



6

A Policy Framework for Tackling Low Student Performance

Millions of 15-year-old students around the world are not acquiring basic skills in such essential domains as mathematics, reading and science. This chapter discusses a series of policy tools to tackle each of the risk factors of low performance identified throughout the report. Policy makers, teachers, parents and students themselves have an important role to play.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Results from PISA 2012 clearly show that no country or economy can yet claim that all of its 15-year-old students have achieved a baseline level of proficiency in mathematics, reading and science. In fact, the numbers of low performers in the 64 countries and economies that participated in PISA in 2012 are staggering: out of approximately 28 million 15-years-old students represented by PISA data, 11.5 million are low performers in mathematics, 8.5 million are low performers in reading, and 9 million are low performers in science. On average across OECD countries, more than one in four students perform below the baseline level of proficiency in one or more of the three subjects PISA assesses. Even in top-performing countries and economies, around one in ten students is a low performer in at least one subject.

Defining the problem, and its scale, is only the first – albeit essential – step. What needs to follow is creative thinking about what governments, schools, teachers, parents and students themselves can do to improve student performance so that every student acquires at least a baseline level of skills. Developing and implementing policy requires creativity, will and potentially extra resources. Figure 6.1 shows a selection of policies and actions that respond to the specific risk factors of low performance at each of the three levels studied in this report: students, schools and education systems.

When reading these policy recommendations, bear in mind that PISA results do not establish causality. Rather, PISA identifies empirical correlations between student achievement and the characteristics of schools and school systems, correlations that show consistent patterns across countries. Implications for policy are based on this correlational evidence and previous research.

PRIORITISE REDUCING THE NUMBER OF LOW-PERFORMING STUDENTS

The evidence presented in this report suggests that all countries and economies can reduce their share of low-performing students, and that a reduction can be accomplished in a relatively short time. The first step for policy makers is to prioritise tackling low performance in their education policy agendas, and translate this priority into additional resources.

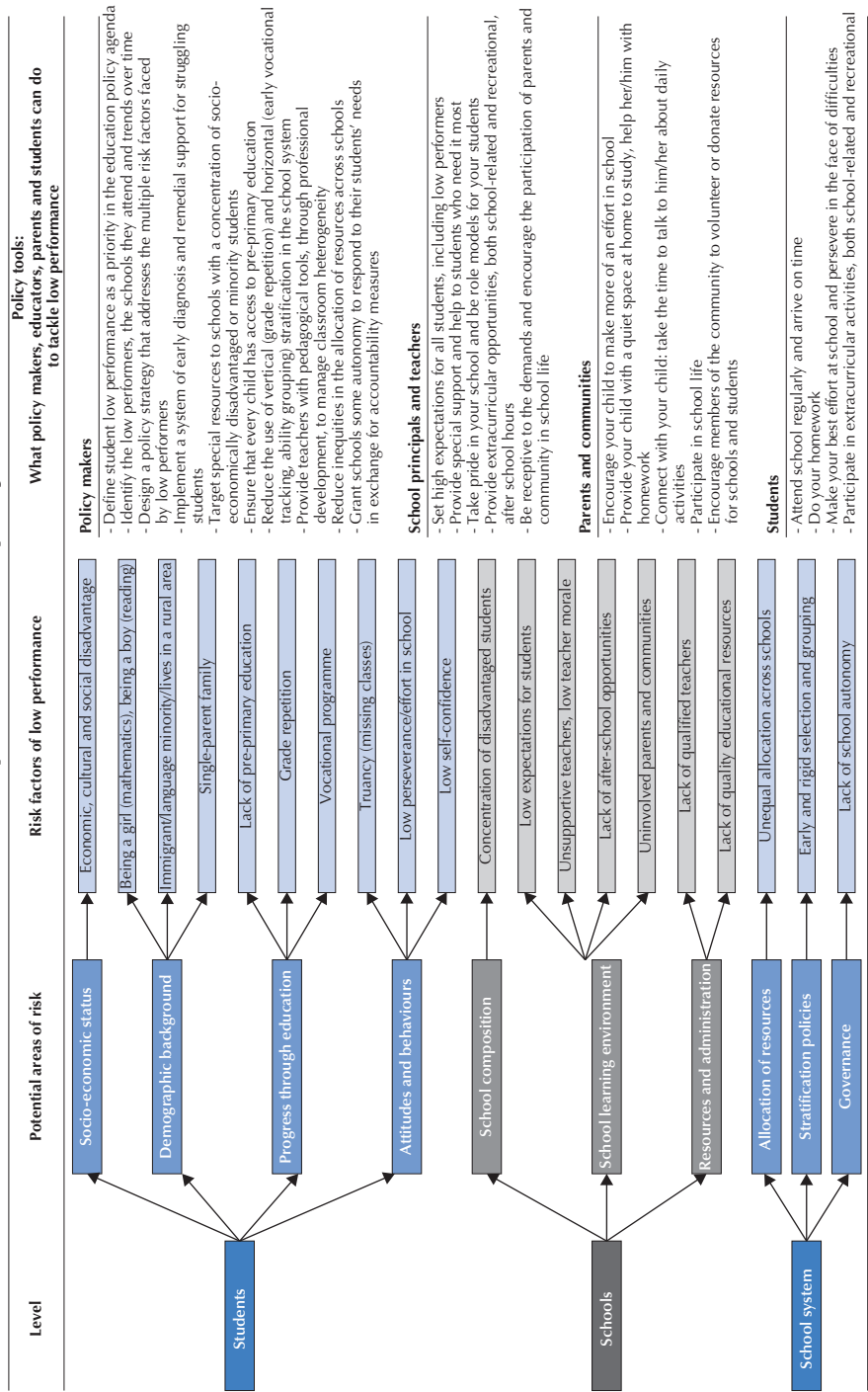
As discussed in Chapter 1, nine countries reduced their share of low-performing students in mathematics between 2003 and 2012; 11 countries reduced their share of low performers in reading between 2000 and 2012; and 20 countries and economies saw a significant reduction in their share of low performers in science between 2006 and 2012. These countries vary considerably in national wealth and in their initial share of low performers. For example, high-income countries Germany and Italy reduced their shares of low performers in mathematics between 2003 and 2012 from 22% to 18% (Germany) and from 32% to 25% (Italy), while Mexico and Tunisia, whose per capita income is comparatively lower, reduced their shares of low performers in mathematics from 78% to 68% (Tunisia) and from 66% to 55% (Mexico) (see Tables 1.9, 1.11 and 1.12).


What these countries and economies do have in common is recent education reform that specifically targeted some of the main risk factors of low performance. For example, in Germany, changes to the structure of the school system, such as delaying the age of student selection into different academic programmes and reducing the number of academic programmes, were introduced with the aim of reducing the influence of socio-economic status on education outcomes. In addition, federal programmes have improved the availability and quality of



■ Figure 6.1 ■

Risk factors of low performance and policy tools





pre-primary education programmes and language training for students who do not speak German fluently. School reforms in Germany have also sought to address the perceived lack of transparency and accountability that permeated the education system before the country suffered its “PISA shock” in 2000 (OECD, 2011).

In Mexico, a number of programmes and initiatives to promote access to and quality of education among disadvantaged students have been introduced during the past few years. These include cash-transfers to poor families to raise enrolment rates in secondary education, especially among girls, and targeted funds, educational resources and infrastructure for schools with large concentrations of either disadvantaged or low-performing students (OECD, 2013a).

DISMANTLE MULTIPLE BARRIERS TO LEARNING

Analyses in this report show that poor performance at age 15 is not the result of any single risk factor, but rather of a combination and accumulation of various barriers and disadvantages that affect students throughout their lives.

Socio-economic disadvantage is arguably the toughest barrier to success at school, but it is not impossible to overcome. For example, Chapter 2 shows that disadvantaged 15-year-old students who have never repeated a grade and who are enrolled in a general programme have a 48% chance of scoring above the baseline level of proficiency (Level 2) in mathematics, on average across OECD countries. Many disadvantaged students manage to defy the odds and perform among the top students internationally through their own efforts and positive attitudes. The analysis presented in Chapter 3 shows that students who have a positive attitude and disposition towards school in general, and mathematics in particular, tend to score higher, regardless of their socio-economic status. By contrast, low performers, regardless of their socio-economic status, show similarly poor attitudes and behaviours towards school, on average across OECD countries. This report also shows that even after accounting for students’ socio-economic status, a variety of factors related to students’ demographic and educational background (Chapter 2), students’ attitudes and behaviours (Chapter 3), schools (Chapter 4) and education systems (Chapter 5) also affect the probability of low performance.

Students often have to overcome several potential barriers to success at school simultaneously. For example, disadvantaged students are more likely than advantaged students to have an immigrant background, live in rural areas and in single-parent households, to have repeated a grade and to be enrolled in a vocational track – all of which, in most countries, increase the likelihood of low performance. Furthermore, barriers associated with demographic background, including gender stereotypes, language difficulties, lack of parental time or help with school work, and geographic isolation, have a stronger impact on the performance of disadvantaged students than on the performance of more advantaged students, on average across OECD countries (see Chapter 2). Disadvantaged students are also more likely to attend schools where there are larger concentrations of other disadvantaged students, a greater incidence of teacher shortage, poorer-quality educational resources, and where teachers have low expectations for their students.

Thus, within any single country or region, tackling low performance requires a multi-pronged approach. Governments and schools need to dismantle barriers to learning that are related



to socio-economic status and demographic background. Given the differences in the size of the populations of disadvantaged students, immigrant students, students from single-parent families and rural students – and the differences in the strength of the impact of these factors on student performance – across countries, policies and actions must be tailored to national and local circumstances. Countries also need to organise schools and education systems so that they: provide early education opportunities for all (universal pre-primary education); can identify struggling students early on (ideally in primary school); offer remedial support, either during regular school hours or after school; and provide psycho-social support, through school psychologists, peer mentors, guidance counsellors and/or assistance for families.

CREATE DEMANDING AND SUPPORTIVE LEARNING ENVIRONMENTS AT SCHOOL

Chapter 4 discusses how school leaders can tackle low performance by fostering expectations of high academic achievement for all students in their schools. Training and professional development programmes for school leaders could thus emphasise this aspect of leadership. Creating networks among school leaders could also help to disseminate best practice in how to improve student performance. The United Kingdom's Education Action Zone programme and Shanghai-China's urban-rural school networks are examples of initiatives that enable schools to exchange and discuss practices and resources (OECD, 2015a, 2011). In addition, school evaluations, whether internal or external, could focus on whether and how schools support students who are falling behind.

Low performers benefit from better-qualified and better-skilled teachers (see Chapter 4). Policy strategies aimed at improving teacher quality are complex and varied, and include all aspects of teacher education and practice. Some countries that have reduced their share of low performers have established new qualification and training requirements and new incentives to recruit and retain the most talented graduates, including higher salaries and rewards for better performance. Korea, for example, offers multiple incentives to teachers who work in disadvantaged schools, including higher salaries, smaller classes, less instructional time, additional credits towards promotion to administrative positions, and the ability to choose the next school in which to work. Teacher-education programmes need to prepare teachers on how to assess their students' performance and how to provide individualised instruction that caters to the needs of particular students (OECD, 2013b).

As Chapter 4 notes, struggling students benefit from teachers who show an interest in every student's learning, help students when they need it, work with students until they understand the course content, and give students an opportunity to express their opinions. This support is particularly important for low-performing students as they perceive that their investment in learning is relatively ineffective (see Chapter 3). Teachers who work with enthusiasm, take pride in their school and value academic achievement are more likely to make school activities and tasks more engaging for students. Countries may want to emphasise these kinds of skills, attitudes and behaviour in teacher training and professional development programmes for teachers. Germany, for example, whose share of low performers has shrunk significantly over the past decade, stresses both pedagogical and psychological skills in its teacher-education programmes.

Low performers often do not have a quiet place at home to do homework or study, and may not be able to pursue creative recreational activities. Governments can provide additional funds for schools to remain open after regular hours to offer instructional and creative extracurricular activities. Countries as diverse as Germany, Greece and Mexico have introduced all-day school programmes that provide supplementary education, including courses in information and communication technologies and language instruction (OECD, 2013a). Governments can also provide financial support for external organisations that provide extracurricular activities and/or summer camps for students from disadvantaged and/or immigrant families. Norway's Homework Assistance Programme and Germany's Education Alliance are two such initiatives (OECD, 2015a). In education systems where after-school tutoring is widespread, such as Hong Kong-China, Japan, Korea, Shanghai-China and Singapore, equity could be improved by increasing access to these activities and perhaps limiting their duration.

PROVIDE REMEDIAL SUPPORT AS EARLY AS POSSIBLE

It is important to disrupt the cycle of low performance that leads to early disengagement. Diagnostic assessments, typically done at the beginning of the school year or at the beginning of a study unit, are tools 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. Diagnostic assessments may include standardised tests, but are more effective when embedded in a broader set assessment that includes a range of formative assessments and tasks. Professional development can help teachers understand which assessment information is most appropriate for particular cases and purposes (OECD, 2013b). It is particularly important to identify and target students who are having difficulties in more than one or in many subjects (see Chapter 1).

Implementing a system of early diagnosis and remedial support for struggling students can be an effective policy tool to prevent students from getting trapped in a cycle of low academic performance and disengagement (see Chapter 3). In Finland, for example, a special teacher who is specifically trained to work with struggling students is assigned to each school and works closely with teachers to identify students who need extra help. Multi-professional care groups, consisting of the school principal, special education teacher, the school nurse, the school psychologist, a social worker, teachers and parents, meet periodically to discuss individual students in each comprehensive school (OECD, 2011).

Singapore provides support to students who do not have the basic numeracy skills and knowledge needed to follow the mathematics curriculum at school ("Learning Support for Maths" [LSM]). These students are identified through a screening test at the beginning of the first grade and receive support by a specialist teacher for 4-8 periods per week. LSM teachers are provided as additional teachers to each school, based on need, and receive additional training and teaching resources for LSM students, as required (see Box 1.2) (OECD, 2011).

ENCOURAGE THE INVOLVEMENT OF PARENTS AND LOCAL COMMUNITIES

Parents have an important role to play both directly and indirectly. Directly they can encourage their children to work hard in school, help them with homework, read to their younger children and take time to talk with their older children about their daily activities. Indirectly they can



become involved in their children's school and be aware of and interested in additional education opportunities for their children, such as free after-school tutoring programmes. As discussed in Chapter 4, there is less incidence of low performance in schools whose principals reported that parents pressure the school to maintain higher academic standards.

Involving parents formally in school management, such as through school boards, is a way of introducing "horizontal" accountability (i.e. to parents and the community as opposed to higher education authorities) in schools (OECD, 2013b). For example, school reforms introduced in Japan encourage parents and community members to assume some responsibility for managing schools and providing individualised instruction to students during lessons when necessary (OECD, 2011). These initiatives seem to be having a positive impact as students in Japan reported a stronger sense of belonging, lower rates of tardiness and better attitudes towards school in 2012 than in 2003.

Schools can reach out to parents who appear to be disengaged from their child's education and provide them with clear guidelines on how they can support their children and participate in the school community. The Netherlands Platform for Ethnic Minority Parents focuses on involving immigrant parents in their children's schooling. Activities include language courses for immigrant parents and home visits by teachers, which give teachers a better idea of their students' living and learning environment (Akkerman et al., 2011; Schleicher, 2014). Ireland's Home School Community Liaison scheme targets children in disadvantaged areas who are at risk because of family-related issues. Through this scheme, liaison co-ordinators visit students' homes regularly to promote good relations between parents and schools, and to identify and provide for the basic needs of parents. The idea behind the scheme is that when parents are more self-confident, they have a more positive impact on their child's education (Irish Department of Education and Skills, 2014).

Many initiatives to assist low-performing students come from the communities and local actors willing to volunteer or donate resources. For example, in Japan's School Support Regional Headquarters Project, people in local communities provide after-school remedial support for students in need, in consultation with schools (OECD, 2011). Mentoring programmes that connect students with working adults as their mentors can also help to motivate students. The Manitoba province in Canada provides a range of school-based, developmental mentoring programmes, including the Big Brother, Big Sister programme, which engages older students or peers as mentors of struggling and low-performing students.

ENCOURAGE STUDENTS TO MAKE THE MOST OF AVAILABLE EDUCATION OPPORTUNITIES

Students who have better attitudes and behaviours towards learning and school – i.e. who attend school regularly and on time, spend more hours on homework, are more perseverant and interested in what they are learning, and participate in extracurricular activities – are less likely to be low performers. Although disadvantaged students can do little to change the material conditions of their families or their schools, they can make the most out of the opportunities they are offered.

Developing positive attitudes towards learning, including mathematics, is essential (Chapter 3). Many policies and practices can have a direct or indirect impact on the engagement, motivation and self-confidence of low-performing students. Research suggests that interventions that teach disadvantaged students “social-cognitive skills”, including self-regulation, social information-processing and conflict resolution, in combination with tailored remedial lessons, can have a measurable impact on high school students (Cook et al., 2014). Low performers could also benefit from developing a “growth mindset”, which assumes that intelligence, character and creativity are not given traits, but qualities that can be learned and trained (Dweck, 2006).

IDENTIFY LOW PERFORMERS AND DESIGN A TAILORED POLICY STRATEGY

In order to design an appropriate strategy to tackle low performance, a country/economy should first identify its low performers. Do they share particular socio-economic and/or demographic characteristics? Are they found in all schools or only in certain schools? Has the incidence of low performance across the country/economy increased over time? The answers to these questions will form the basis of any policy intervention.

Countries and economies where the majority of 15-year-old students performs below the baseline level of proficiency in one, two or all three subjects PISA assesses may want to consider comprehensive education reforms. In 15 countries,¹ more than one in two students are low performers in mathematics; in 10 countries,² more than one in two students are low performers in reading; and in 9 countries,³ more than one in two students are low performers in science. These are mostly upper-middle income countries in Latin America (Brazil, Colombia, Costa Rica, Mexico and Peru), Europe (Albania and Montenegro), East Asia (Malaysia), Central Asia (Kazakhstan) and the Middle East and North Africa (Jordan and Tunisia); three high-income countries in Latin America (Argentina, Chile and Uruguay) and one in the Middle East (Qatar); and one lower-middle income country in East Asia (Indonesia).⁴

In all of these countries, the level of economic development – and of educational expenditure per student – is lower than the OECD average (OECD, 2013a). Previous PISA analysis estimates that cumulative expenditure per student, from age 6 to 15, of around USD 50 000 is the threshold after which additional investments are not necessarily associated with better student performance. Thus, a key policy strategy for these countries would be to increase the financial resources invested in education to the greatest extent possible, in order to attain a minimum level of qualified staff and material resources that schools need to give all students a chance to succeed.

As Chapters 4 and 5 of this report show, the quality of schools’ educational resources, and the equity with which those resources are allocated across an education system, have an impact on the likelihood that an individual student will be a low achiever. Chapter 5 shows that low performers benefit most from investing more, and more equitably, in schools’ educational resources. Thus, countries need to develop funding-allocation mechanisms that ensure that schools receive the resources they need. Revising funding to avoid shortages of educational materials, qualified teachers and professional staff in the schools attended by low-performing and socio-economically disadvantaged students are important components of an education reform



that aims to support low performers. These types of comprehensive reforms do not obviate the need for targeted reforms, since there are also considerable performance differences observed across socio-economic and demographic groups in most countries.

Targeted policies and programmes, rather than comprehensive education reforms, may be more appropriate in countries/economies where low performers are a minority of the total student population. In 14 countries and economies,⁵ 15% or less of students are low performers in mathematics; in 19 countries and economies,⁶ 15% or less of students are low performers in reading; and in 22 countries and economies,⁷ 15% or less of students are low performers in science. All of these countries and economies are high-income countries, except Viet Nam, which is a lower-middle income country where less than 15% of all students are low performers in one of the core PISA subjects.⁸

Although these percentages are relatively low – in top-performing countries/economies, only 8% of students or less are low performers in mathematics –, they represent large numbers of students. In Japan, for example, where the average mathematics score is significantly above the OECD average, 11% of students are low performers in mathematics. This translates into roughly 134 000 15-year-old students in Japan who have not yet acquired basic mathematics skills (see Table 1.7a).

All of these countries/economies may benefit more from policies that target the risk factors of low performance that have the strongest impact on their students. As this report has shown, the impact of each risk factor varies considerably from country to country. For example, the link between immigrant background and low performance, which is significant on average across OECD countries and is particularly strong in Belgium, Denmark, Estonia, Finland, France, Iceland, Mexico and Switzerland, whereas in Australia, Hong Kong-China, Macao-China, Montenegro, Qatar, Singapore and the United Arab Emirates, immigrant students perform better than students without an immigrant background, after students' socio-economic status has been taken into account (Table 2.7). Similarly, the relationship between low performance and no pre-primary education is particularly strong in France, Israel, the Slovak Republic and Shanghai-China. These findings identify the need for targeted interventions to tackle low performance.

Countries and economies that have reduced their shares of low performers may require different approaches than countries and economies where low performance has remained stable or has increased over time. In 14 countries, the share of low performers in mathematics increased between 2003 and 2012; in 4 countries, the share of low performers in reading increased between 2000 and 2012; and in 6 countries, the share of low performers in science increased between 2006 and 2012 (Tables 1.9, 1.11 and 1.12). Sweden has seen dramatic increases in the shares of low performers in each of the core subjects since 2000. In response, the country recently conducted a thorough analysis of its education system to determine the possible source(s) of the problem (OECD, 2015b). Countries – including Brazil, Mexico, Tunisia and Turkey – that have managed to reduce their shares of students who do not attain Level 1 proficiency in mathematics, still face the challenge of lifting sizeable proportions of students above the baseline level of proficiency. Achieving this may require a change in strategy.

PROVIDE TARGETED SUPPORT TO DISADVANTAGED SCHOOLS AND/OR FAMILIES

This report finds that students who attend schools with high concentrations of disadvantaged students are more likely to be low performers, even after accounting for the socio-economic status of individual students (Table 4.5). It is common to find such schools across OECD countries, particularly in Germany, Hungary, the Netherlands and Slovenia (Table 4.1). In these countries, and others, allocating additional resources to schools based on the number or proportion of disadvantaged students enrolled can be an effective and equitable way of supporting low performers (OECD, 2012).

Some countries grant the schools themselves, or local administrators, the autonomy to decide how to use additional resources. The Preferential Subsidy Programme (*Ley de Subvención Preferencial*) in Chile, for example, allocates extra funding for each disadvantaged student enrolled in a school. While schools can decide how to spend this extra money, they still must adhere to certain regulations and accountability requirements. They must, for example, design and implement an improvement plan that is evaluated within five years (OECD, 2015a; Brandt, 2010). In granting autonomy, while demanding accountability, the government takes decision making closer to the classroom, while allowing central education authorities to monitor how the additional resources are used.

Other programmes allocate specific goods and/or personnel to disadvantaged schools, such as teachers specialised in certain subjects or other professional and administrative staff, instructional materials (e.g. computers, laboratories, textbooks) or improvements in school infrastructure. For example, Ireland's Delivering Equality of Opportunity in Schools programme is a national plan that identifies levels of socio-economic disadvantage in schools based on the community in which they are located, and provides different kinds of resources and support, depending on levels of disadvantage. The plan provides early childhood education for disadvantaged students, access to teachers/co-ordinators in rural primary schools, and additional funding for books and school libraries (OECD, 2015a). Portugal's School Food Support Programme (*Programa Escolar de Reforço Alimentar*) provides a morning meal to students identified by their schools and raises awareness among students and their families about the importance of good nutrition (OECD, 2015a).

Instead of providing more resources to schools, some countries allocate resources directly to students' families. For example, countries that have reduced their shares of low performers, such as Brazil, Mexico and Peru, have introduced conditional transfer programmes that offer financial incentives to disadvantaged or marginalised families to encourage their children to enrol in and attend school. These programmes have helped to increase school enrolments and attendance (Anderson, 2005).

In addition to offering these programmes, countries could try to reduce the concentration of disadvantaged and low-performing students in particular schools. At the system level, more socio-economic inclusion in schools is related to smaller shares of low performers and larger shares of top performers (see Chapter 5). This suggests that policies leading to more social inclusion within schools may result in improvement among low-performing students, without adversely affecting high performers.



In education systems where students are assigned to schools on the basis of where they live, a concentration of disadvantage within a particular school is largely the result of residential segregation, rather than an outcome of education policy. Revising funding-allocation mechanisms so that resources are equitably distributed across schools can begin to address this problem (see Chapter 5). In education systems that allow parents and students to choose their schools, social and academic inclusion – meaning greater socio-economic and academic diversity – in schools can be promoted through regulatory frameworks, better dissemination of information about the available choices and financial incentives. Legislation could guarantee that public and private schools receiving government funding are open to all students, making it impossible to discriminate against potential students on the basis of socio-economic status, race, religion, sexual orientation, or other considerations. For example, Chile’s 2009 General Education Law prohibited student selection based on academic performance or family income in any school receiving government funds (OECD, 2015a). Other systems set a quota for disadvantaged students. For example, the French Community of Belgium regulates enrolment in secondary schools through a scheme that offers parents a large degree of choice. In schools where the number of applications is larger than the number of places available, a percentage of seats (around 20%) is reserved for students from disadvantaged primary schools (OECD, 2013a).

OFFER SPECIAL PROGRAMMES FOR IMMIGRANT, MINORITY-LANGUAGE AND RURAL STUDENTS

Low performers are more often found among students with an immigrant background and who speak a different language at home from the language of assessment. This is partly because these students also tend to be socio-economically disadvantaged. However, immigrant students have the potential to perform as well as non-immigrant students. Strategies to prevent low performance among immigrant and minority-language students include language training, curricular programmes designed specifically for minority students and longer school days. Israel, where the share of low performers in reading decreased from 33% in 2000 to 24% in 2012, has instituted small-group teaching programmes for low-performing students. The country also lengthened the school day and improved the quality of the educational resources and teachers’ working conditions in schools attended by Arabic-speaking minorities, especially students from Bedouin families (OECD, 2013a; Hemmings, 2010). Germany’s National Action Plan for Integration recently introduced language training for children with an immigrant background (OECD, 2015a). Finland’s National Core Curriculum for Instruction Preparing Immigrants for Basic Education provides a preparatory curriculum for students with an immigrant background based on their age, ability and mastery of the mainstream language. The programme helps these students integrate more quickly into the regular curriculum (OECD, 2015a). New Zealand’s Māori Education Strategy (*Ka Hikitia*) is designed to support minority students through language training (OECD, 2015a).

Policies to support rural students partly overlap with those for disadvantaged immigrant and minority-language students because low performance among rural students is often linked to the disadvantaged conditions of poor ethnic minorities. Geographic isolation and a lack of access to jobs and other resources that are concentrated in cities are additional challenges unique to rural low performers. Support to rural students could include investing in education infrastructure

and resources in rural schools to encourage universal enrolment in isolated areas, and offering financial incentives for qualified teachers to teach in rural schools. At the same time, policy needs to address the cost of maintaining small schools with small classes. Australia has introduced “place-based” education in rural areas, through which students in rural schools explore the science and history of their surroundings (Bartholomaeus, 2006). A number of school districts in the United States have shortened the school week to four days and lengthened the school day in order to reduce overhead and transportation costs. Research suggests that this initiative has had positive effects on student achievement (Anderson and Walker, 2015).

TACKLE GENDER STEREOTYPES AND ASSIST SINGLE-PARENT FAMILIES

Chapter 2 shows that boys are more likely than girls to be low performers in reading and science, while girls are more likely than boys to be low performers in mathematics. A recent PISA report focusing on gender differences in education suggests several policy tools to reduce gender gaps and help boys and girls fulfil their potential (OECD, 2015c). For example, training teachers to be aware of their own gender biases can help them to become more effective teachers. Sweden introduced a teacher training scheme where each college and university is required to provide a gender perspective, and teachers are expected to develop awareness and knowledge about the importance of gender equality (Rabo, 2007).

Giving students, particularly boys, a greater choice in what they read is a way to encourage reading for enjoyment. This is especially important for boys because they are less likely than girls to read in their free time; and when students don’t read well, their performance in other subjects suffers too. The Australian State of Victoria funds a programme, specifically targeting boys, called “Boys, Blokes, Books & Bytes”, which promotes learning styles that are appealing to boys, and involves adult men as positive role models and reading partners (OECD, 2015c). Policy makers and teachers can also do more to bolster girls’ self-confidence and reduce their high levels of anxiety towards mathematics. In the United States, the “Race to the Top” programme promotes science, technology, engineering and mathematics (STEM) education among groups that are under-represented in these fields, particularly girls and women (OECD, 2015c).

Students in single-parent families tend to have a higher risk of low performance, compared with students who live with two parents (Chapter 2). One reason for this performance gap may be that single parents often have less time and resources to support their children’s school work. Lengthening the school day and offering additional extracurricular activities after regular school hours, as Germany and Greece do (OECD, 2013a; Greek Ministry of Education, 2011), are two ways of offering more opportunities for students who do not get the help they need at home. Japan’s Study Support Volunteering Programme recruits volunteers among university students who help children with their homework and home study (Education Board of Tokyo, 2015).

REDUCE INEQUALITIES IN ACCESS TO EARLY EDUCATION AND LIMIT THE USE OF STUDENT SORTING

A lack of pre-primary education is closely associated with low performance, as discussed in Chapter 2. In most countries, and particularly in high-performing education systems, having attended no or less than a year of pre-primary education increases the likelihood of low



performance more among disadvantaged than advantaged students. Countries should move quickly towards providing access to quality pre-primary schooling for all children. This could be accomplished by passing legislation that gives every child the right to participate in pre-primary education (Mexico and Poland have done so), and by providing the resources needed to develop a network of free pre-primary education centres for disadvantaged children.

Of all variables analysed in this report, repeating a grade has the second strongest association with low performance, after socio-economic disadvantage. Although it remains unclear whether grade repetition is the cause or the result of low performance, as discussed in Chapter 2, research shows that grade repetition is a costly policy with unproven benefits for student performance and with a negative impact on students' engagement with school. Identifying low performers early and providing remedial support for struggling students is a more desirable and effective practice than keeping back low performers. Countries where grade repetition is pervasive, including Belgium, Luxembourg, Portugal and Spain (see Table 2.16), may want to revisit their policies on grade repetition. Where school systems presume that grade repetition is beneficial or necessary, it is important to raise awareness among stakeholders about its cost and negative impact on students (OECD, 2012).

The policy of sorting students into different curricular tracks often results in a two-tier system where socio-economically disadvantaged and low-performing students are more likely to be sorted into tracks of lower quality or status that will make it more difficult for them to enter higher levels of education. As discussed in Chapter 2, students in vocational programmes are more likely to be low performers than students enrolled in general academic programmes. One way to ensure that vocational students are not short-changed in their education is to delay tracking and extend the length of comprehensive education, as Poland has done, or create easier ways to move from vocational to comprehensive schools, as Austria has done. Another way is to improve the quality of vocational training and work with employers to ensure that students in these programmes are well-equipped to enter the labour market (OECD, 2010).

Notes

1. Listed in descending order of the percentage of students who are low performers in mathematics: Indonesia, Peru, Colombia, Qatar, Jordan, Brazil, Tunisia, Argentina, Albania, Costa Rica, Montenegro, Uruguay, Mexico, Malaysia and Chile.
2. Listed in descending order of the percentage of students who are low performers in reading: Peru, Qatar, Kazakhstan, Indonesia, Argentina, Malaysia, Albania, Colombia, Brazil and Jordan.
3. Listed in descending order of the percentage of students who are low performers in science: Peru, Indonesia, Qatar, Colombia, Tunisia, Brazil, Albania, Argentina and Montenegro.
4. According to the World Bank Country Classification, <http://data.worldbank.org/about/country-and-lending-groups> (consulted on 7 January 2016).
5. Listed in descending order of the percentage of students who are low-performers in mathematics: the Netherlands, Poland, Viet Nam, Canada, Liechtenstein, Chinese Taipei, Switzerland, Finland, Japan, Macao-China, Estonia, Korea, Hong Kong-China, Singapore and Shanghai-China.

6. Listed in descending order of the percentage of students who are low performers in reading: Denmark, Germany, Australia, the Netherlands, Switzerland, Liechtenstein, Chinese Taipei, Macao-China, Finland, Canada, Poland, Singapore, Japan, Ireland, Viet Nam, Estonia, Korea, Hong Kong-China and Shanghai-China.
7. Listed in descending order of the percentage of students who are low performers in science: the United Kingdom, the Czech Republic, Australia, the Netherlands, Slovenia, Switzerland, Latvia, Germany, Ireland, Canada, Liechtenstein, Chinese Taipei, Singapore, Poland, Macao-China, Japan, Finland, Viet Nam, Korea, Hong Kong-China, Estonia and Shanghai-China.
8. The population of Vietnamese students who took the PISA 2012 test represents only 56% of all 15-year-olds in Viet Nam. This is a smaller proportion than in most other participating countries (OECD, 2013a).

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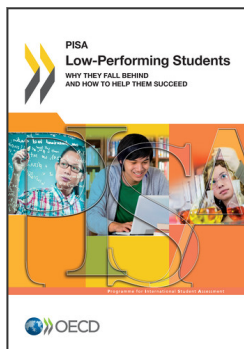
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From:
Low-Performing Students
Why They Fall Behind and How To Help Them Succeed

Access the complete publication at:
<https://doi.org/10.1787/9789264250246-en>

Please cite this chapter as:

OECD (2016), “A Policy Framework for Tackling Low Student Performance”, in *Low-Performing Students: Why They Fall Behind and How To Help Them Succeed*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264250246-9-en>

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