

3 Resourcing education systems to foster equity and inclusion

This chapter examines the resourcing of education systems to foster equity and inclusion in education systems. Specifically, it discusses the role of main allocation mechanisms and targeted distribution of resources in supporting equity and inclusion goals, and how countries can best leverage them to this end. Then, it discusses in greater depth the different forms of targeted resources that can be employed by education systems to support a diverse student population, reflecting on the different goals and uses of financial resources, in-kind service provisions, physical resources and human resources. The chapter ends by highlighting policy pointers for embedding equity and inclusion goals in the resourcing of education systems.

Introduction

A variety of contextual elements highlight the importance of resourcing in education systems, and of ensuring that such resources are used effectively and serve the groups that need resources the most. While the COVID-19 pandemic (discussed more in Chapter 1) spurred short-term education budget increases (e.g., due to the need to acquire materials, digital devices, etc.) for a number of education systems, at the peak of the crisis for various countries, there is concern that education spending may decline in the coming years (World Bank Group, 2020^[1]), as happened after the financial crisis of 2007-2008. Following this crisis, the total average expenditure on educational institutions as a percentage of GDP fell for most countries with available data between 2010 and 2016, mainly as a result of a lower increase in spending compared to GDP (OECD, 2019^[2]). According to the Council of Europe (2017^[3]), this disproportionately affected those most in need of support, due to, for instance, reductions in specialist staff for students with special education needs (SEN) and in programmes to foster the cultural and linguistic integration of immigrant students, cuts in pre-school programmes and scholarships, and the termination of projects to reduce school dropout rates. There is concern that education spending may decline in the coming years, which may impede the provision of additional support to students needed to address both learning losses and the psychological effects of the pandemic (World Bank Group, 2020^[1]). Funding will also be necessary to ensure that the pandemic's impact does not fall disproportionately on the most marginalised students (ibid.).

Education systems have also faced and/or are facing the costs associated with the needs of increasing numbers of refugee students. Refugee students' needs are diverse and wide-ranging, spanning from language learning to emotional support, and may necessitate the provision of targeted resources for specialist staff (such as teachers, cultural mediators) and additional materials and services (e.g., free meals, textbooks, etc.).

In addition, the rising inflation poses a significant challenge for many households around the globe. Higher prices can erode the value of real wages and savings, leaving households poorer. These effects are not felt equally, as low- and middle-income households tend to be more vulnerable to high inflation than wealthier households (Ha, Kose and Ohnsorge, 2019^[4]). This has implications for education resourcing, both in terms of the potential support that socio-economically disadvantaged children may require and to address the risk of widening gaps between students.

These factors, along with the others discussed in Chapter 1, can be drivers of a significant need for education systems to use resources efficiently to maximise the impact of available funds. This implies ensuring an equitable and inclusive financing system so that funds can be used to address gaps and effectively support diverse student needs.

To tackle these topics, the chapter first introduces the role of main allocation mechanisms and targeted distribution of resources in supporting equity and inclusion goals, and the ways in which education systems can best leverage them. Then, it discusses more in depth the different forms of targeted resources that can be employed by education systems to support a diverse student population, reflecting on the different goals and uses of financial resources, in-kind service provisions, physical resources and human resources. The chapter ends by highlighting policy pointers for embedding equity and inclusion goals in the resourcing of education systems.

Why funding equitable and inclusive education is relevant

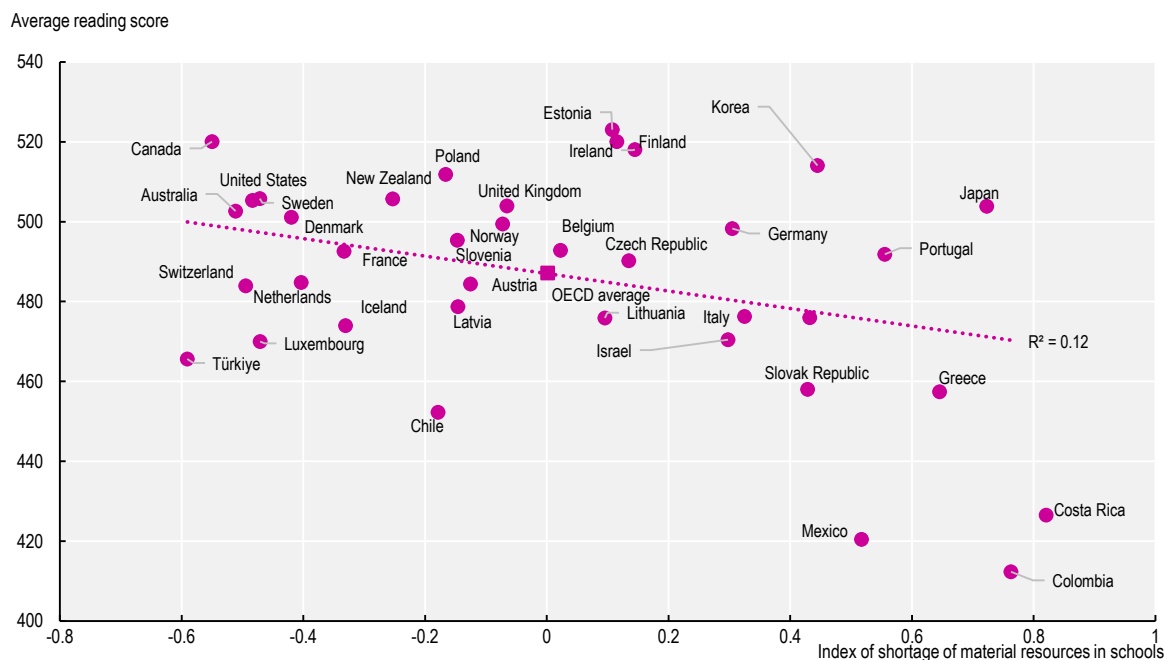
Since the middle of the 19th century worldwide, there has been a growing belief that schools exist to “level the playing field” of learning and opportunities for all students (Merry, 2020^[5]). Based on this belief, the provision of more public school funding should lead to greater equity in education, which consequently should positively impact socio-economic inequalities (European Commission/EACEA/Eurydice, 2020^[6]). However, while public spending on education can lower inequality, the current research literature suggests

that the relationship between funding levels and equity is not linear. In reviewing the literature, Eurydice (2020^[6]) reports that, above a certain level of expenditure, an increase in funding does not necessarily improve student outcomes or equality of opportunities. There are several possible reasons for this. Increasing funding may not be enough if it does not offset structural features of education systems that impact equity and the inclusion of all students. Additional funding, where it is available, may also reach the schools or students that would benefit the most from it. Moreover, additional funding in education does not intervene on the drivers that lead to inequities in education, such as concentrations of socio-economic disadvantage and residential segregation. It is therefore relevant to consider how funding may be allocated equitably, and how to ensure it reaches those in need, in efforts to advance equity and inclusion in education.

An equitable distribution of material resources can influence student outcomes

The OECD PISA 2018 results indicate that countries and economies with fewer shortages of material resources generally show better academic outcomes (OECD, 2020^[7]). As shown in Figure 3.1, differences in the index of shortage of material resources accounted for about 12% of the differences in mean reading performance across OECD countries in PISA 2018. Across all participating countries and economies, the index of shortage of material resources was negatively correlated to mean performance in reading, mathematics and science even after accounting for per capita GDP, which underlines that shortages in resources have a negative relationship with student outcomes (OECD, 2020^[7]).

Figure 3.1. Shortage of material resources in schools and reading performance (PISA 2018)



Note: Positive values in this index indicate more shortages of quality material resources than on average across OECD countries; negative values indicate greater availability and quality of material resources than on average across OECD countries.

Source: OECD (2020^[7]), PISA 2018 Results (Volume V): Effective Policies, Successful Schools, Figure V.5.10, <https://dx.doi.org/10.1787/ca768d40-en>.

Results from PISA 2018 further show that school systems where material resources were allocated equitably amongst socio-economically advantaged and disadvantaged schools – or, in some cases, where

disadvantaged schools have more material resources than advantaged schools – generally perform better in the assessment (OECD, 2020^[7]). Indeed, across all participating countries and economies, the index of equity in the allocation of material resources is positively correlated with mean performance in reading, mathematics and science, even after accounting for per capita GDP (ibid.).

However, socio-economically disadvantaged schools are more likely than advantaged schools to experience shortages of material resources, on average across OECD countries (OECD, 2020^[7]). Disparities in shortages of material resources are generally also observed between rural and urban schools (in 25 education systems participating in PISA, rural schools suffered from more shortages) and between public and private schools (in 39 education systems, public schools suffered from more shortages).

PISA also collects data on shortages of teaching personnel, as reported by principals (OECD, 2020^[7]). Similarly to the previous discussion on material shortages, the results reveal that on average across OECD countries, a per one-unit increase in the index of shortage of education staff leads to a negative change in reading performance. Shortages of education staff generally affect more disadvantaged schools: in 42 countries and economies participating in PISA, shortages of education staff were more prevalent in socio-economically disadvantaged schools than advantaged schools, and in public schools than in private schools. Moreover, on average across OECD countries, shortages of education staff were more prevalent in rural schools than in urban schools. Analysing the components of the index of shortage of education staff separately shows that in most countries, a lack of education staff was more prevalent, according to school principals, than an inadequacy or poor qualifications of staff (OECD, 2020^[7]).

The importance of financing equitable and inclusive education systems

Investing in fostering equity and inclusion in education is not only beneficial for students, but for society more broadly because of its returns in social, economic and political aspects (European Agency for Special Needs and Inclusive Education, 2016^[8]). Indeed, groups that are disadvantaged in education generally fare less well later in life, which can translate into socio-economic losses from a societal perspective (Mezzanotte, 2022^[9]). Better implementation of inclusive education can have positive outcomes (academic and socio-emotional) for all learners, not just learners with SEN or other diverse student groups exclusively (ibid.).

While inclusion is often misconceived of as being prohibitively expensive, impractical and/or unsustainable, the United Nations Department of Economic and Social Affairs, the Office of the United Nations High Commissioner for Human Rights and the Inter-Parliamentary Union (2007^[10]) argue that inclusive education systems tend to be less expensive than segregated models. The administration and management costs will most likely be lower in a single, integrated system that includes all learners than in systems with segregated settings for specific learners. Transport, too, is generally less expensive, since segregated settings are usually attended by individuals from a larger geographical area (UN-DESA, OHCHR, IPU, 2007^[10]). Similarly, UNESCO (2020^[11]) has highlighted that, while shifting to an inclusive education system should not be viewed as a cost-cutting exercise *per se*, investments towards an inclusive education system are an effective use of funds, as they reduce the redundancies and high costs associated with running parallel systems, which may happen in contexts that offer segregated or separate settings for diverse students. Indeed, there exists a general understanding, notably in literature concerning students with special education needs (SEN), that inclusive education systems cost less to implement and maintain than special education models (UNICEF, 2015^[12]). While it is difficult to undertake a comprehensive cost-benefit analysis of inclusive education reforms, there is support for the view that advancing equity and inclusive education may be desirable from a financial sustainability perspective.

The design of the financing system also has an impact *per se* on the promotion of equitable and inclusive education (European Agency for Special Needs and Inclusive Education, 2016^[8]). The way financing is determined in education systems' laws and regulations has consequences for decision making in relation to labelling and identification of learners, diagnostic and assessment procedures, the support available for

individual learners as well as the schools they attend, and the placement of learners in different types of settings (e.g., special classes) (Ebersold et al., 2019_[13]). Thus, financing systems are considered fundamental in the debate on how policies for inclusive education can ensure the right to education for all learners.

Main allocation mechanisms: how regular funding can account for equity and inclusion goals

Education systems rely on a variety of types of resources, which are part of the overall funding provided to education (OECD, 2013_[14]). These can be grouped into three categories (OECD, 2017_[15]):

- **Financial transfers:** e.g., public funding of individual schools, transfers to different levels of school administration;
- **Human resources:** e.g., teachers, school leaders and education administrators;
- **Physical resources:** e.g., buildings and equipment.

These resource types are closely interlinked, as financial transfers may be used in funding human and physical resources. There is therefore often no clear-cut division or classification of certain resources.

The next section of this chapter introduces the topic of main allocation mechanisms (also defined as regular funding) and their uses for equity and inclusion, focusing mainly on financial transfers. Then, it focuses specifically on targeted allocation of resources to support diverse students, and discusses examples related to targeted financial transfers, physical resources and distribution of human resources. This chapter also considers the ways in which the different resourcing mechanisms can be used at different education levels: student level (when resources are given directly to students as with financial aid¹ at secondary level); teacher level (the management of the teaching workforce); school leader level (the management of school leadership); school level (e.g., programmes targeted at schools); and system and sub-system level (e.g., education administration). These all contribute to an equitable and inclusive distribution of resources within education systems and are systematically integrated and discussed throughout the chapter.

Mix and match: the role of different funding mixes to foster equity

While a minimum level of investment in education is important, what matters most for the equity and quality of education provision is how the funding is allocated to schools that are most in need of additional resources (OECD, 2017_[15]). Socio-economically disadvantaged schools, and schools that host large populations of students with specific needs (e.g., students with an immigrant background), may need more resources than others in order to be able to effectively support their student population. For this reason, for instance, most European countries' central authorities allocate additional resources to schools that have additional funding needs (European Commission/EACEA/Eurydice, 2016_[16]). However, it is not only the central level that can be in charge of equity funding: other educational authorities, which can be regional or local, can equally be responsible for allocating additional resources to support disadvantaged students (OECD, 2017_[15]). Different levels of governance thus contribute to the state of equity of educational resourcing, and need to find means to respond to the specific needs of their target populations.

Having recognised varying needs across schools, governments can generally undertake two broad approaches for designing funding mechanisms: i) the inclusion of additional funding in the main allocation mechanisms for particular education providers or schools; and ii) the provision of targeted funding in one or a series of different grants external to the main allocation mechanism (OECD, 2017_[15]). Typically, a mix of these funding mechanisms is found in many systems. Finland, for instance, adopts both these mechanisms: the central authority accounts for certain population characteristics when computing main

allocations to municipalities, while also providing additional grants to said local authorities (OECD, 2022_[17]).

To take into consideration equity concerns, **main allocation mechanisms (or regular funding)** can be based on funding formulas that account for the needs of specific students, schools or areas when establishing the amount of funding to be received by local educational authorities or schools. This can be done by countries regardless of the allocation mechanisms of their choosing, meaning that it can be implemented via lump sum grants, earmarked funds, block grants² or other mechanisms. In Denmark and Norway, for instance, the initial transfer of a lump sum grant from the central government takes into consideration certain demographic characteristics. In Denmark, this refers to characteristics of the municipalities, including their socio-economic structure (Nusche et al., 2016_[18]; Ministry of the Interior and Housing, n.d._[19]). In Norway, the general grant accounts for the number of students with an immigrant background in each municipality to equalise expenditures across them (Eurydice, 2021_[20]). In Chile, the main block grant for general education is allocated with a funding formula that incorporates different weightings for students from socio-economically disadvantaged backgrounds, for schools in rural or highly isolated areas and for special educational provision (OECD, 2017_[15]).

Targeted funding provides resources to be used by local authorities (e.g., municipalities) or schools for specific purposes, with the goal of ensuring responsiveness to emerging priorities and the identified needs of particular groups. Indeed, the use of targeted programmes can allow for better steering and monitoring of the use of public resources for equity purposes at the school level (OECD, 2017_[15]). Targeted funding can thus be a useful tool for central authorities to address concerns over the equity in the distribution of funding. A large number of OECD countries leverage targeted funding and in-depth examples are discussed in the section on Targeted distribution of resources: targeted programmes and resources to support students.

One-size does not fit all: trade-offs between the use of main allocation mechanisms and targeted funding for fostering equity

Governments need to consider some challenges and trade-offs when designing an allocation mechanism for their education systems, so as to balance the advantages and disadvantages of main allocation mechanisms and targeted funds.

Targeted funding can foster responsiveness to priorities within the education system by resourcing specific programmes, students or activities. Indeed, funding can be earmarked for a given purpose and thus be used to promote specific policies or priorities, which can help central authorities foster greater equity and inclusion in their systems. For a specific goal, education systems can adopt a variety of targeted funding options, from the provision of extra funds to buy devices for disadvantaged students or schools; to the coverage of early childhood education and care (ECEC) fees for families from a disadvantaged socio-economic background; to the provision of additional personnel to schools or classes that have large numbers of students with SEN or with an immigrant background. More examples are discussed in the section on Targeted distribution of resources: targeted programmes and resources to support students. Fostering equity via main allocation mechanisms can help stabilise funding to education providers over time – and can in this way support long-term budget sustainability for schools, avoid overlap in repeated grants and applications, and reduce bureaucracy and inefficiencies. There are, therefore, arguments to avoid an ever-increasing number of targeted programmes and include adjustments for equity within the main funding allocation (OECD, 2021_[21]). Education systems may need to take into account such considerations when designing their resourcing systems since no universally valid formula exists equity is accounted for in resource allocation.

Multiple targeted programmes can generate overlap, increased bureaucracy and limited long-term sustainability for educational authorities and schools

Relevant educational authorities (e.g., municipalities or other local authorities) or schools generally need to apply for targeted funding distributed via grants. This implies an additional administrative and reporting burden for local entities, which leads to increased costs, in particular when the entity does not have the capacity or know-how to comply with the application or reporting requirements. In Finland, for instance, problems have been identified with grant-based targeted funding in both urban and remote geographical areas (Bernelius and Huilla, 2021^[22]). The problems specifically concerned local authorities' applications for additional resources: some local actors had such limited capacity that they were not able to apply for additional funding (ibid.).

This issue can have large implications for a system's horizontal equity (see Chapter 1 for definition), as more well-off local authorities are more likely to apply for additional funding than less well-off authorities that might be, however, in a greater need of additional resources (OECD, 2022^[17]). Overall, applying for additional funding and managing projects can be costly for municipalities: even for municipalities with the internal capacity to apply for grants, the process is time-consuming and can take away the attention from other important tasks.

Moreover, not all local authorities have sufficient capacity to implement sound budget planning and to manage their resources well (OECD, 2017^[15]). Administering a funding system requires considerable technical skills and administrative capacity and many school systems find it challenging to ensure these are available at the level of each educational provider. Capacity constraints at the local level can exacerbate inequities between individual authorities, in particular in countries that have many municipalities with a small number of inhabitants. In some countries in particular, education providers are very small and responsible for only one or a few schools, which does not allow them to achieve the same extent of economies of scale, management capacity and support that can be offered by larger providers (ibid.). Small providers typically have a very limited number of staff managing school services, and these do not necessarily have expertise regarding the design of effective resource management strategies. Some OECD countries have thousands of municipalities involved in managing and funding their own schools, many of which have weak administrative capacity, which makes it difficult for them to maintain efficient school services (ibid.). Central authorities may thus not be able to oversee whether funds are allocated efficiently, if they have to rely heavily on local authorities' capacity.

Furthermore, from the central authority perspective, having a multitude of programmes can reduce the transparency of funding to schools and make the funding allocation complex and potentially inefficient due to the risk of duplication of efforts, a lack of co-ordination and greater administrative costs (OECD, 2017^[15]). It also leads to transactions costs from the central authority side, which is required to process all the requests, establish successful recipients and monitor the coherence of the use of the funding with its purposes. Overall, having a large number of targeted programmes that serve a certain goal can lead to an overlap of the various grants, which can complicate the monitoring of the outcomes of such programmes and require increased efforts for the management of the programmes from both the central and local levels.

Moreover, the application process does not always align with the school-year cycle (OECD, 2022^[17]). This implies that local authorities, schools and ECEC institutions may obtain the funds after the academic year already started, which affects their planning efforts. Furthermore, having to rely on additional targeted funding can also impact schools' financial sustainability, as it impairs their ability to commit to long-term investments.

Lastly, applications to grants do not guarantee that the request will be accepted by the central authorities, which implies that local education providers, schools and ECEC settings cannot count on these resources while planning their budgets and activities. This can be especially problematic for disadvantaged schools or municipalities that are dependent on these funds.

Targeting specific student groups while avoiding segregation and stigma

Systems vary in whether they target funding to specific geographical areas or to specific populations within schools (OECD, 2017^[15]). While allocating funding to the specific population of a school can help to ensure that the funding reaches the target group, such approaches do not account for the additional challenges created by a high concentration of disadvantage in a particular region (ibid.). Area-based funding aims to address the additional negative effects that socio-economic disadvantage has when it is concentrated in a particular region (ibid.). However, this approach may leave out a proportion of the disadvantaged population in a system while including many individuals who are not disadvantaged. There is also evidence that the “target area” label can be stigmatising and encourage flight of middle-class families (ibid.). The stigmatisation of areas and schools was, for instance, one of the reasons the government of New Zealand decided to substitute its decile classification system,³ under which funding was allocated to schools based on the proportion of their students living in disadvantaged socio-economic or poorer communities. An inquiry prepared for the Ministry of Education found that a school’s decile had become a synonym for quality, with low decile schools being perceived by many as schools for those with no other choice (Vester, 2018^[23]). Furthermore, despite the absence of ethnicity in the decile calculation, the “low decile” label was seen as marking ethnicity, thereby colouring community perceptions about schools (ibid.). The government decided to phase out the use of deciles and introduce the Equity Index,⁴ both to counter the stigma attached to low decile schools and to update the computations of socio-economic disadvantage in schools (through expanding the number of variables to be considered) (New Zealand Ministry of Education, 2022^[24]).

On the other hand, central authorities may design targeted funding based on specific student characteristics, such as, for instance, students’ special education needs or their Indigenous background. This method can be chosen by education systems to ensure sufficient funding to meet the needs of marginalised or disadvantaged groups, and, if the funding is earmarked, that the funds are used by education providers specifically to support groups deemed as more in need. However, if the authority does not carefully design the characteristics and accompanying criteria, this approach can incur unintended consequences or inadvertently cause perverse incentives⁵. For instance, linking funding to the number of students with SEN could lead education providers to label or diagnose students more often (Ofsted, 2010^[25]). There is evidence that this is the case when financing is directly linked to the number of students with a certain disorder, as in the case of Attention-Deficit/Hyperactivity Disorder (ADHD) (Morrill, 2018^[26]) in a number of states of the United States (Bowers and Parrish, 2000^[27]). Overall, international experience reveals the need to carefully consider risks that can emerge from different financial strategies (e.g., the stigmatising of certain groups) and how they can be avoided.

Furthermore, linking additional funding to students with specific characteristics can result in greater segregation. For instance, an education provider may receive additional funding due to the concentration of socio-economically disadvantaged students in some of its schools. If not provided with additional guidelines or requirements, the provider would be given little incentive to desegregate or support a more equal distribution of students across its schools. This can be counterbalanced by targets and goals that make municipalities accountable to use the funds to decrease the segregation of their students.

This risk also exists in relation to main allocation mechanisms. If regular funding accounts for student characteristics, it can better respond to their needs by providing additional funding. However, as with targeted grants, this may inadvertently lead education providers to over-diagnose students, or to choose not to focus on desegregating schools. To address or mitigate this risk, central authorities may need to adopt compensatory mechanisms, and be prepared to monitor and, if needed, address, the emergence of these unwanted effects. This could involve, for instance, redistributing student groups across different schools, or other mechanisms to counter the risk of increased segregation of the student groups targeted by the grants (OECD, 2022^[17]).

Monitoring the ways in which schools and municipalities respond to the structure of the financing system

While application-based grants can enhance equity in the short-term by providing additional resources to schools that have larger numbers of disadvantaged or diverse students or to trial programmes or policies, in the medium- and long-term they can create perverse incentives for municipalities to adapt their spending based on these inputs (OECD, 2022^[17]).

In a system in which main allocations towards local authorities fund most of costs of the education system, local entities responsible for education provision are likely to act in their best interest and aim to optimise the resources they are allocated. When designing resourcing systems, central authorities should anticipate municipalities' potential responses, in particular those that could be misaligned with or undermine the programme's goals. For example, if a grant were to be designed to support local authorities serving schools with a low level of resources, local authorities may further reduce the funding to certain schools to increase their chances of securing such funds. Likewise, if indicators on the immigrant population of an area were to be used as selection criteria for grant allocation, it is possible that municipalities would have less of an incentive to tackle the issue of segregation in the relative schools (as mentioned in the previous section). Box 3.1 provides an example from Norway and discusses the limitations in the effectiveness of targeted grants for specific purposes.

Box 3.1. Norway's experience with the limitations of additional grants

There is a large body of empirical literature that analyses the extent to which local authorities allocate targeted grants according to the intentions or recommendations of the funding authority. While preliminary findings in the area reported that additional grants were to a large extent spent as intended, recent empirical studies identify mixed effects on local authorities' spending (Brunner, Hyman and Ju, 2020^[28]; Cascio, Gordon and Reber, 2013^[29]; Hyman, 2017^[30]). These studies suggest that this effect may be sensitive to the design and target of the grant, as well as to economic circumstances and institutional settings.

Reiling and colleagues (2021^[31]) provided an analysis on the effectiveness of central government grants on local educational policy, based on a Norwegian programme. In 2015, Norway's central government provided a grant to the 100 municipalities with higher-than-average student-teacher ratios for grades 1–4 (ISCED 1). The additional resources aimed to strengthen early intervention and improve student learning, through the hiring of additional teaching staff. However, their research showed that, for the most part, Norwegian municipalities did not increase teacher density in primary schools, despite receiving extra grants for this specific purpose. Though they could not rule out that there was some take-up of the grant in terms of teacher hiring, their results exclude a full take-up of the policy.

Their conclusions suggest that stronger enforcement mechanisms may be necessary in order for targeted grants to be allocated as intended by the financing authority. However, this may be at the expense of local flexibility.

Source: Adapted from OECD (2022^[17]), *Finland's Right to Learn Programme: Achieving equity and quality in education*, <https://doi.org/10.1787/65eff23e-en>; Reiling et al. (2021^[31]), *The effect of central government grants on local educational policy*, *European Journal of Political Economy*, <https://doi.org/10.1016/j.ejpoleco.2021.102006>.

Another challenge for education systems is that education providers may allocate resources according to their own priorities, which may not match those of the central government. In relation to equity and inclusion, this could mean that education providers choose to use funding that was intended to support disadvantaged or marginalised students for other priorities. Indeed, in certain countries, even if central

authorities distribute funds by weighting the presence of disadvantaged students (or students belonging to another target group) across local education providers, there are no obligations for such providers to follow the same criteria in their own allocation of the funds. In Finland, for instance, the amount of funding each education provider is to receive through the main allocation mechanisms is determined by taking into account certain characteristics of the local population (such as citizens' disabilities, unemployment, foreign-language speaking population, concentration of immigrant population, bilingualism, insularity, remoteness, Sámi population, etc.) (OECD, 2022^[17]). However, local authorities are free to allocate and use these funds as they deem appropriate (*ibid.*). Similarly, in Sweden, each municipality decides how resources will be allocated between schools (OECD, 2017^[32]). The school then has the responsibility of allocating the resources in a way that best serves the needs of students, but, as there is no general model for resource allocation, municipalities may not always have the knowledge or capabilities to allocate funding effectively. National evidence shows that only a limited number of municipalities reallocate resources to schools with low-performing or socio-economically disadvantaged students (*ibid.*). This suggests a need for accountability measures or monitoring mechanisms that ensure that local authorities provide enough funding for target groups.

It is therefore important that funding design be accompanied by strong monitoring and evaluation processes. Particularly in a context where schools have large discretion over the use of equity funding, accountability at the school level on educational provision for different student needs and their impact on learning play a key role. Funding mechanisms need to manage the tension between giving education providers flexibility to use their judgment and accountability to maintain public confidence that equity funds will in fact be used for the benefit of target groups.

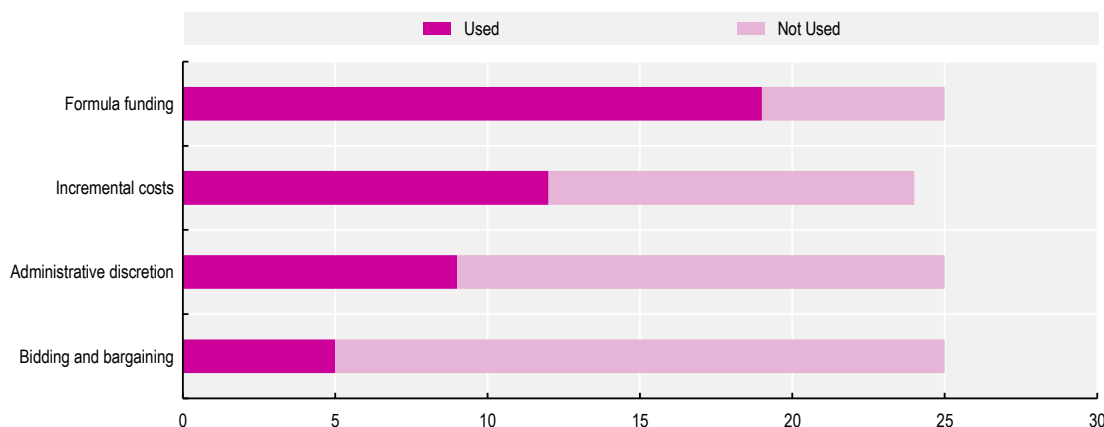
Funding formulas: a complex instrument

Funding formulas – i.e., mathematical formulas that contain some variables (e.g., student numbers) to which a cash amount is attached in order to determine school budgets – are not a recent tool in education policy (Fazekas, 2012^[33]). They have been around since the late 1960s and 1970s, and their use widened during the 1990s, with the adoption by countries such as the United Kingdom, the Netherlands and New Zealand along with a radical decentralisation of the schooling system (*ibid.*). Since then, formula funding has been applied in many different forms and in several OECD countries.

The OECD (2017^[15]) has found that well-designed funding formulas are an effective means to distribute funding in a transparent and efficient way, while also playing a critical role in aligning the distribution of resources with priorities such as fostering equity (by including weights to distribute additional funds to particular categories of students). Indeed, one of the most important functions of a funding formula is to promote equity by ensuring that similar funding levels are allocated to similar types of provision (horizontal equity) and that differential amounts can be added to the basic allocation according to the assessed degree of educational need (vertical equity) (Fazekas, 2012^[33]; OECD, 2017^[15]).

Recent data show that, among OECD countries, funding formulas are the most commonly used basis for allocating general public funding to public primary and lower secondary educational institutions (OECD, 2021^[34]), as shown in Figure 3.2.

Figure 3.2. Basis used to allocate general funding to public primary educational institutions, by category of funding (2019)



Note: General funding includes funds not allocated for particular kinds of expenditure or where it is not possible to disaggregate information by category of expenditure.

The bases used to allocate funding are ranked in descending order of the number of countries using them.

Source: Adapted from OECD (2021^[34]), Education at a Glance 2021: OECD Indicators, Figure D6.1., <https://doi.org/10.1787/b35a14e5-en>.

The OECD (2021^[34]) reports that in 31 OECD and partner countries and economies with available information, equity criteria used in funding the different categories of expenditure tend to relate to the characteristics of one of three groups:

- the population of the locality (state/region/province/municipality): e.g., the number or proportion of people who belong to disadvantaged communities, ethnic minorities or who have an immigrant background;
- the schools: e.g., with special subject offerings (i.e., minority language) or in remote or high-cost locations/regions, or serving disadvantaged communities; or
- the students: e.g., the number or proportion of students with an immigrant background, with SEN, or with a low socio-economic background.

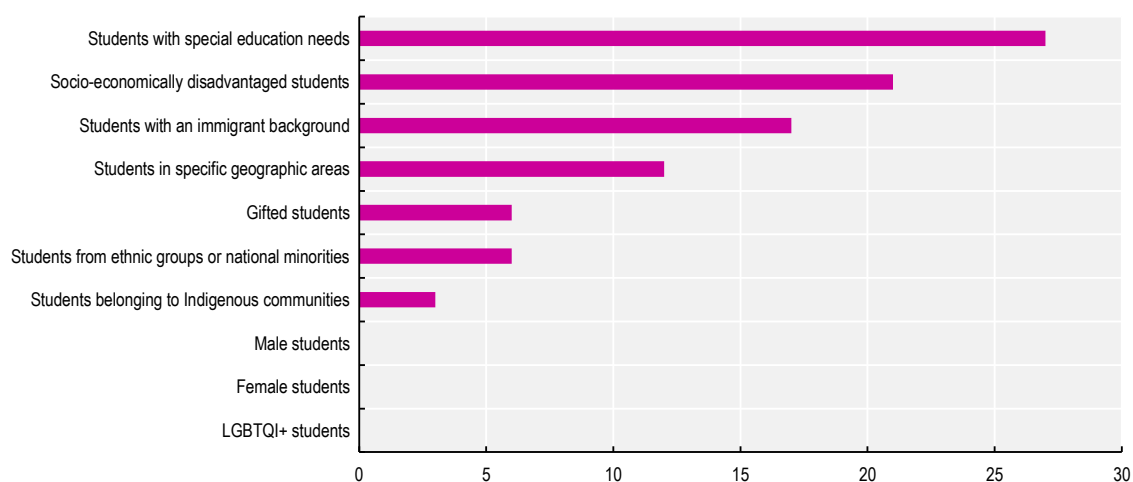
Of the 26 countries and economies with available data on the allocation of funding by central and state governments, 25 use at least one criterion related to student characteristics, 23 use at least one criterion based on school characteristics and 14 use at least one criterion based on population characteristics (OECD, 2021^[34]). Often, the criteria are used in combination.

The OECD has previously analysed the different criteria included in funding formulas for different typologies of expenses for a variety of resource needs: the criteria can be based on individual student needs, the provision of a specialised curriculum or specific school characteristics (OECD, 2017^[15]).⁶

The OECD (2021^[34]) has reported that, among the multiple equity criteria used in funding methodologies, the most commonly adopted relate to student characteristics, and in particular to socio-economic status or SEN.⁷ The extent to which education systems account for these and other student characteristics in their funding methodologies was also considered by the Strength through Diversity Policy Survey 2022. As shown in (Figure 3.3), students with SEN were the group most frequently accounted for (27 education systems), followed by socio-economically disadvantaged students (21 systems). Other groups that were often taken into consideration are students with an immigrant background (17 systems) and from specific geographic areas (12 systems). The breakdown in Annex Table 3.A.1 shows that all education systems (excluding Luxembourg) that reported using a funding formula noted that they account for the number of students with SEN in their formula design. The breakdown further shows that all education systems that

use formulas, besides Japan, reported employing a mix of student characteristics criteria. On average, systems reported including three student-level criteria included in their funding formulas. The education systems that reported including the largest number of student-level criteria were Northern Ireland (United Kingdom) and the United States, who both reported accounting for six characteristics: students with an immigrant background; students from ethnic groups or national minorities; students belonging to Indigenous communities; students with SEN; socio-economically disadvantaged students and students in specific geographic areas. No education system reported accounting for the number of LGBTQI+, or female or male students separately.


Figure 3.3. Groups of students accounted for in the funding formulas (ISCED 2)



Note: This figure is based on answers to the question “Are any of the following groups of students accounted for in the funding formulas in your education jurisdiction at ISCED 2 level?”. Thirty-two education systems responded to this question. Response options were not mutually exclusive.

Options selected have been ranked in descending order of the number of education systems.

Source: OECD (2022^[35]), Strength through Diversity Policy Survey 2022.

StatLink  <https://stat.link/zyd2ct>

Student-based approaches to funding may be adopted to serve various goals. According to research (Chambers, Levin and Shambaugh, 2010^[36]), some local districts in the United States have implemented such an approach to decentralise control on resources to schools and hold them accountable for student outcomes, while others have done so to increase equity in resourcing and make the funding system more transparent (Cooper et al., 2006^[37]; Ucelli et al., 2002^[38]). Designing the funding system to match specific needs of students in schools is intended to create a more equitable distribution of resources and provide greater resources to those students most in need (see, for example (Miles and Roza, 2006^[39]; Roza et al., 2004^[40]; Thomas B. Fordham Foundation, 2006^[41])).

In order to adopt a student-based funding system within a funding formula, coefficients should adequately reflect different per student costs of providing education. However, estimating the costs involved in providing education to different students is a major challenge (OECD, 2017^[15]). Different programmes and types of educational provision will also entail different costs (e.g., for specialised equipment, a specialised curriculum offer such as a recognised language minority). Coefficients can also be used to assist schools and districts facing particular challenges due to their demographics or geography. Some countries apply different coefficients to account for the variable costs of different types of schools or programmes (Connecticut School Finance Project, 2016^[42]).

There is no universal rule that countries can adopt to design their funding formula and select the relative weights to ensure equitable results of their education systems. Every country needs to evaluate the variation in its own costs of providing education and choose where or on whom they want to concentrate the funding. The categories to be included in a given formula should be based on a formalised process of stakeholder engagement and data analysis to determine the particular learning needs of students in the country. Generally, four main components should be the building blocks of a formula, each relating to a main purpose for allocating funds to schools (Levacic and Ross, 1999^[43]; OECD, 2017^[15]):

- a basic allocation, setting a fixed amount per student or per class;
- an allocation for students with supplementary educational needs, aiming to adjust for different student characteristics, which plays a major role in supporting the equity function;
- an allocation for specific needs related to school location, aiming to adjust for structural differences (e.g., rural areas with smaller schools and classes);
- an allocation for curriculum enhancement, adjusting for the costs of providing a specific educational profile and would only apply to selected schools or students.

An effective weighted-student funding formula will contain weights that allocate sufficient resources to students who require greater resources to learn and achieve at a similar level to their peers (Connecticut School Finance Project, 2016^[42]).

Financing private education: impacts on equity

It is insufficient to consider how education systems provide funding, and whether they focus support for disadvantaged or diverse students in mainstream education or in specialised settings to assess risks of inequities in a system. Other factors can affect the equity of system, including the financing of private schooling (OECD, Forthcoming^[44]).

A significant research finding is that the family-background effect on equity is larger in countries with a larger share of private funding (Schütz, Ursprung and Wößmann, 2008^[45]). Eurydice (2020^[46]) argues that this can happen for several reasons. For example, higher levels of private funding can signify that more students attend private schools, that there are more private schools, that private schools are on average more expensive or that parents have, or choose, to invest more in other forms of private education. In any case, they sustain, a higher share of private funding is likely to be negatively correlated with equity in education, given that the capacity to invest in private education is unequally distributed in society (Eurydice, 2020^[46]). In summary, parents with a higher socio-economic status are in a better financial position and/or more willing to spend part of their income on the education of their children than parents from a disadvantaged socio-economic background. Private schools, indeed, tend to serve the richest strata of a population (UNESCO, 2021^[47]). In Chile, for instance, one in two children attends a private primary school, but 87% of these students belong to the more advantaged households. Consequently, a relatively high ratio of private to public expenditure on school education may correlate with a relatively low level of equity in education (Eurydice, 2020^[46]).

The conditions that private schools must fulfil in order to qualify for public funding are also key for the effectiveness and equity of an education system. In particular, their role in school choice (read more in Chapter 2) has to be considered (OECD, 2017^[15]). Private schools' ability to select students and charge add-on tuition fees are particularly salient concerns for several OECD countries. Allowing subsidised schools to select their students based on performance, aptitude tests or socio-economic background raises a number of concerns pertaining to both equity and educational quality (ibid.). Selective admission permits private schools to "cream skim" high-ability students from the public sector, particularly where their public counterparts are required to operate on the basis of open enrolment or confine themselves to using non-academic criteria such as residential proximity to select students. Selectivity threatens to exacerbate student segregation between the public and private sectors and can widen existing achievement gaps.

This process threatens to deprive the public school system of high-ability students, which is likely to harm those who are left behind and deplete public schools of vital resources since disadvantaged students may have greater resource needs (Boeskens, 2016^[48]).

School choice systems that permit private schools to demand significant parental contributions above and beyond the amount covered by the public subsidy risk exacerbating socio-economic segregation across schools. For this reason, a variety of countries that subsidise private providers place restrictions on their ability to charge “add-on” tuition fees (OECD, 2017^[15]). In Sweden, for example, tuition fees among subsidised private schools are entirely prohibited, whereas countries such as Denmark provide fee-charging private schools with a proportionately lower amount of public funding (Houlberg, 2016^[49]). The conditions under which private schools are eligible for public subsidies influence the ways in which school choice programmes affect accessibility, quality and equity of the school system. To mitigate risks to equity, education systems should establish common regulations on tuition and admission policies for all publicly funded providers and then monitor compliance.

As mentioned, tuition fees for publicly funded private schools, in particular, if not covered by vouchers, constitute a barrier to the exercise of school choice and can contribute to the socio-economic segregation of students between the public and private sectors. To ensure that vouchers and other forms of public funding increase the accessibility of private schooling options, some countries implement regulations to prevent subsidised private schools from charging fees that could constitute a barrier to entry (OECD, 2017^[15]). A further element to consider is monitoring the effect of parental contributions to private providers on equity, when such contributions are meant to make up for discrepancies between funding of public and private providers. Indeed, any negative effect should trigger a careful consideration of the measure and an evaluation of how to address it through the modification of public subsidies.

Targeted distribution of resources: targeted programmes and resources to support students

Allocating targeted resources towards specific student groups can be a tool to foster equity and inclusion in education systems, as discussed beforehand. This section provides examples of how OECD education systems use different targeted resources to support both equity and inclusion in schools.

Additional resources for specific student groups or priorities

General school funding can be supplemented by additional resourcing that allows educational authorities to address specific needs or goals (OECD, 2012^[50]). This includes not only general financial transfers for equity and inclusion purposes, but also group specific funding.

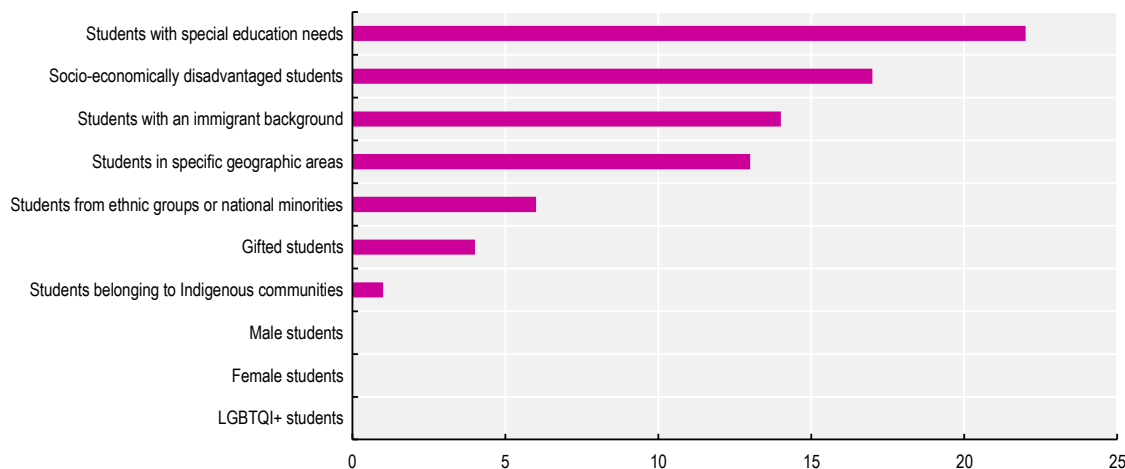
An overview of financial transfers for targeted funding for equity and inclusion

The Strength through Diversity Policy Survey 2022 asked education systems whether they provided additional resources to schools based on the enrolment of students with specific characteristics. As shown in Figure 3.4, the majority of education systems who responded to the survey reported providing additional resources to schools on the basis of the enrolment of specific student groups.

Most education systems that responded to the Survey reported providing resources based on the enrolment of students with SEN (22 education systems) and from socio-economically disadvantaged backgrounds (17). Fourteen education systems also reported providing funding in relation to students with an immigrant background and 13 in relation to specific geographic areas. No education systems reported providing additional resources based on the enrolment of LGBTQI+, male and female students.

Figure 3.4. Provision of additional resources to schools based on student groups' enrolment


Number of education systems where schools received additional resources based on the enrolment of students from the following groups in the previous school year (ISCED 2)



Note: This figure is based on answers to the question “In the previous school year, did schools receive additional resources based on the enrolment of students from any of the following groups at ISCED 2 level?”. Thirty-one education systems responded to this question. Response options were not mutually exclusive.

Options selected have been ranked in descending order of the number of education systems.

Source: OECD (2022^[35]), Strength through Diversity Policy Survey 2022.

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Additional targeted resourcing for these groups can take different forms. The next sections discuss specific typologies of targeted resources, from targeted programmes such as cash transfers, to school meals and provision of educational materials. All these resources can be provided to specific student groups or universally to all students.

Besides specific targeted resourcing, education systems often provide grants that are broader in scope, where recipients can decide how to allocate such funds to foster equity and inclusion. For instance, in 2020, the Ministry of Education and Culture in Finland announced a special state grant for the development of learning support and inclusion in pre-primary and primary education (Finnish Ministry of Education and Culture, 2020^[51]). This grant was meant to support activities of inclusion in schools, via the hiring of a person to coordinate and plan support activities, or fund trainings in this area, etc.

Funding that fosters equity and inclusion in education can take different shapes, targeting different goals. Certain funding is provided specifically to foster equity and inclusion. In Scotland (United Kingdom), for instance, the Ministry established the “Pupil Equity Funding” under the Attainment Scotland Fund - a targeted initiative focused on closing the attainment gap between the most and least disadvantaged children. The Pupil Equity Funding is additional funding allocated directly to schools and is provided to over 97% of Scottish schools to support pupils from low-income families (Education Scotland, 2022^[52]). Funding programmes that counter issues such as segregation, violence or lack of safety in schools can also contribute to improving the equity and inclusion of education systems. In Sweden, for instance, the Government engaged in various measures to combat sexual harassment and abuse, in particular by promoting sexual education in schools. To this end, the Swedish National Agency for Education invested in 2018 SEK 50 million (around EUR 48 million) for this purpose. Some of the funding targeted activities to develop sex education and to provide in-service training for school staff in sex education and against abusive behaviour (Government Offices of Sweden, 2019^[53]). In the same year, Sweden developed an

additional grant to improve equality and knowledge development in compulsory education, to be allocated with on the basis of a socio-economic index. This initiative was meant to increase equality by supporting more disadvantaged students and indirectly foster gender equality: as boys generally perform worse than girls in school, this investment was meant to help reduce this gender gap.

This grant from Sweden is an example of measures that have an intersectional focus. Indeed, grants are at times designed to target students that meet multiple criteria. This is the case in a variety of countries that aim to support gifted students that come from a socio-economically disadvantaged background. In the United Kingdom, for example, the “Excellence in Cities” policy initiative targeted schools in disadvantaged, mostly urban, areas. Under one of its three strands, the programme allocated funds to these schools specifically for a gifted and talented programme (Machin, McNally and Meghir, 2010^[54]).

Some countries do not adopt a categorical approach towards student groups in their education systems, as mentioned in Chapter 1. However, these systems still provide targeted funding based on an assessment of student need for additional resources to support their learning. Portugal is an example of a system that provides additional funding based on student needs for support without categorising students into specific groups (OECD, 2022^[55]). Besides general funding devoted to the implementation of universal support measures⁸, the country provides:

- Funding devoted to selective support measures: this funding provides adaptive and intensified support allocated to schools for groups of students at risk of failure who may need additional help.
- Funding dedicated to additional support measures: these are resources allocated to individual students in need of intensive additional support. The support is specialised and individualised and responds to specific needs.

These resources are meant to support equity and inclusion in the country, and are often complemented by European funds, mainly dedicated to human resources and managed by the European Commission (OECD, 2022^[55]). The examples discussed throughout the rest of the chapter provide further information on how specific resource typologies can be leveraged to foster equity and inclusion of diverse student groups.

Funding for special education needs: a long-standing commitment

Funding for students with SEN is a long-standing example of targeted funding to foster equity across OECD education systems, and highlights important challenges in the field of resourcing for equity and inclusion.

Historically, funding for special education needs has often been managed separately from funding for general education, with the goal of ensuring the appropriate coverage of the needs of students with SEN (Sigafoos et al., 2010^[56]). There are, however, systems in which funding for students with SEN is included within the main funding mechanism. In England (United Kingdom), for instance, funding for SEN is not allocated as a separate amount per student, but is part of the overall Dedicated Schools Grant allocated to each local authority to fund their schools’ budgets (Long and Danechi, 2022^[57]). Local authorities, in consultation with their schools’ forums, determine the individual allocation to schools. As such, the Department for Education does not give funds directly to local authority-maintained schools. Funds for extra assistance with students with SEN come from schools’ budgets and, if the extra cost is more than GBP 6 000 per year (around EUR 7 000) for an individual student, local authorities can provide top-up funding for the school. Local authorities can also give extra funding to schools with a disproportionate number of students with SEN (ibid.).

However, several education systems reported considering the enrolment of students with SEN as a criteria for the provision of targeted resources in the Strength through Diversity Policy Survey 2022 (Figure 3.4). Indeed, in various systems, additional resources allocated to education for students with SEN can be assigned to learners for personal factors related to their special education need, or can support schools by taking contextual requirements into account. Funding can therefore be directed towards different

targets, like individual learners, mainstream schools or special schools (European Agency for Special Needs and Inclusive Education, 2016^[68]).

Funding mechanisms for SEN have been recognised as influencing school-level decision making regarding the identification of students with SEN (Ebersold et al., 2019^[133]). Moreover, the way funding is provided can produce perverse incentives, leading to the placement of some students in separate educational settings such as special classes or special schools (Banks, 2021^[58]; Slee, 2018^[59]), as discussed previously in this chapter.

Building on the classification framework proposed by the European Agency for Development in Special Needs Education (2016^[60]), Brussino (2020^[61]) discussed three modes of classification of education systems' funding models for students with SEN, based on conditions for funding: input, throughput and output-based.

- *Input*: demand-driven model that puts emphasis on the demand for special education needs to be covered. Globally, it is the most common funding scheme to support students with SEN (UNICEF, 2012^[62]). Ministries generally allocate funds for students with SEN at the national level based on a flat grant, weighted-student formula or census of total student population per region/municipality. Countries with small percentages of students with SEN enrolled in special settings can have a need-based funding approach for special schools, such as Austria (European Agency for Special Needs and Inclusive Education, 2016^[60]).
- *Throughput*: supply-driven model that emphasises specific services provided instead of needs to be covered. It usually determines the number of students eligible for funding and decentralises the allocation and management of funds at sub-national levels. Some countries that employ such schemes are Denmark, Ireland, Greece and Sweden (ibid.). In turn, the allocation of funds from sub-national levels to school districts/individual schools can take different forms of financing schemes.
- *Output*: model focusing on the results achieved (European Agency for Special Needs and Inclusive Education, 2016^[60]). In the output scheme, funds channelled to mainstream and special settings are based on students' learning outcomes. Resourcing is dependent on reaching previously set outcomes and/or parameters. The output model represents the least common financing scheme across OECD countries (Brussino, 2020^[61]).

The advantages and disadvantages of these models are discussed in the literature (see Annex Table 3.A.2). There is some agreement that input funding, where individual students or their parents receive funding or resources based on a specific weighted category of disability, is based on the medical model of disability and is therefore problematic (Banks, 2021^[58]). This type of support could, however, empower families as individual-driven funding can “guarantee” that students receive the resources they were assigned (Banks, Frawley and McCoy, 2015^[63]; Parish and Bryant, 2015^[64]). Moreover, with increases in the numbers of students with SEN in mainstream schooling, various stakeholders have expressed concerns in relation to this model and the risk of spiralling costs, the need to label and diagnose students, and the waiting time necessary to access support (Goldan, 2019^[65]; Parish and Bryant, 2015^[64]). Unlike the input scheme that directly requires the labelling of students with SEN and clear definitions of special education needs, the throughput model bases its conditions for funding on services provided, and not on the demand for SEN support (Brussino, 2020^[61]). This model does not directly require labelling students with SEN and, consequently, can reduce the risks of over-identification and stigmatisation induced by labelling (Pijl, Meijer and Hegarty, 1997^[66]). However, not directly linking conditions for funding with a demand-driven scheme can mean that schools may not always have sufficient financing to cover the needs of individual students with SEN (Meijer, 1999^[67]).

Contrary to input and throughput schemes, the output model links results of the education system to the funding and directly promotes a set of valuable outcomes and results (Fletcher-Campbell, 2002^[68]; Brussino, 2020^[61]). This, however, entails the risk of not channelling resources where the need is higher,

as well-performing schools may receive most of the funding that lower-performing schools would need more (Meijer, 1999^[67]). Output models might also enhance risks of competition among schools and the transfer of low-performing students to other schools (*ibid.*). Despite such general considerations, the advantages and disadvantages of output models may vary according to their specificities on conditions for funding, more precisely, on whether funding and/or funding premiums are based on outputs or progress achieved.

Given these considerations, education systems need to evaluate the advantages and disadvantages of all three systems when designing their own. Various systems currently adopt a mix of these mechanisms to fund the education of students with SEN (European Agency for Special Needs and Inclusive Education, 2016^[60]).

A further challenge that education systems face relates to the fact that many countries continue to run a dual funding system of mainstream and special education, reporting increases in these expenses each year (Banks, 2021^[58]; Graham and Sweller, 2011^[69]; Jahnukainen, 2011^[70]). Research, however, has started focusing on how to implement more inclusive funding systems, going beyond the duality of mainstream and special education. This led Banks (2021^[58]) to identify some key elements that characterise funding systems as inclusive:

- They have a devolved funding structure which increases the level of school autonomy and level of responsibility for school leaders;
- Inclusive funding models tend to incorporate investment in school development or capacity building involving school leaders and management and teachers working with increased diversity. Investment is also made in the promotion of innovative teaching and learning strategies such as Universal Design for Learning or Multi-Tiered Systems of Support (as discussed in Chapter 5);
- Systems of accountability and transparency in how and why funding is allocated are important elements of inclusive funding mechanisms.

Targeted resourcing: how it translates into practice

As previously mentioned, education systems rely not only on financial transfers, but also on the allocation of human and physical resources. These resources are at times allocated through targeted funding to pursue specific targets. The next sections provide examples of the different forms of targeted funding provided by education systems, discussing the goals that these may have. Specifically, the following sections discuss the role of the following targeted resources:

- Financial transfers or in-kind service provisions (i.e., funding programmes targeted at particular groups or with specific policy objectives such as scholarships for disadvantaged students or programmes to improve school leadership);
- Physical resources (e.g., buildings, learning material, equipment);
- Human resources (e.g., teachers, school leaders and education administrators).

Financial transfers

The distribution of public funding for schooling can target particular school agents, such as students with an immigrant background, or specific policy priorities, such as providing scholarships for disadvantaged students or programmes to improve school leadership. In some countries, schools may receive a sizeable share of public funds through developmental programmes attached to particular policy objectives such as the introduction of innovative curricula, the enhancement of collaboration with the school community or better support for disadvantaged students (OECD, 2013^[14]). Similarly, funding can also be directed to specific school agents through targeted funds. Examples include compensatory programmes for disadvantaged students (e.g., means-tested voucher systems, scholarships in upper secondary education

for students from low-income families) and performance-based reward schemes for teachers and school leaders. Such targeted programmes typically distribute funding on a differentiated basis (depending on the characteristics of the potential recipients); restrict eligibility to a subset of school agents, schools and sub-systems; and may be based on some form of competition among eligible recipients (e.g., application-based grants) (OECD, 2013^[14]).

Targeted funding can take a variety of shapes when provided by central (or local) authorities. Funding programmes can be targeted at particular groups, such as students with an immigrant background, or have specific policy objectives such as providing scholarships for disadvantaged students or improve school leadership, train teaching staff for inclusion, etc. Given the range of goals that these programmes can serve, some of these resources come as monetary benefits (e.g., fee-exemptions or scholarships), while others are provided directly as services (e.g., meals or transportation) or materials (e.g., digital devices).

Cash transfers, subsidies and scholarships

A few education programmes target students and their families through exemptions (e.g., fees), cash transfers (e.g., scholarships) or in-kind services (e.g., transportation and school meals).

Cash transfers are quite common in low- and medium-income countries, and were pioneered in Latin America (UNESCO, 2021^[71]). A few OECD countries have adopted them to support the most disadvantaged strata of their population. Colombia, for instance, developed the cash transfer programme *Más Familias en Acción* (More Families in Action), which is conditional on school attendance and health service use and had served 2.7 million low-income families as of 2015 (Medellín and Sánchez Prada, 2015^[72]). The value of cash transfers that a family receives depends on several factors: the family's geographic location (municipality), the number and age of children and youth in the family, and the school grade they attend (ibid.). Another example comes from Türkiye, which has run a conditional cash transfer programme since 2003. An initial evaluation found positive effects on secondary school enrolment rate among 14-17 year-olds, especially in rural areas and for girls (Ahmed et al., 2006^[73]; UNESCO, 2021^[71]). The government later scaled up the programme and extended it in May 2017 to reach Syrian and other refugee children (UNESCO, 2021^[71]).

Another example of monetary benefits are **subsidies**. There is, for instance, a widespread use of subsidies in education to support enrolment in ECEC. The cost of childcare has important implications for equity and inclusion, with high childcare costs being one of the factors contributing to inequalities in childcare use across income groups. Data from the OECD show that in European OECD countries, children under the age of three in low-income households are one-third less likely to participate in ECEC than those in high-income households (OECD, 2020^[74]). Although support programmes are sometimes used to reduce the costs for low-income families, out-of-pocket costs often still equate to a large share of earnings for low-paid parents in some countries, which has important implications for equity. For this reason, various countries provide subsidies to specific groups that have historically had lower rates of enrolment in ECEC. Across Australia, for instance, states and territories subsidise access to ECEC and pre-school for Indigenous children. New South Wales subsidises early access to community pre-school for 3-year-old Aboriginal children and children from low-income families (Kral et al., 2021^[75]); and the Northern Territory provides early access to pre-school for children living in remote areas (ibid.). Exemptions from fees are also provided for socio-economically disadvantaged students in some education systems. In the Slovak Republic, for instance, children from disadvantaged households are exempt from fees for all ECEC years (with the rest of the student population being exempt from fees from five years of age) (OECD, 2015^[76]; Slovak Government, 2008^[77]).

Subsidies can also be granted for access to specific programmes or schools. In Ireland, for example, students from designated disadvantaged schools who have been identified as gifted are granted subsidies to attend the fee-based Irish Centre for Talented Youth, in accordance with the Delivering Equality of Opportunity in School policy (Rutigliano and Quarshie, 2021^[78]; Cross, Cross and O'Reilly, 2018^[79]).

Scholarships are a further tool that education authorities can leverage to support specific student groups. Scholarships targeting secondary school students identified as gifted, for instance, exist in several OECD countries. For example, in Slovenia, intellectually and artistically gifted students can be awarded a Zois scholarship (*Zoisova štipendija*), which is financed by the state (Rutigliano and Quarshie, 2021^[78]). Scholarships are also widely used at the tertiary level to support diverse student groups. For instance, various systems and organisations (e.g., specific universities) offer scholarships to women to study STEM (science, technology, engineering and mathematics) subjects at the tertiary level, as a tool to support gender equality in the field. The government of Alberta (Canada), for instance, provides “The Women in STEM Scholarship”, which supports women pursuing careers in STEM fields where their gender is underrepresented, and who are working to advance gender equality in their chosen field (Government of Alberta, 2022^[80]). Similarly, the Department of Industry, Science and Resources of the Australian Government has established a “Boosting the Next Generation of Women in STEM program” (Australian Government, 2022^[81]). The programme will deliver up to 500 university scholarships to help women in STEM seek higher qualifications, re-enter the workforce and develop senior leadership skills (ibid.). The government of New Zealand, too, offers the “Government Communications Security Bureau Women in STEM Scholarship” to support girls in the field (New Zealand Government, 2022^[82]). However, scholarships tend to be awarded on the basis of academic performance, which can have the effect of exacerbating inequality. For this reason, some countries have attempted to take socio-economic status into account (UNESCO, 2021^[71]).

In-kind service provision

Besides programmes that provide cash benefits or subsidies to target disadvantaged students, other provisions for in-kind services exist. For example, school meals and transportation are some of the most widely adopted measures. Their provision (or lack of thereof) can have an impact on equity in education, as they often specifically target the most disadvantaged students.

School meals

Literature has provided evidence on the importance of nutrition for academic performance (Glewwe, Jacoby and King, 2001^[83]; Winicki and Jemison, 2003^[84]). As hunger and food insecurity affect children from more disadvantaged backgrounds, the provision of meals at school can help strengthen equity within education systems (Gordanier et al., 2020^[85]). Research, as reported by Gordanier and colleagues (2020^[85]), has found positive relationships between the availability of free meals and food security, that of free meals and nutrition, and generally with health outcomes. There is also some evidence that school breakfast programmes can improve academic performance (Frisvold, 2015^[86]; Leos-Urbel et al., 2013^[87]). The provision of nutritious school meals contributes to supporting student health, particularly for more socio-economically disadvantaged students, along with their emotional well-being and learning (Burns and Gottschalk, 2020^[88]).

The reasons for education authorities to provide school meals (whether at a cost or for free) are therefore multiple: to improve academic outcomes of students, improve the nutrition of students by providing healthy food options, and support less advantaged families by reducing their food-related expenses, among others.

Across the OECD, different countries adopt vastly different school meal policies. According to a report developed for the European Commission, Estonia, Finland and Sweden serve school lunches to all students free of charge (Bruckmayer, Picken and Flemons, 2021^[89]). France, Italy and Portugal subsidise the cost of meals provided at school according to household income. Hungary provides a “social catering programme” that targets low-income families, large families, or families raising children with disabilities. In addition, a few countries arrange some kind of provision during the holidays (Riding et al., 2021^[90]). In France, recreational holiday centres – used by around two million children – provide lunch on similar financial conditions to school meals; in Portugal, school canteens remain open during certain holidays for

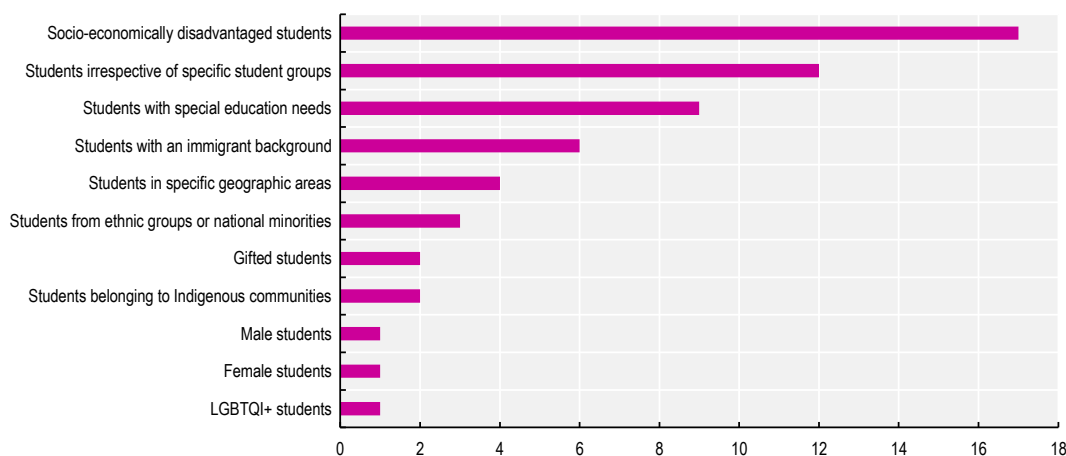
students who are beneficiaries of the school social programme; in Spain, public school canteens remain open during the first six weeks of the summer break period (Guio, Frazer and Marlier, 2021^[91]).

During the height of the COVID-19 pandemic, ensuring that disadvantaged students had access to appropriate nutrition during the lockdowns was a core concern for various countries. In the United States, the Oakland Unified School District offered “grab and go” breakfast and lunch meals to the most vulnerable students, with support from foundations (Oakland Unified School District, 2022^[92]; Eat. Learn. Play. Foundation, 2022^[93]). In Spain, the legislation that established the COVID-19 emergency support measures stipulated that all families benefiting from a scholarship or a special support during the school year must receive economic support and direct services of food distribution (Head of State, 2020^[94]).

Seventeen education systems who responded to the Strength through Diversity Policy Survey 2022 reported providing free or reduced-price school meals to students identified as being socio-economically disadvantaged (Figure 3.5). Twelve systems stated that they provide free or reduced-price meals to all students, irrespective of their groups. Nine systems also referred providing free or subsidised school meals to students with SEN and six on students with an immigrant background.

Figure 3.5. Free (or reduced-price) school meals

Number of education systems providing free or reduced-price school meals to specific student groups



Note: This figure is based on answers to the question "Does the policy framework include provision of any of the following non-instructional services for specific groups of students at ISCED 2 level? [Free (or reduced-price) school meals]". Thirty-two education systems responded to this question. Response options were not mutually exclusive.

Options selected have been ranked in descending order of the number of education systems.

Source: OECD (2022^[35]), Strength through Diversity Policy Survey 2022.

StatLink  <https://stat.link/rqibve>

Some evidence suggests that free meals may not only have a positive impact on less advantaged students, but on all students. As mentioned before, Lundorg and colleagues (2021^[95]) found positive effects of free meals on all students, although to varying degrees. Gordanier et al. (2020^[85]), also evaluated a universal free-lunch programme on primary and lower secondary school students' academic performance and attendance in the state of South Carolina (United States). They found a positive effect on primary school students' mathematic scores, again with variations by student and school socio-economic status and locality. In particular, they found that students who were previously eligible for free lunches but not on other public assistance programmes benefited the most from this policy.

Expanding the provision of free school meals may also support disadvantaged students that do not qualify for free meals but do live in poverty. Eligibility rules, indeed, may still exclude a number of children in poverty from receiving free school meals (Patrick et al., 2021^[96]). Studies on positive effects of free meals on test scores of students not previously eligible for free meals suggest that even students who are not certified as eligible for free or reduced-price meals may face budget or nutritional constraints (Schwartz and Rothbart, 2020^[97]).

Another reason that can lead countries to offer universally free meals is an effort to dismantle the stigma around free meals recipients. Some studies have found that school-level stigma is associated with lower individual-level probability of participation in free meals programmes (Mirtcheva and Powell, 2009^[98]). This can apply in particular to practices that identify low-income students who receive subsidised meals, such as separate lines in the school cafeteria or different types of meals. Observations of similar phenomena flagged a need for attention as to the potential discriminatory effects of competitive foods and to the issue of stigma around school meals (Bhatia, Jones and Reicker, 2011^[99]). Schwartz and Rothbart (2020^[97]), who used administrative data to evaluate the effects of universal free lunch on the performance of lower secondary students in New York City (United States), found that the universal free lunch increased participation in lunch for both students previously eligible for free lunch and those who were not.

Transportation

Travel to and from school is part of each student's life. It can, however, impose a burden on some students more than on others. There is also research, albeit limited, that suggests that school transportation may also have implications for academic success. A systematic review by Hopson et al. (2022^[100]) synthesises research linking school transportation with academic outcomes. They found that longer travel times, and transportation challenges, were associated with adverse academic outcomes (except when the travel provided access to higher-quality schools). Their findings also point to some important implications for schools in rural and urban settings. Among rural students, longer commutes were associated with adverse outcomes, as were challenges in getting to school, such as long walks and extreme weather (Hopson et al., 2022^[100]). Almost all of the studies they examined on rural districts found that travel time and transportation by bus had adverse relationships with academic outcomes. In urban areas, however, bus transportation was associated with positive outcomes more consistently, including when students were traveling long distances to attend a higher-quality school or a more racially integrated school (Banks and DiPasquale, 1970^[101]; Hopson et al., 2022^[100]). Longer distances were associated with more absences, especially when the routes had safety concerns, but not with grades or test scores. The authors thus found that, in urban contexts, longer distances may place students at greater risk of increased absences, but this risk may be outweighed by the benefit of being able to choose to attend a higher-performing school.

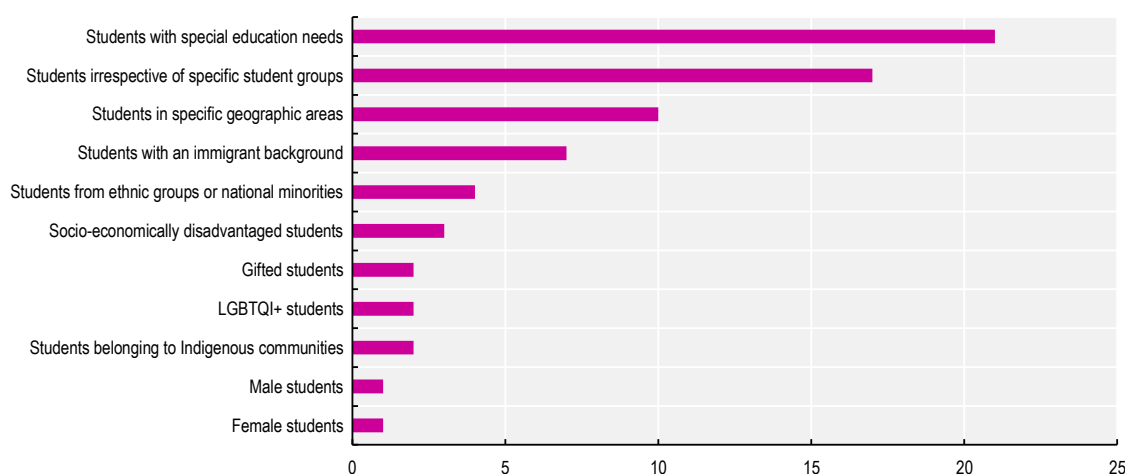
Beyond geographical factors, transportation needs are particularly salient for students with physical impairments, who are at an increased risk of injuries and fatalities in the event of an accident compared to their peers (Falkmer and Gregersen, 2001^[102]; Graham et al., 2014^[103]). Graham and colleagues (2014^[103]) found that students with physical impairments and their families experienced various frustrations with transportation, including the lack of availability of suitable options and low reliability, timeliness and quality of services. Specific difficulties included equipment failures, uncomfortable situations that worsened their physical conditions and inconsistent scheduling. Furthermore, inadequate transportation to a destination and difficulty getting around settings were reported to limit participation in social and employment activities.

Transportation challenges therefore have the potential to further exacerbate risk factors that students face due to socio-economic status, ethnic discrimination and disability (Hopson et al., 2022^[100]). The provision of programmes for transportation to and from school can thus play a key role in improving equity and inclusion in education. Key considerations in this respect are the safety and reliability of transportation services, along with strategies to reduce the potential negative effects of long commutes (which could include, for instance, amendments to routes to shorten bus rides and the provision of enriching activities to engage students during their commute).

Results from the Strength through Diversity Policy Survey 2022 show that various education systems provided transportation to and from school, through school buses or subsidised public transportation, as ways to support equity and inclusion. As Figure 3.6 shows, 21 education systems reported providing transportation for students with SEN. The Flemish Community of Belgium, for instance, provides free transportation services to students with SEN in both special and mainstream education (Flemish Ministry of Education and Training, n.d.^[104]). Moreover, 17 education systems provided transportation irrespective of the group of students into consideration. This can be an important resource to support equity in education systems, by equalising the opportunity of students from different backgrounds to reach their school, irrespective of the barriers they may otherwise face.

Figure 3.6. Transportation to/from school (e.g., school buses, subsidised public transportation)


Number of education systems providing transportation



Note: This figure is based on answers to the question "Does the policy framework include provision of any of the following non-instructional services for specific groups of students at ISCED 2 level? [Transportation to/from school (e.g., school buses, subsidised public transportation)]". Thirty-two education systems responded to this question. Response options were not mutually exclusive.

Options selected have been ranked in descending order of the number of education systems.

Source: OECD (2022^[35]), Strength through Diversity Policy Survey 2022.

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A number of education systems (10) stated that they provided transportation to students located in specific geographic areas, which is important to overcome potential barriers associated with long distances or other transportation difficulties. Students in pre-primary and basic⁹ education in Finland, for instance, have the right to free school transport organised by the municipality if the school trip is more than five kilometres, or if the journey would otherwise be too difficult, strenuous or dangerous in light of the age or circumstances of the student (Finlex, 2022^[105]). Seven education systems reported providing transportation services to students with an immigrant background in certain circumstances. The German-speaking Community of Belgium, for instance, organises transport for newcomer students who are attending language learning classes in a different primary school from the one in which they are enrolled, with funding approved for an academic year (MDG, 2019^[106]; OECD, 2022^[107]).

Physical resources: investing in infrastructure and providing learning materials

PISA defines as material resources both the physical infrastructure of a school and the educational materials available to teachers and students, and recognises their importance as components of a high-quality education (OECD, 2020^[7]). Teachers need educational materials, such as textbooks, computers, library materials or laboratories, in order to provide instruction that is up-to-date, and that is challenging and responsive to students' needs (Murillo and Román, 2011^[108]; OECD, 2020^[7]). In addition, a school environment that is conducive to teaching and learning requires adequate physical infrastructure and facilities, such as buildings, grounds, heating and cooling systems, and lighting and acoustic systems (Conlin and Thompson, 2017^[109]; Gunter and Shao, 2016^[110]; Neilson and Zimmerman, 2014^[111]). According to PISA, in order to make a difference to student learning, school infrastructure and educational materials need to meet at least three conditions. First, material resources need to be available where they are most needed and in sufficient quantity. Second, available material resources need to be of an appropriate quality and type to meet students' needs. Finally, material resources need to be used effectively. The availability and quality of instructional materials, in themselves, do not guarantee better learning; schools and teachers must be able to use these resources to enhance learning and teaching.

Infrastructural investments

Inaccessible and faulty designs can create physical and architectural barriers for students with impairments (and their families) and hamper accessibility to schools (Agarwal, 2020^[112]). Physical school infrastructure accessibility has many components, both within and outside the school. The former includes, for example, signage, accessible entrances, corridors, toilets with grab bars, switches and controls, ramps, elevators, accessible desks, and playgrounds. The latter concerns the design of outdoor facilities like the roads, footpaths and transport needed to reach the school. For a school to be accessible, it must allow all children, teachers and parents to safely enter, use all the facilities including recreational areas, participate fully in all learning activities with as much autonomy as possible, as well as exit during emergencies (*ibid.*). Various countries are aware of limitations in the accessibility of their schools. In Italy, for instance, the *Istituto Nazionale di Statistica* (National Institute of Statistics) (2021^[113]) reported that on average over the country, 32 schools out of every 100 are completely free from physical barriers, which means that less than one in three schools respects the country's criteria for full accessibility. Thus, investing in the infrastructure of school buildings and removing barriers is key to improve the accessibility and inclusivity of education systems. Without relevant support, students with physical impairments are at risk of experiencing low levels of academic well-being as well as deteriorating psychological and physical health (Brussino, 2020^[61]). A report by the European Commission (2022^[114]) based on a national (regional) mapping of European countries points out that “accessibility of facilities (to boost the inclusion of people with disabilities and special needs)” is one of the most common priorities and objectives set by Member States of the European Union (EU) in this area.

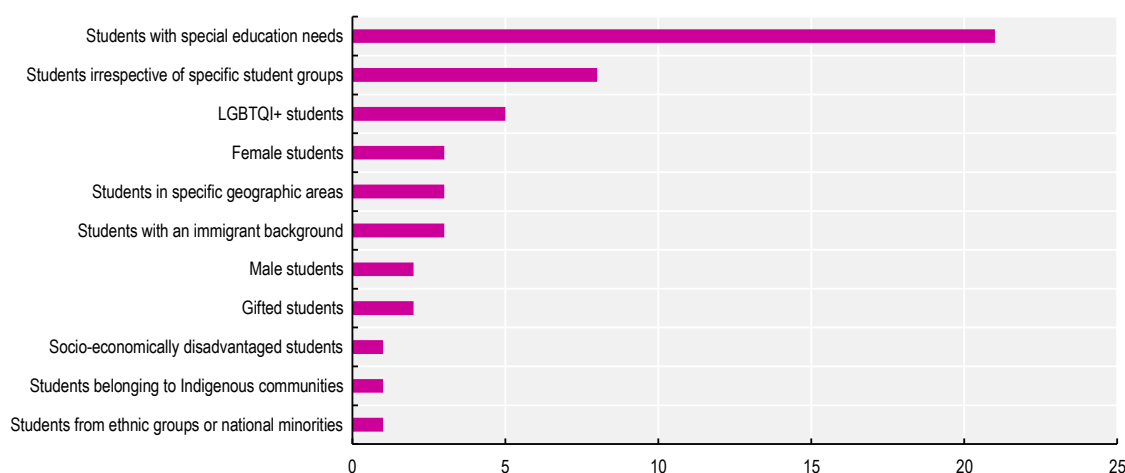
Many governments have taken steps to develop targeted grants to fund modifications to infrastructure and equipment that will improve access for students, staff or visitors with injuries or disability. For instance, schools in the State of Victoria (Canada) can apply to the “Accessible Buildings Programme” that is designed to support inclusive government school environments. Under this programme, schools are “assisted to make “reasonable adjustments” to school facilities for students and staff with a disability. This includes pre-existing disabilities, as well as disabilities that arise during enrolment (or employment) as a result of accident or deterioration of existing conditions” (Victoria State Government, 2019^[115]; Department of Education and Training Victoria, 2021^[116]). Similarly, in April 2021, the Government of the United Kingdom (Government of the United Kingdom, 2021^[117]) announced a GBP 280 million (EUR 326 million) capital funding boost to improve existing provision to create modern, fit-for-purpose spaces adapted to an extended range of student needs. Accessibility does not only concern spaces, but also materials provided to students. For this reason, for instance, the Department of Education of the

Government of Ireland (2019_[118]) offers an Assistive Technology Grant that administers funding to schools towards the cost of computers and specialist equipment.

Twenty-one of the education systems who participated in the Strength through Diversity Policy Survey 2022 reported having provisions for changing the physical infrastructure and facilities in to accommodate students with SEN. As shown in Figure 3.7, five education systems had provisions for changes to school infrastructure and facilities to support the needs of LGBTQI+ students. Changes to physical infrastructure and facilities for LGBTQI+ students typically relate to the provision of gender-neutral restrooms or changing areas, to allow students to have access to facilities that reflect their gender identity.

Figure 3.7. Does the policy framework include provisions for changing physical school infrastructure and facilities, for specific groups of students?

Number of education systems



Note: This figure is based on answers to the question "Does the policy framework include provision of any of the following non-instructional services for specific groups of students at ISCED 2 level? [Changing school infrastructure/facilities]". Thirty-two education systems responded to this question. Response options were not mutually exclusive.

Options selected have been ranked in descending order of the number of education systems.

Source: OECD (2022_[35]), Strength through Diversity Policy Survey 2022.

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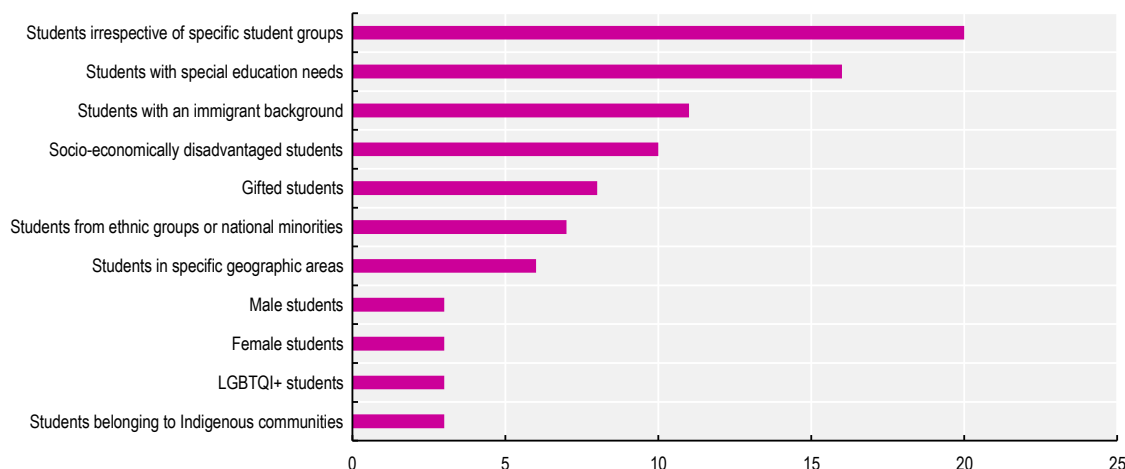
Educational materials and digital devices

Disparities in material resources exist between advantaged and disadvantaged schools, rural and urban schools, and public and private schools (OECD, 2020_[7]). As mentioned in the Introduction, students attending schools with fewer shortages of material resources perform better in PISA reading assessment, on average across OECD countries. Shortages of educational materials also appeared to be more strongly associated with lower reading performance than shortages of physical infrastructure, after accounting for students' and schools' socio-economic profiles (OECD, 2020_[7]). This underlines the key role of educational materials for disadvantaged students.

As shown in Figure 3.8, 20 of the education systems who participated in the Strength through Diversity Policy Survey 2022 referred providing educational material to all students, irrespective of them belonging to a specific group. In Finland, for instance, schoolbooks, learning materials and equipment are all provided free of charge for the nine-year basic education (OECD, 2022_[17]). Other systems, as shown in Figure 3.8,

reported providing material resources to specific student groups, such as students with SEN (16 systems), students with an immigrant background (11 systems) and socio-economically disadvantaged students (10 systems).

Figure 3.8. Providing educational (instructional) materials (e.g., textbooks)



Note: This figure is based on answers to the question "Does the policy framework include provision of any of the following non-instructional services for specific groups of students at ISCED 2 level? [Providing educational (instructional) materials (e.g., textbooks)]". Thirty-two education systems responded to this question. Response options were not mutually exclusive.

Options selected have been ranked in descending order of the number of education systems.

Source: OECD (2022^[35]), Strength through Diversity Policy Survey 2022.

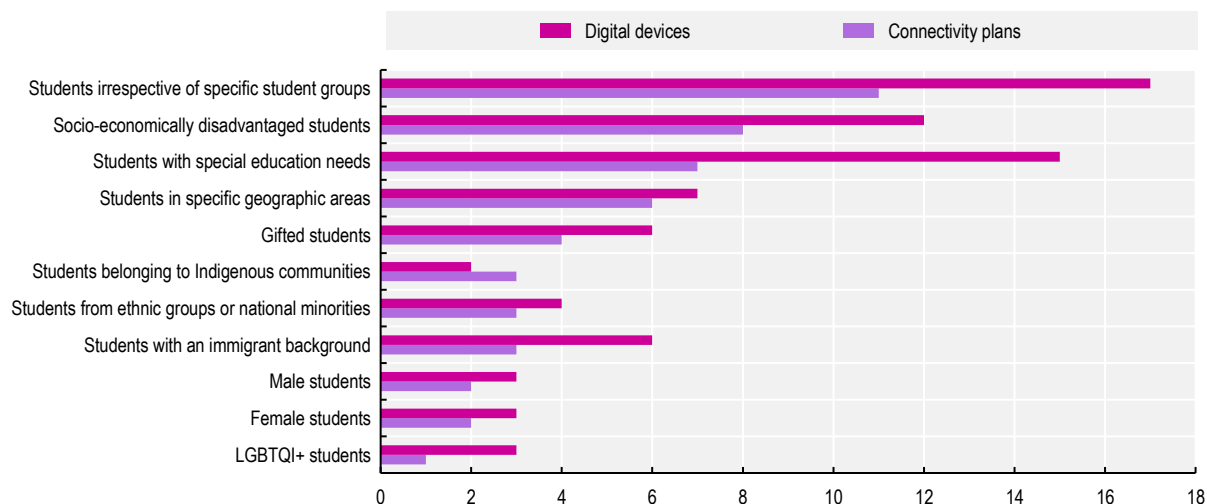
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A further issue in terms of educational equity is driven by the fact that not all students have the same access to digital devices (see also in Chapter 2), although there is great variation across countries in this respect (OECD, 2020^[119]). This issue gained particular prominence during the first months of the COVID-19 pandemic, when school closures required most OECD systems to move education online (Cerna, Rutigliano and Mezzanotte, 2020^[120]). In some cases, especially pre-COVID-19, policies relating to digital devices focused on meeting needs at the school level instead of household or individual level. For instance, Japan provided schools with computer equipment, networking and cloud infrastructure, expecting that they would be used at school, rather than at home (OECD, 2021^[121]). During the COVID-19 pandemic, however, some countries worked on reaching students without access to digital devices by distributing them for free (Cerna, Rutigliano and Mezzanotte, 2020^[120]). Chile, for instance, distributed nearly 125 000 computers with an internet connection in various cities across the country (Ministry of Education, 2020^[122]). Providing personal devices to individual students has been implemented in many systems. The governments of New Zealand and England (United Kingdom) paid for and helped schools distribute laptops so that each student would have access to one (OECD, 2021^[121]). Likewise, the government of Slovenia, with the help of private donors, collected thousands of electronic devices to support vulnerable children without access to a computer (Ministry of Education, Science and Sport, 2020^[123]). Other systems, instead, focused on specific groups when providing resources: in the city of Rome, Italy, the local administration focused not only on students from a disadvantaged socio-economic background, but also on identifying Roma students without digital devices and internet connection and provided them with computers, tablets, and tried to solve the connectivity issues (Cerna, Rutigliano and Mezzanotte, 2020^[120]).

In addition, digital devices can be leveraged by governments to provide additional inclusive learning resources such as online tutoring, homework help and language instruction (Gottschalk and Weise, Forthcoming^[124]). For instance, in Korea, the “Cyber Home Learning System” is designed to balance the inequity arising from families with a higher socio-economic background who often provide private tutors for their children outside of school. The System aims to bridge the gap between more and less advantaged students by providing free online tutors to all students, regardless of their socio-economic background (Avvisati et al., 2013^[125]). A similar programme in France offers an online homework support tool as part of the “Homework Done” programme. It assists students who might not have support at home with their homework (Ministère de l'Éducation Nationale, de la Jeunesse et des Sports, 2018^[126]).

Seventeen of the education systems who responded to the Strength through Diversity Policy Survey 2022 reported providing digital devices and eleven providing connectivity plans to all students, irrespective of whether they were part of a specific group (as shown in Figure 3.9). Moreover, 15 education systems noted that they specifically targeted students with SEN with digital devices and seven with connectivity plans. Socio-economically disadvantaged students were also often targeted by education systems, as 12 systems provided them with digital devices, and eight with connectivity plans. Digital devices were overall provided more often than connectivity plans, and several countries targeted also students in specific geographic areas, gifted students and students with an immigrant background.

Figure 3.9. Providing students with digital tools



Note: This figure is based on answers to the question “Does the education policy framework in your jurisdiction require the provision of any of the following resources at ISCED 2 level?”. Thirty-two education systems responded to this question. Response options were not mutually exclusive.

Options selected have been ranked in descending order of the number of education systems that require connectivity plans.

Source: OECD (2022^[35]), Strength through Diversity Policy Survey 2022.

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As shown in the figure above, digital devices are provided to foster the inclusion of various groups. A common digital resource provided by education systems to support students with SEN is assistive technology (AT). Assistive technology can help, for instance, students who have difficulty communicating through speech and writing to participate more fully in education. Some examples of AT include laptops or tablets with modified software, joysticks, keyboards, touch pads, tapes, braille equipment and audiology equipment. In some countries, schools can apply for grants to obtain funding for providing students with

AT, as for example in Ireland where schools have access to “Assistive Technology Grants” from the Department of Education (Citizens Information, 2022_[127]). In other systems, instead, local education authorities are responsible to provide students with AT. In the United States, students who are eligible under the “Individuals with Disabilities Education Act” (IDEA) have to be provided with AT by the school district to ensure that they can access, participate in and progress in the general education curriculum (Connecticut State Department of Education, 2022_[128]). Indeed, as part of their Individual Education Plans (IEPs are discussed more in Chapter 5), districts have to provide relevant tools for them to succeed, at no cost – which prohibits school districts from excluding AT devices from a student’s IEP solely based on the expense to be incurred (ibid.).

Other inclusive resources, such as online platforms, can supplement content and instruction not otherwise available (Gottschalk and Weise, Forthcoming_[124]). For example, online platforms can be useful for providing difficult to access language instruction in minority languages. These tools can support students from diverse groups such as students with an immigrant background or Indigenous students. To support immigrant students, for instance, Sweden has made specialised teachers available on digital platforms for students’ heritage language instruction (Cerna, 2019_[129]). During the pandemic, New Brunswick (Canada) put in place online courses to support learning of English as an additional language for non-native speaker students (Cerna, Rutigliano and Mezzanotte, 2020_[120]). To support Indigenous students, the Ministry of Education in New Zealand provided guidance and digital resources to support learning of the Māori language (Education Review Office of New Zealand, 2018_[130]). Moreover, during the pandemic, the Mexican National Institute of Indigenous Languages (part of the Ministry of Culture) not only shared information and prevention during the pandemic, but also shared learning materials in Spanish and Indigenous languages (Cerna, Rutigliano and Mezzanotte, 2020_[120]).

Matching human resources to schools: reflecting schools’ needs in staff allocation policies

A past overview of whether and how European countries allocate additional resources to schools with disadvantaged populations finds that the majority provided resources in kind, most typically additional staff (European Commission/EACEA/Eurydice, 2016_[16]). Successful schools¹⁰ are generally able to deploy their best teachers to work with students who need the most support, such as disadvantaged ones (Sharp et al., 2015_[131]). This also implies that students who are most in need – for instance, those from socio-economically disadvantaged backgrounds – are exposed to good teachers and effective teaching practices (OECD, 2022_[132]).

Inequalities in teacher allocation can hamper equity in education

Inequalities in teacher allocation represent a common challenge across OECD countries, which can negatively impact the equity of the education system. Addressing this requires a holistic approach that considers a range of policy levers, including how the recruitment and allocation of teachers is regulated at the system level, perceptions regarding the experience of teaching in disadvantaged schools, and the support provided to teachers, particularly at the initial stages of their careers (areas discussed more extensively in Chapter 4).

Data show that new teachers tend to be disproportionately represented in schools with high concentrations of students from more disadvantaged socio-economic backgrounds (OECD, 2019_[133]). Moreover, TALIS 2018 found that experienced teachers are more likely to work in schools with a low concentration of socio-economically disadvantaged students (less than 10% of the student body) than in schools where disadvantaged students constitute more than 30% of the student body in many of the participating countries (OECD, 2022_[134]).

While new teachers are likely to report “benefiting the socially disadvantaged” as an important motivating factor in their decision to become a teacher (OECD, 2019_[133]), they may lack the experience, skills and training to effectively respond to the challenges and demands that may arise in these environments

(OECD, 2019_[135]). This is reflected in data from across the OECD showing that new teachers, on average, tend to feel less confident in their teaching abilities compared to their more experienced colleagues, particularly in their classroom management skills and their capacity to use a wide range of effective instructional practices (OECD, 2019_[135]; Schulz, 2018_[136]). As experience and solid training represent two of the main elements characterising the profiles of the most effective teachers across OECD countries (OECD, 2019_[137]), the fact that new teachers are overrepresented in disadvantaged schools means that students from disadvantaged backgrounds are less likely to have access to high-quality teachers. Given that teacher quality has been recognised as the most significant influencing factor on students' educational outcomes (Hattie, 2015_[138]; OECD, 2011_[139]; Sammons and Bakkum, 2012_[140]), inequitable teacher allocation can reinforce socio-economic inequalities in student performance (OECD, 2022_[134]) and is thus a key concern from an equity perspective. Data from PISA 2015 showed that the more pervasive the level of inequalities in teacher allocation (in terms of experience and teacher qualification), the larger the difference in student performance related to socio-economic status in the particular education system (OECD, 2018_[141]). Conversely, highly competent, quality teachers can have positive effects in terms of improving the learning outcomes of low-performing students and reducing the achievement gaps between disadvantaged and advantaged students (OECD, 2012_[50]), thereby having the potential to play a key role in promoting equity in education.

Strategies to address inequalities in teacher allocation

Education systems across the OECD have implemented a variety of initiatives to address equity issues in teacher allocation. The Turkish education system, for instance, employs various incentives to attract teachers to remote and disadvantaged school settings, such as higher points in seniority that they can use towards gaining promotions and obtaining salary increases (OECD, 2017_[142]; OECD, 2022_[134]). In Japan, a mandatory rotation system (*jinji idou*) governed by local education authorities requires teachers to relocate to different schools periodically (Brussino, 2021_[143]; Seebruck, 2021_[144]). The stated aims of this policy include balancing attributes like age and gender in the teaching populations of schools, giving teachers varied experience, and achieving a more equal spread of educational quality (OECD, 2022_[134]). However, in systems such as this, there is a risk that the negative impacts associated with a high turnover may offset the potential benefits of teacher rotations. Carefully defining set criteria for determining teacher transfers are in this respect crucial to ensure that rotation systems enhance equity through matching teachers' skills and experience levels with the schools and areas that need them the most (*ibid.*).

Financial incentives are another strategy used to attract teachers to disadvantaged schools, and have been adopted in several education systems across the OECD (OECD, 2012_[50]). However, in order to be effective in improving the quality of teaching, they should be accompanied by measures to ensure teachers have the capacity to be successful in these environments (*ibid.*). In Korea, financial incentives to teach in high-need schools are accompanied by mechanisms to support teachers, including smaller class sizes and reduced instructional time, as well as additional credits when applying for promotional opportunities (Kang and Hong, 2008_[145]; OECD, 2012_[50]). Students from disadvantaged socio-economic backgrounds in Korea have been reported as being more likely to be taught by highly qualified and experienced mathematics teachers, which could suggest the potential of more holistic strategies to attract high-quality teachers to disadvantaged schools (OECD, 2012_[50]).

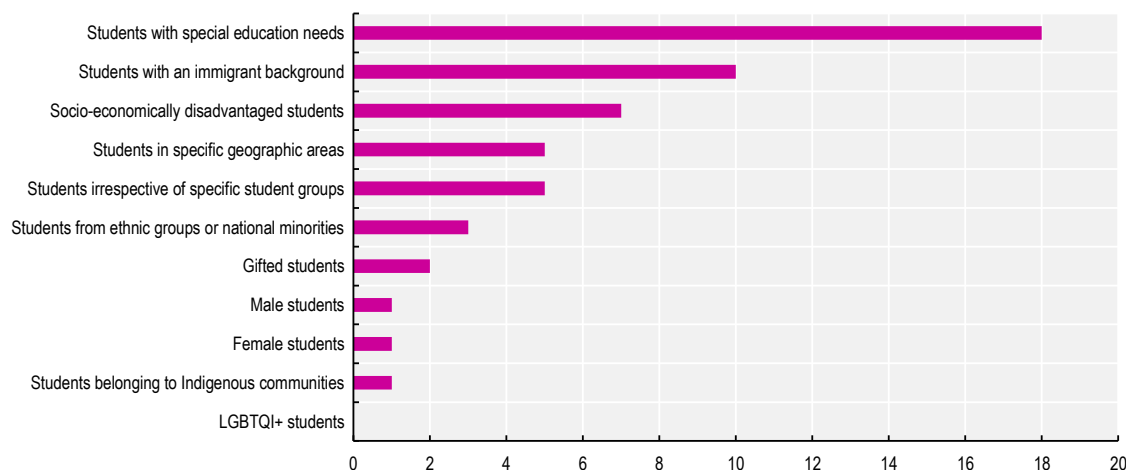
Alternative teacher certification programmes are another strategy adopted to attract highly qualified individuals to teach in disadvantaged settings through providing faster and more affordable pathways to teacher certification. These programmes typically provide non-teaching graduates with the opportunity to earn accredited teaching qualifications while earning an income (and without having to undertake a long period of further study). In New Zealand, for instance, the Teach First New Zealand programme is an alternative field-based initial teacher education (ITE) programme that aims to improve equity in education through recruiting high-achieving individuals with degrees in fields other than teaching to teach in schools with a high concentration of economically disadvantaged students (Ako Mātātupu Teach First NZ, 2022_[146];

Whatman, MacDonald and Stevens, 2017^[147]). After completing a nine-week training course, participants in the programme teach in schools serving low socio-economic communities on a reduced instructional workload for two years, at the completion of which they are eligible to apply for registration to become provisionally certified teachers (Whatman, MacDonald and Stevens, 2017^[147]). Similarly, the High-Achieving Teachers Programme is an initiative funded by the Australian Government that provides two alternative, employment-based pathways into teaching for high-achieving individuals who are committed to pursuing a career in teaching. Participants are placed in secondary schools experiencing teacher shortages and receive on-the-job training and support while they complete an accredited teaching qualification (Australian Government Department of Education, Skills and Employment, 2022^[148]). A similar programme exists in the United Kingdom (TeachFirst, 2022^[149]) and at the international level (Brussino, 2021^[143]; Teach For All, 2022^[150]). However, there is evidence that alternative teacher certification programmes may not always provide adequate preparation for candidates to be effective teachers in disadvantaged schools (Boyd and al, 2008^[151]; Darling-Hammond, 2010^[152]; OECD, 2012^[50]). Induction and mentoring programmes for teachers recruited through these pathways may play a critical role in this respect.

Allocation of teaching staff to support diverse students

Generally, successful schools also ensure that teaching assistants (TAs) are well trained in supporting pupils' learning as well as in specific learning interventions, so that TAs can provide effective support to individual pupils or small groups (Sharp et al., 2015^[131]). They also ensure strong teamwork between teachers and support staff. While teacher preparation is discussed more in depth in Chapter 4, this section discusses the role of policies that allocate staff to schools to support equity and inclusion at the system level.

Figure 3.10. Allocating more teaching staff during instruction



Note: This figure is based on answers to the question "Does the education policy framework in your jurisdiction require the provision of any of the following resources at ISCED 2 level? [Allocating more teaching staff during instruction]". Thirty-two education systems responded to this question. Response options were not mutually exclusive.

Options selected have been ranked in descending order of the number of education systems.

Source: OECD (2022^[35]), Strength through Diversity Policy Survey 2022.

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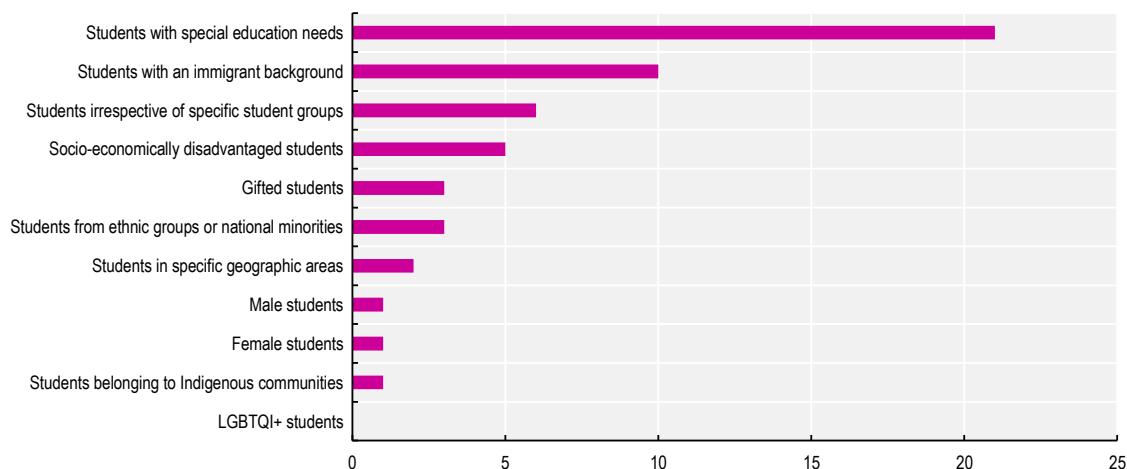
Countries have different means to provide staff resources to schools, from mobilising teaching or TA staff during instruction, to allocating teaching or learning support staff after instruction (such as during in-school extra-curricular activities or for homework support). A variety of education systems reported allocating additional staff during instruction to support particular student groups. As shown in Figure 3.10 above, most systems (18) referred providing additional teachers to students with SEN.

This occurs, generally, either on the basis of a required diagnosis or by a signalling of need for additional support from the school. In Austria, for instance, schools are eligible to receive additional personnel resources after a student's diagnosis of SEN is formalised (though schools are required to use all possible support measures to help students before this occurs). The federal government provides the provinces with funding for additional staff resources for special needs education (European Agency for Special Needs and Inclusive Education, 2020^[153]). In the German-speaking Community of Belgium, students receive an additional hour of support from "integration teachers", based on a formal decision of their level of support needed (high/low), which revolves around a diagnosis of SEN that cannot be addressed sufficiently by general education measures (OECD, 2022^[107]).

In Ireland, special education teachers are deployed to address the needs of students with SEN according to identified needs, rather than based on a diagnosis (National Council for Special Education, n.d.^[154]). The rationale of this system is that a diagnosis does not *per se* establish the amount of support needed by students, as the same disorder can lead to different difficulties and needs. This need-based system gives schools greater autonomy and flexibility in how they allocate special education teaching resources. Schools may deploy special education teachers in a variety of ways in order to effectively meet students' needs (for example, in-class support, group withdrawal).

Another common resource provided for students with SEN is teaching assistants or additional learning support staff, as was shown in the results of the Strength through Diversity Policy Survey 2022 (Figure 3.11).

Figure 3.11. Allocating learning support staff (e.g., teaching assistants) during instruction



Note: This figure is based on answers to the question "Does the education policy framework in your jurisdiction require the provision of any of the following resources at ISCED 2 level? [Allocating learning support staff (e.g., teaching assistants) during instruction]". Thirty-two education systems responded to this question. Response options were not mutually exclusive.

Options selected have been ranked in descending order of the number of education systems.

Source: OECD (2022^[35]), Strength through Diversity Policy Survey 2022.

A number of OECD education systems also reported providing additional teachers or learning staff to support students with an immigrant background (Figure 3.10 and Figure 3.11). In the Flemish Community of Belgium and Saxony (Germany), non-native speaking students are allocated extra teacher hours (Eurydice, 2022^[155]; Sugarman, Morris-Lange and Mchugh, 2016^[156]). In the German-speaking Community of Belgium, pre-primary education settings can apply for additional staff funding when they enrol at least 12 newcomer children that do not speak the language of instruction at least at an A2 level¹¹ (MDG, 2019^[106]; OECD, 2022^[107]).

Pointers for policy development

The final section of this chapter provides a series of policy options that countries can consider to promote equity and inclusion through the design of resourcing of education systems. These have been developed on the basis of the analysis of different policies and practices developed in this chapter, which draws on available evidence and research literature along with experiences discussed in country-specific work of the Project and other OECD work.

Leverage both main allocation mechanisms and targeted funding to foster equity and inclusion

A key element for fostering equity and inclusion in education is the allocation of funding to the schools and students that are most in need of additional resources. Indeed, OECD work highlights that, above a certain level of funding, it is more important *how* the funding is allocated. Countries should leverage both regular and targeted funding, while balancing their potential drawbacks (OECD, 2022^[157]). Targeted funding allows countries to better steer and monitor the use of public resources to foster equity and inclusion, but entails risks of multiplication of programmes, lack of co-ordination, excessive bureaucracy and inefficiencies. Adjusting main allocation mechanisms to be needs-based can reduce transaction costs, streamline the resourcing system and allow education providers to decide allocation of funds according to their specific needs; however, regular allocations allow central governments to exert limited overview and control on the actual allocation of funds by education providers towards equity and inclusion.

Countries should thus consider the different purposes that allocation systems can serve when adopted with the goal to foster equity and inclusion. Moreover, they should design their allocation systems while accounting for their potential shortcomings and planning how to counterbalance them. This could entail carefully monitoring that targeted programmes do not overlap in scope, or designing monitoring systems that keep track of the use of funds for equity and inclusion purposes. Keeping track on the effectiveness of the resourcing system can also support countries to identify whether they are incurring in the aforementioned challenges and to correct any arising issue.

Employ different types of resources and parameters to allocate them, to provide resources for diverse student groups, and to support policy priorities related to equity and inclusion

Education systems have access to a range of different types of resources to support their student population, spanning from financial transfers to physical and human resources that they can allocate to schools and classrooms. Moreover, education systems can also target specific groups with resources by incorporating relevant parameters in their main allocation mechanisms' funding formulas. These pathways can all be leveraged by education systems, which should evaluate which mix of resources can better serve their needs.

Different types of resources can be actively leveraged by education systems to directly provide diverse student groups with extra funds or support, and be leveraged to pursue specific policy objectives (e.g., as

fostering equity). For instance, subsidies to access ECEC services and the provision of free school meals can be used to support socio-economically disadvantaged families; scholarships can be assigned to minorities to pursue fields of study in which they are underrepresented; and transportation and assistive technologies can be provided to support students with SEN. Moreover, infrastructural investments can be implemented to make spaces in schools more accessible and inclusive for all students, through, for instance, ensuring that LGBTQI+ students have safe spaces such as changing rooms and bathrooms, providing students with SEN with accessibility features, and reflecting the identities of ethnic minorities and Indigenous students' presence in the school environment. Education systems should therefore carefully evaluate which student groups they need to target with different types of resources, and which policy goals they are aiming to achieve.

Including specific parameters, such as the number of immigrant students or students with SEN, in an education system's funding formula can also serve at providing additional resources to specific groups. Similarly, taking into account the geographical location (i.e., remoteness) of education providers or the socio-economic composition of their school population can serve equity and inclusion purposes. This method to attribute funding (if it is not earmarked), however, needs to account for the fact that education providers may not be allocating the funds they receive to match the parameters that concern diverse students, or equity and inclusion purposes. This may require education systems to develop accountability measures to ensure that education providers are using the funds for the intended students and/or goals.

Strengthen the capacity of different administrative levels to support education and inclusion goals

Some education systems are decentralised, which means that part of the decisions – including the allocation of funding to schools – is taken at the regional or local level. Decentralised systems require central authorities to take into account not only the role of the different administrative levels in the education financing process, but also the incentives that guide their decisions. Rationally, local education providers will aim to optimise the use of resources in their budgeting processes, and to fulfil their goals. While local entities may be more likely to have a clear understanding of their student population's needs than central authorities, they could also be more interested in fulfilling policy goals other than the ones sought by central authorities. They may also choose to take or not take a particular course of action on the basis of whether this is likely to maximise their chances of receiving further funding, rather than the ultimate policy goal. For instance, in a situation where the education system provides additional funding to local authorities with a low level of school resources, the authorities may be induced to reduce the funding to specific schools to increase their chances of securing such extra funds. Likewise, if the central authority were to use indicators on the concentration of immigrant students in schools to provide additional funding, it is possible that municipalities would have less of an incentive to tackle the issue of segregation in schools. Education systems should evaluate where potential (negative) reactions may arise when designing their funding systems and plan appropriate counterbalances for them. For this to be possible, it is important that the funding reform be accompanied by strong evaluation and monitoring processes.

However, education systems should also take into account that local authorities play a fundamental role in the implementation of education policies and should be supported in achieving equity and inclusion goals. Local entities' autonomy can improve the effectiveness of educational services provisions, but different entities may have different capacity and competences. Central authorities can strengthen the knowledge base on relevant topics, such as equity or equitable resource allocation mechanisms, across municipalities. They can also strengthen the capacity of schools to assume budgetary responsibilities, in contexts where they have them. Central authorities should also take on the role of facilitators of exchanges of ideas, experiences and good practices across local authorities and/or schools in decentralised systems. This would serve the goal of developing capacity across entities more evenly.

Lastly, central authorities can involve municipalities and other stakeholders when developing their financing systems, as to ensure that these are understood and supported by the relevant stakeholders, who can also flag potential challenges before they arise.

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Annex 3.A. Students accounted in funding formulas and evaluation of funding models

Annex Table 3.A.1. Groups of students accounted for in the funding formulas (ISCED 2), by education system

Country	Students with an immigrant background	Students from ethnic groups or national minorities	Students belonging to Indigenous communities	LGBTQI+ students	Students with special education needs (SEN)	Gifted students	Socio-economically disadvantaged students	Students in specific geographic areas	Female students	Male students	No funding formula
Australia	x		x		x		x				
Canada	x				x			x			
Chile					x		x	x			
Colombia	-	-	-	-	-	-	-	-	-	-	-
Czech Republic					x	x	x				
Denmark											x
England (United Kingdom)	x				x		x				
Estonia	x				x			x			
Finland					x		x				
Flemish Community of Belgium	x				x		x	x			
France											x
French Community of Belgium	x				x		x				
Greece	x				x		x	x			
Iceland	x				x		x	x			
Ireland					x		x				

Country	Students with an immigrant background	Students from ethnic groups or national minorities	Students belonging to Indigenous communities	LGBTQI+ students	Students with special education needs (SEN)	Gifted students	Socio-economically disadvantaged students	Students in specific geographic areas	Female students	Male students	No funding formula
Italy	x				x		x				
Japan	x				x		x				
Korea	x				x	x	x	x			
Latvia		x			x						
Lithuania		x			x						
Luxembourg											x
Mexico	-	-	-	-	-	-	-	-	-	-	-
Netherlands	x				x	x	x				
New Zealand					x		x	x			
Northern Ireland (United Kingdom)	x	x	x		x		x	x			
Norway											x
Portugal	x	x			x		x	x			
Scotland (United Kingdom)					x		x				
Slovak Republic					x	x					
Slovenia	x	x			x		x				
Spain					x	x	x	x			
Sweden											x
Türkiye	x				x	x					
United States	x	x	x		x		x	x			
Total	17	6	3	0	27	6	21	12	0	0	4

Note: Question “Are any of the following groups of students accounted for in the funding formulae in your education jurisdiction at ISCED 2 level?”. The answers option included also ‘Do not account for the above student characteristics’, which was not selected by any respondent. Responses were not mutually exclusively.

Source: OECD (2022^[35]), Strength through Diversity Policy Survey 2022.

Annex Table 3.A.2. Advantages and disadvantages of input, throughput and output models

	Advantages	Disadvantages
Input scheme	<p>1) Direct linkage between needs and resources.</p> <p>2) Identification of students with special education needs can be based on an official and shared assessment. The demand-driven nature of the model supports comprehensive coverage of SEN.</p> <p>3) As funding is not directly linked to expenses, this system might promote cost efficiency.</p> <p>4) Support of parental choice.</p>	<p>1) No direct incentives to improve the quality of services provided.</p> <p>2) The cost of assessing special education needs: Demand-driven models might increase the risks of over-identifying SEN.</p> <p>3) Demand-driven models that risk over-identification of special education needs might create risks of budget inflation.</p> <p>4) Parental power in decision making might not always lead to informed decisions concerning their children's education. It might also increase social inequalities and competition among schools.</p>
Throughput scheme	<p>1) Funding is generally stable and predictable.</p> <p>2) Can support a good balance between local flexibility and accountability. Opportunities for implementing an incentive-based system.</p> <p>3) Less administrative burden might stimulate greater efficiency.</p> <p>4) It favours education in inclusive settings and entails less direct risks of stigmatising because no labelling is directly required.</p>	<p>1) The simplicity of the funding mechanism might lead to a less adequate, flexible and equitable allocation of resources. As the model is not directly driven by the demand of special education needs, high concentration of SEN in one area might not always imply sufficiency of funding.</p> <p>2) Vulnerable to cost expansions and entails greater administrative costs.</p> <p>3) It is not clear whether resource-based systems entail cost efficiency.</p> <p>4) No direct incentives to improve quality of services.</p>
Output scheme	<p>1) Promotes a set of desirable results.</p> <p>2) Hinders the risks of incentivising schools not to improve performance.</p>	<p>1) Risk of not channelling resources where the need is greater.</p> <p>2) Risk of inducing the transfer of low-performing students to other school settings and enhancing competitions among schools.</p>

Source: Brussino (2020^[61]), Mapping policy approaches and practices for the inclusion of students with special education needs, OECD Working Paper, OECD Publishing, <https://dx.doi.org/10.1787/600fbad5-en>; adapted from Shewbridge (Unpublished^[158]), Funding Education for Students with Special Educational Needs, OECD Unpublished Working Paper.

Notes

¹ This could entail the exemption from school fees in systems that require them, provision of school material, etc.

² **Lump sum grants** consist of funding for the public sector and leaves discretion to sub-national authorities over the proportion allocated to early childhood and school education. **Block grants** are funds that recipients (sub-national authorities or schools) can use at their own discretion for current expenditure in early childhood or school education. **Earmarked grants** consist of funds that recipients (sub-national authorities or schools) are required to use for specific elements/items of current expenditure in early childhood or school education (e.g., teacher professional development, extra funds for special needs education) (OECD, 2017^[15]).

³ School deciles indicate the extent the school draws their students from low socio-economic communities. New Zealand uses deciles to target funding, as, the lower the school's decile, the more funding it receives (Ministry of Education, 2022^[159]).

⁴ The model to compute the Equity Index looks at cohorts of children from the last 20 years, who have already passed through the school system. It assesses which socioeconomic characteristics observed at different ages best predict a student's achievement at different school levels. It then looks at the socio-economic characteristics of students enrolled at schools for the last three years and predicts how likely they are to achieve at different levels. Student numbers are averaged at an individual school level to produce an Equity Index number for each school. The Special Education Grant (SEG) and Careers Information Grant (CIG) will also utilise the new EQI in lieu of deciles (New Zealand Ministry of Education, 2022^[24]).

⁵ A perverse incentive is an incentive that has an unintended and undesirable result that is contrary to the intentions of its designers.

⁶ For more information, see Annex Table 3.A.1 in "The Funding of School Education: Connecting Resources and Learning (OECD, 2017^[15])".

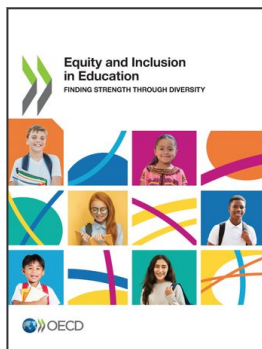
⁷ Education at a Glance (OECD) uses as terminology 'low-income students' and 'students with disabilities', but the terms are considered to match with the Strength through Diversity Project's understanding of socio-economic disadvantage students and special education needs.

⁸ Support measures that schools use to support the participation and learning improvement of all students, which include differentiated instruction, curricular accommodations and/or enrichment, promotion of pro-social behaviour.

⁹ Finland has nine years of basic education, from age 7 to 16. It is part of compulsory education in Finland, which lasts until 18 years old.

¹⁰ The paper defines more successful schools as those where the attainment of students eligible for free school meals or looked after by the local authority was better than expected, after taking account of the characteristics of the school and the student cohort.

¹¹ A2 level is the second level of the Common European Framework of Reference (CEFR), a definition of different language levels written by the Council of Europe.



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