



Education in the EU: Diverging Learning Opportunities?

An analysis of a decade and a half of skills using the Programme for International Student Assessment (PISA) in the European Union

Background to “Growing United: Upgrading Europe’s Convergence Machine”



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Acknowledgments and Notes

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For ease of reference, this report organizes EU countries into 6 regional sub-groups according to history and geography: EU17 South (Italy, Spain, Portugal, Greece, Cyprus and Malta); EU17 Continental (Luxemburg, Belgium, Austria, Netherlands, Germany and France); EU17 North (Ireland, Denmark, Finland, UK, and Sweden); CEE South (Romania and Bulgaria); CEE Continental (Slovenia, Slovakia, Hungary, Czech Republic, Poland and Croatia); CEE North (Estonia, Latvia and Lithuania).

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List of Countries

Austria	AT
Belgium	BE
Bulgaria	BG
Croatia	HR
Cyprus	CY
Czech Republic	CZ
Denmark	DK
Estonia	EE
Finland	FI
France	FR
Germany	DE
Greece	EL
Hungary	HU
Ireland	IE
Italy	IT
Latvia	LV
Lithuania	LT
Luxemburg	LU
Malta	MT
Netherlands	NL
Poland	PL
Portugal	PT
Romania	RO
Slovak Republic	SK
Slovenia	SI
Spain	ES
Sweden	SE
United Kingdom	UK

Acronyms and Abbreviations

CEE	Subgroup of the EU that includes the Central East Europe nations of Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia
CEE-Continental	Subgroup of the Central East Europe nations including the Czech Republic, Croatia, Hungary, Poland, Slovakia, and Slovenia
CEE-North	Subgroup of the Central East Europe nations including Estonia, Latvia and Lithuania
CEE-South	Subgroup of the Central East Europe nations including Romania and Bulgaria
ESCS	Economic, Social and Cultural Status
EU	European Union
EU-28	All 28 member states of the European Union.
EU-17	Sub-group of the EU of 17 countries including Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Malta, Netherlands, Portugal, Spain, Sweden, and United Kingdom.
EU17-Continental	Subgroup of EU-17 that includes Luxemburg, Belgium, Austria, Netherlands, Germany and France
EU17-North	Subgroup of EU-17 that includes Ireland, Denmark, Finland, UK, and Sweden
EU17-South	Subgroup of EU-17 that includes Italy, Spain, Portugal, Greece, Cyprus and Malta
LFS	Labor Force Survey
OECD	Organisation for Economic Co-operation and Development
O*NET	Occupational Information Network
PIAAC	Programme for the International Assessment of Adult Competencies
PISA	Programme for International Student Assessment
p.p.	Percentage point
PPS	Purchasing Power Standard

Executive Summary

This report examines one of the most influential forces in any society, one that can contribute both to bridging differences or to deepening divides among people: *skills*. The skills that people have when they enter the workforce and that they can build on later in their work life determine to a large extent their ability to thrive, to raise families, and to feel vested in their country's economic and political future. Skills gaps and their formation, mirror and exacerbate social divides as well. In the European Union (EU), this issue has new urgency: changes in the labor market have made human capital an increasingly important divider between those who thrive on the labor market and those who not. Importantly, education systems in the EU are not becoming more successful in ensuring that all students acquire the skills needed. This report takes an in-depth look at socioeconomic disparities in educational opportunity and achievement, to aid policymakers in identifying where and how changes can be made to bring more educational equity, ultimately, into the future employment and well-being of Europe's more vulnerable populations.

This report explores the extent to which education systems across the EU succeed in providing equal opportunities for all Europeans to build the relevant foundational skills required to thrive in the 21st century economies. The World Development Report 2018, *Learning*, showed there is a learning crisis around the world. Today, more children are in school than ever before, but there are still millions of children who are not learning—60 percent of primary school children in developing countries still fail to meet minimum proficiency. Europe is no exception to this learning crisis. While European countries have much higher levels of learning among their students than many other countries, many education systems across Europe have become less successful in ensuring that all students acquire the skills that they need. In other words, just when skills became more important, schools became worse—or at least not any better—at providing equal opportunities to developing them. The WDR 2018 states that schooling without learning is not just a wasted opportunity, but also a great injustice. This report shows that the big education quality challenge in Europe is fundamentally one of equity. Education poverty and inequality have widened in many countries in Europe over the last 15 years.

An analysis of basic competencies acquired by students in secondary education across Europe, as measured by the OECD's Programme for International Student Assessment (PISA) shows that, overall, younger cohorts (born in the late 1990s) do *not* obtain more skills than those born in the previous decade. Moreover, other learning outcome indicators display worrying patterns: in many countries, especially in Southern Europe, repetition still remains a prevalent but ineffective and inequitable policy. Many of the students who repeat end up leaving school early and hence losing their opportunities to develop their true potential.

At the same time, there is a clear and persistent performance gap between wealthier and poorer students across Europe. This is reflected in PISA scores, which show that only 1 percent of the poorest students in the EU attain the top PISA performance levels, and only 7 percent of them attain a moderately high level of performance. Given this, together with the

lack of improvement in average scores, poor students today are in a much *worse* situation than they were 15 years ago.

Despite maintaining average performance levels over the last 20 years, many education systems across EU member countries face increasing “education poverty” (measured as the rate of students who score below minimal standards of learning achievement) as well as worsening inequality. The proportion of students who scored below basic proficiency on PISA exams increased in many EU countries between 2000 and 2015, especially among poorer students. The size of the performance gap separating the poorest students from the general student population differs between countries: currently is much larger in Slovakia and Austria than in Latvia and Estonia. The countries where that performance gap is widest were not the same in 2015 as in 2000. Germany, for example, narrowed its gap, whereas in France it widened.

In the years after the great recession, keeping quality of education for all has become way more challenging. It is difficult to know the key reasons to increased inequality, but several factors appear to have converged to push lower-income students farther away from their wealthier peers in academic outcomes over the last two decades:

School social segregation. School social segregation arises when students from households with similar socioeconomic backgrounds tend to attend similar schools, effectively separating richer and poorer students and affecting the peer composition of every classroom and school. Such social segregation has a range of mostly negative effects for poorer students on their knowledge, attitude to learning, learning choices, and even their perception of the returns to be gained from education. School social segregation across the EU is fairly high in some countries, but it did not grow during the studied period (2000-2015). Poland is a successful example of a country that has reduced its social segregation through deliberate changes in policy (in 1999), which also led to academic improvements among the poorest students, narrowing the performance gap. The Netherlands is an example of a country where policy changes have caused just the opposite, with increased school choice and less flexibility between academic tracks have led to segregation through parental choices.

Rising immigration. Students with immigrant backgrounds seem to be having difficulties in most EU education systems, although the gap is narrower for second generation students than for first generation students, indicating that integration into the education system can work. Language issues are important aspects that need to be further studied.

Unequal access to preschool. While children in the EU overall have high rates of access to preschool education, poorer students on average attended at least one less

year of preschool than their richer peers. Evidence has shown that the foundation laid during these early years has lasting effects on later achievement.

Unequal spending on education. When poorer students join school, they attend lower quality schools, and evidence suggests the gap in resources between schools attended by wealthier and poorer students has grown wider over the years.

Student preferences. Students have changed their preferences in their use of leisure time. This has implications for learning because most schools have not kept up with changing student expectations. A very noticeable drop has occurred in time students spend reading for fun, particularly among boys, for example.

Ineffective and counterproductive reforms. A lack of effective reforms to curricula, assessments, and school-based management has impeded learning outcomes. In several countries, the increasing use of school “choice” and tracking of students by ability has tended to heighten, rather than soften, disparate outcomes by socioeconomic group. Grade repetition is a good example of this: In addition to being a highly inefficient and costly policy, rather than aiding low-achieving students with a second chance at mastery it has been shown to be a strong predictor of dropouts and a key contributor to education inequities.

Promoting an equitable education system that is sustainable requires building a strong alliance among key stakeholders. Each policy counts for learning. In addition, three overarching goals should be kept in mind as policies are reviewed and reformed to turn around the deteriorating trend in achievement among Europe’s poorer students. First, policies to improve learning require a coherent set of interventions at all levels of the policy-making and service delivery process—such policies can be grouped in three categories: policies that address systemic challenges, policies that provide targeted support to disadvantaged schools, and policies that provide more flexibility for individualized learning. Whereas the member states of the European Union vary significantly in the set-up of their education system and

the extent and underlying causes of inequities within the system, a broad range of recommendations applicable to most may be summarized as follows.

Policies that can help address system challenges

- Continue the expansion of preschool education; particularly for disadvantaged students.
- Promote policies to build a school network that is inclusive in terms of student composition.
- Delay student tracking at least until the end of lower secondary.
- Ensure that education policy frameworks enhance flexibility and autonomy for schools and teachers to promote learning for all.
- Leverage ICT solutions for innovative models for skill development.
- Set ambitious goals to reduce student repetition.
- Elevate the professional skills of the teaching profession to meet diverse student needs and make teaching a desirable profession.

Provide targeted support

- Measure learning early to identify gaps in foundational skills.
- Provide adequate pro-equity funding for education systems and develop effective and well-implemented targeted initiatives.
- Develop coordinated programs for disadvantaged students and families.
- Protect effective programs from budget cuts.

Enable more flexibility for individualized learning

- Work toward a flexible curriculum that allows holistic skills development focused on student learning.
- Increase autonomy for teachers, schools, and local councils.
- Promote teaching ways that foster responsibility in students and further develop their intrinsic motivation.

Introduction

This report complements the recent World Bank publication, *Growing United: Upgrading Europe's Convergence Machine* (World Bank 2018). The *Growing United* report highlights that, although growth has resumed since the global economic crisis ended in 2014, the European Union is no longer the “convergence machine” that it was before the start of the crisis in 2008, and that resulted in converging economic growth and living standards across EU countries, regions and households. The report points to a growing divide, reflected in inequality widening among households across and within EU countries. It reviews the underlying factors of this growing divide from two angles—that of people and that of firms—and for both it examines the reasons why some are left behind and others thrive.

This report also complements the background paper for the *Growing United* Report, *Skills and Europe's Labor Market*. The *Skills and Europe's Labor Market* report takes a fresh look at the skills divide and delves deeper into how gaps in skills play a large role in explaining the growing divide between people. Combining a review of the demand and supply side of skills, the report finds that ongoing developments in the labor market risk creating a vicious cycle, that could exacerbate the divide between people across households, countries, and generations. At the same time that technology, globalization, and other megatrends are making access to ‘good jobs’ increasingly dependent on the possession of a minimum package of relevant skills. The report also describes how labor demand and supply factors have changed the task content of jobs in recent years, and how there are increasing risks for the low and inappropriately skilled to be left behind on the labor market. Although this trend is not irreversible, and although it is not occurring (in equal measure) in all EU member states, it needs to be reversed sooner rather than later. Otherwise, breaking the vicious cycle is likely to become increasingly complicated as the divide widens and risks becoming cemented in society.

This report explores the extent to which education systems in EU countries achieve the objective of providing high quality skills to all students, regardless of their socioeconomic characteristics. The focus of this report is on pre-university education and not on vocational or on the job training education. It also mostly focuses on cognitive skills since those are the foundational skills for other higher order cognitive and job-relevant skills. Specifically, socioemotional skills, which are very important life skills required in the labor market as well as for citizen engagement are not covered in this report. Chapter 1 documents the overall changes in the skills acquisition process experienced by students in the various EU education systems over 15 years, and particularly among students from lower socio-economic-status households. Chapter 2 explores factors that could help explain the changes in students' skills. The report concludes with Chapter 3 by proposing reforms to improve equitable opportunities for developing necessary skills. The EU comprises a diverse mix of countries with substantial differences in structure and performance of their economies, labor markets, and education systems. It is therefore virtually impossible to derive specific recommendations from the analyses of this report that could be applied across all EU countries. The report lays out broad

directions for policy reforms, which are applicable for most or all EU countries, to provide food for thought for policymakers and other stakeholders.

This report can be usefully read in conjunction with publications that address the topic of skills from a different angle. For example, a recent publication from the European Commission (European Commission 2017) highlights that bolstering Europe's education and training systems is a crucial part of the EU's agenda for smart, sustainable, and inclusive growth; that publication analyses equality in education by assessing member states' progress in achieving the EU's six key 2020 targets for education and training.

1. Equity in education in a changing Europe

Despite maintaining high average performance over the last 15 years, education systems across EU member countries face worsening inequality and increasing “education poverty¹,” which refers to inadequate levels of basic proficiency, primarily hurting the most disadvantaged students. The overall level of cognitive skills in the flow of students in the EU has remained constant since 2000, with EU countries ranking among the top-performing countries in the Programme for International Student Assessment (PISA) exams worldwide (See Box 1 for a description of PISA and the type of data that it does and does not provide.). Nevertheless, the proportion of students who scored below basic proficiency on PISA increased for many EU countries between 2000 and 2015. Most affected are poorer students for whom quality of education—as measured by standardized test scores in mathematics and reading—remains low. According to the latest PISA results, there are great disparities in outcomes between affluent and poorer students.

¹ A student facing education poverty is a student who scores below the basic level of proficiency, level 2 in PISA, and are considered “illiterate” and “innumerate” by the OECD. The term *reading literacy* does not call for a measure of whether 15-year-old students can read in a technical sense but reflects students’ ability to construct, extend and reflect on the meaning of what they have read in situations within and beyond the school (OECD, 1999). All of the statistics in PISA in this part of the report refer to the Mathematics domain specifically.

BOX 1. PISA AND BEYOND: WHAT PISA DATA DO AND DO NOT CAPTURE

This part of the report mostly focuses its analysis of skills on PISA. While enrollment and graduation rates give an indication of the extent to which education systems succeed in preparing students to meet the minimum requirements of the labor market, they do not capture the quality of education outcomes. PISA is a useful tool for measuring the quality of education systems. That is, it measures the extent to which students approaching the end of compulsory education have acquired skills critical for full participation in the advancing knowledge society. A triennial internationally comparable survey that the OECD introduced in 2000, PISA examines the performance of 15-year-old students in more than 60 countries in three core subject areas: science, mathematics, and reading. In addition, the survey examines a wider range of education outcomes that includes students' motivation to learn, their beliefs about themselves, and their learning strategies. "Literacy" in PISA is defined as the ability of students to apply knowledge and skills in the key subject areas and to analyze, reason and communicate effectively as they pose, solve and interpret problems in a variety of situations. The results from this dynamic assessment of students' acquired competencies (cognitive and noncognitive), are a strong indicator of students' ability to apply higher order skills in further education and the workplace.

There is no PISA-equivalent method that provides data on the quality of post-secondary and tertiary education in a way that it allows comparisons between countries and over time. For this reason, this report does not review inequities in higher levels of education. A review of this kind would be a fruitful area of future analysis, especially for a region like the EU where post-secondary and tertiary education indicators of enrollment and attainment are increasing. Across OECD countries, the enrollment of 20-year-olds in education increased, on average, by 7 percentage points between 2005 and 2015, while 85 percent of 15-to-19-year-olds were engaged in upper secondary, vocational, or tertiary levels of education. Moreover, between 2000 and 2016, the share of young adults (ages 25 to 34) in OECD countries with a tertiary degree increased by an average of 17 percentage points between 2000 and 2016, rising from 26 to 43 percent.

Nevertheless, PISA data do already provide some insights in (in)equities in higher levels of education, as skills acquired in pre-university education serve as a pathway to tertiary education. PISA results indicate that students from the bottom socioeconomic quintile are more likely to suffer from education poverty and early school leaving, and are therefore less likely to attain tertiary education, as compared to their counterparts from higher socioeconomic quintiles. Tertiary education is a critical part of efforts to improve the production of job-relevant skills, particularly innovation and entrepreneurship. Nevertheless, countries can only begin to reap the benefits if education systems improve the quality of their foundational skills (math, reading, and science skills) for the majority of students.

Source: OECD 2016 and World Bank STEP 2010.

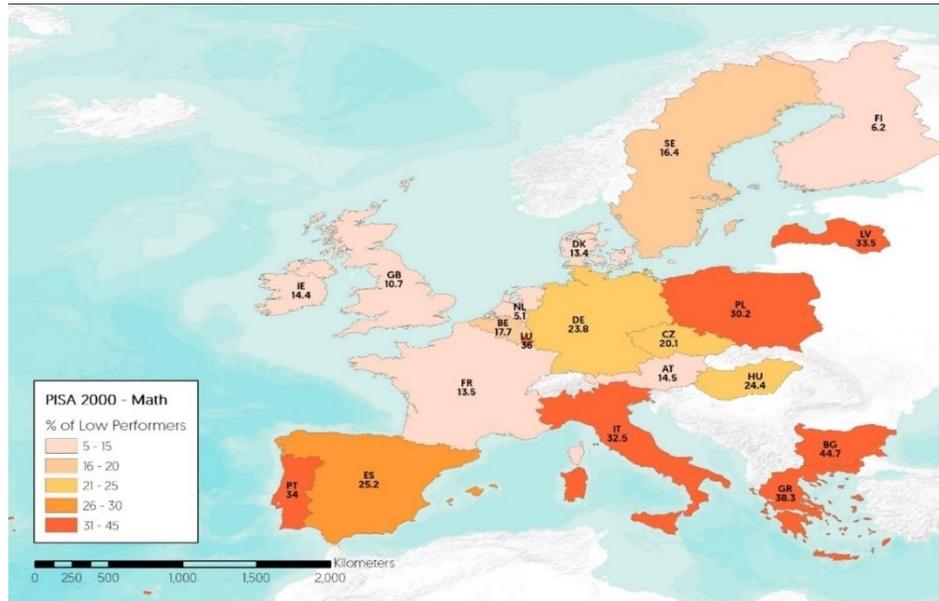
Education poverty and inequality

Education poverty is prevalent in many EU member states and it is increasing in many of them. The proportion of students that scored below basic proficiency on PISA, and were therefore in education poverty, increased for many EU countries between 2000 and 2015. Already in 2000, the EU had a substantial proportion of students at below-basic proficiency, with significant differences among countries (Figure 1). The proportion of students facing education poverty was low in the Netherlands (5.1 percent), Finland (6.2 percent), and Great Britain (10.7 percent), and high in Bulgaria (44.7 percent), Greece (38.3 percent), and Luxemburg (36 percent). Fifteen years later, the PISA 2015 results showed that many countries in the EU still had a significant proportion of students below basic proficiency (Figure 2). The proportion of students facing education poverty was low in Estonia (9.7 percent), Denmark (12.1 percent), and Finland (12.3 percent), and high in Bulgaria (42.4 percent), Romania (39.9 percent), and Greece (35.5 percent).² Many countries who had high levels of education poverty 15 years back, also had high levels of education poverty today, so little progress was made over the course of a decade and a half.

The levels of education poverty found in the EU are nonetheless very similar, on average, to those in countries with a similar level of economic development globally. Estonia, Denmark, and Finland were the three EU countries with the lowest share of low performers and, together with Japan, were the global leaders in this ranking. The proportion of low performers in the EU as a whole was like the proportion in countries such as Russia, New Zealand, Australia, and the United States. Nevertheless, there clearly is a need and ample room to improve on education inequality outcomes.

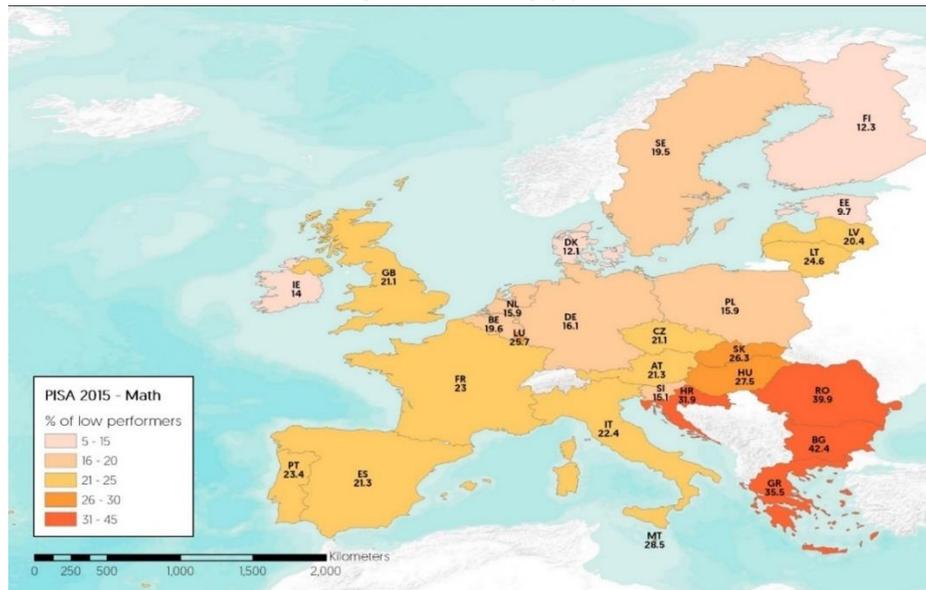
² Even though very few EU member states reduced the proportion of poor students under education poverty between 2000 and 2015, in terms of absolute numbers the EU members with improvements in education poverty constitute half of the total population in the EU. In 2015, the total population in the EU was 508.5 million. The aggregate population of Germany, Luxemburg, Italy, Portugal, Latvia, Spain, and Poland that saw improvements in education poverty over the last 15 years was 238.3 million. Germany and Poland, with relatively large populations, greatly reduced the proportion of students below-basic proficiency from 2000 to 2015, which fell from 24 percent to 16 percent in Germany and from 30 percent to 16 percent in Poland. See Figure 1 and Figure 2.

FIGURE 1: PERCENTAGE OF STUDENTS FACING EDUCATION POVERTY, PISA 2000 MATH, BY EU MEMBER COUNTRY



Source: World Bank staff calculations based on PISA 2000–2015 database.

FIGURE 2: PERCENTAGE OF STUDENTS FACING EDUCATION POVERTY, PISA 2015 MATH, BY EU MEMBER COUNTRY



Source: World Bank staff calculations based on PISA 2000–2015 database.

Education inequality: performance gaps between students from different socioeconomic groups

Inequality of education outcomes is defined as the difference in education outcomes between students from different groups, like those belonging to the top and bottom socioeconomic

quintiles. Looking at inequality is relevant because it provides evidence of the failure of education systems to enhance learning regardless of students' socioeconomic backgrounds, to overcome predefined student differences, and to fulfill the true potential of the students who are worse off.

There is a consistent performance gap between students in the top and bottom socioeconomic quintiles that has persisted in Europe over the years, but the size of the gap has changed within countries. The EU country with the largest population, Germany, has seen improvements in equity of education outcomes between socioeconomic groups, while equity in outcomes in the second biggest country, France, has grown substantially worse. Overall, Scandinavian countries have shown smaller differences between socioeconomic groups than Mediterranean countries. Back in 2000, the performance gap between students from the top and bottom of the OECD's index of Economic Social and Cultural Status (ECSC, see Box 2) was very heterogeneous across countries (Figure 3). The countries with the greatest difference in PISA mathematics scores between their students' top and bottom socioeconomic quintiles were Germany (157 points) and Hungary (140 points).³ Inequality continued to be heterogeneous in 2015 but, as for the analysis of countries by their level of education poverty, also the EU countries that display the highest education inequality changed over the years. Differences in outcomes among groups substantially widened over the years in Sweden and Finland (Figure 4). Interestingly, many other higher-income countries, including the United States, Canada, Japan, and Russian, had much smaller gaps between students from the top and bottom socioeconomic quintiles (Figure 5).

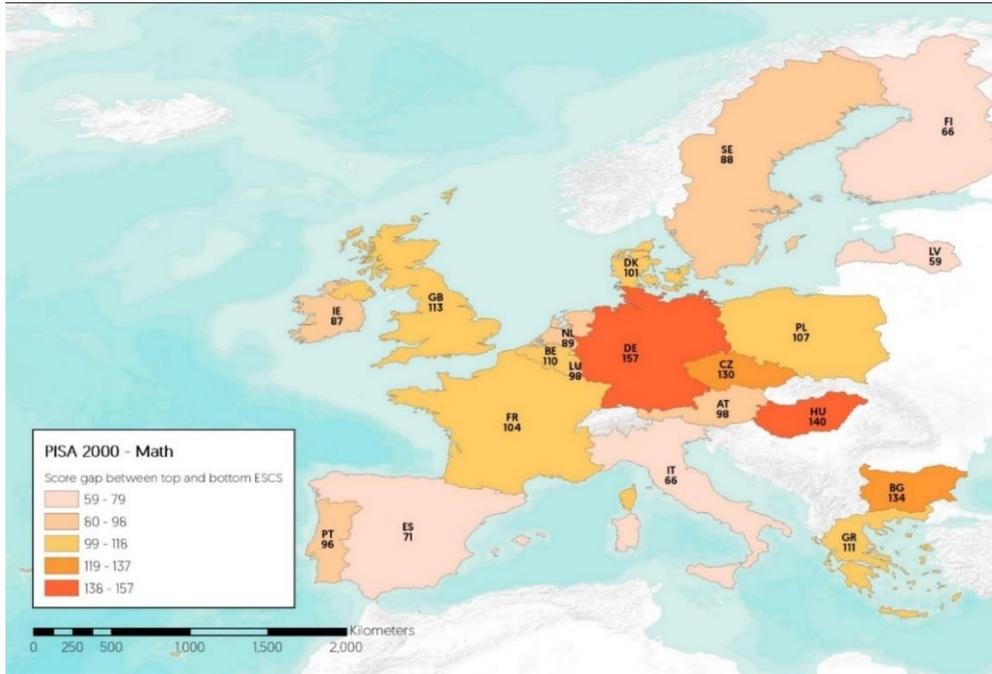
BOX 2. PISA'S INDEX OF ECONOMIC, SOCIAL, AND CULTURAL STATUS

Created by OECD, PISA's Index of Economic, Social, and Cultural Status (ESCS) is a multidimensional measurement that takes into account information reported by students on their family's wealth and occupational, educational, and cultural background. It is derived from a combination of three other indexes: (i) an index of the highest occupational status of parents, indicating not only labor market status but also the type of job held by parents; (ii) an index based on the highest level of parental education in years of schooling; and (iii) an index of family home possessions, which itself consists of a combination of the family's possessions (such as cars, bathrooms, or technological devices) and educational resources (such as desks, computers, textbooks, the number of other books), as well as the type of cultural possessions (such as the type and genre of books or works of art). The ESCS Index, harmonized for the countries that participated in PISA over the years, is the most important determinant of student achievement and is therefore crucial for analysis of the quality of education.

Source: OECD 2016.

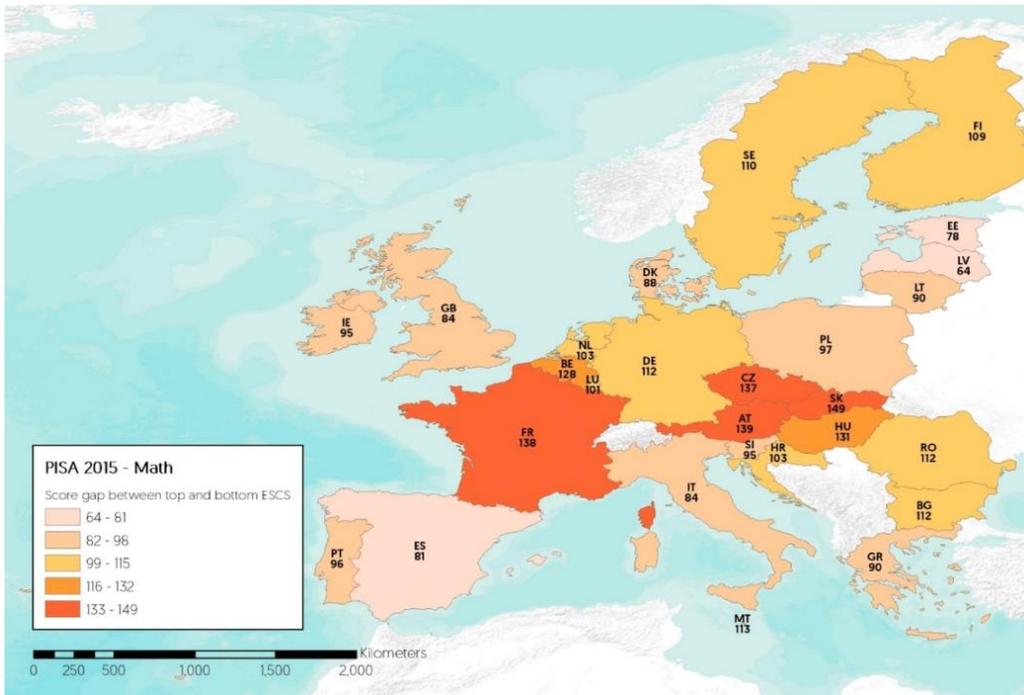
³ In the PISA 2015 scoring, a difference of 30 points is roughly equivalent to one year of schooling.

FIGURE 3: SCORE GAP ON PISA 2000 MATH BETWEEN TOP AND BOTTOM ESCS, BY EU MEMBER COUNTRY



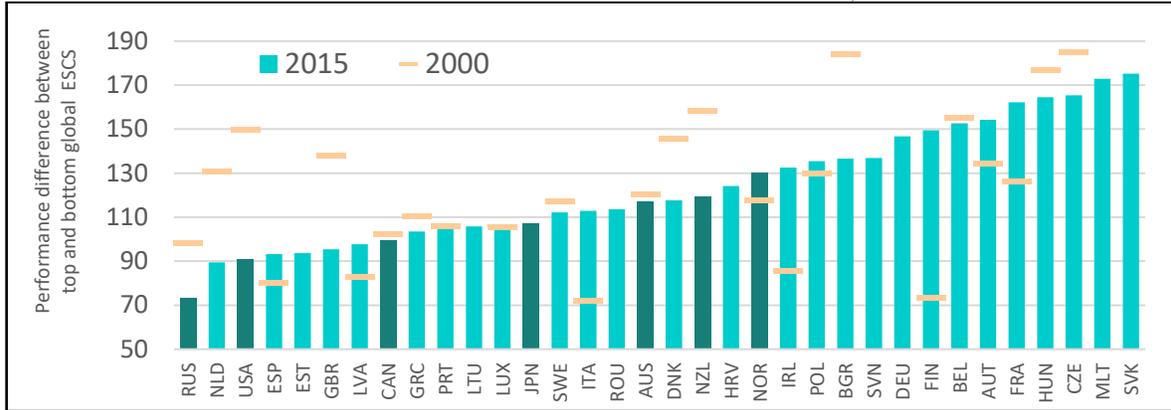
Source: World Bank staff calculations based on PISA 2000–2015 database.

FIGURE 4: SCORE GAP ON PISA 2015 MATH BETWEEN TOP AND BOTTOM ESCS, BY EU MEMBER COUNTRY



Source: World Bank staff calculations based on PISA 2000–2015 database.

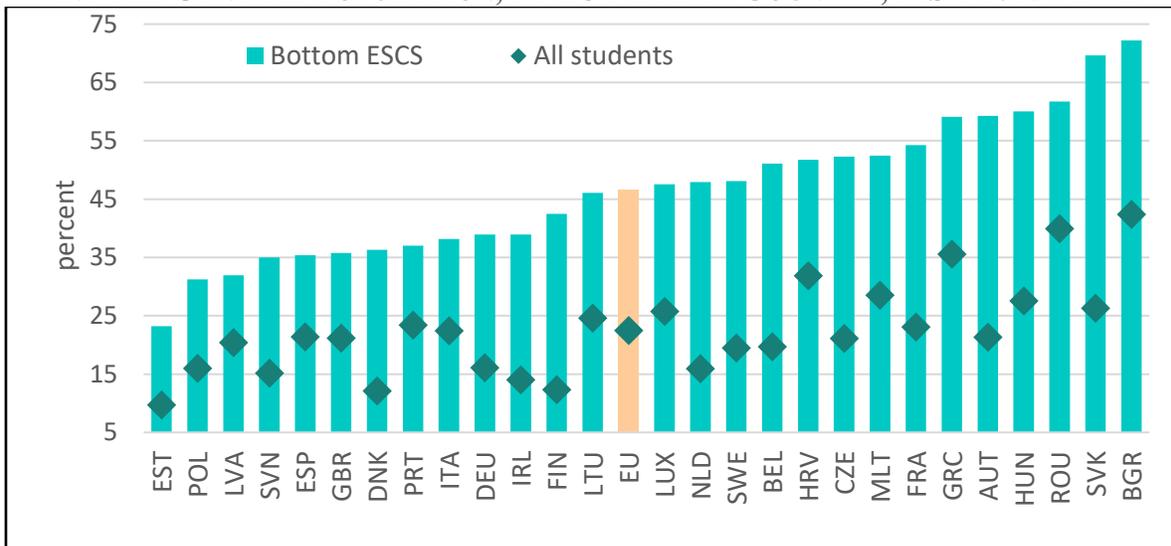
FIGURE 5: PERFORMANCE GAP BETWEEN TOP AND BOTTOM GLOBAL ESCS, EU MEMBER COUNTRIES AND COMPARATOR COUNTRIES, 2000 AND 2015



Source: World Bank staff calculations based on PISA 2000–2015 database.

Children’s socioeconomic background determines their chances for learning, in some countries more than others. Students from the bottom socioeconomic quintile are more likely to suffer from education poverty than students from the top socioeconomic quintile. In 2015, the average proportion of students in the EU as a whole with below basic proficiency in mathematics was 22.5 percent (Figure 6). But in the same year, about 47 percent of the students from the lowest socioeconomic status suffered from education poverty. The difference in education poverty between students from the bottom of socioeconomic quintile and the general population is much larger in some countries than in others. For example, the largest difference is found in Slovakia (43.4 percentage points), Austria (38), and the Netherlands (32). Meanwhile, countries such as Latvia (11.6 percentage points), Estonia (13.5), Portugal (14), and Spain (14) have a much lower difference in the proportion of low performers between students from the top and bottom quintiles.

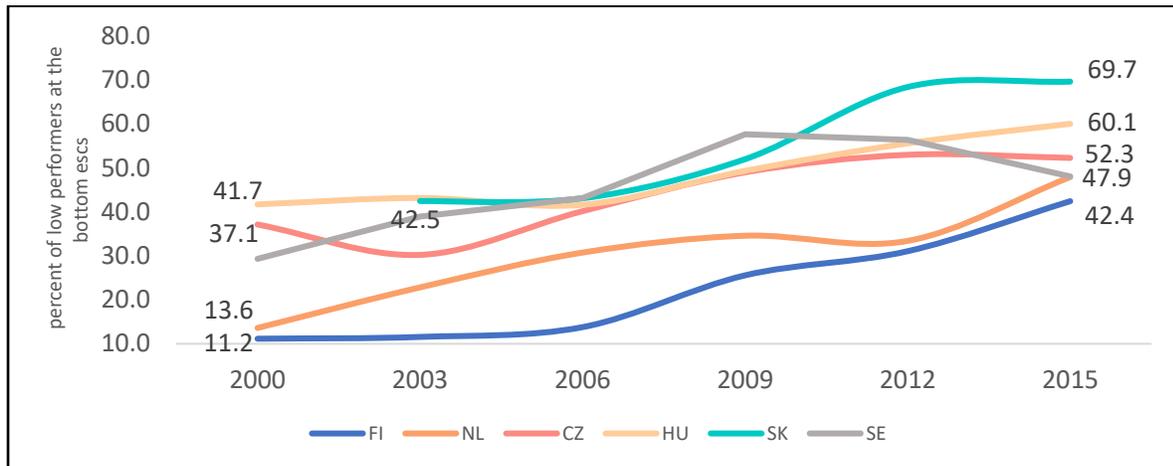
FIGURE 6: DIFFERENCE IN EDUCATION POVERTY BETWEEN BOTTOM ESCS STUDENTS AND THE GENERAL POPULATION, BY EU MEMBER COUNTRY, PISA 2015 MATH



Source: World Bank staff calculations based on PISA 2000–2015 database.

Maintaining high levels of equity requires constant efforts from policy makers. Education poverty among students from the bottom socioeconomic quintile increased over the period 2000–2015 in many EU countries (Figure 7). Back in 2000, countries like Finland and the Netherlands used to have very low rates of education poverty among students in the bottom socioeconomic quintile. Now, however, these countries display rates much more in line with the EU average of 47 percent: in Finland, education poverty among students from the lowest socioeconomic quintiles increased from 11 to 42 percent, and in the Netherlands it rose from 13.6 to 47.9 percent. Another example where inequities have increased is the Czech Republic (from 37.1 to 52.3 percent).

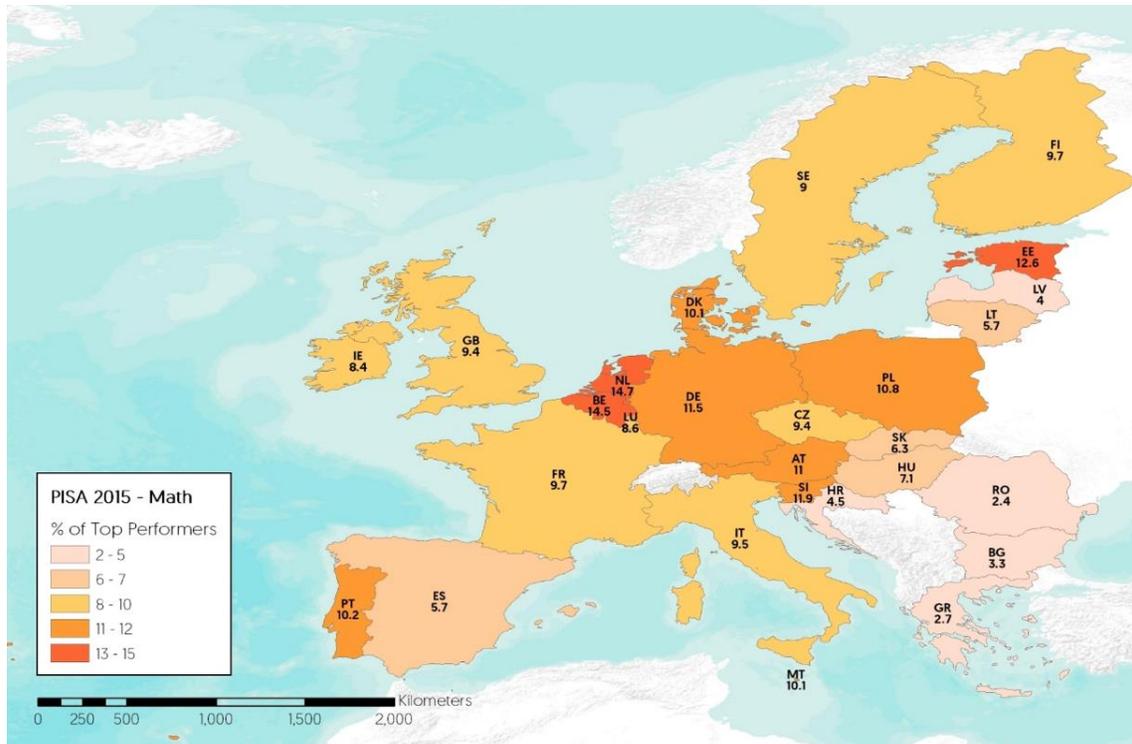
FIGURE 7: EDUCATION POVERTY AMONG BOTTOM ESCS STUDENTS, SELECT EU MEMBER COUNTRIES



Source: World Bank staff calculations based on PISA 2000-2015 database.

A different way to look at education inequality is by exploring how the proportion of students who succeed in the education system by reaching top levels of performance in PISA (Levels 5 and 6) differs across students from different socioeconomic backgrounds. Many EU member states have a relatively high proportion of students scoring in the top levels of proficiency. In 2015, for example, three continental European countries showed a high proportion of top performers in mathematics: Netherlands (14.7 percent), Belgium (14.5 percent), and Estonia (12.6 percent) (Figure 8).

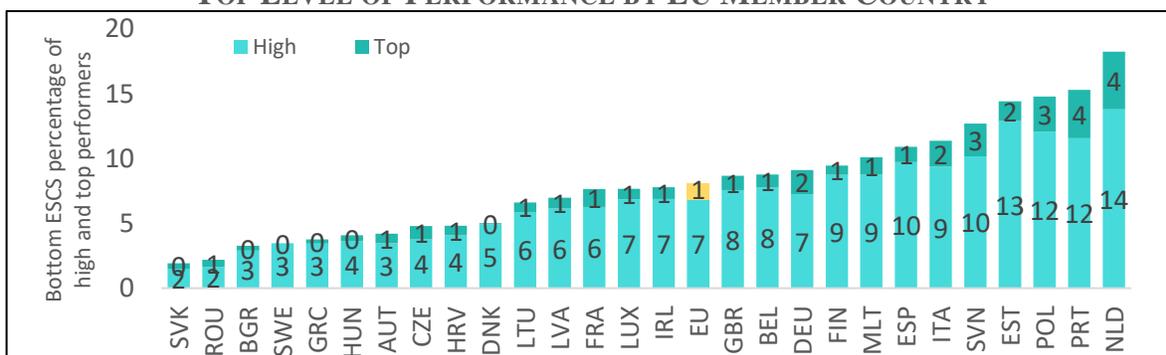
FIGURE 8: PERCENTAGE OF TOP PERFORMERS ON PISA 2015 MATH BY EU MEMBER COUNTRY



Source: World Bank staff calculations based on PISA 2000–2015 database.

In the EU students from the lowest socioeconomic backgrounds do not have much chance of becoming top performers, so although education is thought to be a social mobility catalyst, in many EU countries this remains far from being achieved (Figure 9). Only 1 percent of students from the lowest socioeconomic level reach the top level of performance in PISA (Levels 5 and 6), and only 7 percent of students from the poorest levels reach a moderately high level of performance (Level 4). The overall percentages of poor students who reach high or top-level performance are very low compared to the general pool of students in Europe, suggesting that even if poor students study hard, very few will be able to “escape” their present condition. Moreover, across the EU the average proportion of top performers decreased in most countries between 2000 and 2015, but this was especially the case for students in the bottom ESCS levels, suggesting that poor students are in a much worse situation today than 15 years ago.

FIGURE 9: PERCENTAGE OF STUDENTS FROM BOTTOM ESCS LEVEL WITH A HIGH OR TOP LEVEL OF PERFORMANCE BY EU MEMBER COUNTRY



Source: World Bank staff calculations based on PISA 2000–2015 database.

Education poverty is reflected in other areas of education too, such as early school leaving. After all, an education system should not only aim to develop the skills among those students who remain in education; but it should also prevent drop-outs. Many countries fail to retain students in the education system, further creating an uneven playing field. For instance, in Southern Europe, the chances of individuals leaving the school system due to their socioeconomic background is on the rise, including in Spain and Italy, despite improvements in in education poverty. The probability of pupils leaving school early in many other EU member states also varies considerably by household background (Figure 10). The EU member states with the highest chance of early school leaving due to social background are Slovakia (25.5 percent), Bulgaria (23.9 percent), and Romania (18.7 percent).

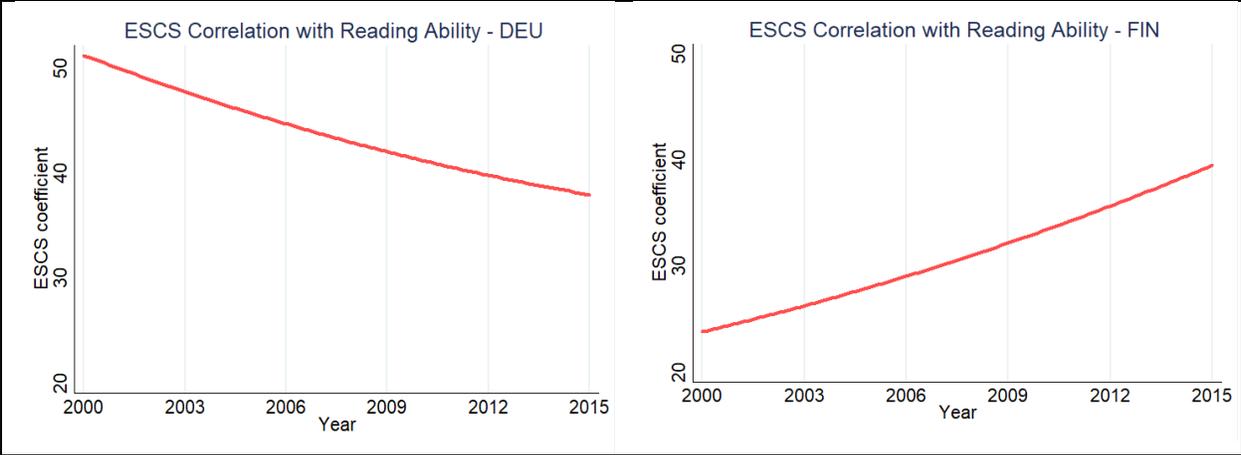
FIGURE 10: CHANCE OF EARLY SCHOOL LEAVING DUE TO SOCIAL BACKGROUND, BY COUNTRY, 2003 AND 2015



Source: World Bank staff calculations based on PISA 2000–2015 database.

The influence of ESCS on student outcomes has also changed across countries over the years. In some cases, the effect of social background on learning outcomes has been reduced. For instance, in Bulgaria the correlation between student background and skills has steadily decreased over the years, showing that individual circumstances have less influence on learning there now than they used to. Nonetheless, in Bulgaria the correlation with learning is still on the higher side among EU countries. Germany is another example where the influence of student background on student performance has decreased. In contrast, the importance of student socioeconomic background has steadily increased in other countries, including Finland, where in 2000 it was very small but has steadily increased over the years and is now at similar levels to those found in Germany and Bulgaria (Figure 11).

FIGURE 11: RELATIONSHIPS BETWEEN STUDENT BACKGROUND AND LEARNING IN GERMANY AND FINLAND, 2000–2015

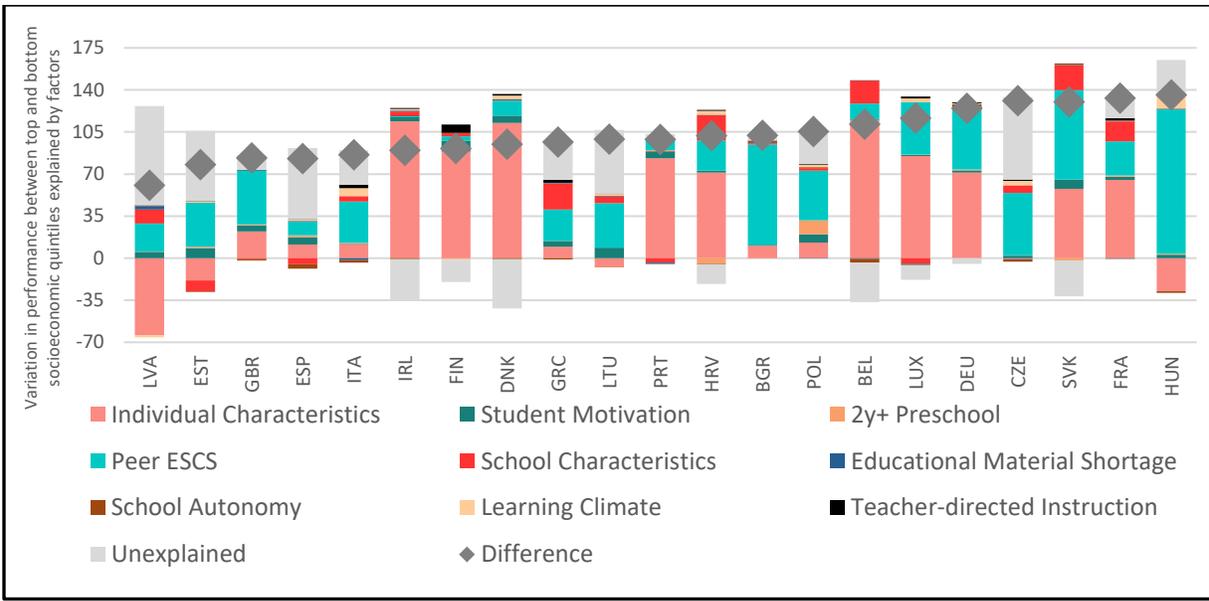


Source: World Bank staff calculations based on PISA 2000–2015 database.

Despite the importance that socioeconomic background has on learning, education systems *can* work to reduce its effect on inequalities in student learning. Education policy can target other school factors, such as student motivation, preschool education, and school disciplinary climate which are also important determinants of performance (see Table A2.1. in Annex 2). In fact, the effect of socioeconomic status, which accounts for 25 to 50 percent of the explained variations in PISA scores among countries, is reduced to almost half once peer effects (measured as the school’s average socio-economic level) are taken into account. Peer effects and school characteristics are important factors that explain the performance difference between students from the top and those from the bottom socioeconomic quintiles. This finding is consistent with the literature and is relevant because some individual and school-level factors are subject to education policy interventions.

To understand how much of the gap is accounted for by differences in learning factors (measured by individual, school, and system level characteristics), Figure 12 displays the decomposition of the performance in PISA 2015 math scores between students from the top and bottom socioeconomic quintiles. The size of the light red component indicates that individual characteristics explain an important share of the difference in performance the between top and bottom ESCS quintiles in most countries. The size of the light green component indicates that peer socioeconomic level help explain the difference in scores between students from top and bottom socioeconomic quintiles. The next section discusses some of these factors in more detail.

FIGURE 12: DECOMPOSITION OF PERFORMANCE IN PISA 2015 SCIENCE SCORES BETWEEN STUDENTS FROM THE TOP AND BOTTOM SOCIOECONOMIC QUINTILE, BY EU MEMBER COUNTRY



Source: World Bank staff calculations based on PISA 2000–2015 database.

Note: Oaxaca decomposition variable grouping. Individual characteristics: Age, gender, relative grade, retention, foreign language at home, ESCS index, and science learning time per week; School Segregation: Mean ESCS at the school level, standard deviation of ESCS at the school; School characteristics: Class size, School size, school type (by government funding), vocational (school); School Autonomy: School autonomy index, Teacher responsibility in the school’s decision process (vis-à-vis government or national education authorities). School responsibility for resource allocation, school responsibility for curriculum and assessment; Learning Climate: Both student- and teacher-related aspects of school climate. See List of Acronyms and Abbreviations for spelled-out country names.

2. Why has inequality increased in some EU countries?

There is no single reason common across the EU to explain why inequality has increased over the last few years in many of its countries. Therefore, in this chapter we explore several causes that have contributed to increased inequality. Often, it is the combination of several policies that had a negative effect on education quality or equity. The experience of the EU countries, and really, almost any other country around the world, shows that it is actually hard work to turn around low performing schools and to maintain low levels of inequality.

Increased social segregation in schools

Widespread school social segregation can create inequality in educational and life opportunities. School social segregation arises when households from similar socioeconomic backgrounds sort themselves to attend similar schools, effectively separating richer and poorer students and affecting the peer composition of the classroom and school, among other effects.

Segregation can generate inequalities in different ways. For example, schools serving mostly lower-income students tend to be organized and operated differently than those serving more affluent students. School average socioeconomic composition also affects the quality of teachers and teachers' expectations of students. Evidence suggests that teachers in low-ESCS schools are more likely to view their students (from disadvantaged backgrounds) as less teachable than teachers in high-ESCS schools, and that view of students in turn is associated with lower student achievement. In addition, teachers prefer working in lower-poverty environments (Van Maele 2011). School cultures can also be biased toward children of highly educated parents; or have segregation practices within the schools, such as access to different opportunities, extra-curricular activities, and the like.

Learning, nevertheless, is carried out by the student so it requires students to be mentally active and motivated. Students learn by linking new information to *prior knowledge*; and students' prior knowledge comes from both formal and informal settings—everyday life observations, hobbies, media, friends, parents, and school. Students from different households' may have very different prior knowledge (Scheider and Stern 2010). When students find themselves socially segregated, the fact that their peers may be experiencing similar difficulties (without much contrasting social experience to observe) can influence their knowledge, their attitude toward school, the amount of homework they do, the number of rigorous courses they select, and their perception of the returns to education (Rumberger and Palardy 2005). For example, poorer students may have fewer older role models who have made serious investments in education (such as higher educational attainment) that yielded higher returns. In short, socially segregated education systems hinder students' access to peers with a larger and richer proportion of role models.

Beyond student achievement, segregation can have negative consequences for other outcomes like social cohesion (Rumberger and Palardy 2005; Palardy 2013). Early school segregation can help perpetuate differences in society rather than promote integration.

Students in segregated schools may not learn to trust other (socioeconomic or ethnic) groups, while low segregation in schools can help reduce stereotypes and generalizations made about different groups, as well as reduce the anxiety of those students who may seem “different” (Mickelson and Nkomo 2012). Social integration can also increase connections and bridges among diverse groups of students. Learning to trust and empathize with students from different groups is important, given the increasing diverse populations and the current social tensions experienced in many countries across Europe. Mixing students from different groups can also increase the network opportunities for students. These benefits can translate into higher learning or other higher achievement with resulting intergenerational benefits. Moreover, long-term societal gains include more integrated neighborhoods, cross-cultural friendships, diverse labor market and civic engagement (Rumberger and Palardy 2005; Palardy 2013).

For instance, research on inter-generational mobility, shows that education mobility (measured by education attainment) is inversely associated with geographic segregation, i.e. economies with lower levels of spatial segregation by education levels tend to have higher inter-generational mobility⁴. At the same time, higher intergenerational mobility is associated with lower inequality of opportunity for educational attainment. Regions with higher concentrations of educated people across generations tend to act as “mobility poles,” providing better services, economic dynamism, and other positive spillovers, which in turn leads to higher upward mobility rates among the disadvantaged and thus reduce segregation in that region.

There are several contributing factors that affect segregation. Some start early on, with education policies related to assigning students to schools, the extent of school choice, whether schools can “cream-skim” the best students, and the like.⁵ There are also demand responses, such as the extent to which parents choose a neighborhood based on a school district and whether parents can influence the choice of public school regardless of assignment mechanisms. Later on, social segregation can be reinforced by education policies that separate students by ability into vocational education and training (VET) or academic profiles (tracking), by public subsidies for private education with barriers to student entry, as well as by multilingual tracks which effectively separate students.

The tracking of students can provide an advantage to already advantaged students and can also provide a disadvantage to already disadvantaged students (Vigdor and Ludwig 2010). The experience in Europe of introducing free school choice policies accompanied by publicized school rankings has reinforced inequalities through excessive segregation (Mulet

⁴ Absolute *upward* intergenerational mobility in education is a measure of the extent to which the current generation has attained a higher educational level than the parents of that generation. Relative intergenerational mobility is the extent to which an individual’s position on the economic scale is independent of the position of his or her parents.

⁵ Unfortunately, because PISA is a sample of 15-year-old students, it does not capture changes in social school segregation during the primary years

2012⁶), as parents have valued the social status of their peers rather than school effectiveness (Mizala and Urquiola 2007; Abdulkadiroglu et al. 2017).

Overall, social segregation in schools remained relatively constant between 2000 and 2015 for most EU member states participating in PISA (Figure 13). We use an index of social segregation in schools to gauge the extent to which richer and poorer students are sorted into different schools. This index measures school segregation as the correlation between the socioeconomic status of each student and the average socioeconomic status of his or her school. This provides a measure of how accurate a student’s own ESCS is as a predictor of the average ESCS of his or her school. If there is very high segregation of students by schools, the value of this correlation will be closer to one. Alternatively, if students are randomly allocated in schools regardless of their socioeconomic status, then the value of the segregation index will be close to zero.

FIGURE 13: SOCIAL SEGREGATION IN SCHOOLS BY EU MEMBER COUNTRY IN 2000, 2009, AND 2015



Source: World Bank staff calculations based on PISA 2000–2015 database.

While the relative ranking of countries is not necessarily informative, tracking the evolution of the segregation index over time for each EU member state provides some understanding of the evolution of school segregation specific to that country. Poland is the only country that in recent years substantially reduced its social segregation (at the secondary level), through delayed tracking (Box 3). Sweden and Finland are the EU members with the lowest segregation index (0.41 in 2015); and they have been since 2000. However, having low

⁶ http://www.oecd-ilibrary.org/education/school-choice-and-equity_5k9fq23507vc-en

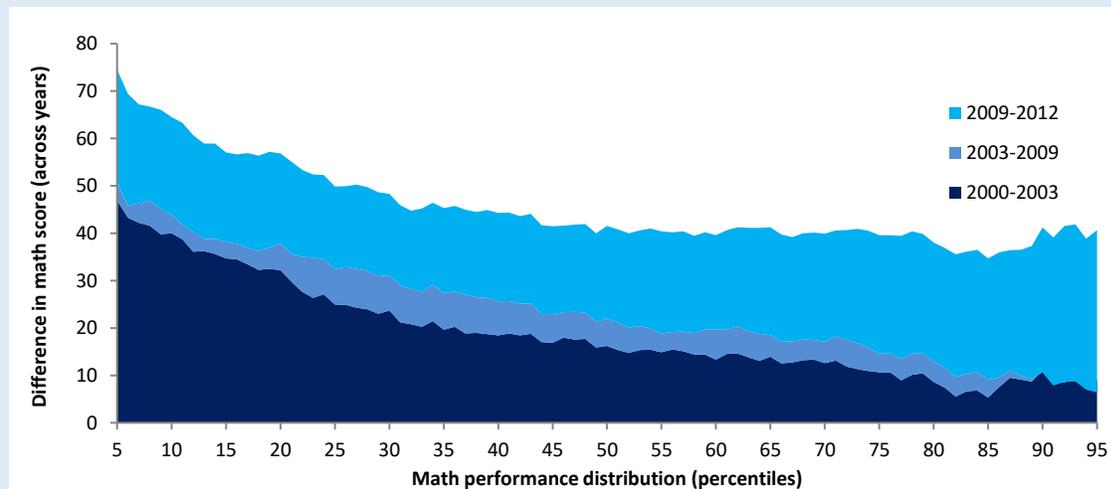
segregation alone does not guarantee equitable outcomes. For instance, in Sweden the performance gap between the top and bottom ESCS students was bigger than in Spain, which has a much higher segregation index. This in part may be due to the rigid Spanish curriculum and teaching practices, which reduces differences in quality of teaching between schools. In contrast, countries like Bulgaria and Hungary have always had high segregation in schools⁷.

BOX 3: POLAND AS A SUCCESSFUL EXAMPLE FOR REDUCING SOCIAL SEGREGATION

In 1999, Poland introduced a set of sweeping reforms to improve access, quality, and equality in education; reducing social segregation proved a key ingredient for success. With subpar and inequitable learning outcomes, especially between urban and rural communities, one of the main reforms of the Polish education system sought to expand general education from 8 years of primary to 6 years of primary, followed by 3 years of a lower secondary education, significantly delaying early tracking and reducing social segregation in schools. Other reforms included introducing per capita funding for state and local government level; granting schools more autonomy regarding curricula and teaching programs; implementing national assessments at the end of primary and lower secondary education; and lowering the compulsory age of preschool education to age five.

Due to these reforms, and to the increase in social integration in particular, students from lower and higher socioeconomic backgrounds alike saw performance improvements. However, the low-performing students — mostly from disadvantaged backgrounds—improved even more (especially between PISA 2000 and 2003) (Figure 14). Nevertheless, recent changes in political climate and public opinion have led to a reversal of many of the policies, including a return to earlier tracking, which is likely to increase social segregation in schools and negatively impact students from disadvantaged backgrounds.

FIGURE 14: POLAND’S PISA MATH SCORE GAINS ACROSS THE PERFORMANCE DISTRIBUTION, 2000-2012



Source: World Bank 2017.

⁷ The segregation results are similar to those reflected in the between-within variation, a measure of how big the “school effects” are in PISA performance across years.

In contrast to Poland, school social segregation in the Netherlands has substantially increased, which shows in the increased between-school variation in performance over the years in primary schools (De Wolf 2017). Education policy reforms, such as a more rigid tracking system, combined with the increased availability of information about schools to parents, have changed incentives for parents and schools, resulting in more selection and segregation of students (Box 4). Early tracking has long been a part of the Dutch education system, but it used to be more flexible than it is today. The education system divides students (at age 12) in different tracks at the entrance of lower secondary education (DeWolf 2017).

There are five tracks in the Netherlands: three for VET (different levels), one for higher vocational education, and one for the pre-university academic track. However, over the years (between 2009 and 2015), student mobility between tracks has decreased and it has become more difficult for students to move to a higher-level track (IoE 2015). At the same time, the Netherlands has seen a decline in student population (CBS 2017) and an increased use of publicly available school performance data, which has increased competition between schools. School performance indicators, which are usually seen as a positive accountability mechanism, are used by the schools, by local and national governments (e.g., the inspectorate), by the media (for rankings and league tables), and by students and their parents. High selectivity suggests that schools can cream-skim the most well-off students as well as those with the strongest abilities (Van de Werfhorst 2015), creating inequalities in the system (DeWolf 2017).

The overall result of these policies has been an overrepresentation of low-ESCS students in VET tracks and an overrepresentation of high ESCS students in academic tracks, further increasing inequality (IoE 2017). In fact, the socioeconomic differences in tracking *doubled* between 2010 and 2017 (IoE 2016, 2017; De Wolf 2017). There are also socioeconomic differences in tracking and school choice; high ESCS students choose schools that offer a

higher level single track, while low ESCS students prefer more comprehensive schools (schools that offer delayed tracking and a combination of tracks) (IoE 2017).

BOX 4: EDUCATION POLICIES THAT LED TO INCREASED SOCIAL SEGREGATION IN THE NETHERLANDS

A combination of factors has led to increased segregation in the Netherlands. In this box we explore the combination of tracking and increased school choice.

Tracking in the Netherlands is more important now than it was 10 years ago for education outcomes (Onderwijsraad 2017; Korpershoek et al. 2016). Parents have responded to this change by investing more in *private extracurricular schooling*. The amount Dutch parents spend on exam classes and test training has increased dramatically over recent years (CBS 2017). Parents from higher socioeconomic backgrounds send their children to extra classes and exam training programs to get them into (pre)university tracks or help them stay there (Denessen 2017; IoE 2017). In addition, the increased use of performance data show that there is an increased competition from schools. Schools respond by optimizing their position in the league tables, offering quality, special curricula, advertising their services, and using other strategies to attract as many students as possible. The number of schools offering specific programs (e.g., foreign languages, top sports, or iPad-based learning for highly intelligent students) has increased rapidly (Korthals 2016). There is also more selection in education. More schools have selection procedures as well as high entrance fees or other requirements (e.g., owning iPads) (IoE 2017). The more selective schools attract higher ECSES students (Van de Werfhorst 2015).

The increased school choice, the options for schools to “cream-skim” entering students, and the more rigid tracking have worked together to increase education inequality in the Netherlands. Inequality is challenging to tackle in this country, due to the high level of autonomy for schools and school boards (DeWolf 2017). Dutch schools can develop their own curricula, as long as all students meet a set of 58 goals at the end of primary and secondary education (ranging from math to social skills) (MinOCW 2015). There is no national curriculum in the Netherlands, and since 1968 there have been no proscriptions of subjects or classes. Autonomy is high for both teachers and schools (Nuffic 2015; OECD 2016). Education policy is increasingly initiated and developed by the organizations of school boards (OECD 2016; Hooge 2017). The Ministry of Education participates less in education policy than it did 10 years ago. This trend of decentralization is not restricted to education; it is a broader trend in Dutch public policies. For example, since 2015 municipalities have been responsible for both youth and health policy (Vermeulen 2015).

Broadly, school boards receive a lump sum based on (a) the number of students and (b) the percentage of students with low educated parents (Ladd, Fiske and Ruijs 2010). The boards are autonomous in spending these public means (as long as this is legal) and in the distribution of the means among their schools. The same holds for the extra funding for low SES students; school boards are free to spend this on other expenditures or to invest more in students who come from low socioeconomic households. Some school boards receive extra money from the local governments or other parties. The lump-sum model is greatly appreciated by the school boards. At the same time, the financial system is weak concerning checks and balances. The Dutch audit committee often calls for a more balanced approach, because it is unable to control the public expenditures (Dutch Audit Committee 2016). Furthermore, quality provision and assurance are the responsibility of school boards, with controls of the basic standards by the Inspectorate of Education (De Wolf, Verkroost and Janssens 2017).

Changes are starting to happen, however. The Ministry of Education has changed its policies on the tracking processes: primary schools now have to check the tracking results with individualized assessments, and when the test result for a student is higher than expected, teachers need to reconsider that student’s tracking assessment (MinOCW 2016 2017). More recently, the government’s plan for the next four years includes reforms to reduce inequity in education.

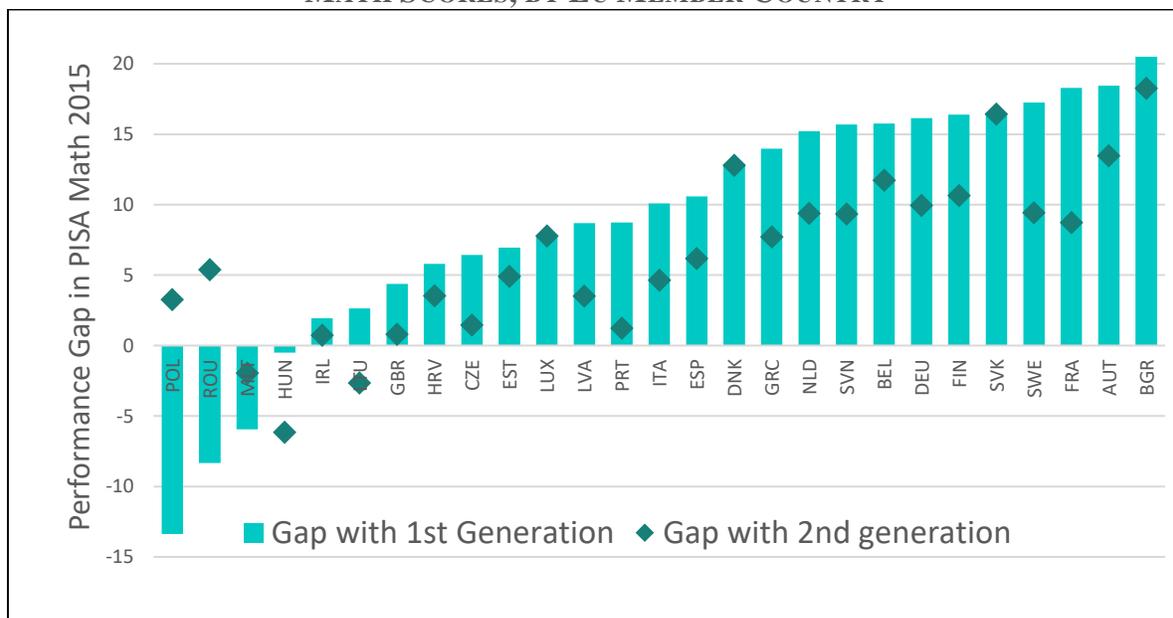
Source: De Wolf 2017.

Not all countries that have seen an increase in inequality have seen increased segregation. Finland remains one of the countries with the lowest school segregation and has had some of the lowest between-school inequality rates among the EU countries for many years. During its 1970s education reform, the goal was to eliminate the impact of socio-economic background and place of residence on learning outcomes with the establishment of comprehensive school (Väljörvi and Alasuutari 2017).

Difficulty responding to students' diversified needs and interests

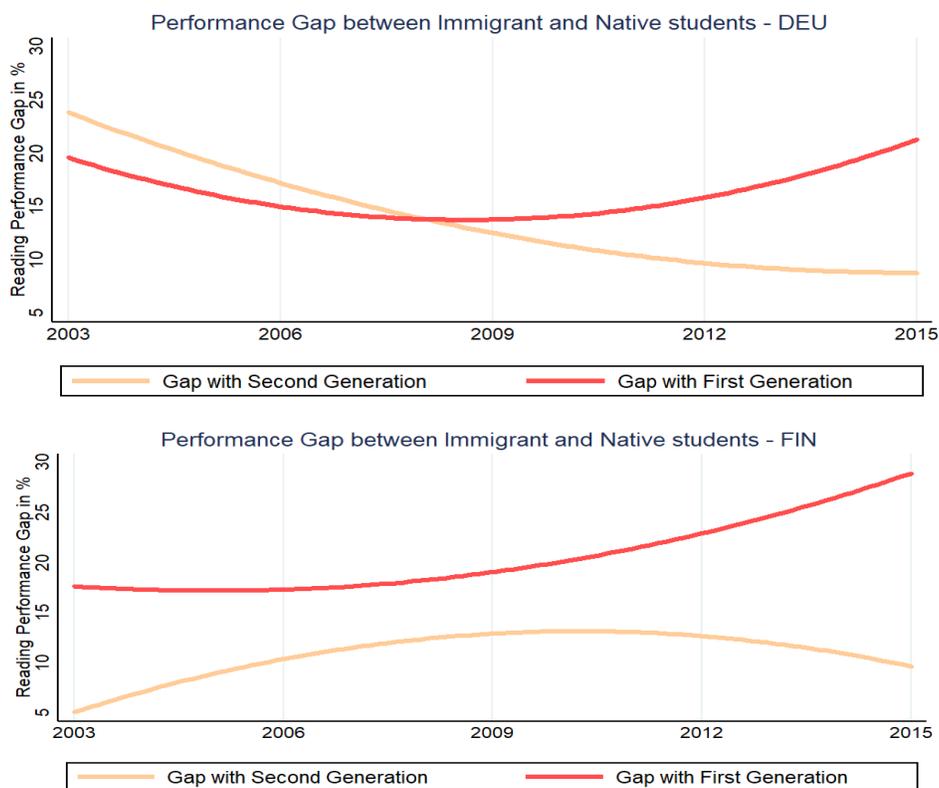
Over the years, the number of poor families has substantially increased in many countries, including Finland, and so has the proportion of students from immigrant backgrounds (Väljörvi and Alasuutari 2017). Interestingly, even though immigrants go to the same schools as nonimmigrants, the reading-level difference between native and first-generation students is persistent over time (Figure 15). Learning gaps are found also for second generation students. While students with immigrant backgrounds seem to have difficulties in most EU education systems, the gap is narrower for second generation students than for first generation students, implying that students from immigrant backgrounds are gradually integrating into the education system. In the case of Germany, the gap between native and second-generation students has decreased over time, while the proportion of second generation students has increased, rising from 6 to 12 percent of the student population since 2000 (Figure 16), showing that education systems can successfully incorporate students from immigrant backgrounds even as their share increases rather substantially.

FIGURE 15: GAP BETWEEN FIRST AND SECOND-GENERATION STUDENTS, PISA 2015 MATH SCORES, BY EU MEMBER COUNTRY



Source: World Bank staff calculations based on PISA 2000–2015 database.
Note: See List of Acronyms and Abbreviations for spelled-out country names.

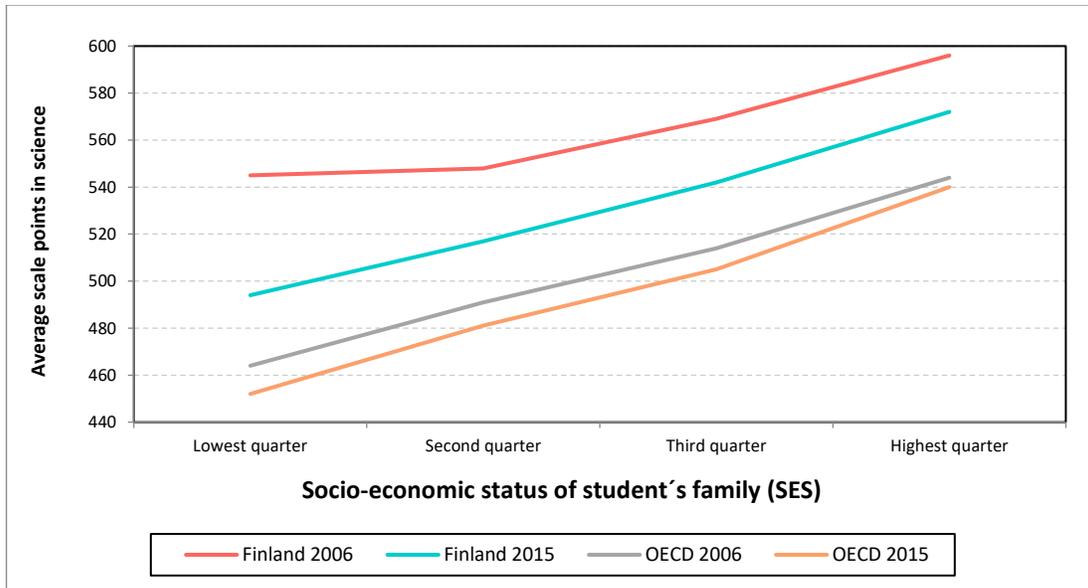
FIGURE 16: READING SCORE DIFFERENCES OF FIRST AND SECOND-GENERATION IMMIGRANT STUDENTS VS. NATIVE STUDENTS, GERMANY AND FINLAND, 2003–2015



Source: World Bank staff calculations based on PISA 2000–2015 database.

However, as diversity increases, equity is no longer guaranteed by just offering the same teaching and teaching structure to all young people. Figure 17 shows how the performance decline between 2006 and 2015 in Finland similarly affected students in the middle and top part of the socioeconomic distribution, while the performance of low-ESCS students decreased disproportionately. Thus, the comprehensive school model built more than four decades ago in countries such as Finland has not been able to prevent an increase in inequitable learning outcomes due to an increasingly heterogeneous student population. Improving the equity of learning results seems to require more flexible and differentiated learning to target different students' needs.

FIGURE 17: PISA SCIENCE PERFORMANCE IN FINLAND VS. OECD AVERAGE, BY FAMILY SOCIOECONOMIC QUARTILES, 2006 AND 2015



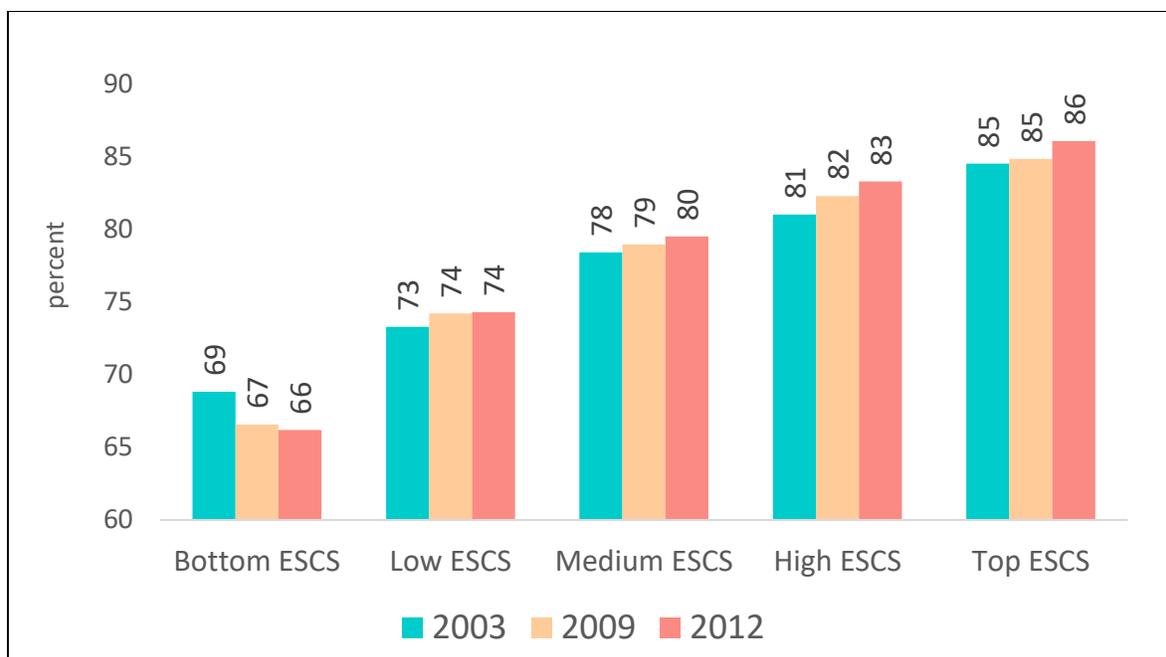
Source: World Bank staff calculations based on PISA 2000-2015 database.
 Note: See List of Acronyms and Abbreviations for spelled-out country names.

Unequal support to schools and students

Inequalities start building early on, even before students join primary education. Often, less wealthy students have access to fewer years of preschool education and to worse quality schools. Early childhood education has been shown worldwide to be a key tool to level the field for disadvantaged children in their learning and throughout life. Extensive education research over recent decades shows convincing evidence that investing in young children (0-5 years old) through early childhood development (ECD) programs is one of the smartest investments a country can make to improve outcomes later in life, such as lower ESL and higher cognitive skills for individuals and for society collectively.

Sound ECD programs help ensure that young children have the right stimulation, nurturing, and nutrition, and through preschool participation children can develop many important socioemotional skills, such as regulating difficult emotions, which is required for learning, as well as independence, collaboration, and problem solving. Evidence on this from PISA is consistent with previous research. PISA scores among students who have attended preschool are higher than those among students who have not. However, while children in the EU overall have high rates of access to preschool education, poorer students on average attended at least one less year of preschool than their richer peers. Moreover, whereas preschool attendance has improved steadily for most levels of socioeconomic status, for the poorest kids it has gotten worse (Figure 18).

FIGURE 18: EU AVERAGE NET ENROLLMENT RATE IN PRE-PRIMARY BY EDUCATIONAL LEVEL AND SOCIOECONOMIC QUINTILE, 2003, 2009, AND 2012

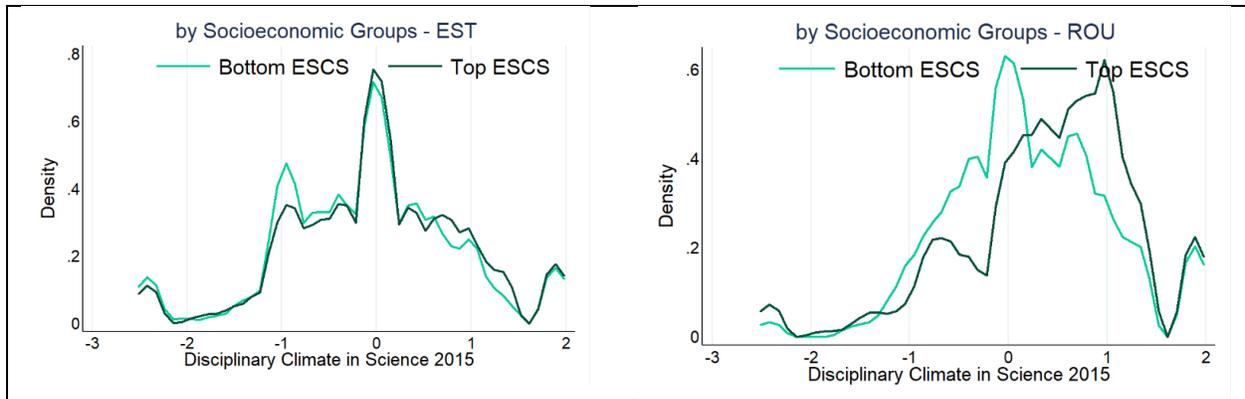


Source: World Bank staff calculations based on PISA 2000-2015 database.

Inequalities then keep pounding on each other when poorer students join school, since they often attend lower quality schools, including due to lower teacher-student ratios, lower quality of teachers, and worse curriculum practices. There are also indications that the gap in school resources between schools attended by wealthier and poorer students has grown wider over the years (OECD 2017; Schmidt et al. 2015). For example, school quality is measured in the PISA studies by indices for shortages of educational material, teacher shortages, and disciplinary climate.⁸ Overall, in almost all the EU member states, students from poorer socioeconomic backgrounds suffer from worse school quality. Education staff shortages are more prevalent among students from the poorest socioeconomic quintile than among their wealthiest peers. Poland and Latvia are the only exceptions where students from different socioeconomic levels face the same education staff problems. High-performing countries, such as Estonia, have relatively equal inputs for all students. Regarding disciplinary climate, which is an important part of the learning environment, the top performing countries in the EU, like Estonia, display smaller differences in the climate faced by students from the top and bottom socioeconomic quintiles than countries that have greater student segregation, like Romania (Figure 19).

FIGURE 19: SCIENCE DISCIPLINARY CLIMATE (DISTRIBUTION), BY STUDENT SOCIOECONOMIC GROUP, ESTONIA AND ROMANIA, 2015

⁸ Disciplinary Climate is an index built using student answers to questions such as, “How often do these things happen in your class? Students do not listen to what the teacher says; there is noise and disorder; the teacher has to wait a long time for students to quiet down; students cannot work well; students do not start working for a long time after the lesson begins; and at the start of class more than five minutes are spent doing nothing.



Source: World Bank staff calculations based on PISA 2000-2015 database.

Lower financing of education

Spending on education is very varied in the European Union and reflects the different country priorities in education. Some countries spend about 7 or 8 percent of their GDP on education (e.g., Denmark and Finland), while others (including Bulgaria and Romania) spend no more than 4% percent (Figure 20). The level of education spending as part of GDP over the last 15 years has been relatively stable, but it has not kept up with the increase in enrollment rates in preschool, upper secondary, and higher education in the EU. Since the spending in education for many countries remained the same, resources have spread more thinly. Nonetheless, the EU had since 2000 relatively high levels of access for primary and secondary education in many countries. Thus, access to education was not necessarily the main cause for the lack of learning among disadvantaged students.

FIGURE 20: GOVERNMENT EXPENDITURE ON EDUCATION AS PERCENT OF GDP, BY EU MEMBER COUNTRY, 2000, 2008, AND 2014



Source: World Bank staff calculations based on UNESCO UIS database.
 Note: See List of Acronyms and Abbreviations for spelled-out country names.

In many countries, nominal public resources spent on education decreased during the financial crisis (even when they may have hardly changed as share of GDP), and this implied budget cuts in the education sector. The empirical evidence identifying the impact of those budget cuts on learning outcomes as a whole is still limited, partly due to the complexity of

education systems and how relatively recent the 2008 crisis still is. However, there is evidence that the reduction in public expenditure on education was compensated by an increase in families' own education budgets in some countries, including Spain (Pérez and Uriel 2016). The effect of this was that the reduction of the education budget took a greater toll on lower-income families. The reduction in budgets translated into education cuts, and fewer resources also meant, in many cases, fewer education programs targeted to disadvantaged groups.

In some countries like Spain, successful education programs targeted to disadvantaged students were discontinued due to budget cuts. Every education policy counts, and in any interconnected education system, budget cuts affecting one element can have unanticipated short- and long-run effects on other elements. If the affected programs were successful and targeted students from lower socioeconomic background, one would expect budget cuts to have a negative impact on equality. Programs that were cut had not been overly expensive. For example, the Spanish PAE program (*Programa de Acompañamiento Escolar*), which focused on students at risk of early school leaving, was discontinued following the 2008 crisis (Box 5). In Ireland, the School Completion Programme (SCP), an early-school-leaving program, experienced a significant cut in funding during the recession (Smyth et al. 2015). The loss of these programs, which have been shown to be successful, could have a negative impact on learning outcomes, particularly among the poor, increasing inequality.

BOX 5: SPAIN'S REGRESSIVE EDUCATION SPENDING AND ITS IMPLICATIONS ON DISADVANTAGED STUDENTS

In 2014, education spending in Spain decreased by 17 percent from its 2009 level. Previously, spending had risen drastically, by 40 percent between 2005 and 2009. With the reduction in education spending came cuts to programs that targeted some of the most disadvantaged students. The current government cut central ministry programs that had proven quite successful in decreasing early school leaving in Spain. The most important of these was PAE (*Programa de Acompañamiento Escolar*), or Program for School Guidance, which included funds for school improvements and for intensive tutoring for at-risk students.

Recent evaluations, such as those by García-Pérez and Hidalgo-Hidalgo (2017), show that these programs may have improved PISA reading scores by around 0.14 standard deviations and decreased the probability of falling behind from anywhere between 3.5 and 6.4 percentage points. Moreover, a larger exposure to the program improved students' scores: whereas students in schools that participated in the program for at most two years did not experience any significant positive effect, those in schools that participated for at least three years did. Finally, evaluations to the program have found that its impact has been much stronger for students in rural schools than for students in urban schools.

The central government also removed funding for *Educa 3*, a program that aimed to provide early childhood education in public schools for children ages 0-3 (Medina 2017). No rigorous impact evaluations have been conducted on this to date, but it is likely that the beneficiaries were low-income families who could not afford a spot in private nurseries. Participation in early childhood programs is one of the predictors of future educational attainment and early school leaving, and disadvantaged students are affected the most.

The elimination of education programs and reduction of public spending on education in general have effectively hurt the disadvantaged families the most, since these families are the least able to supplement out-of-pocket for these educational cutbacks. The reduction in public spending on education in Spain has led to families having to increase their own expenditure on education. As of 2016, Spanish families spent 0.5 percent of GDP on education, as compared with 0.3 percent in Europe as a whole. This has important equity implications, since upper- and middle-income families have more disposable income to use as a buffer when public spending falls. And indeed, from the data we have it seems that during the crisis, upper-income families were able to increase their expenditure on education while lower income families were not (Pérez and Uriel, 2016). Within the last year, there has been a renewed interest in compensatory policies that were cut from the budget during the crisis to support disadvantaged students. However, it remains to be seen how effective this will be, since the program's magnitude (short of €32 million) is far smaller than that of similar programs from prior years.

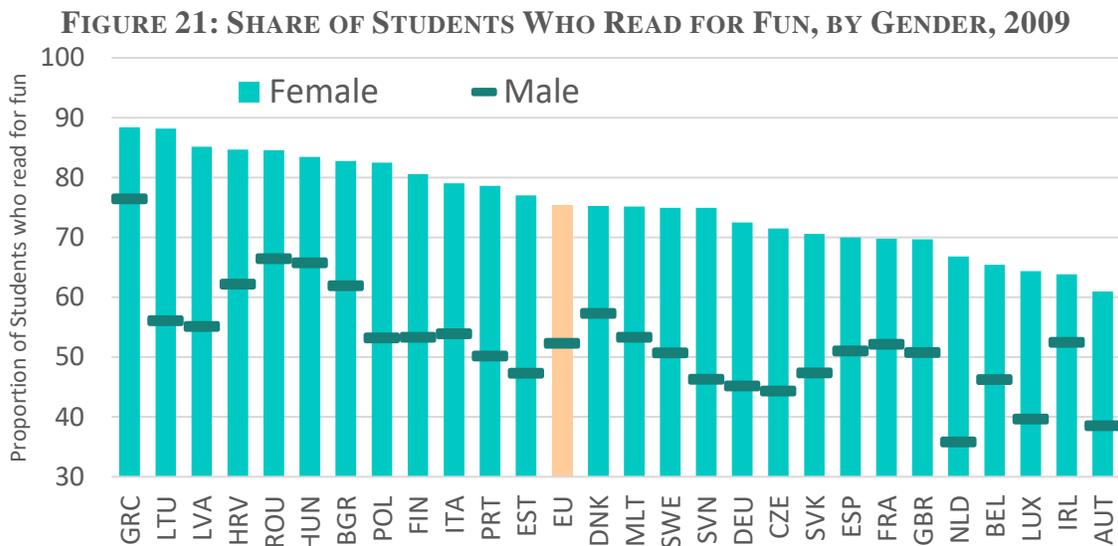
Source: Medina 2017.

Differences and changes in student preferences

Over the years, students have changed their preferences in their use of leisure time, and this has implications for learning. The increased use of the internet, for example, has influenced the behavior and attitudes of young people and the way they spend their free time. Schools now must compete for young people's interest and time more than they had to in the past. Many schools seem to lack the ability to adapt to the new needs and opportunities brought by this kind of progress and technology. At the same time, there has been a change in student's reading habits. Substantially less students report that they read for fun than they

used to. The overwhelming majority of students in Finland, the Czech Republic, and Portugal, for example, used to read for fun often, but that proportion had substantially declined by 2009 (OECD 2000).

Research shows that students’ reading habits, as measured by the amount of time used for reading, are related to their academic performance (and to the gender literacy gap) (Sulkunen 2012; OECD 2017b). At the beginning of the new millennium, Finnish students were very interested in reading and spent substantial time on it compared to students in other countries (OECD 2000). In 2000, only about 20 percent of them reported that they did not read at all outside of school, whereas by 2015 that figure had risen to almost 40 percent (and 60 percent among boys). Time for reading declined most significantly among boys in the lowest socioeconomic groups, raising important equity concerns. Moreover, students’ interest to read a variety of texts has changed. According the PISA 2000, interest in reading among both girls and boys in Finland was exceptionally high compared to young people in other OECD countries (OECD 2001). Both Finnish young people's interest in reading and the versatility in their reading have dropped rapidly since then and today are close to OECD averages (Figure 21).



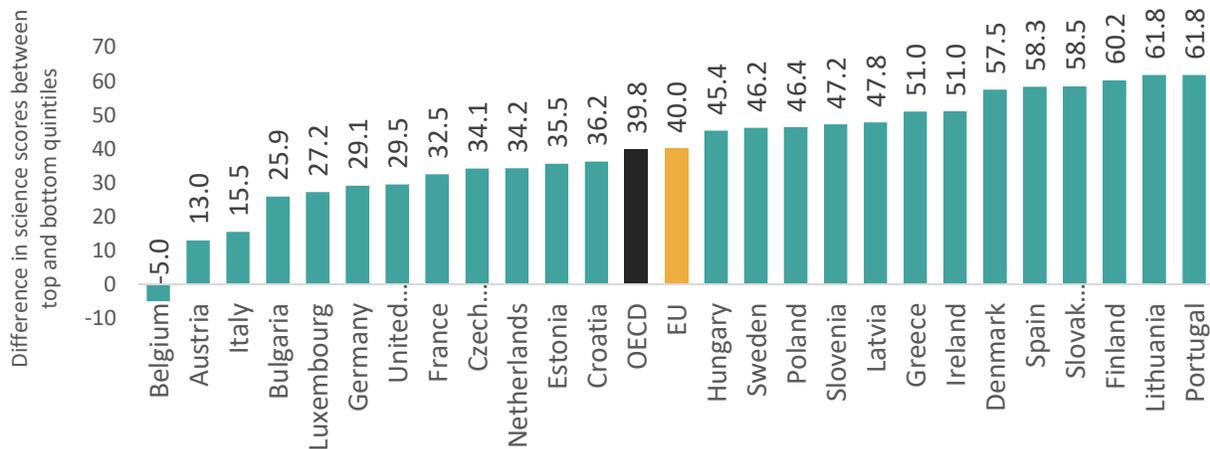
Student motivation

Student (intrinsic) motivation is a key factor in student achievement and skills acquisition (Figure 22). But motivation varies sharply by socioeconomic group. Motivation is essential to education because it ensures that students acquire new knowledge and skills in a meaningful way. Unfortunately, students from the bottom socioeconomic quintile are less motivated than their peers from the top socioeconomic. The Netherlands is the only country

in the EU where students from the top socioeconomic quintile are not more motivated than students from the bottom ESCS quintile (Figure 23).

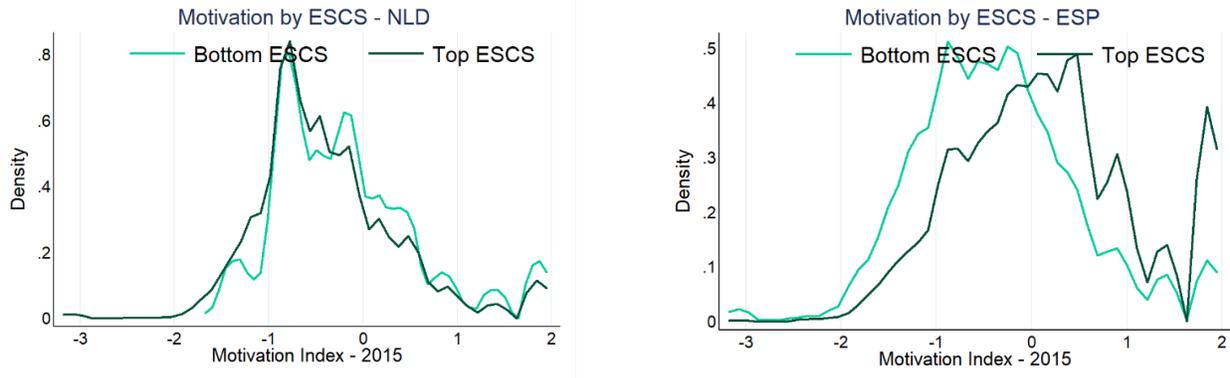
Students are motivated to engage in learning when, among other things, they value the subject, have a clear sense of purpose, and experience positive emotions towards learning activities (Boekaerts 2010). However, some countries, like Finland, have seen a change in the status that schooling used to have. This change in young people's attitudes is reflected, among others, in the decline in the popularity of academic, university-level education in Finland (Kumpulainen 2014; OECD 2017a). On the upside, student motivation, can be influenced by the creation of a positive learning environment.

FIGURE 22: PISA 2015 MATH PERFORMANCE GAP BETWEEN MOST AND LEAST MOTIVATED STUDENTS, BY EU MEMBER COUNTRY



Source: World Bank staff calculations based on PISA 2000–2015 database.

FIGURE 23: STUDENT MOTIVATION DISTRIBUTION BY ESCS IN SPAIN AND NETHERLANDS



Source: World Bank staff calculations based on PISA 2000–2015 database.

Finally, changes in the demand for labor appear to have also changed the motivation of students to pursue higher education. In some countries, including Spain, relative returns to

higher education decreased during the housing bubble, particularly in the construction sector (Fenoll 2010, 2016; Medina & Gortazar 2018). This appears to have increased the early school leaving rate, particularly among boys (Lacuesta et al. 2012), which reached its peak in 2008 (Eurostat 2018). However, since the financial crisis started, the early school leaving rate has decreased, falling from 32 percent in 2008 to a recent 18 percent in 2017. This indicates the broader effect that changing labor demand and economic cycles have on post-secondary school attainment. As the economy is recovering, the demand effects are likely to taper down and the effect of the education system’s capacity to retain disadvantaged students at school (rather than pushing them out) will become clearer.

High levels of ineffective and unfair repetition

Grade repetition, in addition to a highly inefficient and costly policy, has been shown to be a strong predictor of dropouts and a key contributor to education inequities. Repetition rates vary among countries; they are particularly prevalent and disproportionately high in Belgium, Spain, Portugal, Luxemburg, and France, and much lower in high performing countries such as Estonia and Finland in the EU (and also, outside the EU, in Canada, Korea, and Japan) (Figure 24). International research has shown that while repetition does not improve academic performance (Garcia-Perez, Hidalgo-Hidalgo, and Robles-Zurita 2014; Hattie 2008), this measure does have a causal and negative impact on school completion (Jacob and Lefgren 2009; Manacorda 2012) and on student well-being (Jimerson and Ferguson 2007). Beyond being a costly measure for the student, repetition is also expensive for education systems in terms of education investments (which could be devoted to more effective measures) and social costs. The high levels of repetition in some countries mask the lack of resources for addressing the learning needs of disadvantaged students, and thus point to the need for more flexible policies to address learning needs especially of disadvantaged students at the school level.

FIGURE 24: SHARE OF STUDENTS WHO HAVE REPEATED AT LEAST ONE YEAR, EU MEMBER COUNTRY, 2015



Source: World Bank staff calculations based on PISA 2000–2015 database.

More importantly, the likelihood of repetition has a great deal to do with student socio-economic background and not as much to do with learning outcomes, reflecting deep cultural grading patterns. In Spain, students from the lowest ESCS are 5.6 times more likely to have faced repetition than those from the highest ESCS, even after accounting for learning

outcomes measured by PISA. No other country in the OECD has such a high ratio, which is closer to 2.0 times in France, Italy, and Greece. Even though countries in Europe share similar promotion schemes for students in primary and secondary schooling, repetition rates vary significantly across the EU, reflecting a cultural factor strongly related to schools' day-to-day policies and practices (Eurydice 2011). Evidence for France (Cosnefroy and Rocher 2005) and Spain (Calsamiglia and Logivlio 2017) has shown how school grading patterns (and hence repetition) negatively affect students from lower socioeconomic backgrounds and boys, even if those students have adequate cognitive skills as measured by external national assessments. The measure of repeating thus appears to serve more as a punishment related to non-academic outcomes and behavioral skills of students (widely related to socioeconomic background) rather than being a decision aimed toward bridging learning gaps.

Curriculum, assessments, and school-based management

A lack of consideration for effectively implementing reforms to curricula, assessments, and school-based management has impeded learning outcomes. According to findings from the World Bank's 2018 *World Development Report: Learning to Realize Education's Promise*, dynamic demographic and technological changes in society have increased the need to drive school improvements for better learning outcomes (World Bank 2018). Systematic curricula reforms require teachers to equip students with new skills and employ better pedagogy, but in poor school environments teachers often have insufficient training and access and poor instructional materials. Decentralized school-based management programs can be beneficial to student learning because they grant schools and communities the authority to respond immediately to the needs of their students, although communities must have the capacity and incentives to make and implement smarter decisions. Finally, the best way to deliver on improved systematic changes in learning outcomes is through good measurement early on to be able to support schools that are facing challenges.

Finland and Poland are two examples of how changes in curricula and the shifting of some responsibilities to schools and teachers can be beneficial. In Finland, the National Agency for Education builds the National Core Curriculum first, and after every municipality modifies the curriculum for its own schools (Alasuutari and Välijärvi 2017). Concurrently, teacher training and collaboration with the community are emphasized. In Poland, a new curriculum program was introduced in 1999 to make more relevant the changing skillsets required of the labor market; it gave schools and teachers more autonomy in the choice and adoption of curricula and teaching programs (Jakubowski, Wiśniewski, and Herrera-Sosa, 2017). A textbook market was opened, which allowed schools the freedom to decide which textbooks to use based on a list accepted by the Ministry. Principals were free to hire teachers as well. At the same time, additional assessments were introduced for system evaluation and diagnosis purposes that would help identify schools that needed support. It is important to note, however, that such policies can only be deployed where there are strong teachers and strong learners in the classrooms.

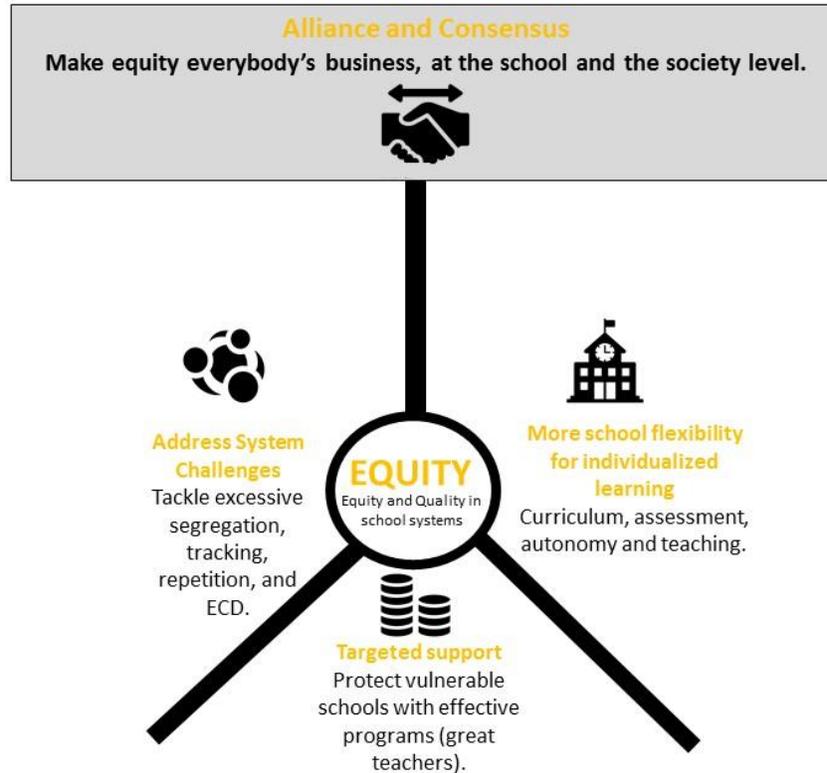
3. Policy recommendations – making equity everybody’s business

This report analyzes the EU systems and identifies a worrying development where there is little to no progress in improving average performance combined with – in most countries – a persistent and oftentimes deteriorating gap in performance between students from more and less advantaged household. Thus, this report argues that there is an urgent need for education systems where all students, regardless of background, can develop the skills they will need to lead to healthy, productive, and meaningful lives. This last part of the report focuses on broad directions for policy interventions in education systems to improve learning outcomes for the disadvantaged.

There is no unique reason why inequality has increased over the last few years that is common across all EU countries, and there is no silver bullet to improve quality or equity. Education policies determine and influence behaviors, incentives, and practices among stakeholders—local governments, principals, teachers, parents, and students—that combined affect education outcomes either for the better or the worse. Overall, education reforms may take several rounds of implementation to get it right, and equitable systems need a permanent effort from policymakers to stand a chance of sustainable improvement. Unfortunately, successful education reforms can – and sometimes are - also be reversed, and sometimes much more quickly than what it took to make them happen. Permanent attention is this required.

Figure 25 suggests a framework to build an equitable (and high quality) education system in EU countries. It suggests three dimensions of action, interconnected at all levels of the service delivery provision, that need to be aligned, representing a multi-dimensional set of inter-dependent decisions and policies that are required. This approach entails developing a flexible system structure that can respond to all students’ needs and does not leave students behind. Second, it requires decentralizing decisions to the school and classroom levels, building trust in teachers and principals so that they can work towards all students’ success. Third, policy-makers and administrators from national, regional, and local governments must accompany such system design with specific measures, programs, and resources that can provide adequate support to the most vulnerable students from their earliest ages and to the schools where they are enrolled. Finally, promoting an equitable education system that is sustainable also requires building a strong alliance among key stakeholders. Strong pro-equity (and pro-quality) alliances can help by creating a positive regulatory, social, and political environment, one that fosters the expectations of teachers, principals, parents, and students toward learning for all. As the World Bank’s recent *World Development Report* (World Bank 2018) argues, implementing education reform requires building a political and social consensus so that the collective good prevails over private and group interests.

FIGURE 25: A FRAMEWORK TOWARDS EQUITY AND QUALITY IN EU EDUCATION SYSTEMS



Source: Authors.

Making equity everybody’s business needs a strong alignment of priorities between political parties, bureaucrats, media, school organizations, and teacher unions. Education policies that tackle inequality require support from different stakeholders—government (national and local), principals, teachers and teacher unions, parents, civil society organizations, and students—and it is not always easy to build a strong coalition that can foster learning for all. Coordinating multiple actors and interests requires a reasonable alignment of priorities, working iteratively in their design and implementation, and following a frank and holistic approach when evaluating the positive and negative consequences such policies. Moreover, even successful processes of pro-equity reform can be derailed after some time if the consensus breaks down, hence posing severe risks to the reform’s sustainability. This makes it even more important to maintain consensus or, in a less optimistic scenario, rebuild it if this risk indeed materializes.

Reflections on consensus-building in five countries

Building consensus: Some countries have managed to navigate difficult reform processes by building consensus on fundamental policies aiming at promoting equity at schools. In the case of Ireland, a national plan led to the creation of a committee that provided advice on policies and strategies to identify and tackle educational

disadvantage. Over the years, the initiative has led to the creation of the *DEIS (Delivering Equality of Opportunity in Schools)*.

Finland also illustrates the paradigm of political and social consensus. In reaction to the recent declines in student performance and to the equity challenges shown in international assessments, the country has made education, and equity, once again a national priority, as it did in the 1970s and 1980s. A large share of Finnish society acknowledges that the country's comprehensive school model needs to be rethought, and in recent years both the national and local governments have been launching discussion forums at various levels. Moreover, this process is being accompanied by an iterative approach, trying out pilot measures that could lead the way for an at-scale reform agenda. All of this is possible thanks to the strong social and political support around the country.

Lack of consensus: At the opposite end from the experience of the last two countries is the situation where a lack of consensus has hampered initiatives to rethink education systems to promote equity agendas. The government of the Netherlands has recently initiated and financed regional alliances to solve regional equity problems as well as provided regions and school boards with more information and data on equity. But this implies passing all the responsibility to local initiatives, thus abandoning the possibility of implementing a strong national-level pro-equity agenda. Similarly, in Spain neither the school community nor the political parties have managed to acknowledge and address the existence of structural challenges in the education system. This has resulted in policy instability through shallow and ineffective legal changes that, in recent decades, have progressively hampered the morale of teachers, students, and parents (Medina 2017).

Finally, in Poland, a lack of support for the reformed system has been backed politically, so that many of the policies described in this report that have had a substantial positive impact on equity have now been reversed. The Polish education reforms were introduced by a relatively small group of convinced policymakers and experts, but perhaps they were not built on solid political grounds. In 2015, a new government outlined, among other issues, a new vision in which schools should promote knowledge and attitudes for a strong national identity and patriotism, together with the return to a "full" course of history and to the "classical" list of obligatory readings in schools, hence adopting a more traditional curricular approach. Finally, the government supported the elimination of lower secondary schools and is bringing back the old system with its eight-year primary school, which is likely to have equity implications in the near future.

All these experiences suggest that beyond building a reasonable consensus on equity priorities in education, it is important to maintain such agreements with constant participation of all relevant stakeholders, so that equity progress is sustained for the long term.

This report has shown structural challenges persisting in many EU countries to effectively combine quality and equity in education. These take the form of very early tracking of

students (e.g., in Bulgaria, Slovakia, and Romania), high and inequitable student retention (e.g., in France, Belgium, Portugal, and Spain), or excessive school segregation. These symptoms reveal rigid segregation mechanisms that are mostly ineffective and contribute to limiting opportunities of the most vulnerable students without benefiting the rest. Some EU countries, however, have managed to combine highly inclusive policy settings with efficient measures so that all students share the same type of school until the age of 15 or 16 and have the same opportunities. Some detailed recommendations of successful policies follow.

Addressing systemic challenges

Start early. Continue the expansion of preschool education, up to ages 2 and 3. Quality preschool programs have the capacity to tackle disadvantage from the early start. While many countries in the EU have managed to expand the start of preschool programs up to age two or three, there is still work to do, particularly, in providing access to the most disadvantaged children, who benefit the most from such programs. As this report has shown, access to pre-primary education is still highly inequitable among EU countries, and progress in expansion is usually made first for students coming from middle and high levels income. International evidence has shown that preschool expansion is one of the most effective social investment over the long run, especially for most disadvantaged students. Thus, to speed up preschool enrollments for children from any ESCS and, in particular, to pull up the bottom ESCS enrollments, it is necessary that policymakers determine the equity drivers of preschool access and use this knowledge as a basis for evidence-based decisions, in addition to building a stable and cohesive policy space. It is important to determine the nature and extent of factors on the demand side (such as financial costs, parental awareness, and other opportunity costs) and the supply-side factors, such as infrastructure, access, and teacher qualification and quality, especially for the ESCS market. It is also important to build alternate models that are at once low-cost, pedagogically attractive, and physically accessible.

Work on building an inclusive school network. School segregation can be the consequence of inequitable early tracking, inadequate school choice settings, ranking policies, or some combination of these. Beyond delaying tracking, other system-level policies can help reduce sorting and segregation as early as primary education. Among other things, these policies should include adequate planning of the allocation of students to schools in reasonable catchment areas and assignment mechanisms, fighting perverse-incentive practices in parental school choice, and avoiding excessive school competition and ranking policies. All these measures can help to reduce the stakes of students to be condemned to inequitable outcomes and promote a more inclusive school network.

Delay student tracking at least until the end of lower secondary. Building basic cognitive and socioemotional skills for all is critical to ensuring future graduates' trainability and adaptability to a rapidly changing social and economic context. In many EU countries, diversification of school itineraries starts too early, limiting the opportunities to build basic skills of all children. Over the long term, this can have

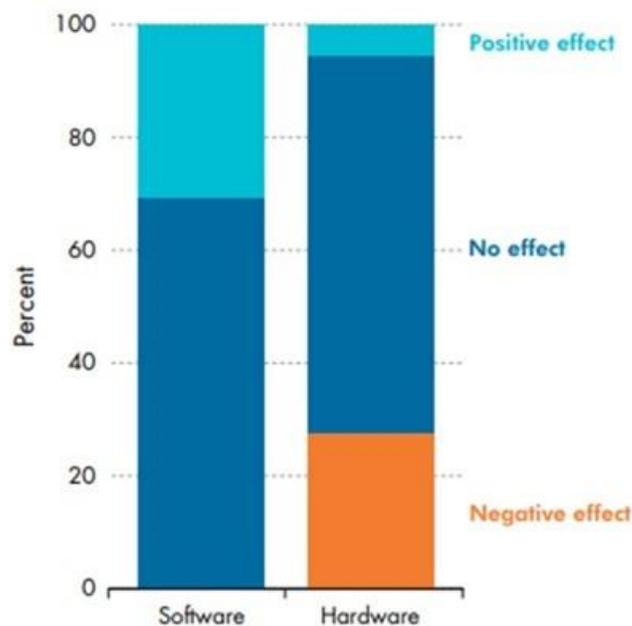
negative consequences for workers, firms, and the economy, hindering productivity and employment growth, as well as social cohesion. Moreover, tracking processes tend to be strongly associated with the social and economic background of students, hence risking to perpetuate intergenerational vulnerability and breaking the social cohesion at schools through excessive school segregation. Although many countries build vertical and horizontal pathways between VET and other post-secondary education, the fact that tracking starts too early limits in practice the capacity to ensure fair opportunities for all. For all these reasons, education systems need to postpone vocational streams with flexible policy arrangements effectively aligned with the labor market. For example, in Poland, the eight-year primary school was replaced with a six-year primary school and a new three-year lower secondary school (*gymnasium*). Consequently, the selection of students for various types of general and vocational upper secondary tracks was postponed by one year, up to age 16. This resulted in significant quality and equity gains, while keeping an inclusive school network for all students for one additional year of schooling (Jakubowski et al. 2012; World Bank 2015).

Reduce student repetition. Although countries in Europe share similar promotion schemes for students in primary and secondary schooling, repetition rates vary significantly across the EU, reflecting a cultural factor strongly related to schools' day-to-day policies and practices (Eurydice 2011). Schools in Belgium, France, Portugal, and Spain make excessive use of student retention. This disproportionately affects students from the lowest ESCS, even though many of these students do acquire the basic skills that are necessary to go on, and this thus severely limits their potential to succeed. To prevent EU countries from an excessive and ineffective use of student retention, a combination of targeted school and student level policies is needed. These could include, among other things, stronger individualized support and tutoring to students at risk, early diagnosis of learning disadvantage, or compensatory programs such as summer schools. At the same time, given the cultural roots of the problem that are implicated in schools' day-to-day practices, initiatives that raise teachers and principals' awareness of the issue will be needed.

Leverage ICT solutions for innovative models for skill development

Though ICT offers potentially significant gains for skills and education, the effects of tested interventions have varied greatly. Some programs have had positive results, such as a dynamic computer-assisted learning program for secondary school students in India that increased math and language scores more than most other learning interventions tested there or elsewhere. But others, such as the One Laptop Per Child programs in Peru and Uruguay, have shown no impact on student reading or mathematics ability. Indeed, the vast majority of ICT interventions have had either no impact or—as with certain hardware interventions—a negative impact on student learning (Figure 26). The speed of technological change almost always outpaces the ability of educational planners to keep up. Educational planners should not attempt to introduce technological “solutions” to problems that have not been well understood. If pointed in the right direction, technology can serve as a catalyst for learning.

FIGURE 26: DISTRIBUTION OF THE EFFECTS OF EDUCATION TECHNOLOGY ON STUDENT LEARNING, BY TYPE



Source: World Development Report, 2018.

The role of teachers becomes more central as a result of ICT use in the classroom. There is sometimes talk that technology will replace teachers. In reality, experience from around the world demonstrates that, over time, while technology will not replace teachers, teachers who use technology will replace those who do not. Teachers having a suite of basic technology-related skills, will be asked to take on new, often more sophisticated duties and responsibilities in ways that will challenge the existing capacity of many educational systems to prepare and support teachers over time. For instance, a model gaining traction in North America ‘flips’ classrooms by asking learners to watch informational lectures outside of school – usually on mobile devices carried with learners wherever they are – so that more class time can be devoted to the application (as opposed to the mere transmission) of disciplinary concepts. Tasks that were once schoolwork become homework, and teachers become better able to place emphasis on the social aspects of learning during class time.

Positive education outcomes cannot occur by just providing technology alone, since educational challenges cannot be overcome simply by providing more and better devices and connectivity. The so-called Matthew Effect of educational technology holds that those most likely to benefit from the use of new technologies in educational settings are those who already enjoy many privileges related to wealth, existing levels of education, and prior exposure to technology in other contexts. Policies that neglect to consider this phenomenon may result in projects that exacerbate existing divides within the education system, and indeed within the larger society in many EU countries. However, lessons learned from international examples can help the EU harness the potential of technology to narrow educational inequities and promote ICT skills such as using technologies in ways that are supplemental and practical; attention to pedagogy, teacher support, and using evaluation mechanisms that go beyond inputs.

Enable more flexibility for individualized learning

Design and strengthen an education policy framework that enhances flexibility and autonomy for schools and teachers to promote learning for all. Since the beginning of the twenty-first century, EU institutions and its member states have agreed on the need to strengthen key competences among education and training systems to effectively help students find personal fulfillment at work and in society. This, together with other initiatives, has argued toward a reform agenda to ensure that skills, broadly defined, are taken into account at all levels of teaching and learning through coherence in and alignment of teaching and assessment practices. At the same time, international evidence has shown that the best school systems can combine quality and equity of skill acquisition for all students. Having said that, many EU education systems are still adapting to this new agenda, that combines inclusiveness with flexibility and adaptability, in order to help all students achieve their potential without harming other's opportunities to learn. Some policy measures that affect day-to-day policies and practices at schools still require a strong push to achieve this necessary transition.

Work toward a flexible curriculum that allows holistic skills development. The Key Competences framework, agreed to a decade ago and widely implemented across EU education systems, leads the way for a skills agenda for the coming years in Europe. However, significant challenges remain, because the full application of this framework in textbooks, teaching methods, and curricula has been uneven across EU countries, and that is likely to continue (Eurydice 2012; Looney and Michel 2014). Building on these initiatives, EU countries need to keep pushing toward less prescriptive curricula in order to benefit the development of other relevant skills, like critical thinking, perseverance, learning to learn, and communication and social skills. Overall, there is a need to follow curriculum models that replace shallow learning with deeper learning, in which students develop a wide range of skills that will be key for later life stages.

Measure learning better to take it seriously. While most education systems usually report detailed enrollment figures, learning metrics – of all types – are still uncommon in the policy-making process and in public debate (World Bank 2017), including in many EU countries. Although international assessments are important for trend comparisons and progress, national assessments of skill acquisition can be more effective for policymakers and practitioners, especially if what they measure is well aligned with skill acquisition priorities. These include formative classroom assessments as well as national and regional external assessments of skills, which measure not only basic cognitive skills like reading, mathematics, or science, but also other Key Competencies, like social and civic engagement, critical thinking, and problem solving. These learning metrics can help highlight schools where additional

support is needed, assess the effectiveness of targeted programs and initiatives, and identify needs of teachers and principals.

Increase the autonomy of teachers, schools and local councils. Local innovators need to have regulatory space to do an effective job with all the support of society and government. Many EU countries still rely excessively on a bureaucratic approach of excessive regulatory paperwork and decision-making power that limits the capacity of schools to innovate and transform themselves as learning organizations. As some EU countries have managed to do in the last decades, many education systems need to give the necessary confidence to schools and teachers by providing them with effective training, resource support, and social recognition. Teachers should be treated like the professionals they are, and as such, they need to be given latitude to serve their students. At the same time, this needs to be accompanied by designing effective channels through which there can be a purposeful debate on shared responsibilities and learning outcomes among all sector actors.

Elevate the professional skills of the teaching profession to meet diverse student needs and make teaching a desirable profession. The increasing diversity among students in EU countries now more than ever requires highly skilled teachers able to adapt to the differentiated needs of students. Teachers are one of the greatest drivers of student learning and the best asset of the education system in any country. Therefore, teachers must have equitable access to modern pedagogical practices and continuous professional development, as is the case in Finland. Teachers in successful systems are able to adapt their foundational knowledge and training to individual student needs. EU countries are trying hard so that teaching becomes a well-recognized and highly professionalized career, but in many of them there is still progress to be made. It is important to make teaching a desirable profession, one in which teachers are recognized by their peers and the local communities. Teachers in successful systems handle themselves as professionals and have career progression grades and adequate salaries.

Targeted support

Provide adequate pro-equity funding for education systems and develop effective and well-implemented targeted initiatives. Education systems need robust and sustainable financing schemes that are successful in reaching students who need the most of each additional euro. International evidence in the last decade has concluded that after some level of financing, additional funds for schools become ineffective if not properly targeted to successful initiatives and students most in need.

Develop coordinated programs for disadvantaged students and families. It is hard to break the relationship between socioeconomic status and education outcomes. Therefore, it is critical to develop initiatives and programs that help disadvantaged students by involving different administrative services and working with local stakeholders and families. Some EU countries are implementing programs to improve

schools that are attended by socioeconomically disadvantaged students. In Ireland, the DEIS program (6) is an example of such a multi-faceted intervention. The program combines the provision of additional resources, a focus on planning for teaching and learning, and provision of socioemotional as well as practical (e.g. school meals) support for students and their families (including a preschool year for children). The program also liaises with parents and the community in primary and secondary schools to foster school engagement and retention through within-school, after-school, and holiday activities and support (Archer and Weir 2005). The program undergoes constant improvement and national support as positive results emerge along with areas needing improvement.

Protect effective programs from budget cuts. During the economic crisis, some countries faced a budget reduction of their (public) education financing. Although little is known about the progressivity of such cuts and their consequences across the EU, evidence from Spain suggests negative consequences for equity at schools. In Spain some of the financing gap in public spending was filled by upper- and middle-income families sending their kids to attend schools where most students came from higher socioeconomic backgrounds. This pattern left disadvantaged families in an even more disadvantaged position, increasing the importance of socioeconomic status in learning outcomes, especially repetition and early school leaving (Medina 2017). Moreover, the PAE (*Programa de Acompañamiento Escolar*), or Program for School Guidance, an effective intervention (García-Perez and Hidalgo-Hidalgo 2017) that included central and regional coordinated funds and action for school improvements and for intensive tutoring for at-risk students in Spain, was abandoned. Education systems need to keep financing stable throughout the economic cycle, protecting schools and programs from budget cuts during recessions—especially those schools

that the most vulnerable students attend and those programs that have proven their effectiveness.

BOX 6. IRELAND’S DELIVERING EQUALITY OF OPPORTUNITY IN SCHOOLS (DEIS) PROGRAM

In 2005, the Department of Education and Skills launched Delivering Equality of Opportunity in Schools (DEIS). The plan brought together several programs aimed at tackling educational disadvantage under a single framework, the DEIS School Support Programme (SSP), and was motivated by the higher incidence of educational underachievement and early school leaving among disadvantaged students than for other students. SSP provides additional funding and access to planning and professional development support to all schools included in the scheme (Table 1).

The DEIS program is administered and funded by the Department of Education and Skills. To increase objectivity in identifying primary schools for the program, the information source has shifted from school principal reports to Census population data, which led to the inclusion of additional schools that were not originally identified. Meanwhile, secondary schools were selected based on educational indicators (exam scores and dropout and retention rates, etc.). Monitoring of the program occurs through ongoing evaluation studies conducted by the Educational Research Centre and through school-based and thematic inspections conducted by the Inspectorate of the DES.

Research on the DEIS program points to some improvements in attendance levels in Urban Band 1 schools, and in retention rates and overall Junior Certificate grades at secondary level. Literacy and numeracy levels have improved in DEIS primary schools, although the gap in achievement between DEIS and non-DEIS schools has not narrowed over time.

TABLE 1: DESCRIPTION OF DEIS PLANNING AND PROFESSIONAL SUPPORT AND RESOURCES PROVIDED TO SCHOOLS

Type of support/resources	Urban Band 1 (most disadvantaged urban primary schools)	Urban Band 2 (remaining urban primary schools)	Rural Primary (primary schools in rural areas)	Post-Primary (secondary schools participating in DEIS)
Reduced class sizes: application of a staffing schedule to DEIS Band 1 primary schools to accommodate class size of 20:1 at junior classes and 24:1 at senior classes.	✓			
Allocation of administrative principals on lower enrolment and staffing figures compared to primary schools generally	✓	✓		
Additional grant aid based on level of disadvantage	✓	✓	✓	✓
Enhanced rate of funding under the Schools Book Grant Scheme	✓	✓	✓	✓
Access to a range of supports under School Completion Program	✓	✓	✓	✓
Access to Home School Community Liaison	✓	✓	✓	✓
Access to literacy/numeracy support service to specific literacy/numeracy measures	✓	✓	✓	✓
Priority access to Schools Meals Program	✓	✓	✓	✓
Priority access to a range of professional development support for teachers	✓	✓	✓	✓
Enhanced guidance allocation of 1.15 of the PTR (non-DEIS allocation is 0.4)				✓

Source: Department of Education and Skills (DES).

The DEIS program illustrates the importance of supporting efforts to tackle educational disadvantage with broader policies to promote equality. It is likely that any changes in student outcomes reflect the comprehensive nature of supports, combining the provision of additional resources, a focus on planning for teaching and learning, and a recognition of the multi-faceted nature of disadvantage through providing socio-emotional and practical (i.e., school meals) support for students and their families. The new approach to identifying schools provides a more objective and transparent way of targeting resources towards schools with a greater concentration of disadvantage.

Policy approaches to countering educational inequality cannot necessarily rely on targeting individual schools alone. Research indicates that over half of disadvantaged groups attend non-DEIS schools.

Source: Smith 2017.

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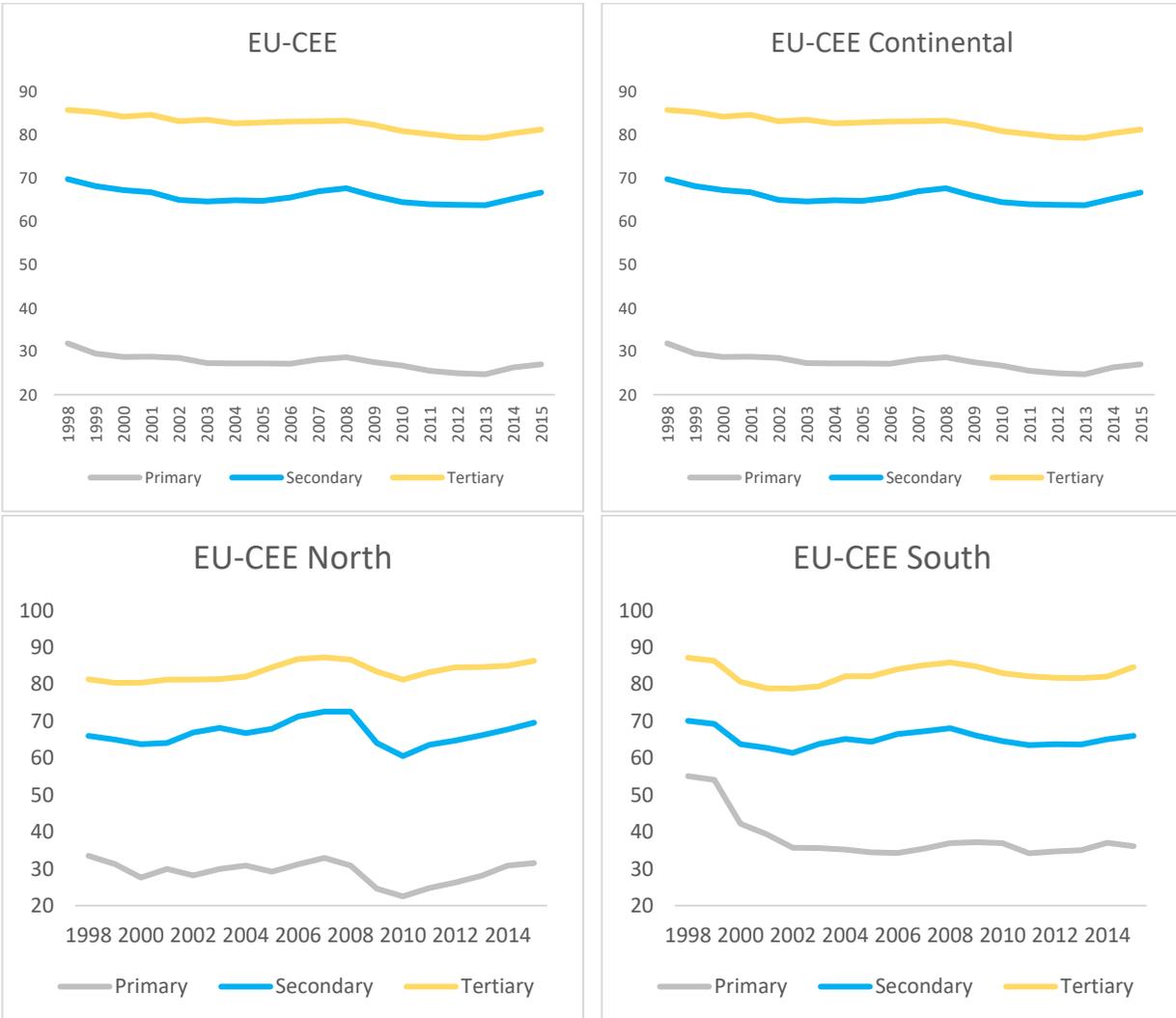
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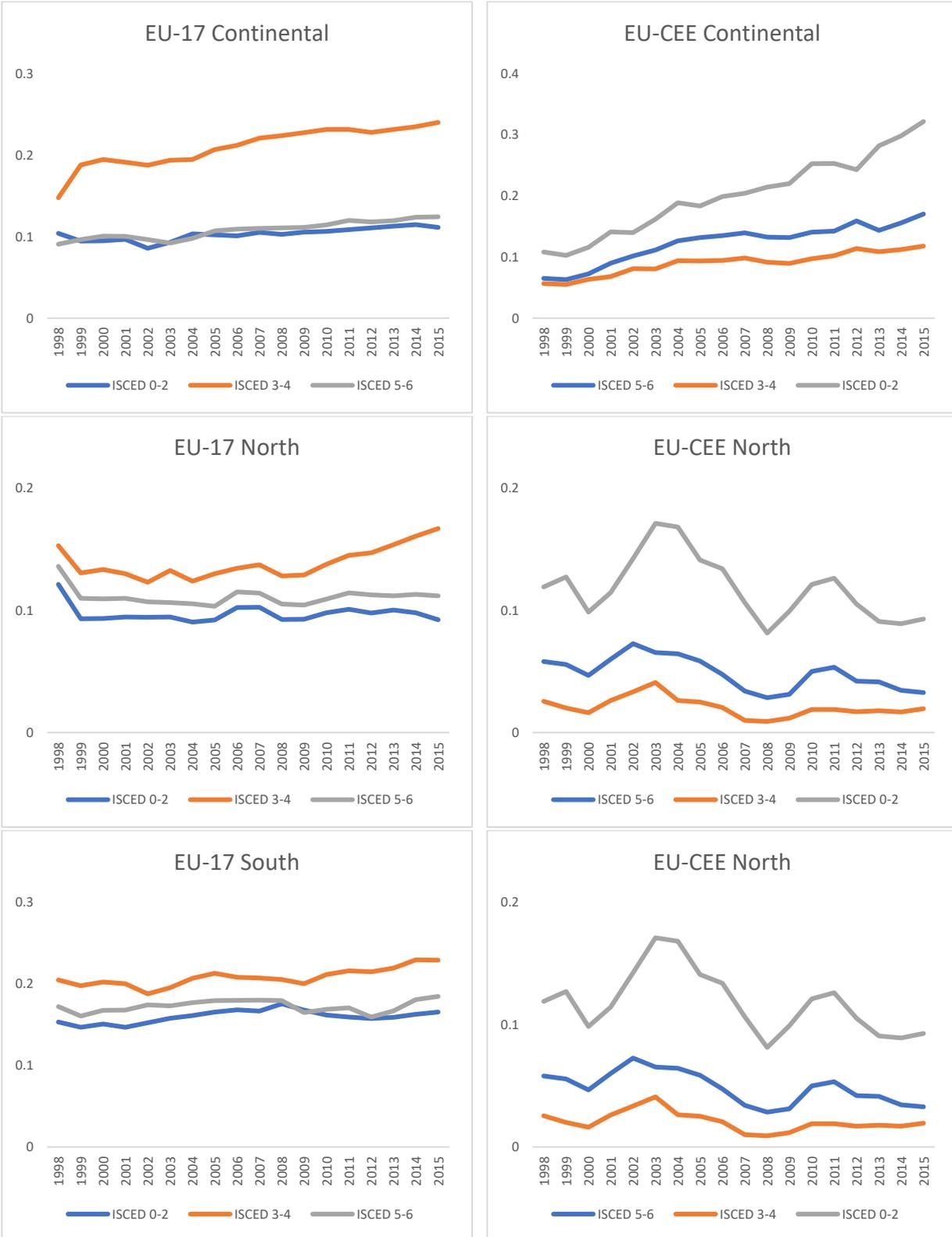
Annex 1 - Figures

FIGURE A1.1. EMPLOYMENT RATES BY EDUCATION LEVEL IN THE CEE COUNTRIES IN 1998-2014



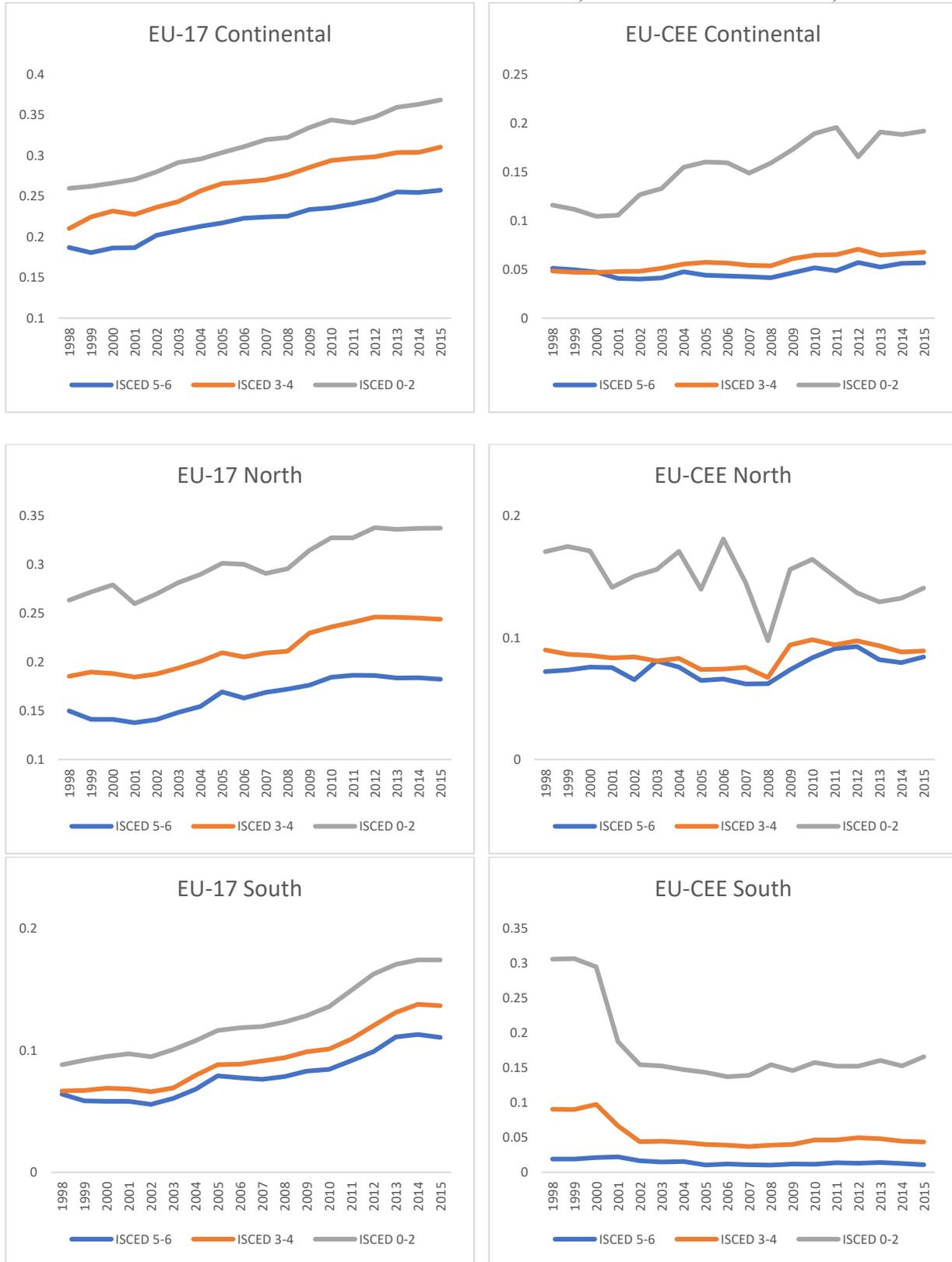
Source: World Bank staff calculations using Eurostat Data.

FIGURE A1.2. SHARE OF TEMPORARY WORKERS 1998-2014, BY EDUCATION LEVEL, 1995-2015



Source: World Bank staff calculations using EU-LFS data. Note: Malta and Luxembourg are excluded.

FIGURE A1.3. SHARE OF PART-TIME WORKERS IN EU, BY EDUCATION LEVEL, 1998-2014



Source: World Bank staff calculations using EU-LFS data. Note: Malta and Luxembourg are excluded.

Annex 2 - Tables

TABLE A2.1. OLS WITH COUNTRY FIXED EFFECTS ESTIMATION RESULTS, SCIENCE 2015

Model Includes:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ESCS	37.5***	31.7***	30.1***	14.0***	14.5***	14.8***	14.8***
Female		-6.9***	-6.6***	-8.8***	-10.1***	-9.7***	-9.8***
Age		13.5***	13.4***	12.0***	11.9***	11.6***	11.6***
Repeater		-74.8***	-72.4***	-59.5***	-61.8***	-63.0***	-63.0***
Language at Home		-26.0***	-26.2***	-23.1***	-22.9***	-20.9***	-20.8***
Preschool - At least 2 years		11.4***	10.8***	7.1***	6.1***	5.4***	5.5***
Student Motivation			9.8***	9.9***	9.6***	9.6***	9.6***
Sense of Belonging			-6.4***	-5.6***	-4.3***	-4.6***	-4.6***
Peer Effects (ESCSS)				61.9***	55.6***	53.5***	53.9***
Teacher Directed Instruction					5.4***	5.4***	5.4***
Teaching Climate					-2.5***	-2.3***	-2.2***
Disciplinary Climate					8.6***	8.7***	8.7***
Educational Material Shortage						0.2	0.2
Staff shortage						-0.4	-0.5
School Size						0.0	-0.0
Class Size						0.5***	0.5***
Teacher participation							0.8
School Autonomy							-1.4
School Resource Allocation							-0.6
Curriculum and Assessment							-0.7
Observations	127,280	127,280	127,280	127,280	99,623	90,496	90,496
R-squared	0.167	0.230	0.244	0.312	0.325	0.322	0.322

Robust Standard Errors clustered at the school level

* 10%, ** 5%, *** 1%

Source: World Bank staff calculations based on PISA 2000–2015 database.