Trends Shaping Education Spotlight 8

Mind the Gap: Inequity in Education

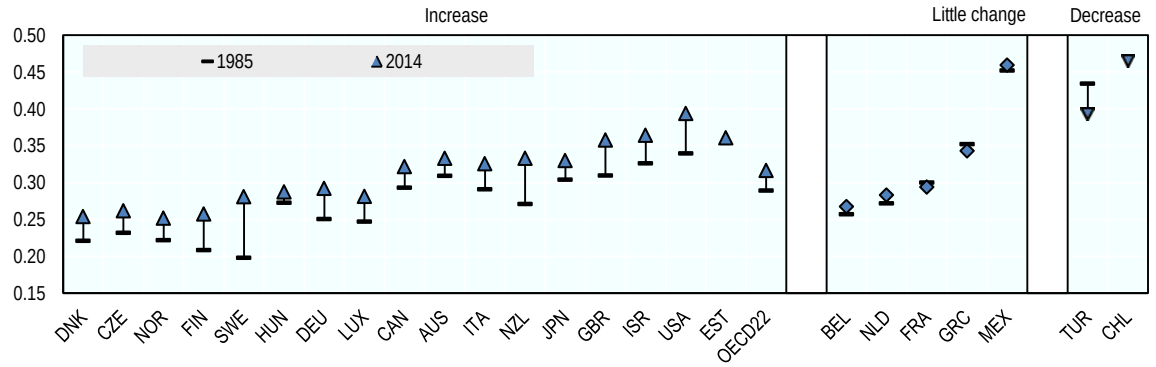
Inequality comes in many forms, including economic, social, cultural, and regional. Since the 1980s Income inequality has been growing in most OECD countries and is currently at its highest level in 30 years. As inequality both impacts education and is impacted by it, it is important to better understand how best to help ensure that all students, irrespective of social background, succeed in school and beyond.

A vicious cycle

Across the OECD, the average income of the richest 10% of the population is about nine times that of the poorest 10%.

Income inequality has increased in almost all OECD countries over the past three decades (Figure 1). In 2014, the OECD countries with the highest level of income inequality were Chile, Mexico and the United States, followed by Israel and Turkey. The biggest increases in that time were in Finland, New Zealand, and Sweden. Turkey saw the largest decrease in inequality, although its overall level of inequality remained high. Forecasts for 2060 suggest that gross earnings inequality could continue to rise in the OECD if current trends persist (Braconier et al., 2014).

Figure 1: Gini index of income inequality, 1985 and 2014 or latest year available



Note: The GINI index is a common measure of income inequality. It ranges in value from 0 (perfect equality) to 1 (perfect inequality). Chile and Estonia data for 2013 only, direction of trend is determined from 2007.
Source: OECD Income Distribution Database, retrieved from http://www.oecd.org/social/income-distribution-database.htm; OECD (2015a), *In It Together: Why Less Inequality Benefits All*, OECD Publishing, Paris.

*This version replaces the previous one.

Inequality has a negative impact on social cohesion and harms long-term economic growth. Disadvantaged individuals are less likely to be able to invest in education and skill development than those who are well-off, which limits their access to skilled jobs. This also limits economies' capacity to produce, grow and innovate as they are unable to give education access and opportunities to segments of their population.

Education can play a key role in breaking this cycle. A person's educational attainment is closely related to their likelihood of being unemployed (OECD, 2014a) and future wages (Barro and Lee, 2013). Increasing the educational performance of everyone, and especially the most disadvantaged, is beneficial to both economy and society.

Educational attainment and disadvantage

In many countries students from disadvantaged backgrounds are more likely to struggle at school. For example, in France, Hungary and Singapore, students with disadvantaged economic, social and cultural status (ESCS) were more than 3.5 times more likely to score in the bottom quarter for science performance relative to non-disadvantaged students on the 2015 PISA assessment (OECD, 2016). Students' ESCS status is calculated on a number of factors including the parent's educational attainment and employment status, as well as student's educational resources at home and family wealth.

Beating the odds

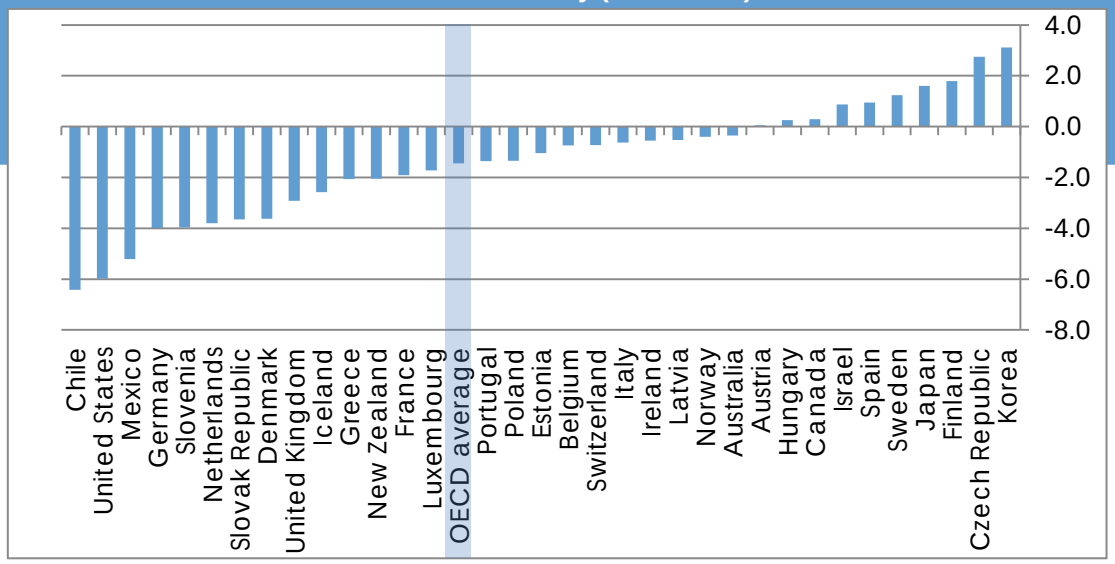
Not all students from disadvantaged backgrounds perform poorly. In fact, 29% of students included in the PISA test are resilient, meaning that they rank in the top quarter of performance even though they come from disadvantaged backgrounds (OECD, 2016). Resilient students are those who "beat the odds".

What factors might bolster student resilience? The average resilient student spends between one and two hours per week more studying science at school (OECD, 2011). Also, in schools where students spend a relatively long time in mathematics lessons, a student's socio-economic performance has a smaller impact on academic performance (OECD, 2015b).

Another way to measure disadvantaged backgrounds is through socio-economic status (SES), which estimates individual and family status through income, education and occupation. As shown in Figure 2, in countries such as Czech Republic, Finland and Korea the percent of variation of students' scores on the PISA test explained by their SES status has increased since 2006. This means the educational systems in these countries have become less inclusive and/or supportive to students of disadvantaged backgrounds. In contrast, countries such as Chile, Mexico and

the United States improved on this measure. Although not shown in the figure because trend data is not available, top performers such as Singapore and China (Beijing, Shanghai, Jiangsu and Guangzhou) also struggle in terms of equity (OECD, 2016).

Figure 2: Percentage of variation in science performance explained by students' socio-economic status, by country (2006- 2015)



Source: OECD (2016a), Graph I.1.3. Snapshot of equity in education, in *PISA 2015 Results (Volume 1),* OECD Publishing, Paris.

Students from families with higher SES are more likely to come from home environments that are conducive to learning, including a quiet place to study and access to diverse learning resources, such as the Internet. Furthermore, their parents are more likely to have the time and ability to help them with their homework and encourage them to study and pursue further education. Students without these opportunities are thus disadvantaged even before entering school, and continue to be disadvantaged as they go through the education system.

Students from advantaged backgrounds tend to have parents from advantaged backgrounds as well.

In fact, a key driver of inequality is the intergenerational transmission of advantage. This means that advantaged students are more likely to have advantaged parents, both in terms of education and labour force participation. On the 2015 PISA test, an average of 97% of advantaged parents participated in higher education and 94% work in skilled occupations (OECD, 2016a). In contrast, only 8% of disadvantaged parents work in skilled occupations and 88% of them did not complete higher education. Similarly, the Survey of Adult Skills shows that adults aged 16 to 65 who had at least one parent with higher education scored higher on average on the literacy scale than adults who do not.

Although longitudinal evidence suggests that the effect of SES diminishes with age, especially in countries where the initial education system compensates for the disadvantage, the intergenerational transmission of advantage remains important throughout a person's life.

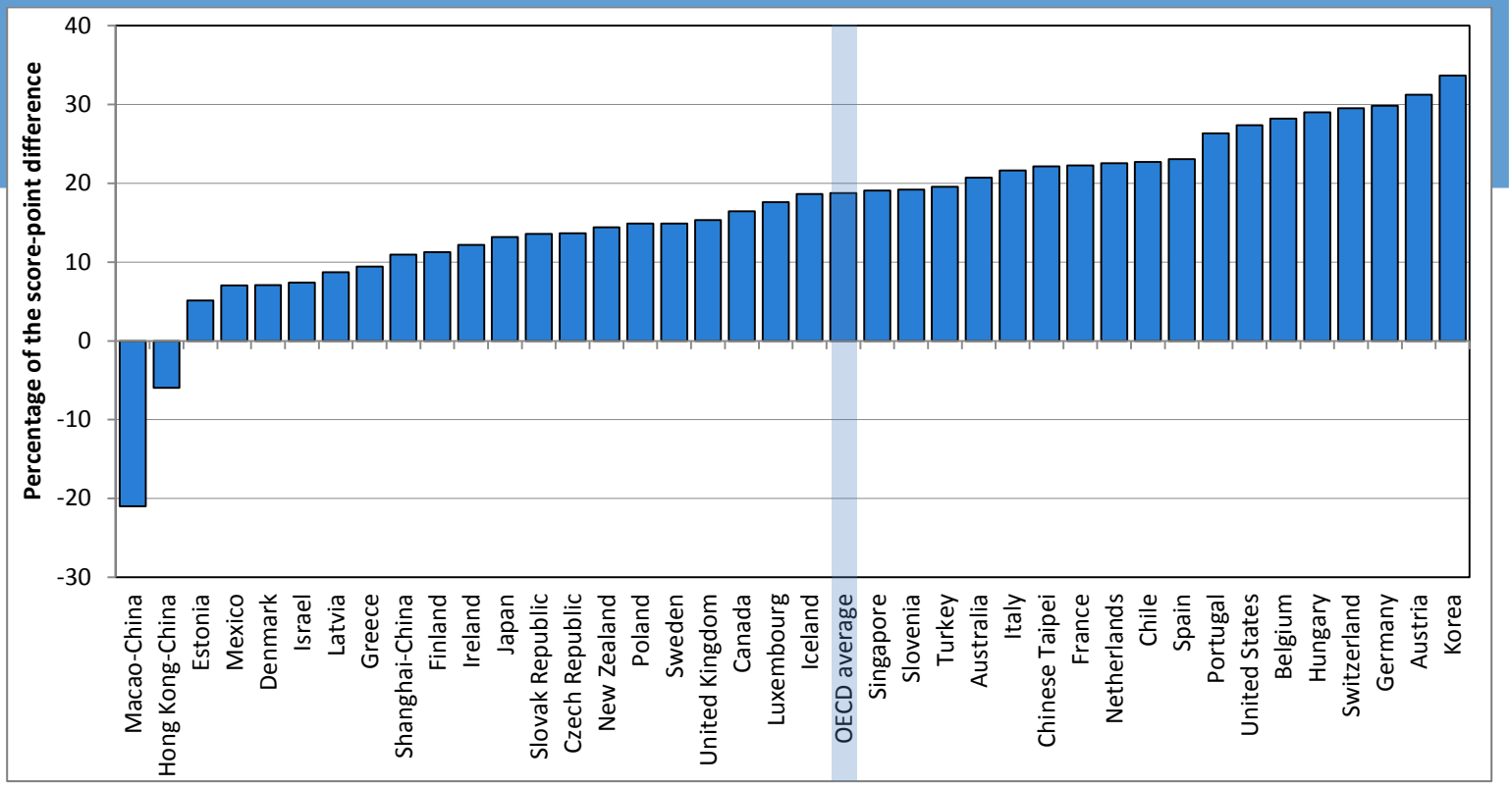
Unequal opportunities to learn

Much of the attention on educational inequalities has focused on factors indirectly influencing student learning such as school resources; teacher quality; school autonomy; standardisation; privatisation and class size. However, some would argue that students' ability to learn is dependent on whether and for how long they are exposed to educational content in school (e.g., Schmidt et al., 2015).

Across OECD countries, disadvantaged students spend about the same time in mathematics classes in school as their advantaged peers. However, they are less exposed to pure mathematics tasks and concepts, which tend to be associated with better learning outcomes. On average, differences in familiarity with mathematics account for about 19% of the performance difference between the two groups.

As shown in Figure 3, in Germany, Korea, Switzerland and the United States about 30% of the performance difference between advantaged and disadvantaged students is related to pure mathematics exposure. The gap is larger in countries that track students early, have larger percentages of students in selective schools, and are more likely to transfer less-able students to other schools.

Figure 3: Percentage of the score-point difference between advantaged and disadvantaged students explained by differences in familiarity with mathematics



Note: Socio-economically advantaged students are defined as those students in the top quarter of the PISA index of economic, social and cultural status (ESCS). Disadvantaged students are students in the bottom quarter of ESCS.

Source: OECD (2012a) PISA database.

Making education systems more inclusive

Certain system level policies, such as the expansion of pre-primary education, can help mitigate socio-economic inequalities whereas others, such as grade repetition and early tracking, may amplify them (Causa and Chapius, 2010).

High quality early childhood education and care

Early Childhood Education and Care (ECEC) can help prepare children for entrance into formal schooling and provide less advantaged children support and skills that may be lacking at home. There is now a wealth of evidence, including longitudinal studies, that investing in ECEC yields high returns in boosting cognitive and non-cognitive skills, as well as later success in the labour market, especially for disadvantaged children (Heckman, 1999; Lazzari and Vandenbroeck, 2013). ECEC not only boosts academic performance but also aids the development of important socio-emotional skills such as creative and analytical thinking through student and teacher interactions (OECD, 2015c).

> Students who attended at least one year of pre-primary education perform 31 points better on the PISA test on average at the age of 15 than those who did not.

Several countries and regions have created policies to encourage the participation of low-income families in ECEC. Children from socio-economically disadvantaged families in Belgium and Slovenia, for example, are given priority access to ECEC (OECD, 2012b). Other systems have implemented programmes that target low-income families directly. In Australia, the Home Interaction Program for Parents and Youngsters has been implemented in over 100 disadvantaged communities around the country. It aims to support low-income parents and carers in their role of being their children's first teacher (OECD, 2012b).

Grade repetition

On average, 13% of 15-year-olds in the OECD have repeated at least one grade in primary or secondary school. However, the prevalence of grade repetition varies widely between countries. For example, Japan, South Korea and Norway do not have grade repetition system and all students automatically progress to the next grade. In France, Luxembourg, Portugal or Spain, the rate of grade repetition is as high as 35%.

Students from low-income backgrounds are on average much more likely to repeat grades even after accounting for differences in academic

Grade Repetition - Finland

Finland's education system is guided by the belief that all students are capable of achieving common academic goals. It has combined automatic promotion policy with early intervention to prevent students from failing. As a result, grade repetition rates are exceptionally low (2%).

Instead of failing students, schools offer a range of methods like oral discussions for learning and assessment. Pedagogical methods are chosen according to students' abilities and interests.

The Finnish education system also allows students to choose their own courses which can be completed at a different pace depending on the student's abilities (Välijärvi and Sahlberg, 2008).

performance (OECD, 2014b). This is likely due to less access to early remedial academic support and more frequent misbehaviour. High rates of grade repetition are correlated with poorer student performance (OECD, 2014c), and increase the risk of dropping out by 20% to 50% (Jimerson, Pletcher and Graydon, 2006). In addition to this human cost, grade repetition has a financial cost for the system, in that children repeating years of schooling are effectively tying up more resources over a longer time period than those that do not.

Low performers need to be identified early on, for example through entry screening and continuous formative assessment. Once recognised, alternatives to grade repetition include remedial classes after school or during the summer. For students with an unfavourable out-of–school learning environment, spending more time in school can be beneficial (OECD, 2010). Course specific repetition - used in Canada, New Zealand and the USA - can also be a good tool to maintain student motivation as students are not separated from their peers and are less likely to face stigma issues and bullying (OECD, 2012c).

On the wrong track?

Many OECD countries separate their students into different educational groups according to students' abilities. The median age for first formal tracking in the OECD is 14 (OECD, 2013), but there is a lot of variation across countries. In Finland and Spain, students are not tracked until the end of lower secondary school. In contrast, tracking in Austria and Germany begins when students are just 10 years old (OECD, 2012c).

The track students are placed into strongly influences their educational and professional prospects (Shavit and Mueller, 2006).

Students from disadvantaged backgrounds are disproportionately placed in the least academically oriented track or groups (Gamoran, 2010). They are thus more likely to be locked into inferior educational environments and receive qualifications that do not allow them to move into tertiary education.

How can tracking systems better support disadvantaged students? Higher curricular standards with emphasis on fundamental cognitive skills can help provide disadvantaged students with the generalisable skills they need to succeed in the workplace. The quality of lower level tracks can also be improved (Hattie, 2009). For example, several German states have combined the two lower level tracks (Realschule and Hauptschule) into one, in order to increase the available resources and quality of education offered to students.

More flexibility between tracks can also help. The Nordic countries, for example, use temporary groupings, with the possibility of changing tracks. This allows students who are initially placed into lower level tracks or groups to move into a more challenging learning environment conditional on academic improvement.

Finding the best teachers

Seniority and teacher preferences tend to direct the more qualified and more experienced teachers to the best schools, which often happen to be schools in higher income areas (Hanushek et al., 2001; Bénabou et al., 2003; Karsten et al., 2006). As senior teachers move to schools with better resources, novice teachers are more likely to be placed in lower achieving and more challenging schools (see Figure 4).

This is a real concern. In addition to the challenge of finding themselves in the classroom for the first time, new teachers can find themselves faced with the highest needs students and in the lowest achieving schools. This can lead directly to frustration and burn-out, particularly if they lack strong mentors and school leaders.

Figure 4: Distribution of experienced teachers in more and less challenging schools
Schools with more than 30% of students from socioeconomically disadvantaged homes

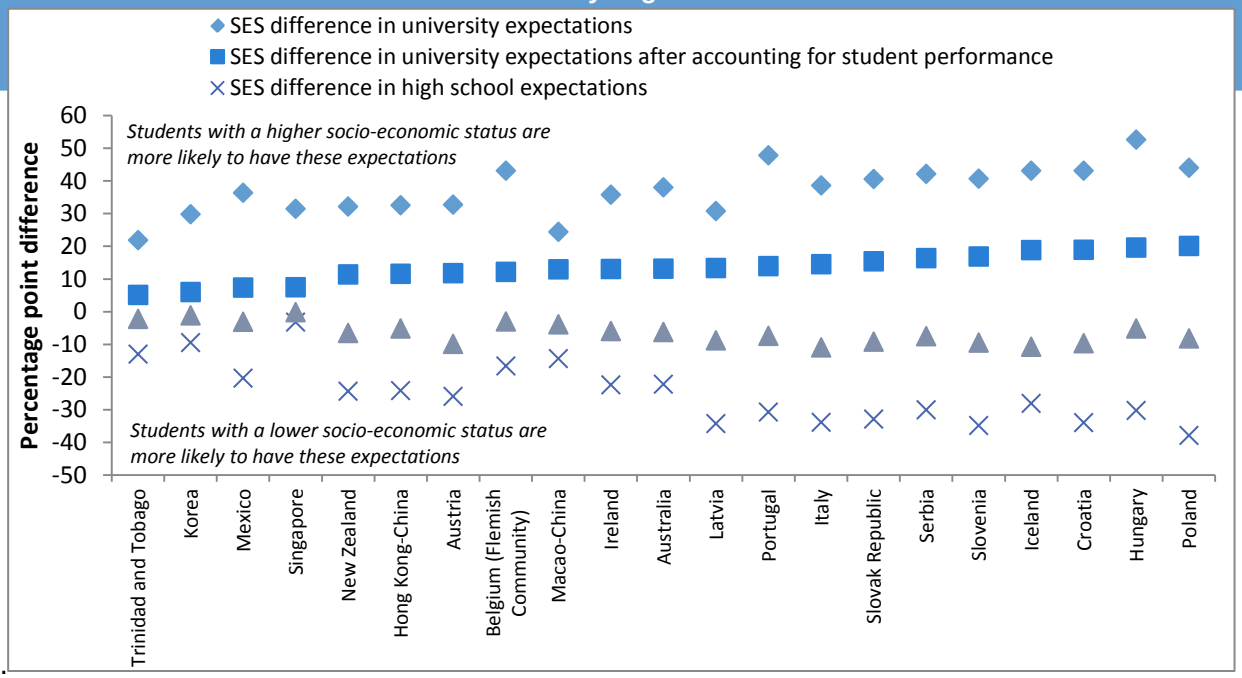
	Percentage of teachers working in more challenging schools	Difference in the proportion of teachers with more than 5 years teaching experience who work in more challenging schools and those who do not
	%	-10 0 10
Brazil	40	
Korea	8	
Croatia	7	
Netherlands	12	
Chile	55	
Latvia	18	
Mexico	44	
Portugal	48	
Italy	10	
Serbia	7	
France	45	
Bulgaria	24	
Abu Dhabi (United Arab Emirates)	11	
Slovak Republic	10	
Poland	18	
Malaysia	58	
Spain	14	
TALIS average	20	
Australia	26	
Singapore	6	
Estonia	11	
Japan	6	
England (United Kingdom)	24	
Israel	46	
Romania	28	
Alberta (Canada)	20	
Sweden	10	
Flanders (Belgium)	16	

Source: OECD (2014d), *TALIS 2013 Results*, OECD Publishing, Paris. Graph 2.4.

Inequality and higher education

Participation in higher education greatly enhances the employment prospects of individuals and is a factor in determining the income they will earn later in life (OECD, 2007). However, on average in OECD countries a 20-34 year-old whose parents have tertiary education is about 4.5 times more likely to go to university than someone whose parents did not acquire higher education (OECD, 2015d). Students' socio-economic background and parental education thus have an important effect on participation in tertiary education (see Figure 5).

Figure 5: Socio-economic differences in expectations of completing a university and upper secondary degree



Source: OECD (2012d), Grade Expectations: How Marks and Education Policies Shape Students' Ambitions

How can we ensure that more students from disadvantaged backgrounds enter higher education and break this vicious cycle? One way to improve equality is by providing financial incentives to universities, such as funds or grants for enrolling students from under-represented groups (OECD, 2008). In Australia, for example, universities receive funding premiums for students who are socio-economically disadvantaged, have disabilities or live in rural or remote areas.

In addition, disadvantaged students themselves could be provided with financial aid to allow them to enrol in higher education. The financial aid process should be made clear and transparent, as an opaque or overly-complex financial aid process could discourage potential students from applying in the first place.

Affirmative action or positive discrimination can also facilitate access for minorities, and can have far-reaching positive externalities: medical students who have benefitted from

affirmative action in the United States are more likely to work in low-income areas or with disadvantaged patients, for example (OECD, 2010).

Opening up the entry requirements for tertiary education can also be an important step. For example in Sweden, students can enter tertiary education without a secondary school leaving certificate by achieving a certain score in the Swedish Scholastic Assessment Test. Similarly, in Norway, people who are older than 25 can be admitted on the basis of non-formal or informal training (OECD, 2008).

In addition to improving access to tertiary education, ongoing support is also needed once they are in the programme. Disadvantaged students are more likely to drop out (OECD, 2015e) and so could benefit from assistance. This might involve creating financial support systems, offering additional classes and tutoring sessions, improving opportunities and increasing flexibility for students who simultaneously work and study.

Affirmative Action in Brazilian Universities

In order to diminish social and racial inequality in Brazil, a law was passed in 2012 reserving 50% of places in federal universities and higher education institutions for students who completed upper secondary in public schools.

Half these places are reserved for students whose per capita family income is less than 1.5 times the minimum wage. A percentage of these places has also been reserved for black, mixed and indigenous students (aligned to the proportion these groups represent in each state's population). An assessment of progress in 2015 revealed that all tertiary institutions were implementing the law and forecast that the universities would be able to reach their goal of 50% of the places by 2016.

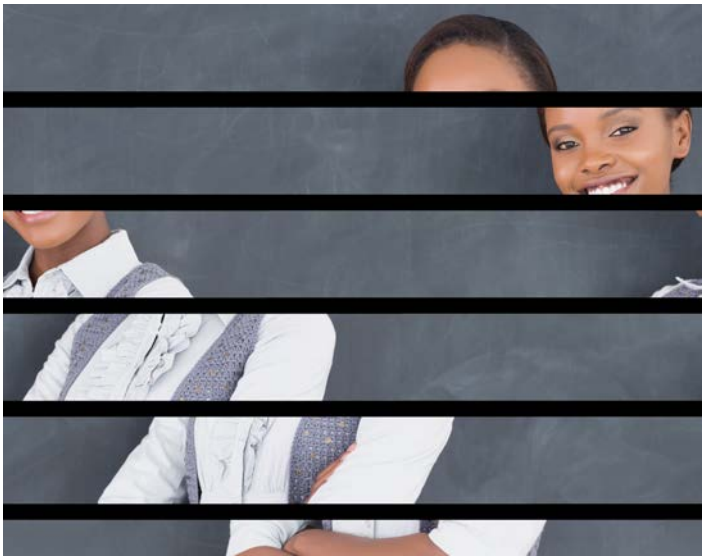
However, access to higher education alone will not be enough. The government is also working to improve the quality of primary and secondary education.

For more information:
http://portal.mec.gov.br/cotas/legislacao.html

Geographical Inequalities

Within the OECD there are also large regional inequalities in educational levels and achievement. These differences are often most extreme when comparing capital cities to rural areas.

In addition to the urban/rural divide, large educational disparities can also be observed within different districts of the same city. High and low quality schools are often clustered together in wealthy and less wealthy neighbourhoods. In the last 25 years, more than two-thirds of OECD countries have increased the extent of parental "school choice" as a potential answer to this problem. However, choice and associated market mechanisms that do not take into account equity considerations can result in more segregation of students by ability, income or ethnic background (Musset, 2012).

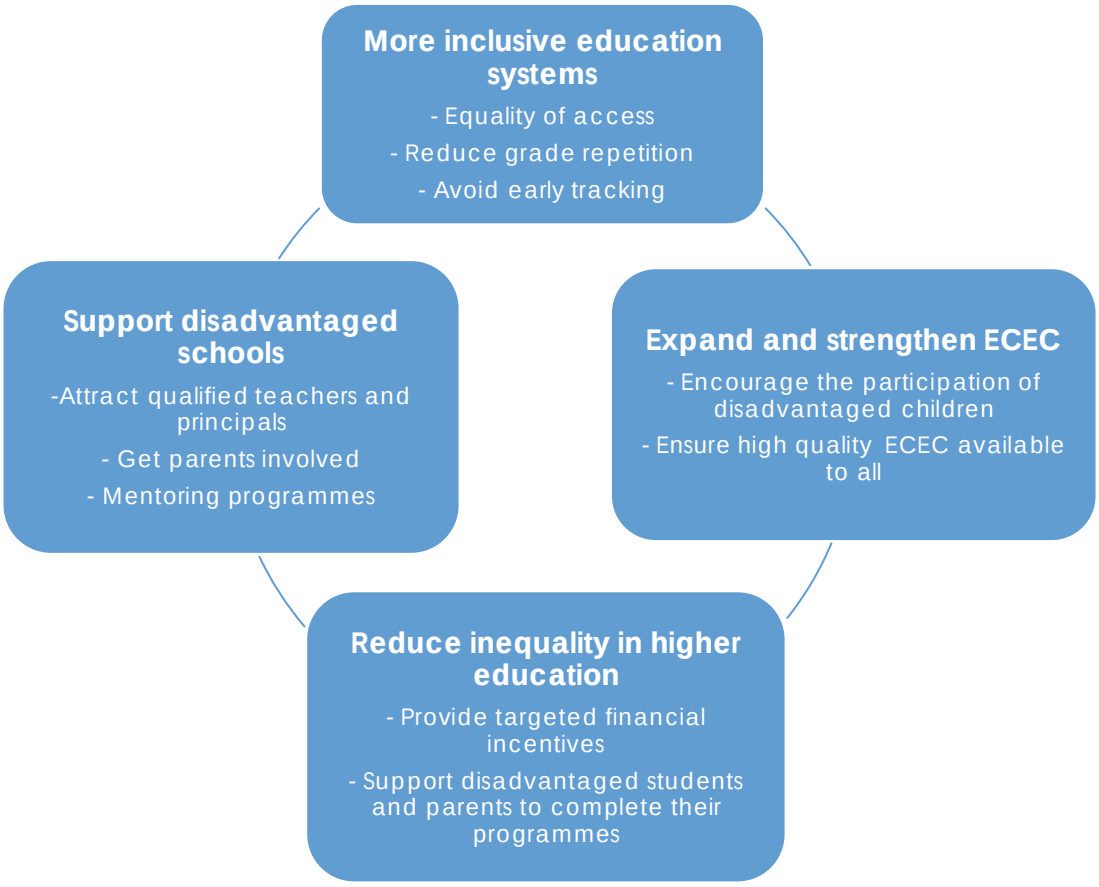


Controlled school choice schemes can be designed and managed in a way that combines the provision of diverse school options for parents and limits the negative impact on equity. In Nijmegen, Netherlands, for example, a central subscription system assigns students according to preferences, capacity and diversity. In addition, ensuring that disadvantaged students are attractive to high quality schools for example with financial incentives, or improving disadvantaged families' access to information on school choices, can mitigate the unequal distribution of students in schools (OECD, 2012c).

In sum

Good quality education is a critical tool to ensure growth and inclusiveness in our societies. It allows for better employment opportunities and is also linked to improved well-being and social and political participation. Our most successful education systems have focused on strengthening equity in education as well as improving academic excellence. This is a crucial step towards evening the playing field and reducing inequality across the OECD.

Education's powerful role does not mean that it can work alone. Reducing inequality also requires policies for housing, criminal justice, taxation and health care to work hand in hand with education to make a lasting difference.



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For more information

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See OECD (2016), Trends Shaping Education 2016, OECD Publishing

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