*Chapter 1*

# Overview: Towards equitable learning opportunities throughout life

*This Chapter provides the background to the publication which is the main output of the Fostering Good Education for All project – the contribution of the Directorate for Education and Skills to the OECD-wide Inclusive Growth initiative. It outlines the main factors that can affect an individual's life outcomes such as lack of skills and unequal learning opportunities. It also provides policy recommendations for ensuring equitable educational outcomes at each stage of life.*

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

## Background rationale

The concept of equal opportunity for all has been widely shared and promoted across many countries around the world (Kamp, 2009; Fish, 2013). It advocates that everyone should have the chance to reach their full potential and enjoy the fruits of their hard labour, regardless of their circumstances in life. But has this ideal become a mere dream for the majority, while a privileged few enjoy abundant opportunities to succeed in life? Recent studies (Corak, 2013; OECD, 2015a; OECD, 2012; IMF, 2015) point to growing economic and social inequality around the globe and cast doubt on the notion that everyone can succeed.

Why is inequality on the rise? To begin with, the global economy has become more knowledge intensive. Together with skills-biased technological changes, globalisation and the growing influence of the financial sector on the economy, the demand for high-skilled workers and jobs with non-routine tasks has increased over the last three decades. As a result, a premium has been put on the wages of high-skilled workers, raising the wage gap between high- and low-skilled workers (Sill, 2002; Card and Di Nardo, 2002; Autor and Acemoglu, 2011). In this context, quality education and skills formation that equip individuals with labour market-relevant skills are more important than ever.

A critical question is whether learning opportunities are accessible to all, regardless of economic and social background. This report finds that the progress different countries have made in providing educational and skills development opportunities to disadvantaged individuals has varied widely. Only a few countries have been successful in providing lifelong learning opportunities. Most have offered sporadic interventions at certain stages of life, rather than continued support over the course of an individual's lifespan.

## What this report offers

This report analyses how countries are advancing in providing equitable lifelong learning opportunities for individuals from disadvantaged backgrounds, using a set of 12 indicators relevant to economic and educational equity. It examines how disadvantages can accumulate over a lifetime (Chapter 1). The report takes a closer look at equity issues at each stage of life, from early childhood education (Chapter 2), student and school outcomes (Chapter 3) through adult education and skills formation (Chapter 4). Each chapter offers policy recommendations and describes policies on education and skills that can ensure lifelong equitable learning opportunities for the socio-economically disadvantaged, as well as best policy practices and lessons from selected countries.

### Box 1.1. **The Fostering Good Education for All project**

The Fostering Good Education for All project, began in November 2015 as a contribution of the Directorate for Education and Skills to the OECD-wide Inclusive Growth initiative, with funding support from the Open Society Foundations (OSF). *Opportunity for All: Overcoming Educational Inequalities over the Life Course* (OECD, forthcoming), is a main output of the Fostering Good Education for All project. This report aims to provide extensive analysis of inequality in education, and concrete policy recommendations to provide solutions for this pressing issue.

Comprehensive desk-based research on issues related to economic, social and educational inequalities was conducted in preparing this report. It benefited from the rich experience and knowledge of the Directorate of Education and Skills on equity in education for young children, students and adults (OECD, 2011; Field, Kuczera and Pont, 2007; OECD, 2012; OECD, 2016a). Assessment and survey databases such as the Programme for International Student Assessment (PISA) and the Survey of Adult Skills (a product of the Programme for the International Assessment of Adult Competencies, PIAAC) were used to support the findings of this report. These sources also allow analysis of data from the OECD's partnering and developing countries where relevant and possible. The work of other directorates across the OECD, such as the Office of the Secretary General; the Directorate for Employment, Labour and Social Policies; the Economics Department; and the Local Economic and Employment Development (LEED) programme were used. Where relevant, research work of Thomas J. Alexander Fellowship (TJA) fellows and of other external scholars has been used. The findings of this report contribute to co-ordinated efforts between OECD directorates on inclusive growth (see Box 1.2).

The OECD gathered a group of experts in London in March 2016 to get constructive feedback on the report's preliminary literature review, outline and framework. This expert group meeting stimulated discussions on critical issues related to educational inequalities throughout the life course.

The findings of *Opportunity for All* have been presented on a number of occasions, including: the International Education Inequalities Conference in March, 2016 in London; the Centre for Education Research and Innovation (CERI) Governing Board meeting in April 2016 in Paris; the OECD symposium "From Inclusion and Equity in Education to Social and Economic Prosperity" on 17 June 2016 in Paris; the Education Policy Outlook Seminar on 27 June 2016 in Paris; the Inclusive Growth Seminar on 6 September 2016 in Paris; the Comparative and International Education Society (CIES) conference "Problematizing (In)Equality: The Promise of Comparative and International Education", on 6 March 2017 in Atlanta; and the 21st Education Policy Committee (EDPC) meeting in April 2017. The main findings of this report were also contributed to the preparation of report for 43rd G7 summit, 2017 OECD Ministerial Meeting and an OECD and Eurofound joint high-level conference on "The only way is up? Social Mobility and Equal Opportunities"

*Sources*:

Field, S., M. Kuczera and B. Pont (2007), *No More Failures: Ten Steps to Equity in Education, Education and Training Policy*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264032606-en.

OECD (2016a), *Skills Matter: Further Results from the Survey of Adult Skills*, http://dx.doi.org/10.1787/9789264258051-en.

*OECD (2012), Equity and Quality in Education: Supporting Disadvantaged Students and Schools, OECD Publishing*, http://dx.doi.org/10.1787/9789264130852-en.

OECD (2011), *Starting Strong III: A Quality Toolbox for Early Childhood Education and Care*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264123564-en.

*OECD (2006), Starting Strong II: Early Childhood Education and Care*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264035461-en.

### Box 1.2. **Inclusive growth initiatives at the OECD**

***Inclusive Growth initiative***

To respond to economic and social challenges, the OECD launched the New Approaches to Economic Challenges (NAEC) initiative in 2012. NAEC seeks to re-evaluate past OECD working practices that focused on economic growth and failed to address many of the root causes of economic crises and growing inequality. The development of policies that also encourage well-being and inclusive growth has become an integral part of the OECD's broader agenda. The Inclusive Growth initiative (IG) was launched in 2012 to support NAEC in producing a strategic policy agenda centred on inclusive growth. The preliminary product of this initiative, *The OECD Framework for Inclusive Growth*, was released in 2014. It provides the policy framework to measure well-being based on multidimensional living standards, not just Gross Domestic Product (GDP). This initiative is comprised of three important elements:

- Multidimensionality: Both monetary and non-monetary outcomes are considered, among a variety of dimensions, which include education, jobs, health status, environment, civic participation and social connections.
- Emphasis on distribution: Inclusive growth means that all members of society, regardless of socio-economic background, ethnic origin, gender or place of origin, should receive both equal opportunities to contribute to growth and equitable benefits from the outcomes of this growth.
- Policy relevance: In order to realise effective and dynamic policies, policy tools need to be linked to the financial and non-financial dimensions highlighted above. Policy makers must also consider distributional impacts and potential outcomes with respect to all dimensions of inclusiveness. Trade-offs that arise from policies which encourage both growth and inclusiveness must also be explored.

The initiative's first report, *All on Board: Making Inclusive Growth Happen*, was released in 2015 (OECD, 2015b). It discusses concrete policy recommendations that promote inclusiveness in education and skills, macro-economic policies, labour market policies, innovation and entrepreneurship, infrastructure, public services, development and urban policies. This publication also includes strategies for the design and implementation of policies based on underlying governance requirements. Furthermore, it establishes causal linkages between policies and outcomes. The most recent addition to the Inclusive Growth initiative is the Inclusive Growth in Cities campaign, which was launched in March 2016. The campaign seeks to reduce inequalities in major cities across the world. It promotes inclusive urban development policies targeting the education system, the labour market, the housing market, infrastructure and public services.

***OECD Centre for Opportunity and Equality (COPE)***

The OECD Centre for Opportunity and Equality (COPE) was established as part of the OECD's "All on Board for Inclusive Growth" Initiative. It was founded to serve as a platform for policy-oriented research centred around the trends, causes and consequences of inequalities in society and the economy. The centre also serves as a forum to examine policy-based solutions to mitigate these inequalities. The centre has three primary functions for encouraging inclusive growth, the first of which is to produce pioneering reports on inequality. The Centre promotes exchanges of information and expertise on inequality by hosting visiting researchers and experts. It interacts closely with the Growth Advisory Group of International Experts on inequalities and inclusive growth.

Box 1.2. **Inclusive growth initiatives at the OECD** *(cont.)*

***Innovation for Inclusive Growth***

Another inclusion-based initiative is the Innovation for Inclusive Growth project. Developed in 2013, the project champions the use of innovation initiatives and innovation products to improve the welfare of citizens from low-income backgrounds and other groups who have traditionally been excluded from society and the economy. Giving these groups access to innovative technology can support their well-being. Innovation and technology can also encourage greater inclusiveness across a wide variety of sectors. The 2015 OECD report *Innovation Policies for Inclusive Growth* identifies improving inclusiveness in education as a key goal. It stresses the importance of providing "economically deprived groups with enhanced access to high-quality education and educational resources" (OECD, 2015c). Innovative mechanisms such as low-cost and widely used technologies like online platforms, mobile phones and tablets can help disadvantaged groups access high-quality education. Redesigned infrastructure, new approaches to curriculum design, school networks and student assessment can also all play a major part in increasing inclusiveness in education.

*Sources*:
OECD (2016b), "Perspectives on Innovation and Inclusive Growth", OECD official document DSTI/STP (2016)5, OECD Directorate for Science, Technology and Innovation, March 2016.
OECD (2015b), *All on Board: Making Inclusive Growth Happen*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264218512-en.
OECD (2015c), *Innovation Policies for Inclusive Growth*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264229488-en.
OECD Centre for Opportunity and Equality, http://www.oecd.org/inclusive-growth/about/centre-for-opportunity-and-equality/.

### *Skills premium due to skills-biased technological changes*

In recent decades, acquiring skills and obtaining educational qualifications that are well-recognised and rewarded in the labour market has become more important than ever. This is due in part to the fact that the global economy has become more knowledge intensive. In addition, technological changes, globalisation and growing size and influence of the financial sector contributed to the increase in demand for workers with cognitive, non-routine and high level of information technology skills. All of these factors resulted in how much the labour market rewards skills they look for, placing a high wage premium on high-skilled workers over the last three decades (Sill, 2002; Card and Di Nardo, 2002; Autor and Acemoglu, 2011).

According to the latest *Education at a Glance* publication (2016c), adults without an upper secondary level of education earn on average 19% less than those with an upper secondary level of education, while those with a tertiary degree earn 55% more than those with upper secondary education on average across OECD countries. The earnings premium for tertiary education is largest in Brazil, Chile, Colombia, Hungary and Mexico, where the tertiary-educated adults earn more than twice as much as adults with upper secondary education. Across OECD countries, adults with a master's, doctoral or equivalent degree enjoy a significant earnings premium compared to those with upper secondary education or with a bachelor's degree. In the last ten years, the proportion of 25-64 year-olds with tertiary education attainment has increased from 21% to 30%, and the wage premium for adults with a tertiary education has increased by 6 percentage points (OECD, 2016c). This trend suggests that the demand for tertiary-educated individuals has kept up with the increasing supply from higher educational institutions in most OECD countries.

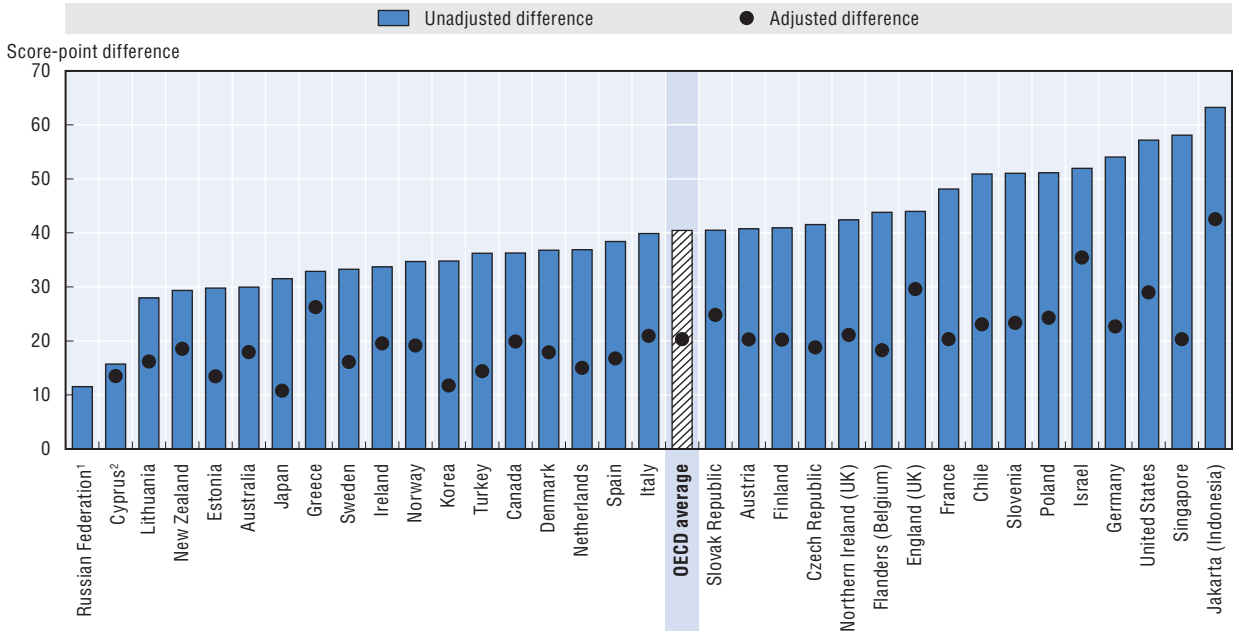
### *Unequal learning opportunities and outcomes over the life course*

Considering how important education and skills have become in the labour market, a critical question is whether such learning opportunities can be accessible to all. This report finds that countries have been advancing at different rates in providing quality education and skills development opportunities to disadvantaged individuals. In most countries, inequality in learning

opportunities begins at birth, and often widens as individuals grow older. These inequalities result in very different life outcomes for adults. In some countries, access to learning opportunities differs considerably between certain population groups. As a result, a substantial gap in literacy scores has been found between adults with highly and poorly educated parents, according to the Adult Skills Survey (Figure 1.1). Even after accounting for socio-demographic factors such as gender, age, foreign-born status and years that a respondent has been working for the current employer or has been self-employed, a gap in literacy skills remains in all countries participating in the survey. The gaps are particularly high in Israel, the United Kingdom (England), the United States, Greece, the Slovak Republic, Poland, Slovenia and Chile (OECD, 2016a).

Figure 1.1. **Difference in literacy proficiency between adults with highly and poorly educated parents**

Difference in literacy proficiency between adults with at least one parent with tertiary education and adults whose parents have not attained upper secondary education




1. The sample for the Russian Federation does not include the population of the Moscow municipal area.

*Notes*: All differences are statistically significant. Unadjusted differences are the differences between the two means for each contrast category. Adjusted differences are based on a regression model and take account of differences associated with other factors such as, age, gender, education, immigrant, and language background. Only the score-point differences between two contrast categories are shown, which is useful for showing the relative significance of parents' educational attainment in relation to observed score-point differences. Upper secondary education includes ISCED 3A, 3B, 3C long and 4. Tertiary includes ISCED 5A, 5B and 6. Adjusted difference for the Russian Federation is missing due to the lack of language variables.

2. Note by Turkey: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

*Source*: OECD (2016a), *Skills Matter: Further Results from the Survey of Adult Skills*, http://dx.doi.org/10.1787/9789264258051-en,
StatLink http://dx.doi.org/10.1787/888933638106

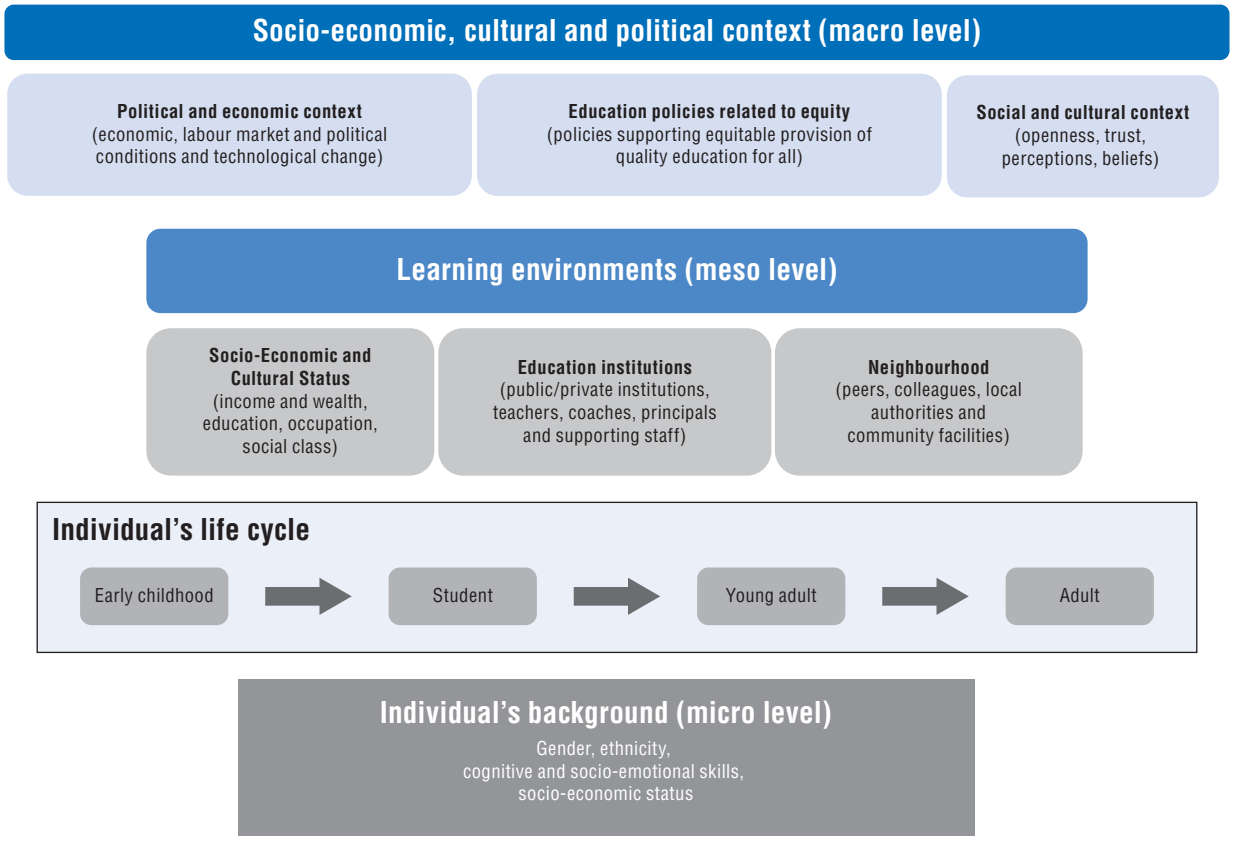
## Various factors affecting individuals' life outcomes

Unequal distribution of learning outcomes by socio-economic status exists in all countries without exception. However, the gap varies considerably across countries. This suggests that countries have made varying progress in mitigating the impact of

families' socio-economic backgrounds on their children's life outcomes. Prior to exploring the action that countries have taken to address issues of equity, it is crucial to understand which factors affect individual life outcomes, in order to identify areas of intervention for policy makers. This report presents a conceptual framework that captures various factors affecting individual life outcomes on three levels: namely, individual backgrounds, learning environments, and socio-economic and political contexts (Figure 1.2). The framework highlights comprehensive and multidimensional factors affecting outcomes that are not confined to parents' socio-economic status. The quality of education institutions, teachers, school leaders and neighbourhoods can also have a direct impact on individual outcomes. In addition, public policies, such as education and labour market policies, political and economic conditions, as well as socio-cultural contexts, can influence outcomes.

Figure 1.2. **Conceptual framework**

Sources of inequality that affect individuals' socio-economic outcomes




*Sources*: Author's own work, based on Autor D. and D. Acemoglu (2011), "Skills, tasks and technologies: Implications for employment and earnings", in O. Ashenfelter and D. Card (eds.), *Handbook of Economics*, Vol. 4; Card, D. and J. Di Nardo (2002), "Skill-biased technological change and rising wage inequality: Some problems and puzzles," *Journal of Labor Economics*, Vol. 20/4, pp. 733-83; Corak, M. (2013), "Income Inequality, Equality of Opportunity, and Intergenerational Mobility", *IZA Discussion Paper*, No. 7520; D'Addio, A. (2007), "Intergenerational Transmission of Disadvantage: Mobility or Immobility Across Generations?", *OECD Social, Employment and Migration Working Papers*, No. 52, http://dx.doi.org/10.1787/21773050555; OECD (2015e), *Skills for Social Progress: The Power of Social and Emotional Skills*, OECD Skills Studies, http://dx.doi.org/10.1787/9789264226159-en; OECD (2013), *PISA 2012 Results: What Makes Schools Successful (Volume IV): Resources, Policies and Practices*, http://dx.doi.org/10.1787/9789264201156-en; and OECD (2006), *Starting Strong II: Early Childhood Education and Care*, http://dx.doi.org/10.1787/9789264035461-en;

### *How are countries performing on equity-relevant indicators?*

A set of 11 equity-relevant indicators have been selected to help illuminate how countries are advancing in providing equitable learning opportunities for individuals from disadvantaged backgrounds and to identify the stages at which improvements in equity are needed (Table 1.1 and Annex Tables 2.A2.1; 2.A2.2 and 2.A2.3 in Chapter 2). Only a few OECD countries demonstrated outstanding equity performance over the individual life course. Estonia, Japan, Korea and the Netherlands have a level of equity performance above the OECD average in 10 out of 11 indicators relevant to equity in education, while most other countries have ample room for improvement to ensure better learning outcomes for individuals from disadvantaged backgrounds. On the other hand, Israel, the Slovak Republic and the United States, show above-OECD average performance in only 1 or 2 indicators out of 11 indicators relevant to education equity. Chile, France, Poland, Turkey and the United Kingdom have performance above the OECD average in 3 or 4 out of 11 indicators. These countries show exceptionally large gaps between the socio-economically advantaged and disadvantaged groups. This suggests that disadvantaged children from these countries are less likely to obtain the skills necessary for today's technology-rich and versatile labour markets and improve their socio-economic status. Considering that acquiring labour market-relevant skills and obtaining well-recognised educational qualifications have become major determinants of labour market outcomes, the lack of equity in education in these countries is worrisome.

Some countries stand out with regards to indicators on early childhood education. In 2012, over 85% of 15-year-olds from the most disadvantaged backgrounds in Belgium, France, Hungary, Iceland, Japan and the Netherlands reported having more than a year of pre-primary education experience (Table 1.1 and Annex Table 2.A2.1 in Chapter 2). For educational investments made during early childhood to be productive, continued support throughout schooling is crucial. This is particularly true for those disadvantaged students who have had little to no preschool experience. Some countries stand out in providing access to early childhood education for children from the most disadvantaged socio-economic backgrounds. However, the learning outcomes of these students at the age 15 and from 20 to 29 are not as successful. Austria, Belgium, France and Italy fall into this group of countries. Yet, Canada, Estonia, Finland, Ireland, Japan, Korea, Latvia and Spain perform above the OECD average on equity grounds in at least 3 performance levels out of 4. In particular, Estonia, Finland, Japan and Korea had an exceptionally high proportion of resilient students. About 46% of students in Estonia were found to be resilient in 2006. In Finland the figure was 53%, in Japan 41% and in Korea 44% (Table 1.1 and Annex Table 2.A2.1 in Chapter 2).

In addition, equity performance of young adults aged 20 to 29 in 2012 and 2015, which includes PISA 2006 cohorts, continued to be high in Estonia, Finland, Japan and Korea. Numeracy score differences between young adults with highly and poorly educated parents were below the OECD average in these countries. The percentage of young adults with poorly educated parents scoring below Level 2 in numeracy was lower than the OECD average. Estonia, Finland, Japan and Korea also have lower than the OECD average proportion of 16-29 year-old "Not in Education, Employment, or Training" (NEETs) with poorly educated parents, as measured by the Survey of Adult Skills. These countries managed to maintain high equity during the student years of individuals' lives and through young adulthood (Table 1.1 and Table 2.A2.3 in Chapter 2).

## Table 1.1. **Snapshot of indicators relevant to equity in education throughout the life course**

| | Early Childhood | Student learning outcomes | | | | Adult skills and labour market outcomes | | |
|---|---|---|---|---|---|---|---|---|
| | Early childhood education experience among disadvantaged students[1] | Score-point difference in science associated with one-unit increase in the index of ESCS[2] (PISA 2006) | Difference in science performance between students whose parents are highly and poorly educated[3] (PISA 2006) | Percentage of disadvantaged students performing below Level 2 in science (PISA 2006) | Percentage of resilient students[4] (PISA 2006) | Score-point difference between 20-29 year-old adults with highly and poorly educated parents[5] | Percentage of 20-29 year-olds with poorly educated parents[5] performing below Level 2 in numeracy | Proportion of 16-29 year-olds not in education, employment, or training (NEETs) with poorly educated parents[5] |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | % | Score dif. | Score dif. | % | % | Score dif. | % | % |
| **OECD average** | **66.3** | **40** | **79** | **48.0** | **27.7** | **46** | **34.6** | **19.5** |
| Australia | 42.7 | 43 | 62 | 34.3 | 33.1 | 38 | 29.4 | 18.1 |
| Austria | 80.7 | 46 | 108 | 47.3 | 28.1 | 58 | 28.3 | 13.2 |
| Belgium | 89.2 | 48 | 98 | 47.3 | 25.8 | 56 | 27.9 | 9.2 |
| Canada | 42.6 | 33 | 71 | 25.8 | 38.0 | 36 | 33.8 | 16.8 |
| Chile | 27.9 | 38 | 93 | 85.4 | 15.0 | 53 | 71.2 | 16.5 |
| Czech Republic | 84.4 | 51 | c | 41.4 | 28.8 | 56 | 34.6 | 23.1 |
| Denmark | 72.6 | 39 | 86 | 48.7 | 19.6 | 48 | 27.3 | 11.4 |
| Estonia | 76.7 | 31 | c | 20.0 | 46.2 | 37 | 25.4 | 17.8 |
| Finland | 51.4 | 31 | 39 | 11.3 | 53.1 | 50 | 22.0 | 7.7 |
| France | 87.5 | 54 | 84 | 55.3 | 23.6 | 50 | 28.4 | 21.0 |
| Germany | 79.2 | 46 | 94 | 41.6 | 24.8 | 47 | 34.4 | 13.5 |
| Greece | 59.9 | 37 | 80 | 61.4 | 20.4 | 36 | 37.6 | 36.4 |
| Ireland | 34.2 | 39 | 66 | 40.1 | 29.2 | 36 | 31.0 | 20.5 |
| Israel | 73.0 | 43 | 81 | 79.6 | 13.4 | 61 | 52.1 | 25.8 |
| Italy | 84.2 | 31 | 49 | 62.5 | 23.7 | 36 | 34.3 | 25.3 |
| Japan | 95.8 | 39 | c | 32.3 | 40.5 | 27 | 16.2 | 17.5 |
| Korea | 79.8 | 32 | 55 | 28.9 | 43.6 | 23 | 12.0 | 17.3 |
| Netherlands | 92.7 | 44 | 70 | 36.8 | 32.0 | 36 | 17.0 | 5.6 |
| New Zealand | 60.3 | 52 | 82 | 37.8 | 35.1 | 44 | 30.0 | 12.9 |
| Norway | 78.0 | 36 | c | 49.2 | 17.2 | 48 | 43.4 | 7.7 |
| Poland | 28.4 | 39 | 121 | 44.5 | 31.4 | 55 | 34.6 | 26.3 |
| Slovak Republic | 63.9 | 45 | 152 | 54.9 | 20.3 | 80 | 53.3 | 58.3 |
| Slovenia | 61.4 | 46 | 111 | 38.9 | 30.3 | 45 | 31.2 | 18.1 |
| Spain | 80.1 | 31 | 56 | 49.6 | 28.5 | 32 | 29.9 | 16.8 |
| Sweden | 61.9 | 38 | 59 | 42.0 | 24.0 | 39 | 19.3 | 12.6 |
| Turkey | 1.7 | 31 | 74 | 87.6 | 23.2 | 42 | 45.3 | 33.6 |
| United Kingdom* | 61.1 | 48 | 87 | 42.6 | 30.5 | 65 | 58.5 | 29.0 |
| United States | 61.1 | 49 | 97 | 62.7 | 19.3 | 57 | 50.6 | 12.8 |

1. Percentage of students from the bottom quarter of the socio-economic profile reporting more than a year of pre-primary education.
2. ESCS refers to the PISA index of economic, social and cultural status.
3. Highly educated means one or both parents attained tertiary education (ISCED level 5 and 6); low educated means one or both parents attained secondary education (ISCED level 2) as their highest level of education.
4. A student is classified as resilient if he or she is in the bottom quarter of the PISA index of economic, social and cultural status (ESCS) in the country/economy of assessment and performs in the top quarter of students among all countries/economies, after accounting for socio-economic status.
5. Highly educated parents are defined as at least one parent obtained tertiary education and poorly educated parents are defined as neither parents obtained upper secondary education.
"c" indicates there are too few observations to provide reliable estimates (i.e., there are fewer than 3 percent of students for this cell or too few schools for valid inferences).
*Data estimates for United Kingdom for indicators (6), (7), (8) denote data for England.

*Sources*: (1) PISA 2012 Database: OECD (2013), *PISA 2012 Results: What Makes Schools Successful (Volume IV): Resources, Policies and Practices*, http://dx.doi.org/10.1787/9789264201156-en, Table IV.3.34V; (2) *OECD PISA 2006 Database*, Table 4.4c, http://www.oecd.org/pisa/data/database-pisa2006.htm, OECD (2007), *PISA 2006: Science Competencies for Tomorrow's World: Volume 1: Analysis*, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264040014-en (3) *OECD PISA 2006 Database*, Table 4.7a, OECD (2007), *PISA 2006: Science Competencies for Tomorrow's World: Volume 1: Analysis*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264040014-en, (4) *OECD, PISA 2006 Database*, Table I.2.2a, http://www.oecd.org/pisa/data/database-pisa2006.htm; OECD (2016), *PISA 2015 Results (Volume I): Excellence and Equity in Education*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264266490-en (5) *OECD, PISA 2006 Database*, Table I.6.17, http://www.oecd.org/pisa/data/database-pisa2006.htm OECD (2007), PISA 2006: Science Competencies for Tomorrow's World: Volume 1: Analysis, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264040014-en (6, 7, 8), OECD (2016d), *Survey of Adult Skills (PIAAC)* (Database 2012, 2015), www.oecd.org/site/piaac/publicdataandanalysis.htm.

StatLink http://dx.doi.org/10.1787/888933638087

### *Recent improvements in educational equity over time*

Together with key equity indicators that focus on specific cohorts, the recent changes in equity-related indicators over time have important implications. The changes over time in equity indicators demonstrate whether education systems have been improving with respect to equity. They can also help to predict the levels of inequality in both learning and labour market outcomes in the future workforce. Analysis of the trends in equity indicators suggests that all countries need to continue working on improving equity throughout the life course of individuals (OECD, 2016g).

Across most OECD countries, neither performance in the sciences nor levels of equity vastly changed between 2006 and 2015. In PISA 2015, the degree to which students' socio-economic status predicted performance in science decreased to 12.9%, a drop of 1.4 percentage points. Although it is encouraging to observe that in recent years, several countries, such as the United States, Mexico and Chile, have made great improvements in providing more equitable educational opportunities, this does not make up for the lack of support that disadvantaged students from earlier cohorts have already experienced. These students who have now become adults need targeted support to make up for the loss during their school years. In addition, although these countries have narrowed the gaps in performance between students from different socio-economic backgrounds, the size of the gap in these countries is still relatively large when compared to the OECD average and to the gap in highly equitable countries. The trend data also suggests that no significant improvements have been made in equity among countries with a traditionally high level of equity performance in PISA. In fact, in a number of countries, equity outcomes have deteriorated in the last nine years. In Finland and Korea, for example, the gap in science performance between students from different socio-economic backgrounds has widened.

### *Public policies that empower individuals and create inclusive growth*

Policies and systems that focus on empowering individuals can achieve long-lasting, inclusive economic growth and social cohesion. Such policies include providing, especially to disadvantaged individuals, healthcare and lifelong opportunities to improve skills relevant to the labour market (Sunde and Vischer, 2011; OECD, 2015a). Policies that empower low-income individuals to obtain high-quality, stable jobs can mitigate inequalities, especially if efforts are directed at those who earn the least. These policies can also make inclusive and sustainable economic growth more feasible. Research shows that lowering inequality by reducing income disparities at the bottom of the income distribution has a greater impact on economic growth than reducing inequality at the top end of the distribution (Rajan, 2010; OECD, 2015a). This is due in part to the fact that reducing inequality for low-income people allows the benefits of growth to be shared with a wider section of the population. In addition, dealing directly, at an earlier stage, with the root causes of income inequality, such as education and skills inequality, is more effective than trying to fix the symptoms at later stages of life, through redistribution policies like taxes and transfers (OECD, 2015a).

### *Prioritising public spending*

Effective policies are to empower individuals require adequate investment in social sectors like education. In 2016, public social spending was 21% of GDP on average across OECD countries. In recent years, public social spending-to-GDP ratios have been highest in France, at 32% of GDP, followed by Finland (over 30%). Social spending-to-GDP ratios have

fallen in a few OECD countries, including Hungary, Luxembourg, Latvia and Ireland, but have only slightly increased or have remained stable in most.

Most OECD countries spend far less on education as a percentage of GDP, especially post-secondary education, than on pensions or healthcare. On average, public expenditure on primary, secondary and post-secondary education as a percentage of GDP was 3.4%. In addition, between 2010 and 2012, public spending as a percentage of GDP for all levels of education fell by 3% on average across OECD countries where data is available. Australia, Estonia, Hungary, Norway, Portugal and Spain lowered spending by more than 8% during this period (OECD, 2016d). Although public expenditure decisions depend on the priorities of each country, investment in education, especially for children and disadvantaged individuals, need to be prioritised to build equitable and inclusive societies.

## Policy recommendations on ensuring equitable educational outcomes at each stage of life

Given the importance of lifelong educational support for individuals from disadvantaged backgrounds, this report brings together policy recommendations on ensuring educational equity in each stage of life. These recommendations are drawn from existing OECD research, as well as from research papers and studies outside the OECD. This report also provides concrete policy examples and practices that have been successful in providing equitable educational opportunities for the disadvantaged.

### *Invest in early childhood education (Chapter 3)*

Early childhood is a critical phase for human development. Research shows that the cognitive, social and emotional skills developed during the first years of life set the stage for future potential (OECD, 2015e). Early learning deficiencies can be overcome, but inadequate learning environments and lack of support can hamper educational development and have lasting impacts on individuals later in life (OECD, 2015e). Children from less privileged socio-economic backgrounds are far less likely to benefit from high-quality home learning environments and early childhood education and care services (ECEC) than their more affluent peers. As a consequence, targeted policies need to be considered to ensure high-quality learning opportunities for children from disadvantaged backgrounds. These include:

#### *Remove barriers to ECEC*

Children from disadvantaged backgrounds are more likely to face barriers in accessing quality ECEC facilities. These include the cost, proximity and availability of good ECEC facilities, and a lack of information about ECEC services. Some OECD countries have been successful overcoming these barriers, but others, including Chile, Ireland, Poland and Turkey have not been very successful in providing access to ECEC for children from the most disadvantaged socio-economic backgrounds (Table 1.A1.1 in the Annex). In these countries, further efforts need to be made to remove barriers preventing children from disadvantaged backgrounds from access to ECEC services.

#### *Ensure provision of quality of ECEC*

Low quality ECEC without strong health, safety and other quality regulations can have negative and severe consequences on children's physical and socio-emotional development, as well as on their learning outcomes. Children from disadvantaged backgrounds are generally at higher risk of not being able to access quality ECEC services. OECD research on ECEC (OECD, 2006; OECD, 2001) has found that low staff-child ratios and small group sizes

must be maintained to ensure safety and quality of ECEC services. Standards for ECEC staff qualifications and experience and the training for teaching and caring for young children must be maintained to ensure quality ECEC services. To attract effective teachers to ECEC, salaries and working conditions must be attractive. National ECEC curricula and manuals, and guides for professional staff members, also play a crucial role in ensuring quality of ECEC services. The curricula need to cover learning that accounts for children's developmental stages into consideration. Standards for the design, layout, space and hygiene of ECEC facilities need to be set. Such regulations can ensure that children are learning and being cared for in a safe, creative environment that optimises learning and interactions with their peers and teachers.

#### *Support family and community-based interventions*

Young children spend a majority of their time at home with either parents or caregivers. Home learning environments thus have a direct impact on children's early childhood outcomes. Evidence-based parenting programmes for families, home visits for troubled families and subsidies to boost family income can help such families improve the learning environment they provide for their children (OECD, 2011).

### *Support low performers from disadvantaged backgrounds and disadvantaged schools (Chapter 4)*

For educational investments made during early childhood to be productive, continued support throughout schooling is crucial. This is particularly true for disadvantaged students who have had little to no preschool experience. Some countries are particularly successful in providing access to ECEC for children from the most disadvantaged socio-economic backgrounds but the learning outcomes for these students at the age 15 and from 20 to 29 are not as successful. Austria, Belgium, France and Italy fall into this group (Tables 2.A2.1 and 2.A2.2 in Annex 2.A2). Disadvantaged schools are typically most in need of high-quality resources and support, but in most countries, they are more likely to suffer from financial constraints and a lack of staff. Disadvantaged schools also tend to have a disproportionately high number of students considered to be low performers and at risk of dropping out (OECD, 2016f). The following policy recommendations should be taken into consideration:

#### *Identify low performers early and provide targeted support*

Low performers need to be identified early, so that teachers and parents can provide early, regular and timely support to those at risk of falling behind. Sorting and segregation mechanisms such as academic tracking and ability grouping can perpetuate educational inequality in schools. This is often costly, not to mention ineffective in improving educational outcomes. In particular, disadvantaged students are far more likely than more advantaged students to be sorted into non-academic tracks, such as Vocational Education and Training programmes. Academic selection should be delayed and grade repetition avoided for greater equity. Instead, high academic commitment, attitude and behaviour should be expected from all.

#### *Support disadvantaged schools*

Allocation of adequate resources to disadvantaged schools is essential in ensuring that all students receive the high-quality education and training they need to fully participate in society (OECD, 2016f). Providing such schools with additional financial and human resources is essential. School budgets should prioritise spending, as well as investing in high-quality human resources such as school leaders and teachers, who play a critical role

in reducing educational inequality in their schools. Monetary or professional-level incentives can also be used to attract effective school leaders and teachers to disadvantaged schools. Targeted support should be given to school leaders and teachers in disadvantaged schools, and efforts need to be made to connect them to other school leaders and teachers, which can help them share knowledge and provide assistance to each other (OECD, 2012; OECD, 2016f).

### *Provide continuing education opportunities for adults (Chapter 5)*

Failed interventions and investments in early childhood and schooling can result in serious consequences in adulthood that are harder to resolve. Many adults who have dropped out of school early may have less than a basic level of literacy and numeracy skills. This is an enormous obstacle to overcome in entering the job market or participating in training later in life. It is therefore crucial that these adults be provided with adequate opportunities to improve their basic skills. On average across OECD countries, according to the OECD population database (OECD, 2017a and 2017b) in 2012, 66% of the population was of working age (16-64 year-olds) compared to 18% of the school-age population under 15. Given the size of the working-age population and the significant economic and social role it plays, it is too important to leave these adults to their own devices to upgrade, maintain and add to their existing skills. Inaction will only exacerbate inequality in skills distribution in the society, since those with more resources are likely to invest more on their lifelong learning and those without the resources are less likely to do so. Participation rate in adult education and training is significantly higher for high-skilled adults than mid- to low-skilled adults (Grotlüschen et al., 2016). In particular, low-skilled adults who are unemployed or of immigrant background participate much less in training than their more skilled counterparts, despite the very large potential gains (Grotlüschen et al., 2016). The following policy solutions should be taken into consideration:

#### *Focus on improving employability of adults from disadvantaged backgrounds*

Education and training have a critical role in equipping learners with skills, knowledge and personal attributes that increase their likelihood of being employed and pursuing occupations of their choice (also known as "employability"). To increase adults' employability, it is important to ensure that they have the basic requirements, such as literacy, numeracy and computer skills, through education and training programmes (OECD, 2016a). Opportunities for learning, such as apprenticeships, internships and well-designed work-based learning, if combined with work experience, can enhance their transition into the labour market. France, Germany, Switzerland and the United Kingdom have introduced various initiatives to incorporate work experience in learning. Career information and guidance can help adults make informed decisions about their careers, and better prepare them to enter the labour market (OECD, 2015d). Experience in OECD countries shows that governments need to provide financial incentives for employers to take on unemployed adults as trainees and set up simple, transparent administrative procedures to ensure that sufficient places are available.

#### *Provide targeted support to the most vulnerable group of adults*

In adult learning is to be effective, targeted support is crucial. The most vulnerable groups of adults need to be identified and offered opportunities tailored to their needs. This report focuses on learning opportunities for adults with a low level of education and skills. They include population groups who face particular challenges and barriers to learning, such as: unemployed young adults; single mothers and women who have been out of the labour market for a long period; and immigrants without language skills. Each group faces

different challenges and barriers, and policies and support systems are needed to address their particular concerns. Since these groups are the most vulnerable to economic changes and labour market conditions, investing in maintaining and enhancing their skills should be made a priority.

### *Reducing barriers to participation in adult education*

Removing financial, situational and time-related barriers to participation in learning programmes is absolutely essential, especially for the socio-economically disadvantaged. Co-financing and tax incentives are particularly effective. A variety of co-financing arrangements policymakers are one option to consider, including Individual Learning Accounts (ILA), accounts set up exclusively for adult-learning purposes, vouchers and training allowances and training leave. In addition, tax-based mechanisms such as tax allowances and tax credits that reduce the tax liability on at least part of an individual's spending directly related to skills training costs can remove cost barriers and act as an incentive for participating in adult learning (OECD, 2017). Such tax incentives can increase the returns to skills by making the costs of skills acquisition deductible for personal tax purposes. To remove time and situational barriers, innovative and effective adult learning programmes, such as online, distance and family-based learning programmes can be used. In addition, providing courses on a part-time basis, on evenings and weekends, can help increase flexibility and encourage participation in adult education (OECD, 2005).

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