximately 5% of schools are required to take part; for the others, the test is voluntary. However, the vast majority of schools participate and use the results for the purpose of identifying students' learning needs.

The **Icelandic** National Curriculum Guide for Compulsory Schools sets the basis for standardised testing in mathematics to be conducted three times during a student's compulsory education (in grades 4, 7 and 9). These tests can be used for the purpose of identifying students' learning needs.

In other education systems, top-level authorities design freely available tests with the main purpose of detecting students' learning difficulties. In these cases, top-level authorities do not make testing compulsory for all students, but these tests are available (and recommended) for teachers to use when they deem necessary. In other words, teachers can rely on these tests as additional assessment tools supporting them in identifying or confirming the specific learning problems of students and their needs for support. Such tests exist in Hungary and Malta in mathematics, and in Austria in mathematics and science.

In **Hungary**, a diagnostic developmental examination system (DIFER) is available for teachers to assess those grade 1 pupils whose development of basic skills should be more strongly supported in the future. Teachers can rely on this system's tests to help them establish the necessary support measures.

In **Malta**, low-achieving students in grades 4 and 5 who need additional support in class take a mathematics diagnostic test provided by the mathematics support teacher. Consequently, they follow an alternative programme adapted to their specific needs. This diagnostic test is administered once, as soon as the class teacher realises that the particular student is a low achiever who is not mastering curriculum content as well as the rest of the class.

In science, informal competence measurement (IKM) tests are developed by the top-level authority in **Austria** to test the competences of grade 7 and grade 8 students in science. The tests are freely available and teachers can use them voluntarily. Such voluntary tests are also available in mathematics.

National tests and their potential impact on learning outcomes will be further analysed in Chapter 7.

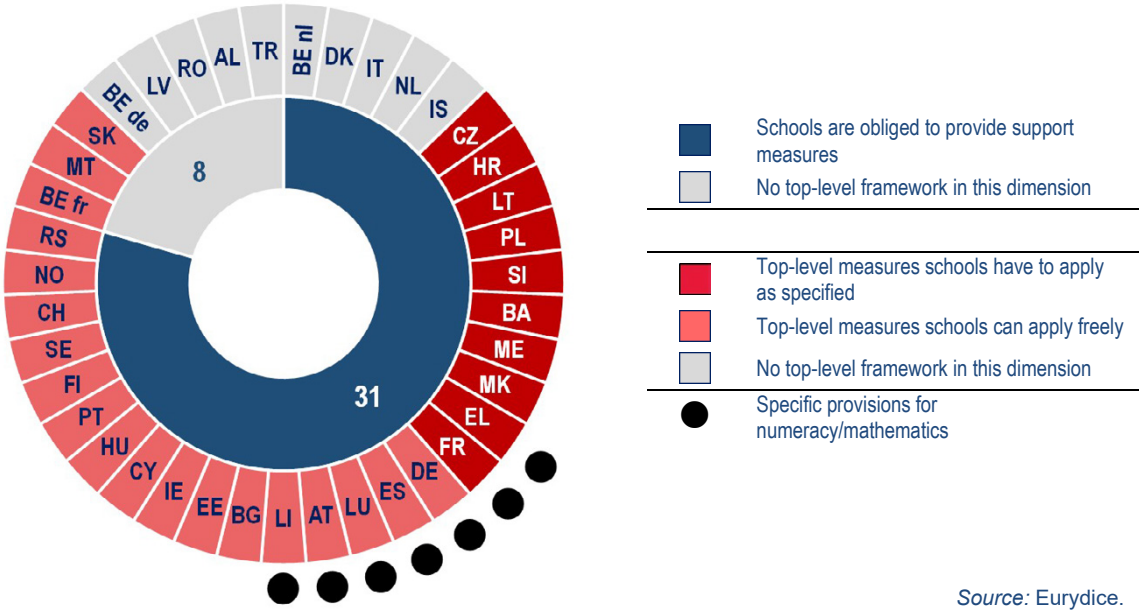
6.2. Top-level frameworks for providing learning support

After their learning needs are identified, students with learning problems and difficulties must receive the appropriate learning support to be able to achieve their full potential. While the next section will detail the concrete learning support measures that are applied in European education systems, this section provides an overview of the broad frameworks and top-level policy approaches. These top-level frameworks may contain:

- the obligation of schools to provide learning support to low-achieving students;
- the support measures that can or should be applied;
- subject-specific provisions.

Very broadly, where top-level frameworks exist – as illustrated by Figure 6.2 – authorities can follow different strategies, examined along three main dimensions. Firstly, they can oblige schools to take steps towards identifying and supporting students' learning problems and difficulties. In such frameworks, students are usually entitled to receive effective learning support, and schools have the obligation to comply with this requirement. Secondly, top-level authorities can provide more or less detailed guidelines or recommendations for schools on how to support low-achieving students. In a more prescriptive framework, these guidelines can contain the exact steps schools need to take to identify and support students with learning difficulties. Alternatively, top-level recommendations can provide schools with different options they can implement, enabling them to make effective support available for those in need. Thirdly, education systems may decide to outline specific provisions for certain learning areas, notably in mathematics. In the 2020/2021 school year, such subject-specific provisions were not provided for science in any education system.

Figure 6.2: Top-level frameworks for providing learning support in mathematics and science, ISCED 1-2, 2020/2021



Source: Eurydice.

Explanatory note

The inner circle distinguishes between education systems that oblige schools to provide learning support to students who need it and those that do not. The outer circle shows whether and how top-level authorities determine the concrete support measures schools can or should apply when providing support to low-achieving students. Finally, the black dots around the circle indicate whether top-level frameworks include subject-specific provisions.

Country-specific notes

Belgium (BE fr): The top-level framework concerns ISCED 2 only.
Czechia: Specific support measures are decided by the schools, counselling centres and parents in cooperation.
Greece: Specific provisions for numeracy skills are at ISCED 1 only.
France: A specific plan addressing low achievement in science will enter into force in the 2022/2023 academic year, in addition to the scheme for mathematics launched in 2018.
Cyprus: The obligation to provide support applies to ISCED 1 only.
Luxembourg: Specific provisions for numeracy/mathematics skills are at ISCED 2 only.

Top-level authorities may also specify the appropriate financial and human resources necessary for the provision of learning support, and ensure that they are in place. The human resources aspects of learning support will be discussed in Section 6.3.2.

Along the first dimension (the inner circle in Figure 6.2), the majority of European education systems do oblige schools to provide learning support to students who need it. Even in the absence of more

detailed regulations, this obligation exists in 31 education systems. Nevertheless, this does not necessarily mean that, in the eight education systems without such obligations, support measures are not applied in schools at all; the top level might simply keep this decision within the realms of school autonomy.

The second dimension (the outer circle in Figure 6.2) concerns whether and how top-level authorities determine the concrete support measures schools can or should apply when providing support to low-achieving students. In around one quarter of European education systems (10), top-level authorities specify concrete and detailed steps schools need to follow when organising learning support provision. In these cases, top-level regulations usually specify the format of support to be applied (e.g. small-group tutoring), sometimes depending on the types of need, the teaching personnel involved, and when and how support provision should be organised. In such prescriptive frameworks, schools are always obliged to provide learning support where needed.

In **Greece**, where support for low achievers in primary schools is essentially provided for only literacy and numeracy, schoolteachers are responsible for setting up small classes (of up to five students) for remedial teaching (*enischytiki didaskalia*) ([223]). Remedial teaching runs for 1–2 school hours a day and up to 6 school hours a week, during or after school hours. For lower secondary students, remedial teaching and compensatory education (*antistathmistiki ekpaidefsi*) ([224]) takes place in school centres for educational support (SKAE) in groups of a minimum of 10 and a maximum of 15 students. Depending on the number of applications, the teachers' board of each school can propose that the school functions as a school centre for educational support. All schools provide such compensatory education; where necessary, this is provided in collaboration with neighbouring remedial teaching centres.

In **Croatia**, schools are obliged to organise additional tuition (*dopunska nastava*) for students who need help in learning. When such student support is needed, additional tuition is organised in small groups, usually of up to eight students. Additional tuition is organised for subjects for which there is a need for support, and the students have to attend these classes regularly. The number of preparatory and additional classes is planned by schools according to the actual needs, with the prior consent of the Ministry of Science and Education ([225]).

A more widespread approach, which is used in around half of European education systems (19), is top-level authorities specifying potential ways to provide support, which schools can apply freely depending on the needs of students or the school's organisational capacity. Alternatively, specifications in top-level frameworks may be relatively vague, and schools can freely decide how to implement them. These frameworks most often, but not always, oblige schools to provide learning support, and stress the importance of school autonomy in learning support provision.

In **Finland**, according to the Basic Education Act ([226]), pupils are entitled to sufficient learning support as the need arises. To ensure the early identification of needs, pupils' progress and their school attendance must be continuously assessed. The school's operating methods, teaching arrangements and learning environment, as well as their suitability for the pupil, are examined first. On the basis of this examination, the possibility of making changes in these aspects to find suitable pedagogical solutions is assessed. In the examination and planning of the support, all available assessment results are utilised, and earlier support provided for the pupil is taken into account. Forms of support prescribed in the Basic Education Act include remedial teaching, part-time special needs education, interpretation and assistance services, and special aids. These support forms may be used separately or to complement each other. The support received by the pupil must be based on long-term planning and adjustable as the pupil's needs for support change. Support is provided for as long as necessary.

([223]) Presidential Decree 429/1991 (Government Gazette No 167 / A / 30-9-1985) on assessment and remedial teaching of lower secondary school students; Law 4823/2021 (Government Gazette No 136 / A / 3-8-2021), article 100 on extra-curricular teaching hours covering remedial teaching.

([224]) Law 4368/2016 (*Government Gazette* No 181 / A / 18-11-2019), Article 28 on issues of special needs education; and Law 4485/2017 (*Government Gazette* No 114 / A / 4-8-2017) on organisation and operation of higher education, regulations for research and other provisions.

([225]) Primary and Secondary School Education Act (*Zakon o odgoju i obrazovanju u osnovnoj i srednjoj školi*), *Official Gazette*, 89/2008, 86/2010, 92/2010, 105/2010, 90/2011, 5/2012, 16/2012, 86/2012, 126/2012, 94/2013, 152/2014, 07/2017, 68/2018, 98/2019, 64/2020.

([226]) Basic Education Act (*Perusopetuslaki*) 21.8.1998/628, regulations and instructions (2014:96).

Finally, in around one quarter of education systems (10), it is not the top level that is responsible for specifying learning support measures. In some cases, top-level authorities delegate this task to local authorities (e.g. in Denmark and Iceland), but most often schools have the autonomy to decide how to support students with learning difficulties. In some systems, schools are still obliged to provide learning support, even if the format is not specified.

The third dimension into which top-level frameworks can be categorised is whether they include subject-specific provisions (i.e. whether learning support measures are specified for a specific learning area) (see the black dots around the circle in Figure 6.2). As Figure 6.2 shows, such subject-specific provisions exist in seven education systems, and they all concern learning support in mathematics or numeracy skills ([227]).

In **Germany**, the Resolution of the Standing Conference of German Ministers of Education and Cultural Affairs on the principles for the support of students with special difficulties in reading and spelling or in arithmetic ([228]) emphasises the need for recognising learning difficulties at an early stage in order to be able to start support as early as possible and to develop an individual support plan, specifically related to reading, spelling and arithmetic skills.

In **Austria**, differentiated teaching is recommended specifically in the case of difficulties concerning arithmetic problem-solving ([229]).

Students with special educational needs

In the majority of European education systems, support provided to students with special educational needs within mainstream education falls under a separate top-level framework. Even education systems without a top-level framework for supporting low-achieving students tend to have one for students with special educational needs; only Albania and Turkey do not have top-level frameworks for supporting such students within the mainstream education system. These frameworks often outline specific support provisions for this group of students (adapted curriculum content and assessment, individual learning plans, protection from grade repetition, etc.). These specific provisions are not included in the analysis above.

Nevertheless, the distinction between low achievers and students with special educational needs is not always clear-cut. Some education systems emphasise that all students should receive the type and level of instruction they need irrespective of how small or big their learning difficulties may be. Some of these education systems tend to mainstream the category of 'special educational needs', categorising all students with smaller or greater learning difficulties under this or a similar umbrella term (e.g. in Czechia, Ireland, Poland, Iceland and Serbia).

In **Poland**, pupils with low educational performance ('with educational failure, with specific learning difficulties') are included in the category of pupils with special educational needs who require support and are offered psychological and pedagogical assistance. In addition to low-achieving students, this group also includes exceptionally gifted students, students in crisis or traumatic situations, socially neglected students, students previously educated abroad and culturally diverse students (e.g. immigrants or Polish children returning from abroad). Schools and counselling and support centres provide various forms of support to students with special educational needs, depending on the individual student's needs ([230]).

([227]) A specific framework for learning support in science will enter into force in France in the 2022/2023 academic year.

([228]) Resolution of the Standing Conference of German Ministers of Education and Cultural Affairs on the principles for the support of students with special difficulties in reading and spelling or in arithmetic (*Grundsätze zur Förderung von Schülerinnen und Schülern mit besonderen Schwierigkeiten im Lesen und Rechtschreiben oder im Rechnen*).

([229]) Guidelines for dealing with pupils with difficulties in learning arithmetic in schools (Circular 2017/27) (*Richtlinien für den schulischen Umgang mit Schülerinnen und Schülern mit Schwierigkeiten beim Rechnenlernen*).

([230]) Regulation of the Polish Minister of National Education of 9 August 2017 on the rules for organisation and provision of psychological and educational support in public nursery schools, schools and educational institutions (consolidated text, *Journal of Laws of 2020*, item 1280) (*Rozporządzenie Ministra Edukacji Narodowej z dnia 9 sierpnia 2017 r. w sprawie zasad organizacji i udzielania pomocy psychologiczno-pedagogicznej w publicznych przedszkolach, szkołach i placówkach*).

Some other education systems aim to end the 'categorisation' of students altogether, creating a continuum of educational responses based on students' needs (e.g. in Portugal, Finland and Norway).

> In **Portugal**, Decree-Law No 54/2018 (1) abandons student categorisation systems, including the category of special educational needs, (2) abandons the special legislation model for students with special educational needs, (3) establishes a continuum of responses for all students, and (4) focuses on educational responses and not on categories of students.

Nevertheless, the analysis in this chapter does not include students with special educational needs in case separate top-level frameworks apply to them.

6.3. Learning support measures in mathematics and science

Having examined the broader policy framework in which schools operate in relation to supporting low-achieving students, this section takes a closer look at the concrete learning support measures specified in top-level regulations, recommendations or guidelines (i.e. the ways in which schools are supposed to help students facing learning difficulties). More specifically, this section provides an overview on what the main forms of support are, who provides such support in schools and how support measures have evolved since the beginning of the COVID-19 crisis.

6.3.1. How are low-achieving students supported?

Learning support for low-achieving students can be organised in several different ways, from differentiated instruction within the classroom to out-of-school homework support. This subsection first examines the support measures specified in top-level regulations, recommendations or guidelines (excluding provisions for special educational needs in case they fall under a separate framework). While such top-level documents often indicate how learning support can or should be organised in schools, they rarely address teaching practices and the ways in which teachers could address the presence of students with different achievement levels in the classroom. Therefore, the second part of this subsection briefly discusses classroom teaching practices based on the International Association for the Evaluation of Educational Achievement's (IEA) Trends in International Mathematics and Science Study (TIMSS) 2019 survey. Specifically, it looks at the prevalence of differentiated teaching and ability grouping in the classroom in mathematics and science.

Top-level learning support measures in mathematics and science

Few would debate the usefulness of additional support provided for those who need it. Additional tutoring and individually tailored student support have been found to be beneficial to students who require more focused attention (see, for example, Dietrichson et al., 2017; Lee-St. John et al., 2018; Santibañez and Fagioli, 2016). Additional tutoring can also mean more opportunities to learn, and increased learning time alone has the potential to improve student performance (see Chapter 3 for more details).

Nevertheless, in what form learning support is provided might also matter. Studies have evaluated the effectiveness of both in-school and out-of-school support or remedial instruction, mostly concentrating on literacy and numeracy. The effectiveness of within-class interventions – both small-group tutoring and independent work partially integrated into usual classroom practice – was demonstrated by, for example, Moser Opitz et al. (2017). Along similar lines, Montague (2011) argues that direct instruction within the classroom – for example based on 'drill and practice' – can help students with learning difficulties in mathematics.

Regarding out-of-school support, several studies have found modest, but positive, impacts of such programmes on students' achievement (see, for example, Ariyo and Adeleke, 2018; Laurer et al.,

2006; Scheerens, 2014; Yin, 2020). However, Scheerens (2014) notes that the literature is not sufficiently robust regarding the actual impact of additional activities or homework support outside the normal school day, mainly due to the population size covered, the volume and variety of activities, and differences in their quality. In addition, research has not focused much on comparing the effectiveness of in-school and out-of-school support, mostly due to the difficulties related to the lack of reliable comparative research design in this area. Chapter 7 will provide further insights regarding learning support during and outside the school day.

Top-level steering documents specify one or more support measures for low-achieving students in the majority of European education systems. Figure 6.3 illustrates the prevalence of selected learning support measures in Europe according to such top-level specifications. As the figure shows, top-level authorities in around three quarters of education systems recommend the use of one-to-one or small-group tutoring when providing support to low achievers. This includes nearly all education systems with a top-level framework for learning support provision.

Most of this tutoring takes place during the formal school day, although some education systems organise additional tutoring in after-school hours ([231]). Several education systems (e.g. in Belgium (Flemish Community), Czechia, Germany, Estonia, Greece, Spain, Luxembourg, Poland, Liechtenstein and Serbia) also make use of different options and provide support in a diversified way, both during and outside the school day.

In **France**, in primary education, providing complementary educational activities (*activités pédagogiques complémentaires*, APC) is an obligation for all teachers. These activities are organised outside the formal school day, and require the consent of the pupils' parents. In secondary education, 3 hours per week can be dedicated to personalised support in grade 6, and 1–2 hours per week can be dedicated to this in grades 7–9. This support takes place during the school day, in the class. In addition, homework support is provided in secondary schools after the formal school day ([232]).

In **Poland**, for students with learning difficulties, in particular those with difficulties in meeting educational requirements specified in the core curriculum, a specific regulation ([233]) recommends organising remedial classes in groups of up to eight participants. The classes are organised in particular school subjects, for example mathematics.

In **Slovenia**, the Basic School Act ([234]) states that basic schools are obliged to adapt teaching and learning methods for pupils with learning difficulties during lessons, and to provide remedial lessons during the formal school day and other forms of individual or small-group assistance. Remedial lessons are conducted before or after classes, and take place for 45 minutes a week in each major subject.

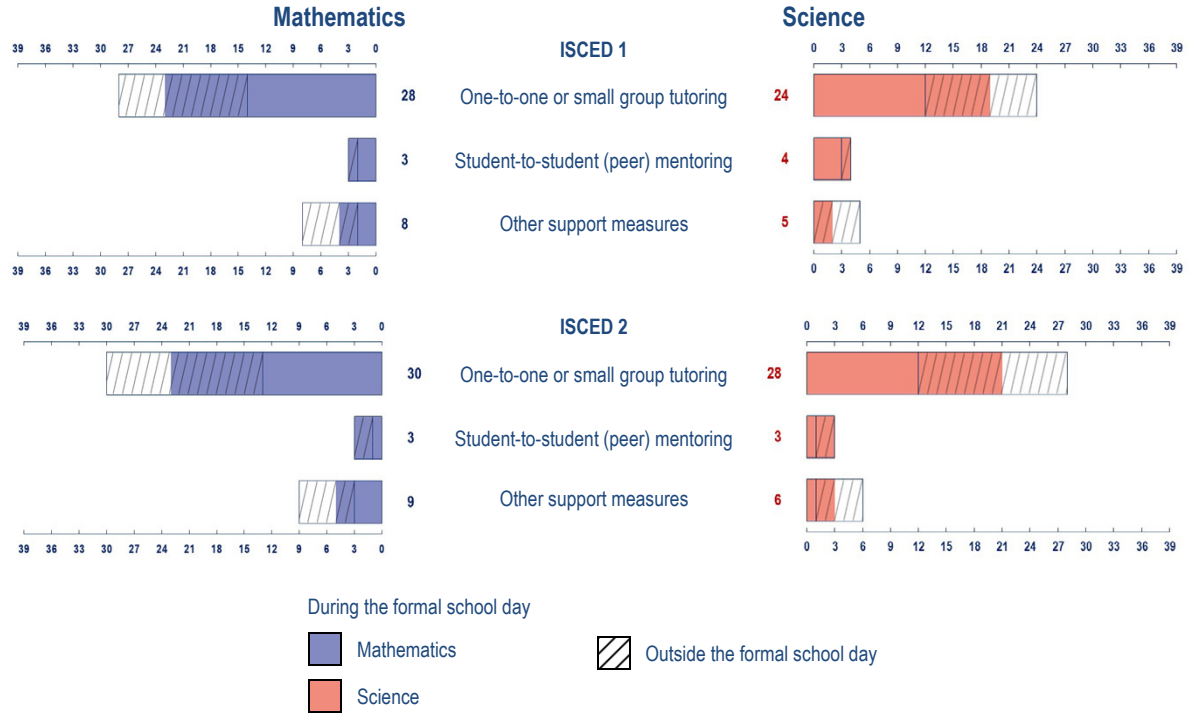
([231]) See Annex II, Figure 6.3A, for country-specific information.

([232]) https://www.education.gouv.fr/devoirs-faits-un-temps-d-etude-accompagnee-pour-realiser-les-devoirs-7337

([233]) Regulation of the Polish Minister of National Education of 9 August 2017 on the rules for organisation and provision of psychological and educational support in public nursery schools, schools and educational institutions (consolidated text, *Journal of Laws of 2020*, item 1280) (Rozporządzenie Ministra Edukacji Narodowej z dnia 9 sierpnia 2017 r. w sprawie zasad organizacji i udzielania pomocy psychologiczno-pedagogicznej w publicznych przedszkolach, szkołach i placówkach (tekst jednolity: Dz.U. z 2020, poz. 1280)).

([234]) Basic School Act, Article 12(a).

Figure 6.3: Top-level learning support measures in mathematics and science, ISCED 1-2, 2020/2021



Source: Eurydice.

Explanatory notes

The number and the total length of the bar show in how many European education systems (out of 39 in total) a support measure is prescribed or recommended by top-level documents. Shading indicates whether the support takes places during or outside the formal school day, or both. Country-specific information is available in Annex II, Figure 6.3A.

Only long-term measures are taken into account; temporary measures due to the COVID-19 pandemic are not included in the figure. For more information on COVID-19-related measures, see Section 6.3.3.

While one-to-one or small-group tutoring is the most widespread form of learning support provision, in a few cases top-level documents prescribe or recommend the use of other support measures. One of them is peer mentoring, the value of which is emphasised by some researchers (see, for example, Charlton, 1998). However, its effectiveness is also debated (Gersten et al., 2009). The presence of peer mentoring in top-level recommendations has been reported by Germany, Spain and Luxembourg for both mathematics and science, while Cyprus reports recommending this support measure in science education.

In **Germany**, peer mentoring is named as a support measure for low-achieving students in some *Länder* (e.g. Nordrhein-Westfalen). Some students can be trained as 'learning coaches' (*Lerncoaches*), who can in turn help those they supervise to better manage their own learning.

In **Cyprus**, guides for teachers recommend that students work in groups that are formed with students from multiple achievement levels during science education in primary schools. As a result, during classwork, low achievers can benefit from interaction with higher-achieving students ([235]).

In **Luxembourg**, the 2004 Law on the Organisation of Secondary Schools ([236]) mentions the possibility that a student in the upper classes may be entrusted, at his or her request, by the school head, with academic and personal support measures, to be a tutor of a student in the lower classes or in the fourth grade of secondary school. The school head appoints a teacher to supervise the tutor.

([235]) https://fysed.schools.ac.cy/index.php/el/

([236]) *Loi du 25 juin 2004 portant organisation des lycées*.

Other learning support measures include summer schools or summer remedial instruction (in both mathematics and science in Bulgaria (primary education), France and North Macedonia (both education levels), and Sweden (secondary education) and in mathematics in Austria); individual learning plans or programmes (Belgium (French Community), Czechia, Germany and Malta); and training workshops for families (Spain) ([237]).

> In **Germany**, for the individual support of students with special educational need in mathematics, support plans / learning plans are developed and used to provide individual support in class. They are to be discussed with all teachers involved, the parents and the students, as part of the school's overall plan ([238]).

Figure 6.3 also reveals that differences between the subject areas are not substantial, although there are slightly more education systems specifying support measures for low achievers in mathematics than for those in science. When the top-level authority specifies support measures, it most often does so for all or most subject areas, with very few subject-specific recommendations (see also Section 6.2). Similarly, differences between the education levels are small, although slightly more support measures are specified for lower secondary than for primary education.

Targeted support

Most top-level support measures target low-achieving students in general, without special attention to specific vulnerable groups. Indeed, most education systems do not have targeted measures when it comes to the goal of reducing low achievement: mainstream measures are assumed to be able to reach those needing support, irrespective of their background.

Nevertheless, a few education systems have identified specific target groups or have put targeted support programmes and measures in place. Such target groups include:

- schools in disadvantaged regions (e.g. in Czechia and Portugal);
- schools with a large number of children from low socioeconomic backgrounds (e.g. in Belgium (French and Flemish Communities) and Ireland);
- low-achieving students from low socioeconomic backgrounds or rural areas, or low-achieving Roma students (e.g. in Spain (Basque Country), Italy, Hungary, Poland, Romania, Slovakia and Serbia).

Teaching practices: differentiated teaching and ability grouping in the classroom

Differentiated teaching and ability grouping are among the most widely cited examples of providing support to students with different achievement levels within the classroom. However, the practices of differentiated teaching and ability grouping have mixed reviews. Research evidence mostly points towards small to moderate positive effects of differentiated teaching and within-class ability grouping on student achievement in mathematics and science (see, for example, Bal, 2016; Salar and Turgut, 2021; Smale-Jacobse et al., 2019; Tieso, 2003). Nevertheless, some experimental studies found no such effects (see, for example, Pablico, Diack and Lawson, 2017) or concluded that the effect of differentiation depended on teachers' training and professional development in differentiated

([237]) An example of a training workshop for families is the workshop 'How to help your children in their studies?', held at IES Jaime Ferrán Clúa (Madrid).

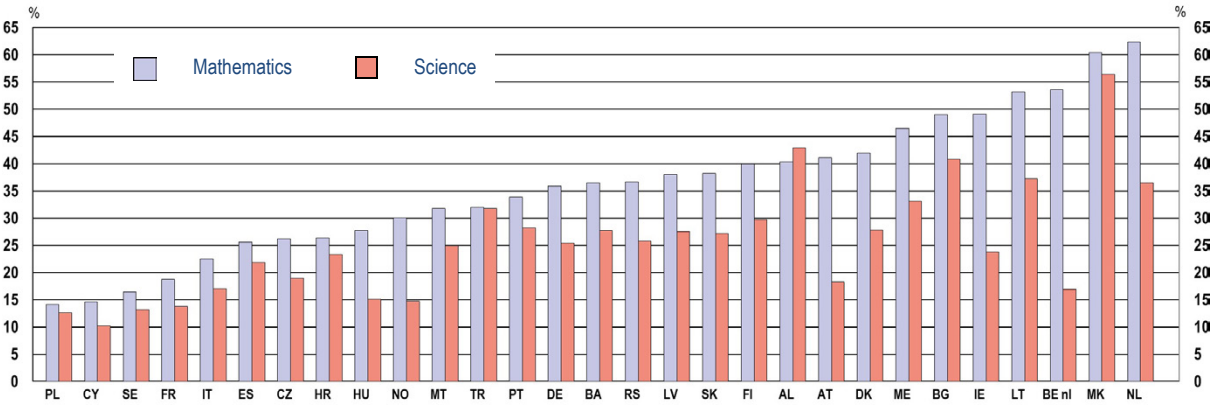
([238]) Resolution of the Standing Conference of German Ministers of Education and Cultural Affairs on the principles for the support of students with special difficulties in reading and spelling or in arithmetic, 4 December 2003 (*Grundsätze zur Förderung von Schülerinnen und Schülern mit besonderen Schwierigkeiten im Lesen und Rechtschreiben oder im Rechnen*).

instruction (Prast et al., 2018). Other researchers underline the negative effects of teaching high- and low-achieving students separately and employing different teaching methods (such as widening learning gaps or stigmatisation; see, for example, Boaler, Wiliam and Brown, 2000; Chmielewski, 2014; Gamoran et al., 1995).

While top-level steering documents often recommend support measures that take place outside the classroom or in addition to the usual teaching activities, it is more difficult to find top-level recommendations on instruction practices for the whole class. However, international assessment surveys can provide a good insight into teaching practices based on teachers' responses.

Based on the TIMSS 2019 survey, Figure 6.4 depicts the percentage of fourth graders whose mathematics or science teachers report that students work in same-ability groups in the majority of lessons. As the figure reveals, ability grouping is much more common in mathematics than in science in primary education. In almost all education systems with available information, as well as in the EU-27 on average, mathematics teachers report working in same-ability groups more frequently than science teachers do.

Figure 6.4: Percentage of fourth graders whose mathematics or science teachers report working in same-ability groups in the majority of lessons, 2019



	EU	PL	CY	SE	FR	IT	ES	CZ	HR	HU	NO	MT	TR	PT	DE
Mathematics	27.9	14.1	14.7	16.4	18.8	22.5	25.6	26.2	26.4	27.7	30.0	31.8	31.9	33.9	35.9
Science	19.8	12.6	10.2	13.2	13.7	17.0	21.8	19.0	23.3	15.1	14.7	25.0	31.7	28.2	25.4
	BA	**RS**	**LV**	**SK**	**FI**	**AL**	**AT**	**DK**	**ME**	**BG**	**IE**	**LT**	**BE nl**	**MK**	**NL**
Mathematics	36.4	36.6	38.0	38.1	40.0	40.3	41.1	41.9	46. 5	48.9	49.1	53.2	53.6	60.4	62.3
Science	27.7	25.8	27.5	27.1	29.7	42.9	18.2	27.8	33.1	40.8	23.8	37.2	17.0	56.4	36.4

Source: Eurydice based on IEA, TIMSS 2019 database.

Explanatory notes

Education systems are depicted in ascending order based on the mathematics percentage.

The percentages were calculated based on the variables ATBM02H and ATBS02M (linked to the question 'In teaching mathematics/science to this class, how often do you ask students to do the following? / Work in same ability groups', with possible responses being (1) 'Every or almost every lesson', (2) 'About half the lessons', (3) 'Some lessons' or (4) 'Never'). The response categories 1 and 2 were merged into a single category: 'The majority of lessons'. Standard errors are available in Annex III.

The percentages were calculated with the missing values excluded. Missing values exceed 25% in the Netherlands and Norway for both mathematics and science teachers.

'EU' comprises the 27 EU countries that participated in the TIMSS survey. It does not include participating education systems from the United Kingdom.

Differences between mathematics and science teaching practices are smallest – and not significant – in Poland, Turkey, Albania and North Macedonia. In these countries, ability grouping is used in both subject areas to a similar extent. In contrast, differences are biggest in Norway, Austria and Belgium (Flemish Community), where ability grouping is a much more widespread practice in mathematics than in science.

In mathematics, ability grouping is most widespread in the Netherlands and North Macedonia, where teachers of more than 60% of students report grouping students based on ability in the majority of lessons. This practice also covers the majority of students in Lithuania and Belgium (Flemish Community). At the other end of the scale, teachers of less than 20% of students frequently apply the practice of ability grouping in Poland, Cyprus, Sweden and France.

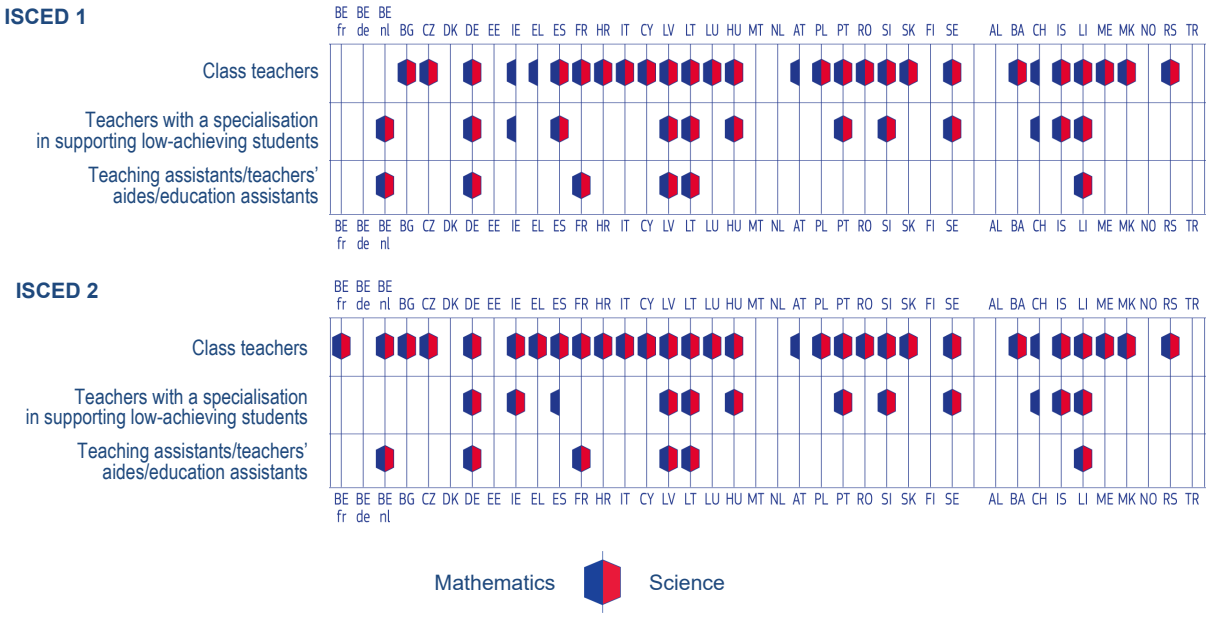
The picture changes a little when it comes to science education. In science, frequent ability grouping applies to the majority of students only in North Macedonia (56.4%). It covers around one third or more of grade 4 students in Turkey, Albania, Bulgaria, Lithuania and the Netherlands. As was the case for mathematics, ability grouping in science is least practised in Poland, Cyprus, Sweden and France, where teachers of less than 15% of students report frequently using this practice.

6.3.2. Who provides learning support?

Academic research has emphasised the importance of the human resources aspects of learning support provision: the teaching staff or school staff providing such support and the training they receive in order to fulfil this task successfully and effectively. Some studies emphasise the need for continuous training activities for class teachers (Montague, 2011; Moser Opitz et al., 2017), whereas others suggest that, in addition to class teachers, employing teachers specialised in learning support can better contribute to reducing the number of low-achieving students (Motiejunaite, Noorani and Monseur, 2014).

Figure 6.5 shows how top-level regulations or recommendations envisage the human resources aspects of learning support provision. The analysis distinguishes between three categories of teaching staff: (1) class teachers, (2) teachers with a specialisation in supporting low-achieving students and (3) teaching assistants / teachers' aides / education assistants. Class teachers, the first category, are the ones who are in charge of teaching students in the classroom. They can be either generalist or specialist teachers (see Chapter 4, Figure 4.3) – in the latter case, different teachers might be responsible for learning support provision depending on the subject area. The second category refers to teachers who have received special training in the identification of and support for students facing difficulties. These teachers often, although not necessarily, teach only low-achieving students (i.e. serve as 'remedial teachers'). The role of remedial teachers in tackling low achievement will be further analysed in Chapter 7. Finally, teaching assistants / teachers' aides / education assistants are staff who assist teachers with instructional responsibilities. Teaching assistants may assist in the classroom, but may also serve as the sole instructor for a class or group of students.

Figure 6.5: Teaching staff providing one-to-one or small group tutoring in mathematics and science, ISCED 1-2, 2020/2021



Source: Eurydice.

As Figure 6.5 reveals, class teachers provide learning support in all education systems with top-level regulations on this aspect (in 28 systems in primary education and in 30 in lower secondary education), and they are regarded as the sole providers of such support in around half of them. Despite their central role, class teachers are required to undergo training in low achievement and related support during initial teacher education in only seven education systems: Germany, Estonia, Croatia, Lithuania, Luxembourg, Austria and Poland. Nevertheless, some education systems note that publicly funded continuous professional development programmes on this type of support are organised for teachers.

In **Bulgaria**, within the national programme 'Together in the care of each student' ([239]), activities related to the joint work of primary and secondary school teachers are funded. These activities include planning lessons and developing didactic materials for joint implementation or jointly conducting lessons in different subjects, including mathematics and natural sciences.

In **Ireland**, the School Excellence Fund is an initiative to encourage innovation and excellence in education, supporting schools to work together in tackling educational disadvantage and improving learning outcomes for students. In 2011, the Department of Education launched their national strategy to improve literacy and numeracy among children and young people. One area of action is providing improved professional development for teachers. In addition, in the framework of the Delivering Equality of Opportunity in Schools (DEIS) action plan – an initiative focusing on supporting students in schools with a high concentrations of students from socio-economically disadvantaged backgrounds – all teachers of the early primary years receive specific training on teaching mathematics to disadvantaged children ([240]).

In **Spain**, within the framework of the programme for orientation, advancement and educational enrichment (PROA+) 2020/2021, teacher-training programmes are organised on new methodologies, individualised resources or cooperative learning ([241]).

([239]) https://www.mon.bg/upload/22572/4NP_Zaedno-vsekiUchenik-20.pdf

([240]) See more at: https://www.gov.ie/en/policy-information/4018ea-deis-delivering-equality-of-opportunity-in-schools/

([241]) Resolution of 31 July 2020, of the Secretary of State for Education, which publishes the Agreement of the Council of Ministers of 21 July 2020, which formalises the distribution criteria to the autonomous communities, approved by the Education Sector Conference, as well as the distribution resulting from the credit allocated in 2020 to the territorial cooperation programme for the orientation, advancement and educational enrichment in the educational emergency situation of the 2020/2021 academic year caused by the COVID-19 pandemic (#PROA+ 2020/2021).

In addition to class teachers, teachers specialised in supporting low-achieving students participate in learning support provision in 13 education systems in primary education and in 12 at lower secondary level. The role of specialised teachers varies from coordinating learning support provision to actual teaching, often depending on the needs of children or the size of schools. Teaching assistants are involved in learning support provision in six education systems. In some cases, top-level authorities provide the possibility for schools to ask for the appropriate resources for their needs.

In **Belgium (Flemish Community)**, there is regular consultation between the care coordinator and the class teachers. The care coordinator follows the same children during several school years, to be well informed about changes in their needs. Together with the class teacher, the care coordinator searches for suitable aids (e.g. support teachers) to support children who are having difficulties. In primary school, children are supported both in and outside the classroom. In the classroom, support is usually provided during independent work set by the teacher and the care coordinator. However, some children need more individual support, which takes place in a task class (*taakklas*). In smaller schools, the care coordinator will also take on the tasks of the support teacher; in larger schools, there is a clear division of tasks.

In the **German** *Länder*, support services are made possible through additional staffing. Additional staffing can refer to (1) the allocation of additional teacher hours per week for (subject) teachers in usual classes and supplementary remedial instruction, (2) additional teachers being assigned to hotspots of socioeconomic deprivation, or (3) the involvement of professionals with special competencies. For the support of lower-performing students, additional remedial teachers, pedagogical assistants, other pedagogical staff or special education teachers are deployed ([242]).

In **Estonia**, low achievers are supported by their class teachers or support specialists depending on their needs, upon the decision of school heads. Support measures are chosen and implemented in cooperation with the parents.

In **Ireland**, the school leader or a special education needs coordinator allocates the work of special education teachers to manage the provision of additional support for pupils. Schools participating in the Delivering Equality of Opportunity in Schools (DEIS) programme ([243]) are encouraged to nominate a teacher to train as a specialist mathematics recovery teacher. These teachers provide intensive, individualised or small-group teaching for low-attaining children in the first class for 10–15 weeks.

In **Lithuania**, teachers specialised in supporting low-achieving students are called special educators (*specialieji pedagogai*). They are not specialised in a given subject, but support all students with learning problems. In addition, teaching assistants (*mokytojo padėjėjai*) also help low-achieving students. Teaching assistants work together with the teacher, in the classroom, providing extra assistance to students and information to the parents or guardians.

In **Switzerland**, teachers with a specialisation in supporting low achievers assist class teachers in small-group or one-to-one tuition in all schools. Class teachers, however, do not always delegate this support completely to the specialised teacher; they are involved as well, depending on, for instance, the number of pupils concerned.

In **Iceland**, personnel decisions depend on the available resources. In some cases, for instance in the case of schools in smaller municipalities, teachers specialised in supporting low-achieving students are not always available. In these cases, the support is provided by the class teachers.

In addition to the class teachers, specialised teachers or teaching assistants, other professionals (speech therapists, psychologists, social workers, etc.) may also participate in providing support to students. In Cyprus, specialised teachers (mathematicians, physicists) employed by the State Institutes for Further Education can provide learning support in lower secondary education. In Slovakia, in addition to class teachers, other staff with teaching qualifications or students in teacher-training programmes can also participate in support provision. Some education systems emphasise the need for holistic support, with different specialists working together to support students with learning problems and difficulties.

([242]) Resolution of the Standing Conference of German Ministers of Education and Cultural Affairs on the support strategy for lower-achieving pupils, 4 March 2010 (*Förderstrategie für leistungsschwächere Schülerinnen und Schüler*).

([243]) https://www.gov.ie/en/policy-information/4018ea-deis-delivering-equality-of-opportunity-in-schools/

In **Czechia**, schools are obliged to operate 'school guidance and counselling centres' (*školské poradenské zařízení*), which have the role of school failure prevention and provide counselling services. Low-achieving students can receive the support of school psychologists, school counsellors, school failure prevention specialists, special educational needs teachers, speech/language therapists and other similar professionals.

In **Liechtenstein**, the responsible class teachers can seek support or advice from school psychologists and school social workers to determine the appropriate support measures. There are also specialist/remedial teachers (*Ergänzungslehrer*) and school assistants (*Klassenhilfen*) in schools, who can also be involved in support. In addition, external experts such as occupational therapists or speech therapists can also be called upon.

In addition, as a form of digitalised support, France has introduced 'Jules', an online virtual assistant to support students in completing their homework in mathematics ([244]).

6.3.3. What impact has the COVID-19 pandemic had on learning support provision?

In 2020, the COVID-19 pandemic arrived in Europe and brought about extensive school closures and distance- and blended-learning periods for many children in the 2020/2021 school year (see Chapter 2, Figure 2.1). While data on the impact of such changes are still scarce, researchers have started to estimate the 'learning loss' experienced by children resulting from physical school closures, as well as the uneven impact of distance learning on students from different socioeconomic backgrounds or achievement levels (Blaskó, da Costa and Schnepf, 2021; Engzell, Frey and Verhagen, 2021; Grewenig et al., 2021). Students with existing learning difficulties have been facing additional hurdles in their learning experience (see also Chapter 2).

Despite the large impact the pandemic has had on schools, only about half of the education systems have put additional measures or support programmes in place, or have dedicated additional resources to learning support provision (Figure 6.6). Among them, the Netherlands adopted a new, comprehensive top-level framework programme on providing support.

In the **Netherlands**, the national education programme (*Nationaal Programma Onderwijs*) ([245]) was created with a focus on helping students catch up to prevent learning loss and low achievement. The programme started in the 2020/2021 school year with a budget of EUR 5.8 billion, evidence-based measures and a support structure.

The most common response to newly emerging learning difficulties as a result of school closures is to organise or offer students additional small-group tutoring or differentiated learning (on top of existing measures), typically taking place either during school holidays or after the formal school day, but in some cases also during the formal school day. Such measures were implemented and funded in Belgium (French and Flemish Communities), Czechia, Ireland, Spain (Castilla y León), France, Italy, Luxembourg, Austria, Poland, Romania and Slovakia.

Belgium (**French Community)** recommended the use of differentiated teaching and remedial support during the school day in both primary and secondary education ([246]) in order to provide additional support to students with difficulties after the school closures, and due to distance and blended learning.

Belgium (Flemish Community) organised summer, autumn and winter schools during the 2020/2021 school year for lower secondary students, as they were the most affected by school closures / hybrid-learning periods. Similarly, summer schools were offered to students with learning difficulties in **Czechia** and **Luxembourg**. In Luxembourg, pupils could go to school in smaller groups during 2 weeks in the summer to receive further educational support from teachers or other educational staff.

In **Italy**, in 2020, Ministerial Order 11 introduced extracurricular small-group tutoring for students at risk of school failure ([247]).

In **Austria**, the 'Corona support package' includes up to two additional support lessons per class in the main subjects.

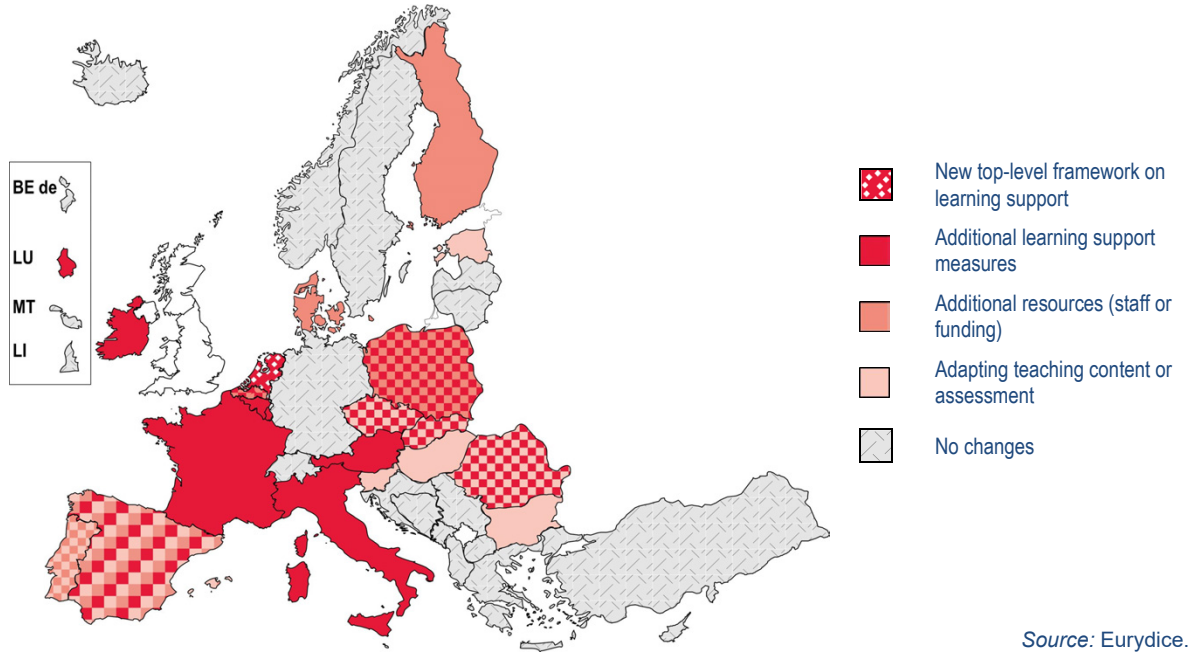
([244]) See: https://jules.cned.fr

([245]) https://www.nponderwijs.nl/

([246]) Ministerial circulars n°7704 of 25/08/2020 and n°8220 of 20/08/2021.

([247]) Italian Ministry of Education Ministerial Order 11 of 16 May 2020.

Figure 6.6: Additional learning support measures and dedicated resources due to the COVID-19 pandemic, ISCED 1-2, 2020/2021



Source: Eurydice.

Explanatory note

The category 'additional resources (funding)' refers to situations where schools had the autonomy to decide on the form of learning support, but top-level authorities provided additional funding to them to address low achievement.

In order to provide the adequate human resources for additional tutoring as well as reinforced counselling and psychological support, Belgium (Flemish Community), Spain (autonomous community of Andalucía), Poland and Portugal have made additional funding available for the temporary recruitment of supplementary staff – educators, psychologists, social workers, etc. – to enable schools to rapidly respond to students' needs.

> All educational centres in the autonomous community of Andalucía, **Spain**, have 'COVID-19 support teachers', who supported teaching work in schools as a reinforcement throughout the 2020/2021 school year ([248]).
>
> In **Poland**, a programme developed by the Ministry of Education and Science establishes rapid-response teams comprising counsellors, school psychologists, tutors, social workers, etc. The programme targets students severely affected by the COVID-19 crisis and aims to ensure a quick response to the deterioration of the mental health of students with learning difficulties ([249]).

Denmark and Finland have also distributed additional financial support to schools to address low achievement and learning loss as a result of the pandemic. In Finland, the additional funding targeted especially disadvantaged students (students not speaking the language of instruction at home, students from immigrant backgrounds and students with special educational needs) ([250]).

In Bulgaria, Czechia, Spain, Hungary, Portugal, Slovakia and Slovenia, top-level authorities issued new guidelines on adapting teaching content and/or the methods of assessment to the new reality. In Romania, guides have been created and made available for all teachers to help them address any

([248]) See https://www.adideandalucia.es/...
([249]) See the website of the Polish Ministry of Education and Science for more details.
([250]) See the website of the Finnish Ministry of Education and Culture for more details.

delays in their students' learning, for all subjects in primary and lower secondary education. In Estonia, new diagnostic tests were developed to identify learning gaps.

Summary

This chapter provided an overview of top-level learning support measures that education systems have identified to help students facing learning difficulties and to reduce the level of low achievement. Starting the analysis by examining assessment mechanisms through which European education systems identify students' learning needs, the chapter showed that the majority of education systems identify low achievers through ongoing evaluation, testing and grading. In this sense, teachers are in large part responsible for identifying students who need learning support.

In addition to ongoing classroom evaluation, a minority of education systems also rely on national competence-based tests to identify students' individual learning needs. These national tests can be compulsory or recommended. Where they are compulsory, top-level authorities specify the content and the frequency of the tests, and all students need to take them, irrespective of their achievement. Alternatively, top-level authorities can recommend the use of existing national tests when identifying students' learning needs, or can design competence-based tests that can be used by teachers for additional evaluation when they deem it necessary. Such tests are more common in mathematics than in science.

Top-level authorities can also take an active part in identifying the appropriate measures to support students with learning difficulties. In the large majority of education systems, top-level authorities oblige schools to provide learning support for low-achieving students. The majority of education systems also specify in more or less detail the kind of support measures schools can apply to help the students who need support. More frequently (in around half of European education systems), top-level regulations or recommendations are relatively broad, or contain various types of support measures that schools can freely choose from depending on the needs of the students. However, in around one quarter of education systems, the top-level authority provides a detailed framework that schools have to implement relatively thoroughly. Finally, in another quarter of education systems, top-level authorities do not specify learning support measures, and leave this task to local authorities or the schools themselves.

Top-level frameworks of learning support are rarely subject specific; they most often apply to learning difficulties in general. Nevertheless, a handful of education systems have specific provisions on supporting students in mathematics or numeracy. No such specific provisions address learning difficulties in science.

When it comes to determining how exactly schools should support low-achieving students, again slightly more education systems specify support measures in mathematics than in science. Nevertheless, differences are relatively small. The most common way of supporting students with learning difficulties is through additional one-to-one or small-group tutoring, which can take place either during the formal school day or outside it (or both). In addition, in some cases, top-level authorities oblige or advise schools to implement peer mentoring, summer schools or other forms of individualised support.

Differentiated teaching in mathematics and science classes may also serve as a way of supporting low-achieving students in the classroom. The TIMSS 2019 survey shows that differentiated teaching is fairly common in some countries but quite rare in others. However, the overarching pattern across Europe is of differentiated teaching being used more frequently in mathematics than in science.

Learning support provision is most commonly the responsibility of classroom teachers. They participate in supporting low-achieving students in all education systems with top-level regulations or recommendations on these issues. At the same time, around one third of education systems also involve teachers specialised in supporting low-achieving students ('remedial teachers') in learning support provision. Other participating staff include, for example, teaching assistants, student teachers and other professionals such as psychologists and social workers.

Finally, this chapter also examined European countries' responses to the COVID-19 pandemic in terms of additional learning support provision, funding provided for the recruitment of additional teaching and support staff, and changes in teaching content and student assessment. Despite the large impact the COVID-19 pandemic has had on students' learning experiences, only about half of education systems have put additional measures or support programmes in place, or have dedicated additional resources to learning support provision.