

Chapter 2

Distribution of school resources in Denmark

This chapter discusses how resources are used and distributed in the Danish school system. It includes descriptions and analyses of expenditures, teacher resources, and the school structure and offer. The central government plays a strong role in the funding of the municipalities, while the municipalities prioritise between local services and allocate resources to individual schools. Schools typically decide how resources are used. The chapter highlights the traditionally high investment in the Folkeskole and the presence of explicit equalisation mechanisms in the funding of municipalities and schools. But it also points out some concerns related to the decentralised funding model and the potential for greater system learning about effective funding formulas. The chapter discusses the potential benefits of a strong private schooling sector in terms of innovation, but also the risks of private schooling to increase segregation. Furthermore, the chapter highlights the benefits of local teacher recruitment for matching teachers to local needs and the increasing flexibility of schools to use their human resources according to their needs under the new framework for the utilisation of teachers' working time. But it also point out concerns about the attractiveness of the teaching profession and the organisation of teachers' career development. The chapter concludes with a number of policy recommendations to consider.

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

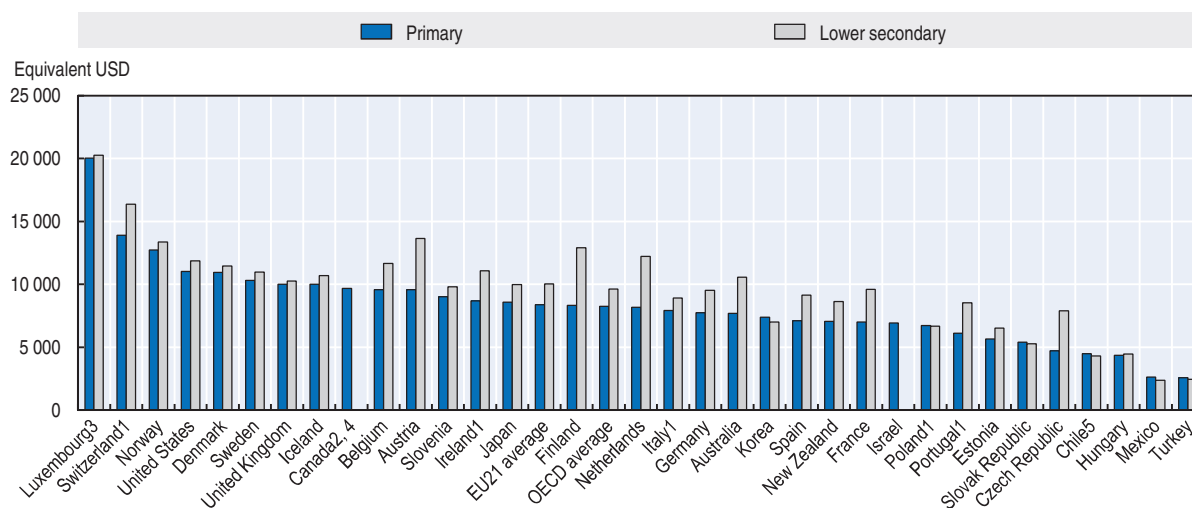
Context and features

Distribution of funding

Expenditure per student

The Folkeskole is financed by the municipalities and the central government. The expenditure per student is relatively high compared to other countries, both at the primary and lower secondary level (see Figure 2.1). In 2012, the most recent comparison available, the expenditure per student was 32.8% and 30.8% above the OECD and EU21 averages for primary education, and 19% and 14.1% above the averages of the OECD and EU21 areas for lower secondary education. Although primary and lower secondary education are typically provided under the same roof in the *Folkeskole*, expenditures are slightly higher at the lower secondary level than at the primary level, presumably because of longer school days for students at the lower secondary level. This is similar to other countries.

Figure 2.1. Annual expenditure per student, 2012

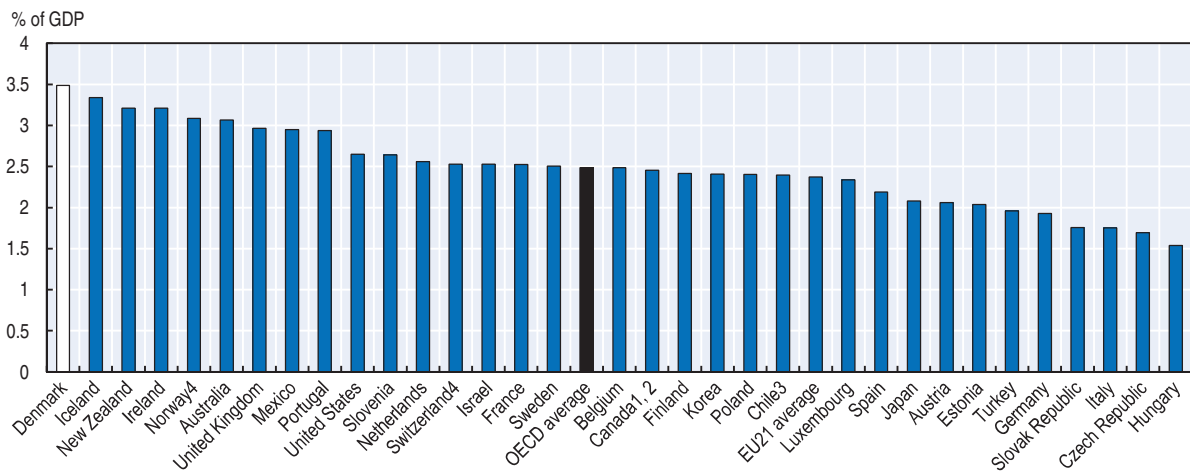


1. Public institutions only.
2. Data for lower secondary education is included in data for primary education.
3. Pre-primary and primary education include reimbursements from local authorities for previous years.
4. Year of reference 2011.
5. Year of reference 2013.

Note: Expenditure is measured in equivalent USD converted using PPPs for GDP and includes expenditure in private schools.

Source: OECD (2015), *Education at a Glance 2015: OECD Indicators*, <http://dx.doi.org/10.1787/eag-2015-en>, Table B1.1a.

Denmark is a rich country. An alternative measure of the degree to which a country prioritises education is the share of GDP spent on education. Denmark was the highest spending country in this respect in 2012, spending a larger share of GDP on primary and lower secondary education than all other OECD countries (see Figure 2.2). The figure includes both public and private spending.

Figure 2.2. **Spending on primary and lower secondary education, 2012**

1. Only primary education.

2. Year of reference 2011.

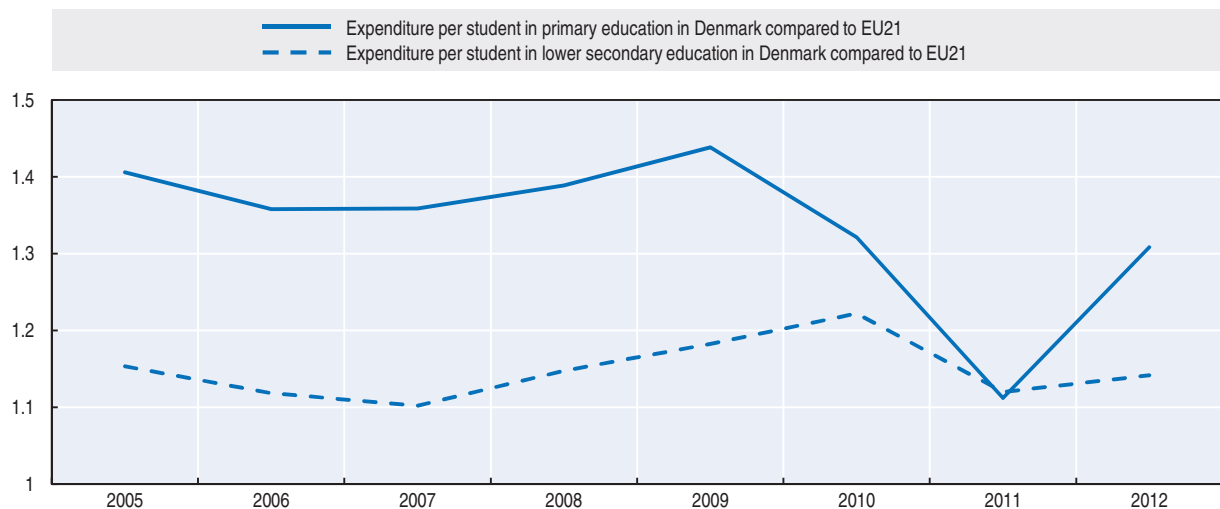
3. Year of reference 2013.

4. Public expenditure only.

Note: Expenditure on primary and lower secondary education as a percentage of GDP, include public and private sources of funds.

Source: OECD (2015), *Education at a Glance 2015: OECD Indicators*, <http://dx.doi.org/10.1787/eag-2015-en>, Table B2.1.

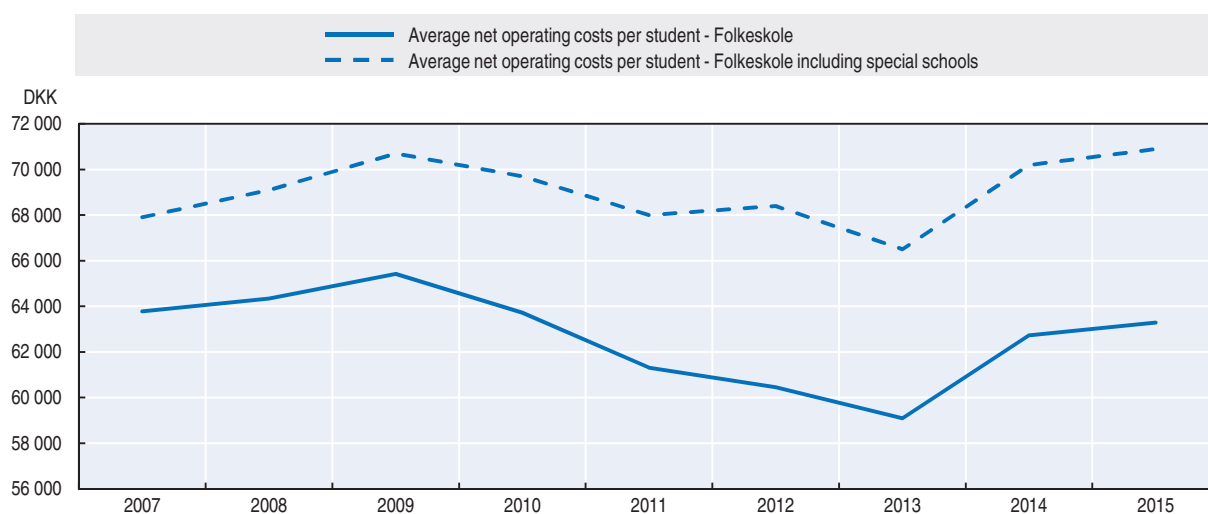
In recent years, there has been some variation in expenditure per student in Denmark. According to the OECD *Education at a Glance*, expenditure per student in primary education declined sharply compared to the other EU and OECD countries in 2010 and 2011 (Figure 2.3). In 2012, the latest comparison available, relative per student expenditure for primary education increased again, but was still below the pre-2010 levels. This development is a combination of the official numbers for Denmark and other countries, both working in the same direction. The changes are more modest for lower secondary education, where Denmark is more in line with several other countries (see also Figure 2.3).

Figure 2.3. **Development in international relative expenditure per student, 2005-12**

Source: OECD (2008, 2009, 2010, 2011, 2012, 2013a, 2014a, 2015), *Education at a Glance: OECD Indicators*, OECD Publishing, Paris, Table B1.1a.

According to the municipal accounts in Denmark, covering the whole *Folkeskole* (public primary and lower secondary schools, including special schools, but excluding private schools), there was a reduction in real expenditure per student in the period 2009-13 (Figure 2.4). However, the expenditures in 2013 were extraordinarily low because of the lockout of all teachers for about one month (see Chapter 1). Taking the lockout into account, it seems like real expenditure per student has been on a rising path since 2012. The trend of reduced expenditure per student in the public schools was followed by markedly higher expenditures in 2014 and 2015. Expenditure per student in real terms was 4.7% higher in 2015 than in 2012, but still 3.3% below the level in 2009. The block grant from the central government to the municipalities increased permanently in 2014 as a result of the 2014 *Folkeskole* reform.

Figure 2.4. **Development in real expenditure per student in the *Folkeskole*, 2007-15**



Note: Figures for 2007-14 are accounting information from accounting functions 3.22.01. *Folkeskoler* [Folkeskole], 3.22.07. *Specialundervisning i regionale tilbud* [Special education in regional institutions], 3.22.08. *Kommunale specialskoler og fra 2014 tillige 3.22.09. Efter- og* [Municipal special schools and from 2014 onwards also continuation schools].

Figures for 2015 are budget numbers.

Source: Ministry of Social Affairs and the Interior (2016), Key Figures, www.noegletal.dk (accessed 24 February 2016); Statistics Denmark (2016), StatBank Denmark, <http://statistikbanken.dk> (accessed 24 February 2016).

Funding of municipalities

According to the *Folkeskole* Act, municipalities are responsible for all expenditures in compulsory education, except if stated otherwise by law. Municipalities are the main providers of public sector services in Denmark, and spending on children and young people (including the *Folkeskole*) accounts for 26% of the total spending of the municipalities (Ministry of Economic Affairs and the Interior, 2014).

Municipal income consists of grants from the central government and local taxes. About 71% of the municipal revenues are local tax income, grants from the central government account for about 26% of the revenues, while the rest are mainly financial transactions (Ministry of Economic Affairs and the Interior, 2014). Income tax is the main local tax income source. The main part of income tax in Denmark goes to the municipalities. The rules determining how taxable income is collected are decided nationally, while the municipalities in principle decide the tax rate (see below). The local income tax rate varies between municipalities from 23% to 28%.

The central government allocates different kinds of grants to the municipalities. However, there are very few specific or earmarked grants to the *Folkeskole*. Those that do exist concern relatively small amounts compared to the overall spending level in schools (for example for the competency development of teachers). The *Folkeskole* is almost exclusively financed by the unconditional block grant from the central government in addition to local taxes.

An important mechanism to keep the balance between central regulations and local autonomy are the annual negotiations between the central government and Local Government Denmark (KL/LGDK), the interest group and member authority of the Danish municipalities. Negotiations take place in the spring. In these negotiations, the Ministry of Finance is responsible for setting the total spending level and the total level of grants. The Ministry of Social Affairs and the Interior is responsible for determining the grant system and for monitoring the overall performance of the municipalities, while LGDK co-ordinates tax rates. The agreement sets the goals for the coming fiscal year with regard to both the municipal economic performance and the development of the different municipal services. It lays down the overall framework for the economy for the coming year and the level of overall service expenditure and capital investments.

It is a general agreement which enables the municipalities to prioritise expenditure and taxes in relation to local needs taking into account the overall framework agreed upon. The agreement is not legally binding, but the system is based on observance of the rules it includes. Negotiations include both the level of the grants from the central government and changes in the local income tax rate. This effectively puts limitations on the local freedom to change the tax rate (Lotz et al., 2013). Setting the grant level is important for the overall fiscal policy of the central government, while agreeing on changes in the local income tax rate is important for the budgeting process of the individual municipalities.

If the total municipal expenditure increases more than determined in the agreement, the central government has in the past often enforced sanctions that reduce the general grants the following year (Lotz et al., 2013). Such a sanction system was institutionalised by a budget law from 2012 (Houlberg et al., 2016) (also see Chapter 1). Even though these sanctions are related to the overall economic performance and not the economic performance in individual municipalities, Lotz et al. (2013) argue that the sanction regime has reduced the flexibility of local tax policy.

Negotiations decide the total grant level, but do not directly determine the grant level for each individual municipality. The allocation of the unconditional lump-sum grant follows a budget allocation model decided by the Ministry of Social Affairs and the Interior, which takes certain characteristics of the individual municipalities into account. The model includes population size, age composition, and an index of the socio-economic structure of the municipalities. The factors in the model are designed so as to reflect the expenditure needs facing municipalities on which they have little or no influence. The age group 6-16 years has a relatively high weight in the model as it directly influences the expenditure needs in the *Folkeskole*. The age-related expenditure need has a weight of about 68%, and the socio-economic expenditure need has a weight of about 32%. Important socio-economic characteristics in the system are unemployment, the education level of the population, and housing conditions (Table 2.1).

The aim of the grant system is not to equalise service levels across municipalities as this is a matter of local politics. It is rather designed to give municipalities a similar financial basis so that all municipalities are able to provide a similar service level in all of their remits.

Table 2.1. **Criteria and weights for socio-economic needs in the national equalisation scheme, 2014**

Criterion	Weight
20-59 year-olds without employment over 5%	19
25-49 year-olds without vocational training	16
Rented apartments	5
Psychiatric patients	5
Families in certain types of housing	15
Children in families where the parents have no or little education	8
Individuals 65 years old and older living alone	2.5
Individuals with a low income in three out of four years	8
Number of individuals with intellectual disabilities	5
Number of immigrants and descendants	3
20-59 year-olds with basic skills	5
Estimated annual reduction of the population	2
Children with single parents	4
Children who have moved to another municipality at least three times	2.5

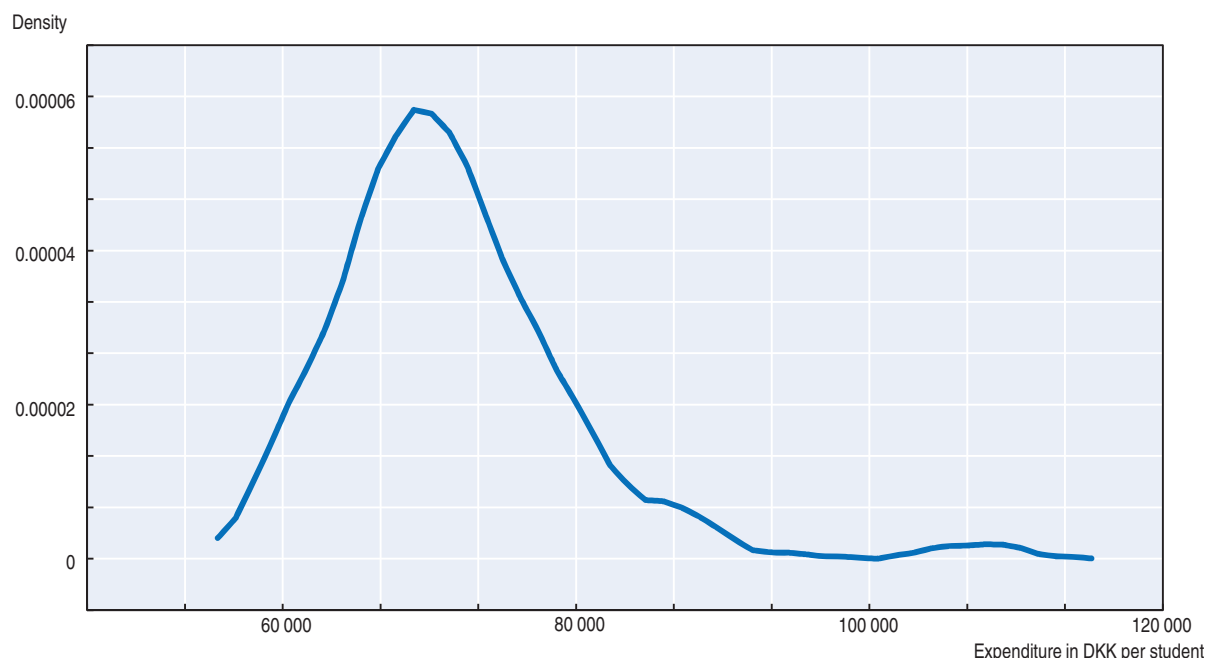
Source: Ministry for Economic Affairs and the Interior (2014), *Municipalities and Regions – Tasks and Financing*, http://english.sim.dk/media/670682/municipalities_and_regions_-_tasks_and_financing_june_2014.pdf; Houlberg, K. et al. (2016), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Denmark*, www.oecd.org/edu/school/10932_OECD%20Country%20Background%20Report%20Denmark.pdf, Chapter 3.

The equalisation system takes the municipal tax base into account, thus working as an income tax sharing system. Variations in the tax base across municipalities lead to variations in the potential level of service provision for a given tax rate. The equalisation scheme distributes central government grants to reduce the differences in municipal income related to the tax base, but it does not fully compensate for low tax bases in order to retain incentives for increasing private income in the municipality. The present system implies that if the tax base increases, the municipal revenues increase (for unchanged tax rates), but at a smaller rate than the increase in the tax base as the grants from the central government will decline. If, however, a municipality increases the tax rate, the increased revenues go without reductions to the municipality since the equalisation scheme is only related to the tax base.

Expenditure per student in the municipal accounts (including students with special needs) varies from DKK 58 424 to above DKK 100 000 (Figure 2.5) in 2014. The vast majority of the municipalities, however, have expenditure per student in the order of DKK 60 000 to DKK 80 000, with an average of DKK 70 000. Expenditure per student in the *Folkeskole* varies across municipalities for a number of reasons. Expenditure might be high because inhabitants have a high income, because the municipality chooses to have a relatively high income tax rate, because of characteristics that increase the expenditure needs and thus the grants from the central government, and/or because a municipality chooses to prioritise the *Folkeskole* compared to other local public services.

Since 2013, the implementation of the 2014 *Folkeskole* reform has been an important part of the negotiations between the central government and LGDK. The central government steers in relation to the national goals set with the reform (see Chapters 1 and 3). The high degree of local autonomy in the system implies that the central government does not set specific goals for individual municipalities. However, the central government has recently established mechanisms that make it easier to monitor individual municipalities. This includes the development of a data warehouse and the obligation for schools and municipalities to produce biannual quality reports (see Chapter 3).

Figure 2.5. **Density of expenditure per student across municipalities, including special needs education, based on municipal budgets for 2014 (2015 prices)**



Source: Statistics Denmark (2016), StatBank Denmark, <http://statistikbanken.dk> (accessed 24 February 2016); Danish Ministry for Children, Education and Gender Equality (2016c), *Datavarehuset* [Datawarehouse], www.uddannelsesstatistik.dk.

Funding of schools

Municipal councils allocate funds to individual schools. A variety of models and mechanisms are used for this allocation in different municipalities. Some municipalities simply allocate a given amount per student, while most municipalities take the socio-economic background of students or neighbourhoods into account in some way. The way in which socio-economic conditions is taken into account and the relative weight of different socio-economic characteristics vary greatly across municipalities. Typically, funding mechanisms take school size into account. Some municipalities relate funding to the number of students, while others use measures on the required number of classes according to the national maximum class size regulations (which set a maximum class size of 28 students)

Danish municipalities have detailed register data on their inhabitants, which provides them key information about the socio-economic background of each individual student. Thus, there is large local freedom in how to operationalise socio-economic measures as a way to calculate school funding. Municipalities vary in the variables they include in the socio-economic measure. In addition, some municipalities use a measure of the socio-economic composition in the school, while other municipalities use a measure of the socio-economic composition in the school catchment area. In the latter case, schools are responsible for funding the education costs of all students living in the catchment area, including students enrolled in private schools and special schools for students with special needs. Enrolment in private schools is a free choice by parents, whereas for enrolment in special schools the local *Folkeskole* and/or the municipality are involved in the decision.

Since the 2007 local government reform (see Chapter 1), approaches to funding support for students with special educational needs have changed. Based on interviews conducted in Denmark, the OECD review team formed the impression that municipalities rely to a

decreasing extent on earmarked funding to individual students and more on general funding. Following an approach of general funding, resources for students with special needs are allocated across schools with respect to general criteria measuring the socio-economic background of students. That way, schools have the flexibility to optimally use these resources, taking factors such as the characteristics of peers into account when allocating resources.

As described in Chapter 1, school principals have a high degree of autonomy in using school funding, in consultation with their school's school board. Individual municipalities might set some more regulations and instructions than the central government, but, above all, school principals are restricted by the national regulations for class size, regulation of the amount of teaching hours in the school year and in the different subjects, and individual students' right to receive teaching in accordance with their needs. Principals are obliged to recruit the relevant teacher competency within the budget. The allocation of the school budget is also discussed by the school board.

Organisation of the school offer

Governance of the school offer

Municipalities in Denmark are responsible for providing compulsory education to all of their inhabitants. This involves ensuring that all children get an education in accordance with the law, starting from 1 August of the year they turn six (enrolment in Year 0) until the end of Year 9, which is typically the year they turn 16. This responsibility includes all children, including children with special needs. Compulsory education does not necessarily need to be provided in the municipal *Folkeskole*, but can also take place in a private school or in private homes. However, every child has the right to be enrolled in the municipal *Folkeskole* free of charge. Children also have the right to enrol in Year 10 free of charge, which implies that municipalities have public schools with a pedagogical offer for Year 10 (see below).

This system of governance relies on a balance between local autonomy on the one hand, and central authority and regulation on the other. The national level defines the space for local autonomy within nationally specified frames and guidelines. The municipalities are obliged to follow all the central regulations since Denmark does not have a formal federal system. The central government has the overall responsibility for education, regulating the content of education through the *Folkeskole* law and different regulations.

The municipalities are multi-purpose local governments. They provide several of the main services of the welfare state, including health care, social services, care for the elderly, cultural services, local infrastructure, and local industrial and economic development. Within their budget, they prioritise between different services (see Chapter 1). This system implies that some municipalities might prioritise spending on education more than others. The municipalities are autonomous in making a wide range of decisions, including decisions on the organisation of the school offer, the number of schools, whether students with special needs should be enrolled in regular schools or in special schools, the pedagogical organisation of schools and the number of classes.

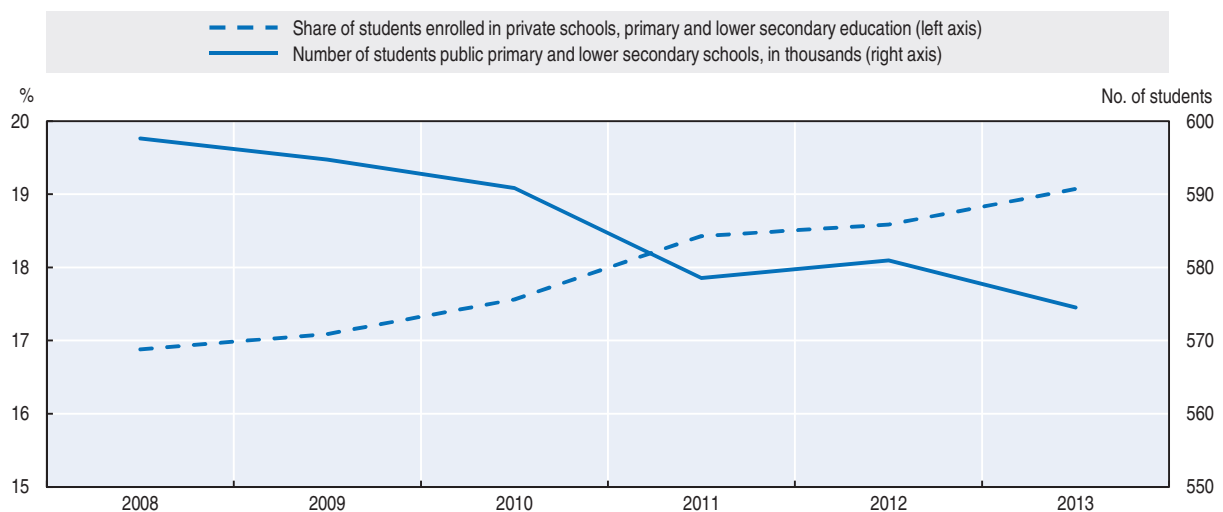
National regulations only set some minimum standards. For example, classes shall not exceed 28 students and students with special needs have the right to special assistance and support. All children have the right to teaching that is in accordance with their individual needs and qualifications. In addition, municipalities are required to provide biannual quality reports on the performance of their schools.

Student enrolment in public and private schools

Parents can choose private schools for their children, which provide education from pre-school to Year 10. Private schools do not have to accept all students, but can refuse to accept students if they wish. They decide the objectives for the education they provide, but have to offer an education that is equivalent to the *Folkeskole*. Private schools in Denmark are highly diverse, and both students with a weak and strong socio-economic background attend private schools. However, even though private schools and students in private schools are very heterogeneous, empirical studies find that students in private schools, on average, have a more advantaged socio-economic background than students in the *Folkeskole* (Houlberg et al., 2016).

Private schools constitute a significant part of compulsory education in Denmark. According to OECD statistics, the only European countries that have a larger share of students in private lower secondary schools than Denmark are the Netherlands and Spain (OECD, 2014a, Chart C7.1). Between 2008 and 2013, the share of students in private schools increased from just under 17% to over 19% (Figure 2.6).

Figure 2.6. **Trend in the number of students in public schools and in the share of students in private schools**



Note: Private schools include "continuation schools" (*Efterskole*).

Source: Houlberg, K. et al. (2016), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Denmark*, www.oecd.org/edu/school/10932_OECD%20Country%20Background%20Report%20Denmark.pdf, Table 2.2.

Private schools receive public grants. In 2013, the grant was equal to 71% of the average expenditure per student in the *Folkeskole*. The municipalities have to pay 89% of this grant, while the remaining 11% are paid for by the central government (Houlberg et al., 2016). From 2016 onwards, private schools have been receiving 73% of the average expenditure per student in the *Folkeskole*. Parents pay a fee that is determined by the individual private schools. The typical amount ranges from DKK 1 000 to 2 000 per month (Houlberg et al., 2016). This corresponds to 15%-30% of the average expenditure per student in the *Folkeskole*.

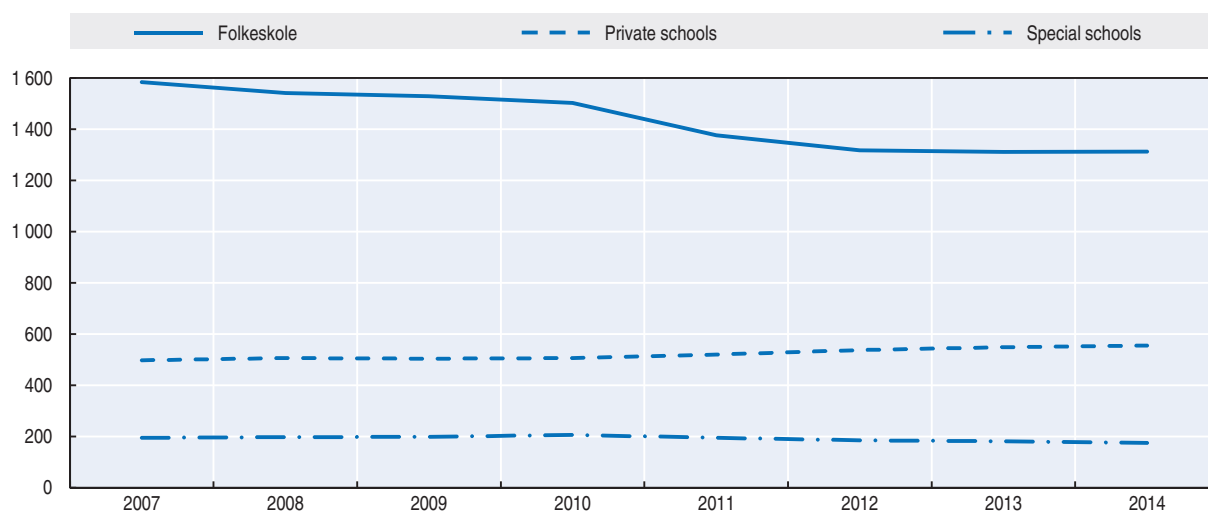
Since the public subsidy for private schools is relatively high, the share of private spending is low in Denmark despite the relatively high share of private schools. The *OECD Education at a Glance 2015* compares funding sources across countries, including primary education, all secondary education and post-secondary non-tertiary education as one

group. The private school system in Denmark is similar for upper secondary education as for primary and lower secondary education. According to the OECD's data, only about 3% of spending on education at these educational levels comes from households (OECD, 2015, Chart B3.1).

The number of students in primary and lower secondary education has been stable in Denmark during the last years. Given the increasing share of students in private schools, this implies that the number of students in public schools has declined (Figure 2.6). The reduced number of students puts additional pressure on cost savings in public schools.

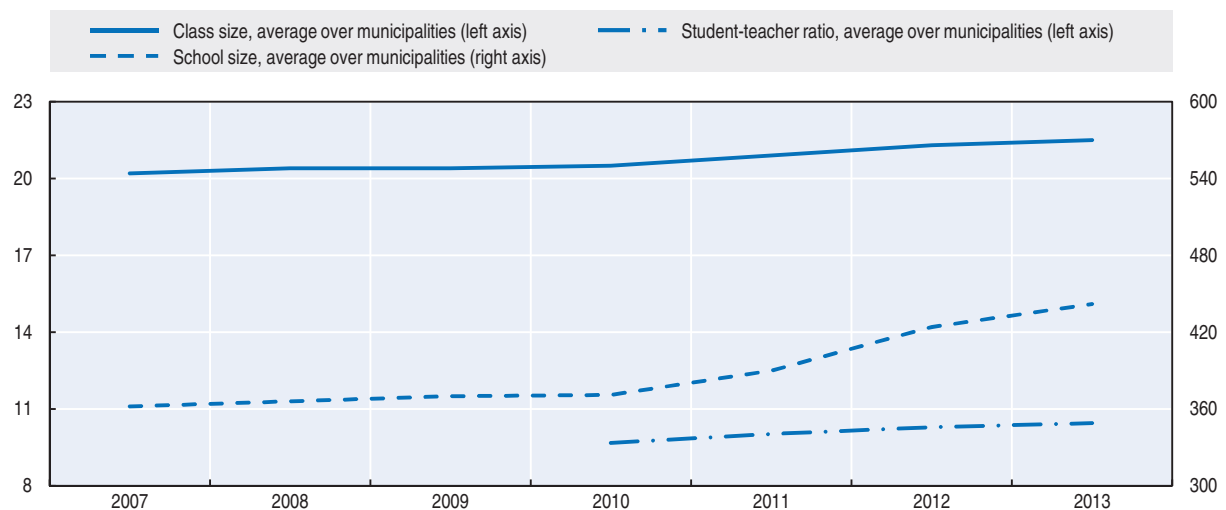
On average, public schools are twice as large as private schools. In addition, average school size has increased in recent years. From 2007 to 2014, the number of public regular schools declined by 17%, with the largest degree of consolidation in 2011 and 2012 (Figure 2.7). On the other hand, the increasing number of students in private schools has increased the number of private schools by 12%. School consolidation across Denmark has involved mainly the closure or merger of relatively small public schools. The total number of schools in Denmark has declined from 2 275 in 2007 to 2 043 in 2014.

Figure 2.7. **Trend in the number of schools**



Source: Houlberg, K. et al. (2016), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Denmark*, www.oecd.org/edu/school/10932_OECD%20Country%20Background%20Report%20Denmark.pdf, Appendix 1, Table 2.

Since 2009, municipalities have reduced their service level by DKK 11 billion in real terms. As a result, unit costs in all service levels have been under pressure, including the *Folkeskole*. The school consolidation process has most likely contributed to a reduction in expenditure per student. The reduction in expenditure per student in real terms up to 2013 can also be observed by an increase in class size and a higher student-teacher ratio (Figure 2.8), even though it also has to be taken into account that pedagogues (a profession similar to early childhood and care staff in other countries, but supporting all stages of human development more broadly) have been working increasingly in schools since the 2014 *Folkeskole* reform. The student-teacher ratio is smaller than the class size as students have more hours in class than teachers and some students have extra teachers. On the other hand, increased travel time of students can also create new costs for municipalities. The municipalities are obliged to cover transportation costs for students living far away from the *Folkeskole* in which they are enrolled. For students in pre-school and Years 1-3,

Figure 2.8. **Teacher-student ratio, class size and school size**

Source: Houlberg, K. et al. (2016), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Denmark*, www.oecd.org/edu/school/10932_OECD%20Country%20Background%20Report%20Denmark.pdf, Appendix 1, Tables 3, 4, and 10.

municipalities are obliged to pay for the transportation cost for students living more than 2.5 km away from their *Folkeskole*. For Years 4-6 it is 6 km, for Years 7-9 it is 7 km, and for Year 10 it is a distance of more than 9 km. If parents choose a private school, they lose the right to the free transportation of their child.

Student enrolment in Year 10

Students graduate from the *Folkeskole* after Year 9, typically the year they turn 16. Upper secondary education builds upon the qualifications that students have acquired in the *Folkeskole*. All young people in Denmark have the right to upper secondary education and thus must be offered such an education. This reflects the expectation that all children should complete and graduate from upper secondary education with only few exceptions.

When graduating from the *Folkeskole*, students are expected to have the necessary basic skills in order to complete upper secondary education successfully within the regular time. In between compulsory education and upper secondary education, however, students have the possibility to enrol in an optional Year 10 in the *Folkeskole* or a private continuation school (*Efterskole*). Continuation schools cover Years 8-10, comprise a broad range of school types, and specialise in different educational themes or specific youth groups. Typical examples are sports, outdoor activities and various creative arts productions. Continuation schools are typically boarding schools that are financially supported by the municipalities similar to other private schools. According to various groups interviewed by the OECD review team, one of the main rationales for Year 10 lies in some students needing more time to reach the qualifications necessary for enrolment in upper secondary education. According to the *Folkeskole* Act, Year 10 is an educational offer for young people who, after finishing basic education, are in need of additional qualifications and/or clarifications with regard to their further educational opportunities before entering upper secondary education. Students may, however, also enrol in an optional Year 10 for personal and social development, which is reflected in the wide range of available specialisations, particularly in private continuation schools.

Students have the right to enrol in Year 10 free of charge, which implies that the municipal authorities must have a pedagogical offer for Year 10 for all those that are

interested. In reality, the pedagogical content varies largely between schools offering Year 10. Some schools offer merely repetition of the content of the earlier years in the *Folkeskole*, while others have a much broader set of goals. Year 10 consists of a compulsory part and an optional part. In private continuation schools, the optional part can be used in different ways.

Available data indicate that it is quite common for students to enrol in the voluntary Year 10. In the public *Folkeskole*, the number of students in Year 10 was 35% of the number of students in Year 9 in 2013 (Houlberg et al., 2016, Table 2.4). Enrolment in Year 10 has been stable over the last six years (Houlberg et al., 2016, Table 2.3). In addition, a high number of Year 10 students are enrolled in private continuation schools. Overall, counting also the a large number of students in Year 10 in private schools, the proportion of students enrolled in Year 10 is as high as 55% of the enrolment in Year 9 in the school year 2013/14.

Special schools and inclusion of students with special needs

Municipalities are responsible for the education of all children, including children with different kinds of special needs. Some municipalities have agreements that their students with special needs can attend a special school in another municipality and municipalities that do not themselves run a special needs school may draw on special needs schools run by the regions for a fee and according to specific framework agreements. It is a local choice whether to enrol a student in a regular school or in a special school, a decision taken in a process typically involving an assessment through an external visitation board and including parents and pedagogues in the municipality under general rules set by the individual municipalities. Following a recent legislative change, special needs education now includes children in special classes or special schools as well as children with special needs in regular classes with the need for instruction in a special class of more than nine teaching hours per week. Children who need less than nine teaching hours of special instruction per week can benefit from individualised teaching in regular classes, a temporary subdivision of classes, additional lessons and other types of professional support, two teachers in a class, teacher assistants, or individual support. The specific criteria used for enrolment in special schools, however, vary across municipalities, and this is also reflected in different degrees of inclusion of special needs students.

Denmark has followed a policy of greater inclusion of students with special needs in regular teaching situations as set out in the annual agreements between the central government and LGDK (see Chapter 1). As a result, the share of students in special schools has declined in the past few years, from 5.8% in 2010/11 to 4.8% in 2013/14 (Table 2.2). The national goal was to reduce the number of students in special schools to below 4% by 2015.

Table 2.2. Percentage of students in the public *Folkeskole* enrolled in special schools

	2010/11	2011/12	2012/13	2013/14
All students	5.8	5.4	5.3	4.8
Boys	8.0	7.5	7.2	..
Girls	3.4	3.2	3.0	..

..: Not available

Source: Houlberg, K. et al. (2016), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Denmark*, www.oecd.org/edu/school/10932_OECD%20Country%20Background%20Report%20Denmark.pdf, Table 2.8.

Moving students with the least severe special educational needs previously enrolled in special schools to regular schools might reduce the overall expenditure per student in primary and lower secondary education. One motivation for the inclusion policy seems to be to teach these students more efficiently with less extra resources in regular schools than in special schools. For example, students with less severe special educational needs can participate in regular teaching without extra resources in some subjects, although not all subjects, with the same learning potential as in special schools. However, even though overall expenditure per student in the school system can be reduced by the inclusion policy, expenditure per student might nevertheless increase both in special schools and regular schools. Special schools are left with a student population with a higher level of special needs on average, which will increase expenditure per student. They will typically have to continue to cover the fixed costs of operating a school, but with fewer students. Houlberg et al. (2016, Appendix 1, Table 7) show that the expenditure per student in special schools has increased by 17% in the period 2010 to 2013. Figure 2.7 shows that the number of special schools has declined by 15% between 2010 and 2014.

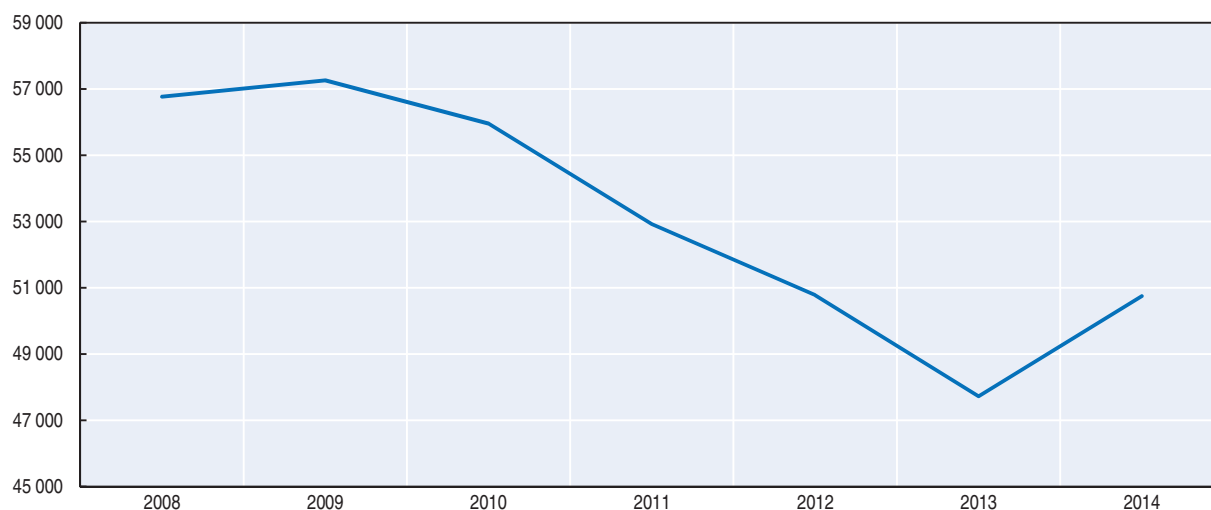
At the same time, the movement of students to regular schools is likely to increase the expenditure per student also in regular schools as these schools need to make adequate arrangements to cater to an increasing number of students with some special needs. This effect is likely to be small considering the low share of the overall number of students being moved. In fact, increased inclusion in regular schools has occurred in a period of a general decline in expenditure per student. The overall cost saving is a result of fewer students in the costly special schools.

Distribution of teacher resources

Teacher employment conditions and salaries

Teacher quality is the main school-level factor affecting student achievement, and teachers are the main cost component in education (OECD, 2005). Thus, when analysing the resource situation in schools, teacher resources are of particular importance. There has been a reduction in the number of teachers in the *Folkeskole* in the last years following a decline in the number of students and an increase in the student-teacher ratio (Figures 2.7 and 2.8). While there were about 57 000 teachers (including pedagogues) in the *Folkeskole* in 2009, this number decreased to about 51 000 in 2014 (Houlberg et al., 2016). The low number of teachers in 2013 is related to the teacher lockout (Figure 2.9). However, as part of the 2014 *Folkeskole* reform, there has been an increase in the number of pedagogues working in the *Folkeskole* (see Chapter 4). According to data from the Ministry for Children, Education and Gender Equality, the number of pedagogues in the *Folkeskole* increased from 3 961 in 2010/11 to 5 785 in 2013/14 (Danish Ministry for Children, Education and Gender Equality, 2016b).

About 98% of the teachers in the *Folkeskole* are members of the Danish Union of Teachers (*Danmarks Lærerforening*, DLF). Private school teachers are organised in a separate union and do not take part in the negotiations for teachers working in the *Folkeskole*. Historically, working conditions for teachers in the *Folkeskole* have been determined in negotiations between the teacher union and LGDK. Up until 2014, the central agreement resulting from these negotiations used to set a certain amount of preparation time for each lesson taught, independent of teacher experience, year and subject. The agreement also included compensation for a large range of different tasks in terms of reduction in number of lessons taught. Legislation passed in 2013 (Act no. 409 on teacher working time) set this agreement aside as of the school year 2014/15. Act no. 409 has given school leaders a higher degree of

Figure 2.9. **The number of teachers in the public Folkeskole, full-year equivalents**

Note: Includes ordinary teachers, pedagogical leaders of pre-school classes, and substitute teachers.

Source: Houlberg, K. et al. (2016), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Denmark*, www.oecd.org/edu/school/10932_OECD%20Country%20Background%20Report%20Denmark.pdf, Table 4.1.

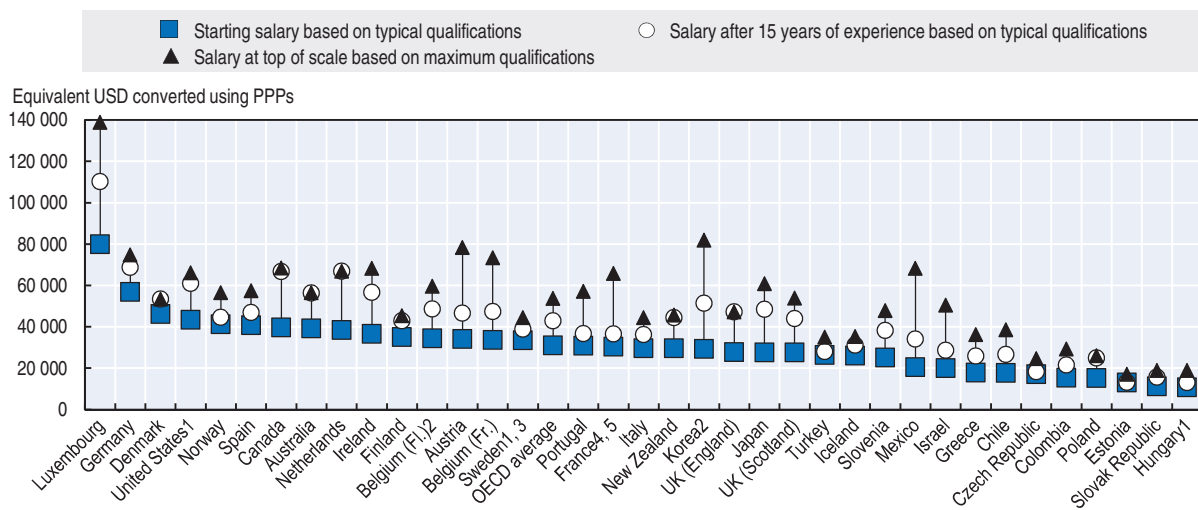
flexibility in the management of the teacher work force within the daily working time determined in the legislation (see also Chapters 1 and 4 for details).

The salaries of teachers in municipal schools are mainly determined in the central bargaining between the teacher union and LGDK. In the latest years, the bargaining parties have used most of their efforts on negotiating working conditions, while agreement on salary levels has been more easily reached. While the growth in teacher salaries is determined in the central bargaining process, there is some local flexibility for setting individual teachers' salaries. Local adjustments of teacher salaries are determined in bargaining processes between individual municipalities and their local teacher union. As a result of this process, salaries of teachers with the same experience differ somewhat across different municipalities.

The salaries of Danish teachers compared to the salaries for other tertiary educated workers are higher than the OECD average (OECD, 2015, Chart D3.1). The wage structure of Danish teachers is, however, much more compressed than in most other countries. This implies that the starting salary for teachers in Denmark is competitive compared to other countries, while the top salaries for senior teachers with the highest qualifications are low by international comparison (see Figure 2.10).

Teacher recruitment

Teachers are employed by the municipalities, but are attached to an individual school. School principals are in charge of the recruitment of new teachers, within national work and tariff regulations and municipal instructions. They determine the share of resources in the school budget that should be used on teacher salaries and recruit teachers accordingly. Before announcing a vacant position, school principals are responsible for determining the kinds of competencies that are required. The teacher recruitment situation varies across schools and municipalities. In the example of a rural municipality visited by the OECD review team, it was reported that they had fewer applicants to vacant positions than more urban areas. No national data on teacher supply and demand in different municipalities is

Figure 2.10. **Lower secondary teachers' salaries at different points in teachers' career, 2013**

1. Actual base salaries.
 2. Salaries at top of scale and typical qualifications, instead of maximum qualifications.
 3. Salaries at top of scale and minimum qualifications, instead of maximum qualifications.
 4. Includes average bonuses for overtime hours.
 5. The typical qualification of starting teachers differs substantially from the typical qualification of all the current teachers.
- Note: Countries are ranked in descending order of starting salaries for lower secondary teachers with typical qualifications. Annual statutory salaries in public schools measured in equivalent USD converted using PPPs for GDP.
- Source: OECD (2015), *Education at a Glance 2015: OECD Indicators*, <http://dx.doi.org/10.1787/eag-2015-en>, Tables D3.1a and D3.6a.

available. A recent survey from January 2016 of the Danish Union of Teachers suggests an increasing challenge to recruit qualified teachers (DLF, 2016). The respondents were local union leaders in the municipalities. 75% of the local unions reported problems with recruiting qualified teachers in the previous year, and 33% considered this to be a problem of high degree. 74% of the respondents had the impression that the recruitment challenge had increased over the last years. In another survey carried out in autumn 2015, 11% of the municipalities reported challenges in recruiting qualified teachers to a high degree. 69% of the municipalities reported challenges to some degree. This is an increase in comparison to a similar survey conducted in the autumn of 2014. Challenges are especially reported with regards to recruiting teachers with teaching competencies in certain subjects and in certain geographical areas (LGDK, 2015b).

Most individuals with a teacher education actually work as teachers. According to data from the Ministry for Children, Education and Gender Equality, the Ministry of Higher Education and Science and Statistics Denmark, about 84% of qualified teachers in employment work in the education sector. The remaining individuals with teacher education work in different parts of the economy, including the private sector, social services and the cultural sector. The unemployment rate of teachers is about 2%, has been relatively stable over the last four to five years, and does not seem to have been influenced by the decrease in the number of teacher positions in the *Folkeskole* and the new legislation on working conditions (Danish Ministry of Children, Education and Gender Equality, 2016a).

It is too early to conclude whether the change in working conditions has reduced the attractiveness of the teaching profession. According to municipal payroll data 5 339 teachers (around 10%) left the public school sector between October 2013 and October 2014 and 5 315 between October 2014 and 2015. This is an increase in comparison to October 2012 and 2013 where only 4 261 teachers left the public school sector. However, in the years 2007-11

an average of 5 474 left the public school sector annually. Teachers leave public schools either for work in another sector, for work in private schools, into unemployment, or for retirement. Teachers' sick leave has also increased. According to the municipal payroll data, sick leave has increased by 12% after the reform in 2014 and is now at the same level as for other municipal employees (Kommunernes og regionernes Løndatakontor, 2016).

Strengths

Distribution of funding

Investment in education has been traditionally high and there has been a recent focus on the efficiency of spending

It is a clear goal of the Danish school system that every student in the *Folkeskole* should be prepared for further education and complete upper secondary education. The *Folkeskole* is the foundation for further education, such that the investment in basics skills in the *Folkeskole* must be seen in relation to the overall investment in education.

Historically, Denmark has allocated a high level of resources to education. Between 2009 and 2013, expenditure per student in the *Folkeskole* declined, but the proportion of overall municipal expenditure allocated to the *Folkeskole* remained unchanged. The overall decline in spending on the *Folkeskole* in this time period did not coincide with reduced ambitions for the performance of the *Folkeskole*. The expenditure per student has always been clearly above the average expenditure in the OECD and the EU, and relative expenditure increased markedly again in 2014 (Figures 2.1 to 2.4). Policies have expressed an increased ambition to improve educational performance and to strengthen the governance of the education sector. The central government acknowledges that the organisation of education and the support system for schools and teachers are crucial elements to improve performance.

Since the financial crisis, attention to the efficient use of resources in education has increased. In the process of preparing the 2014 *Folkeskole* reform, stakeholders acknowledged that better learning outcomes for all students should be possible without using more of society's resources on compulsory education. The present evidence does not indicate any reduction in student achievement since the introduction of the reform, but the full impact of the changes will need to be monitored over the years to come. The impression of the OECD review team is, however, that the Danish school system has been able to implement a reform with clear and high ambitions for improved student performance without a major increase in overall spending. The focus has been on improving school quality within the present resource situation. An important element has been a more flexible use of teachers' working hours, improving the utilisation of existing resources in schools. Previously, teachers' preparation time was bound in agreements. Under the new framework for the utilisation of teachers' working time it is the intention that teachers' work should be organised in a new and more flexible and collaborative way with discretion for school leaders to prioritise the teachers' tasks and teaching based on students' abilities and needs. As the new framework envisages, this should also give room for a more efficient organisation of teachers' preparatory work, so that more time can be dedicated directly to students. As another important element of the reform, the length of students' school day increased. This has been accomplished without hiring additional teachers. Instead, it has been possible to shift resources from after school programmes (*Skolefritidsordning og Fritidshjem*, SFO) to schools, enabling schools to employ more pedagogues, as students' time in after school programmes has decreased following the introduction of longer school days. Pedagogues are professionals

trained in supporting all stages of human development from birth to old age, including early childhood education and care and leisure and youth education (see Chapter 4). In addition, the government has raised the block grant permanently with DKK 407 million, introduced a grant for competency development (DKK 1 billion from 2013-20), and allocated DKK 1.8 billion (2014-17) in order to facilitate the implementation of the reform.

However, as is discussed further below, the success of the reform will depend essentially on how teachers and school leaders are able to adjust to the new situation regarding the use of their time, and whether expectations for increased teaching time (in general two additional clock hours per week based on an agreement between the central government and LGDK, that is 18.3 hours compared to 16.3 hours previously) will influence teachers' engagement and time for other aspects of their work as teaching professionals (e.g. collaboration, mentoring, peer feedback etc.). For example, a recent research report on the school reform and new working conditions finds that teachers have experienced a reduction in their time for preparation and that this situation poses a challenge for their teaching (Bjørnholt et al., 2015, more on this below and in Chapter 4). The analysis also finds, however, that school principals consider that the mind-set and practices of teachers have remained unchanged.

In the Danish context of highly decentralised policy making, the goal of efficient school organisation has been taken on board at both the central and municipal level. Decentralised power in the school system can provide good conditions for efficiency and high performance (Barankay and Lockwood, 2007; Clark, 2009; Falch and Fischer, 2012; Hanushek et al., 2013). The Danish system is highly decentralised in the sense that the central government does not interfere in specific municipalities and schools, but governs the system mainly through general guidelines agreed in national negotiations. Central funding is related to national goals and targets as negotiated in the annual agreements between the central government and LGDK. A key central initiative to reduce spending following the financial crisis was the introduction of multi-annual expenditure ceilings for the central government, municipalities and regions by the Danish parliament.

A range of initiatives to increase the efficiency of spending in the education sector were implemented by individual municipalities without involvement of the national level. One example of the capability of the system to work on efficiency improvement is the school consolidation process. This process was led in a decentralised fashion by individual municipalities. Municipalities have sought to consolidate their school systems to both increase student achievement by improving the learning environment and to reduce expenditures in the *Folkeskole* by achieving economies of scale through larger school sizes.

The approach to funding entails explicit equalisation mechanisms

The funding system of the *Folkeskole* entails several equalisation mechanisms. The national system reduces financial differences across municipalities. Less advantaged municipalities in terms of private income and municipalities with a challenging socio-economic composition of the population get higher grants from the central government. There is an implicit tax sharing system as municipalities with rich inhabitants and consequently a high tax base receive small to no grants from the central government. In addition, this grant system takes detailed socio-economic measures into account. The equalisation system does not have the ambition to completely equalise the economic situation in all municipalities, conditional on socio-economic status, but to reduce major differences. Consequently, the differences in expenditure per student observed across

municipalities are to a small extent related to differences in municipalities' financial bases. According to Houlberg et al. (2016) and Dalsgaard and Andersen (2016), differences in socio-economic characteristics explain more than half of the variation in expenditure per student across municipalities. In addition, the variation reflects differences in how municipalities prioritise the *Folkeskole* relative to other local public services. Notably, it is not the case that municipalities with a challenging student population and with low private income systematically use less resources on the *Folkeskole* compared to other municipalities. Rather, municipalities with a relatively disadvantaged socio-economic population spend more resources on education than other municipalities (Houlberg et al., 2016).

Within municipalities, mechanisms for school funding typically take socio-economic characteristics of the student body into account. Based on interviews conducted during the review visit, the OECD review team formed the impression that all municipalities use some sort of a funding formula known to schools when allocating financial resources. The specificities of the local systems vary considerably, but they typically take variations between schools into account. Municipalities with little variation across schools in the socio-economic background of students seem to put less weight on socio-economic conditions and to give relatively more importance to school size. Overall, these mechanisms result in a per student expenditure that is positively related to the share of students with a low socio-economic status at the school (Houlberg et al., 2016). The fact that students facing some kind of disadvantage need extra resources and follow-up is widely accepted. In addition, municipalities can apply to the central government for specific targeted funds for special needs education.

Students with special needs also receive additional resources. Special schools spend on average over eight times more per student than regular schools (Houlberg et al., 2016, Appendix 1), although this reflects to a large extent the costs of educating students with severe disabilities. Regular schools typically employ pedagogues with a specific relevant education to work with students with special needs. Additional resources are allocated to these students via support by teachers with the relevant competencies (see Chapter 4).

Organisation of the school offer

School structures provide good conditions for students from different backgrounds to succeed, even though equity concerns remain

Upper secondary education (youth education) is an important part of the education system, in which some students qualify for tertiary education while others choose a vocational path. Vocational programmes include apprentice training in close co-operation with employers. The goal that all students should be well prepared for upper secondary education in a comprehensive system implies strong demand for equalisation. This requires not only adequate funding to meet the needs of all students (see above), but also a school structure that offers extra support to those most in need.

Skill development at young ages is the most critical factor for equalising educational outcomes (Heckman, 2008). Compulsory education in Denmark starts the year a student turns six years of age. The first year in school (Year 0) differs from the other years in that much more time is used on play and non-formal learning. Schools typically use pedagogues for the youngest students and adapt the learning environment to their specific needs. Denmark has a well-developed system for early childhood education and care (ECEC). In 2013, 96% of children aged three participated in ECEC (OECD, 2015, Table C2.1). Schools can

then build on the experience almost all students have from participation in ECEC, even if students with an immigrant background are less likely to participate in ECEC than their non-immigrant peers (see Chapter 1).

The *Folkeskole* offers its students an integrated and comprehensive education for the entire period of compulsory education and aims to differentiate teaching to meet individual student needs. As such, the structure of the *Folkeskole* avoids early tracking of students into different study programmes and keeps all educational options open for students until age 16. As described in Chapter 1, Denmark enjoys comparative success internationally in limiting the proportion of low performing students at the end of compulsory education. The between-school variation of performance in Denmark remains lower than the OECD average, which might indicate that the specific school a student attends has less of an impact on how the student performs than is the case internationally.

Despite these structural conditions that provide good conditions for students from different backgrounds to succeed, equity remains a concern in Denmark. Students' socio-economic background has a stronger impact on performance than in other Nordic countries and only a small proportion of students manages to overcome difficult socio-economic circumstances. Equity concerns are particularly strong for students with an immigrant background and more so than in many other OECD countries.

Various municipalities have been willing to adjust the school structure to demographic changes

In the past few years, the Danish *Folkeskole* has shown its ability to adjust the school structure to demographic changes. In particular at the start of the 2010s, there was a trend towards school consolidation in the context of declining student numbers in rural areas. Even though the past years have seen fewer changes, discussions regarding the organisation of the school offer appear to be a vivid part of local politics. Ares Abalde (2014) finds that there are several potential advantages to larger school size and school consolidation: larger schools are likely to be able to offer a larger curriculum, more specialised teachers and courses, a broader range of extracurricular activities and a higher share of administrative staff and para-professionals offering support to teachers and school leaders. On the other hand, potential negative effects on student wellbeing related to increased transportation time, reduced individual attention and fewer links to parents and the local community need to be taken into account.

Research from different countries indicates that expenditure per student is highest in small schools (Falch et al., 2008; Larsen et al., 2013) and that important economies of scale can be achieved up to a certain enrolment level. However, some studies also find that returns to scale diminish, and that, beyond a certain enrolment level, diseconomies of scale begin to emerge (Ares Abalde, 2014). The main scale effect when school size increases is most likely the potential to fill up classes towards the maximum allowed class size. According to Humlum and Smith (2015), school size affects a diverse set of outcomes such as student achievement and parental involvement, but in a non-consistent way. They conclude that the mixed evidence on the effects of school size on academic achievement suggests that optimal school size depends on the context, such as the country and student composition.

The infrastructure for learning (and other local public services) has characteristics of a local public good (Oates, 1972). Local knowledge is important for optimal decisions, and there are few externalities on other local governments. The infrastructure of schooling is clearly a

local decision in Denmark. The national funding system is not related to actual decisions on school structure, and the central government does not take a standpoint on school structure. The consolidation process has been motivated by both effectiveness and efficiency arguments with the aim of enhancing learning as much as possible given limited resources available.

Private schools and school structure may support efficiency and innovation

Private schools have a long tradition in Denmark. From an efficiency point of view, the co-existence of public and private schools might be beneficial as it lays the ground for competition (Friedman, 1962). At the same time, there is evidence that the development and support of a large private school sector might go in line with threats to equity and risks of segregation, especially if the school choices of some families are inhibited by factors such as tuition fees, availability of and access to information, school transportation arrangements and admission practices. These points are addressed below in the section on Challenges.

Most proponents of school choice and the use of private providers in education make some combination of the following arguments as described in OECD (2010). First, competition between schools might improve schools' incentives because schools prefer to be attractive and will work to avoid losing students. In theory, competition and the threat that consumers can purchase goods and services from other providers create a strong incentive for supplying high quality products at low prices. Consumers "vote with their feet" and make their purchases elsewhere if dissatisfied (Hirschman, 1970). Regarding compulsory education, for example Figlio and Hart (2014) and Böhlmark and Lindahl (2015) find evidence for such an effect. Figlio and Hart use the introduction of a means-tested voucher programme in public schools in Florida in the United States to examine whether increased competitive pressure on public schools affects students' test marks. They find the greatest positive effect of the programme for students attending public schools located close to private schools. Böhlmark and Lindahl exploit the variation across municipalities of the expansion of independent schools (*Friskolor*) in Sweden in the 1990s, and find that an increase in the share of independent schools improves both student performance at the end of compulsory education and further educational attainment. They conclude that this is not because independent schools are of higher quality, and thus interpret their finding as a result of increased competition between schools.

A second argument for offering private schooling options suggests that with a wide variety of schools from which to choose and where each provides a different mix of services, customers will choose the mix of services that best meets their educational preferences. The result will be that schools cater to a relatively narrow range of educational preferences. Advocates of privatisation and school choice argue that such sorting by preferences will reduce the amount of time schools spend resolving conflicts among stakeholders, leaving them more time and energy to devote to developing and implementing education programmes (Chubb and Moe, 1990; Hill et al., 1997). Advocates of private providers in education also argue that the very act of choice will leave students, parents, and teachers disposed to work harder to support the schools they have chosen.

According to a third theoretical argument for privatisation, autonomous schools will develop innovations in curriculum, instruction and governance that should lead to improvements in outcomes. Traditional public schools could also improve by adopting the innovative practices that private or independent schools are expected to develop. Proponents also argue that privatisation is likely to bring a welcome dose of entrepreneurial spirit and a competitive ethos to public education.

Distribution of teacher resources

There seem to be no major difficulties for teacher recruitment

High quality schooling requires competent and motivated teachers. In order to recruit teachers of high quality in the *Folkeskole*, initial teacher education must be of high quality and be attractive for promising teacher candidates. The Danish initial teacher education system has been reformed over the last years with the aim of increasing teacher quality. The teacher education institutions themselves have actively taken part in changing the content and teaching methods to achieve this goal. In addition, the recent changes in Denmark reflect an increasing recognition that teacher competency and motivation need continuous development, with investments in further education and competency development for existing teachers (see Chapter 4).

The OECD review team formed the impression that the overall supply of teachers to the Danish school system was adequate. There is no observable shortage of formally qualified teachers. For the OECD 2013 Teaching and Learning International Survey (TALIS), only 14.8% of lower secondary teachers were in a school whose principal reported that a shortage of qualified and /or well-performing teachers hindered the school's capacity to offer quality instruction (OECD, 2014b, Table 2.19). Data from the OECD PISA 2012 paint a similar picture. School principals in Denmark were less likely to report a teacher shortage than in many other countries (OECD, 2013b, Figure IV.3.5, Table IV.3.11). Teacher education institutions seem properly scaled, and the large majority of individuals with teacher education choose to stay on in teaching. In addition, teachers are recruited by schools. This yields the best possibility to assess applicants to vacant teacher positions in relation to the specific needs of schools and promotes efficiency (Naper, 2010). The school leader can focus on the school's competency needs in the recruitment process.

Changes in the utilisation of the teachers' competencies increase the flexibility of schools to use their human resources according to their needs

Recent changes in the national rules on working conditions for teachers (Act no. 409) and the 2014 *Folkeskole* reform have increased schools' flexibility in using the time and competencies of their teachers. Under the new legislation, schools have the opportunity to let teachers better utilise their specific competencies. Schools can more easily focus on student learning as the key issue of school leadership (see Chapter 4 for a more detailed analysis and discussion).

The competencies of teachers need continuous development and updating (Jackson, 2012a). The system tries to combine professional development that is in the interest of the individual teacher, and, in addition, meets the needs of the school. The former is important to stimulate teacher motivation, while the latter is essential in order to develop the school in the desired direction. The establishment of a system with learning consultants is also an improvement of the system (also see Chapter 4 for greater detail).

Challenges

Distribution of funding

There are concerns related to the decentralised funding model

The national funding system implies that the resources available in each municipality to a large extent depend on national policies. The flexibility of municipalities to influence their own income is limited by the national steering of the income tax rate. At the same time,

the central government's influence on expenditure on education is limited as education is only one of many local services the municipalities are responsible for and prioritise across.

The present system relies to some extent on the regulation of inputs, as illustrated by the maximum class size rule. Although the Folkeskole reform has changed the focus towards learning outcomes, the measurement of learning outcomes still has to develop and there are still challenges in moving from a teaching to a learning focus in practice (see Chapters 3 and 4). Further, there are at present no attempts to link expenditure decisions to realised outcomes. Expenditure per student clearly varies across municipalities. This indicates a situation where some municipalities prioritise spending on education more than others, but also a potential for efficiency savings. There is no information at the national level to which extent the different priorities set by the municipalities affect the quality and equity of learning outcomes. However, according to Houlberg et al. (2016) and Dalsgaard and Andersen (2016), more than half of the variations among municipalities can be explained by socio-economic conditions, with municipalities having more students from disadvantaged backgrounds spending higher amounts per student than other municipalities. There are hence variations in the expenditure level across the municipalities that can be explained either through differences in the decided level of service or through differences in productivity.

Research from different countries indicates that the relationship between expenditure per student and learning outcomes is context-dependent. There is some evidence for Denmark that smaller classes slightly increase student performance (Browning and Heinesen, 2007, Heinesen, 2010), but the findings in the international literature are mixed (Hanushek, 2003, 2006, Krueger, 2003, Fredriksson and Öckert, 2008, Leuven et al., 2008). Nevertheless, the variation in expenditure level across the municipalities indicates significant potential for efficiency savings in several municipalities. It is not the case that the reduction in average expenditure per student in Denmark during the period 2009-13 reflects spending cuts in the municipalities with the highest expenditures.

There is little system learning regarding effective school funding formulas

The funding of schools takes spending needs into account and intends to promote an equalisation of learning outcomes. Municipalities use different funding formulas for their schools. These formulas typically include parental background characteristics in addition to the number of students and the number of classes at the different year levels. However, the ways in which socio-economic differences are taken into account in the funding formulas vary greatly across municipalities. This suggests that the models vary not only as a result of deliberate decisions or different priorities. In one of the municipalities visited by the OECD review team, socio-economic measures were not considered in deciding on the distribution of funding across schools due to little variation in the socio-economic composition of the schools in the municipality.

There is a potential for municipalities to learn from each other from the diversity of approaches across municipalities, but it appears that there is no co-ordination or learning process across municipalities on how funding formulas can best contribute to equalise student performance. Each municipality develops its own formula based more or less on assumptions regarding school resource needs. The OECD review team saw examples of municipalities making efforts to identify student characteristics associated with learning difficulties and to direct resources to the relevant groups. The municipality of Copenhagen, for example, has worked together with the Danish Institute for Local and Regional Government Research (KORA) to develop a funding formula based on such analyses.

However, there appeared to be only weak mechanisms to share and spread such expertise and experience more broadly and systematically across municipalities. National measures on how much extra support specific groups of students receive on average could be of help for municipalities, without the intention to reduce local autonomy or the advantages of taking local contexts into account.

It is challenging to establish evidence on how extra resources towards specific groups of students or schools with a disadvantaged socio-economic composition will contribute to equalising performance (Costrell et al., 2008; Falch et al., 2008). Relationships between expenditures and some characteristics of students are not informative about the causal effect of a selective increase in expenditures. Extra resources directed to a large share of students from disadvantaged socio-economic backgrounds or students with special needs are likely to also benefit the other students in the school since such additional resources increase the possibility to cater to individual student needs more effectively and to reduce disruptions in classrooms.

There are reports about difficulties in the adjustment to the new framework for the utilisation of teachers' working hours

The 2014 Folkeskole reform has increased the length of the school day for students (see Chapter 1). Several cross-country studies indicate that increased instruction hours in a subject increase student achievement in this subject, but that the actual content of the additional hours is crucial for the effect on student achievement (Carlsson et al., 2015; Lavy, 2015; Gromada and Shewbridge, 2016). While it can be expected that the increased number of school hours for Danish students will have a positive effect on student achievement, the effect will depend on the quality of teaching and learning taking place during these extra hours. Act no. 409 changed teachers' working time arrangement, specifying the total number of working hours, but not the number of hours that teachers should be teaching in class or spend on other tasks and duties. As a result, schools have more flexibility in the use of teachers' working time (see Chapter 1 for a general description and above and Chapter 4 for an analysis of the potential benefits of this greater level of flexibility). The success of the reform will, thus, among other factors, also depend on how teachers and school leaders adjust to this new situation. Depending on how schools adapt to the new arrangement, it also carries some risks for the quality and equity of learning (also see Chapter 4).

Teachers' working time has remained unchanged, but, within regular working hours, teachers are expected to teach, on average, about two clock hours more per week than prior to the new arrangement (18.3 hours a week compared to 16.3 hours a week) (see Chapter 4 for an international comparison of teaching time based on the OECD *Education at a Glance* and the OECD TALIS). Some resources have been moved from after schools programmes (SFO) to schools (since students spend less time in SFO) and the central government has allocated some additional resources to the municipalities as a result of the reform and as a part of an agreement with LGDK. Nevertheless, schools reported to experience having fewer resources available overall, in particular, for other tasks as they have allocated more resources to teaching.

The OECD review team had the clear impression from its interviews and school visits that teachers used less time to prepare their lessons under the new legislation. This will, of course, differ across contexts and teachers and also depend on teachers' level of experience and the subjects a teacher teaches. A research report on the school reform and new working conditions, however, indeed finds that teachers experience a reduction in their time for

preparation and that this situation poses a challenge for their teaching (Bjørnholt et al., 2015). Little international research evidence is available on this issue as the amount of time spent on preparation is typically a decision of individual teachers and it is challenging to disentangle the effect of teacher quality and teacher preparation time. However, if teachers do not have the right conditions for preparation, collaboration, mentoring, peer feedback and other important aspects of teacher professionalism, this carries a risk of adversely affecting the quality of their teaching. Teachers can initially rely to some extent on their preparation of previous years, but this opportunity may fade out over time and any possible negative effect of less preparation time on the quality of instruction is thus likely to increase if schools and teachers do not adjust well to the new situation. While the new flexible working time arrangements give school leaders the possibility to differentiate between beginning and experienced teachers, the average increase in teaching time may make the transition into teaching for beginning teachers more difficult if their school leaders do not use their new flexibility well. Unlike their more experienced peers, beginning teachers cannot rely on previous preparation to provide good teaching.

The new framework for the utilisation of teachers' working hours intends to bring about a change in the nature of teacher preparation, moving from individual preparation to more collaborative preparation made more efficient through joint planning, knowledge sharing and the use of digital learning resources. According to the abovementioned report, however, school principals found that teachers' mind-set and practices with respect to their preparation had remained unchanged (Bjørnholt et al., 2015). The local level thus seems to not have yet fully adjusted to less regulation in teaching hours and seems to need to develop greater knowledge on how to use their new flexibility in the best way. Through the implementation of Act no. 409, school leaders were given the same opportunities as other leaders in the public sector to manage and distribute work within their institution. Thus, school leaders can continuously assess how tasks are best solved, assigned and distributed. It also means that school principals can organise working arrangements so that teachers share materials and collaborate on preparation, for example. Working arrangements can theoretically better reflect differences in teacher competencies and experience (e.g. by giving new teachers a smaller teaching load than more experienced teachers as new teachers need more preparation time for each lesson in order to give lessons of the same quality or to differentiate the assignment of tasks depending on the subjects a teacher teaches).

There are concerns about the impact of recent reforms on equity and inclusion

The 2014 *Folkeskole* reform aims to change the system in the direction of achieving a better performance for all students. Several elements of the reform provide opportunities for improving equity. But if teachers get less prepared and collaborate less, the reform might come at the cost of vulnerable students if there are no specific policies at the municipal and school levels to mitigate such possible detrimental effects. In the case that school leaders and teachers do not adjust well to the new working time arrangements, there is a risk that the students most in need experience less teacher follow-up and feedback. At-risk students arguably need more teacher support and follow-up because they have fewer possibilities for such support at home than other students. If teachers experience reduced time for preparation and follow-up of individual students, it is likely to have negative effects mainly for students at risk of underperformance. This concern was expressed by stakeholders to the OECD review team. As part of the 2014 *Folkeskole* reform, the government intended to reduce the amount of homework and instead use some of the

extra hours at school to cover material that used to be done at home. Schools thus need to find the right balance on the content of the extra teaching hours in schools. They need to use the new lessons to improve the competencies of the students that are highlighted in the 2014 *Folkeskole* reform. In addition, they need to strive for using the lessons such that homework contributes to student learning without having a negative effect on equity.¹

Coinciding with the 2014 *Folkeskole* reform, Denmark is also working towards greater inclusion in schools. Fewer students are enrolled in special schools than only a few years ago. While there seems to be an expectation that some of the resources would be shifted from special needs schools to regular schools following students with special needs to facilitate their inclusion, there are no national rules on how the extra needs of these recently included students in regular schools should be translated into extra resources. In addition, the municipalities do generally not allocate specific resources for schools to be used for students with special needs or provide guidelines for how additional resources could be used to create inclusive learning environments (even though in some municipalities school can apply for funding for specific purposes specified by the municipality). Various interview partners during the OECD review visit thus expressed concerns about a lack of transparency and uncertainty if resources followed students with special needs that had moved to a regular school. They thus saw inclusion as carrying a risk that students with special needs do not receive adequate learning support in an inclusive setting in a regular school in comparison to a special school.

Nevertheless, it is important to recognise that the funding systems in the different municipalities allocate most resources to schools and students with a less favourable socio-economic background. Although it is difficult to provide research evidence on the effect of this policy on the equalisation of student performance as argued above, the system is based on a well-grounded belief that targeted funding contributes to equity in student performance. In addition, the increased focus on student performance may provide schools with an incentive to use resources for students with special needs, at least to the extent that students with special needs are included in the testing system related to the 2014 *Folkeskole* reform.

Organisation of the school offer

The growth of the private school sector might go in line with greater segregation

Private schools are an alternative for parents and students in Denmark. As described above, the share of students in private schools has been increasing, and there seems to be excess demand for admission in a number of private schools. One potential challenge in education systems relying on an extensive offer of private schools is increased segregation of students. All over the world, students in private schools are typically from relatively well-educated families with relatively high income. Available data indicate that this is the case on average also for Denmark (Rangvid, 2007, 2010), although the student population in private schools in Denmark is more heterogeneous than in some other countries.

Why do some parents prefer private schools? Understanding how schools are competing for students is important for judging whether competition contributes to improved performance of the school system. Is it competition based on student achievement or based on other factors? Increased competition in compulsory education often seems to have a limited effect on school performance (Böhlmark and Lindahl, 2015), as it does not by itself eliminate an information problem. Research indicates that while choice policies

increase the level of information of all parents, the quantity and quality of information seems to be highly correlated with parents' level of education (Lacireno-Paquet, 2012; Hamilton and Guin, 2005; Bosetti, 2004; Schneider and Buckley, 2002; Schneider et al., 1998). It is, therefore, important that relevant, fair and comparable information on available school choices by the local community is easily accessible for all parents. Experience from different countries indicates that personal contact, at least in the initial stages, is key to ensuring that parents from different socio-economic backgrounds engage, understand the information and have the opportunity to seek clarification (Nusche, 2009).

There are significant information gaps in Denmark with respect to school quality. If students and parents are expected to make school choices in order to support their children's learning outcomes, they need reliable information about school quality and other school factors. If information on school quality is not available or not easily accessible, parents are likely to make their choices based on other criteria. If parents mainly care about extracurricular elements such as cultural activity, sports and the peer-composition of the students at the school, one should expect that schools also would compete along these dimensions. If parents care strongly about the peers of their children, this will work in the direction of segregation in the school system.

There is a risk that a lack of mechanisms to promote competition among schools based on quality, as for example exemplified by relevant and contextualised information on school quality and learning outcomes, might lead schools to compete on factors that enhance segregation. In order to be attractive for students and parents, schools might be inclined to focus on activities that do not contribute to the national goals of the 2014 Folkeskole reform. Such a focus can easily have a negative effect on student achievement in core subjects.

It is still too early to evaluate whether the new legislation on inclusion has contributed to the growing preference of parents for private schools. Some preliminary evidence on changes in the share of students enrolled in private schools from 2011 to 2012 indicates that there is no relationship between the inclusion policy and the demand for private schools (Houlberg et al., 2016), but this is an issue that needs to be monitored. Parents who experience that teachers devote less time and attention for their own children than for other students might be inclined to search for alternative schools for their children. During the OECD review visit to Denmark, several of our interlocutors voiced concerns that the inclusion policy could potentially lead more parents to consider choosing a private school for their children. In order to avoid flight of students to private schools under the new legislation, teachers and schools might prioritise the students most likely to shift to a private school. Given that these students tend to come from an advantaged socio-economic background, such behaviour will have a negative effect on equity. On the other hand, if teachers prioritise ongoing support for vulnerable students, this may result in an increasing demand for private schools.

It is unclear to what extent school consolidation policy has contributed to the establishment of new private schools, which may then undermine the gains of school consolidation efforts. During the OECD review visit, municipal leaders repeatedly reported that when closing public schools in certain rural areas with strong parental engagements, parents might respond by setting up a private school in the same location as a former public school.

Consolidation processes need to be managed locally

The consolidation of public schools requires local support. While there have been several successful consolidations in Denmark in the past, there are clearly different views on

the optimal school structure. As Ares Abalde (2014) and Humlum and Smith (2015) point out, there are many factors that are important when making decisions about school size and consolidation. At least the effects on expenditure per student, the learning environment and students' travel time must be taken into account. The research literature cannot provide a "magic" number on the optimal size of schools. Rather, the optimal school size is context-dependent and varies according to local characteristics.

Combined with the decentralised nature of education in Denmark, this implies that the introduction of any national policy on school size and school consolidation is unwarranted. However, it needs to be emphasised that the issue of school structure is a very important part of local school policies. Ongoing changes in demography, settlement patterns, and learning technology imply that school structure should be a vivid part of local politics. It is a concern that the consolidation agenda sometimes seems to have been too strongly related to a cost saving strategy and less to improvements in school quality. A reduction in costs does not increase efficiency if student achievement falls substantially. Danish evidence indicates that achievement typically declines in the first few years after a school consolidation due to the disruption this implies, but that the performance of students increases in the longer term (Humlum and Smith, 2015).

High enrolment in Year 10 leads to delayed graduation

As analysed above, about half a cohort of students enrolls in Year 10. One of the arguments for the public support of Year 10 rests on the possibility for students to improve their qualifications up to a level necessary for upper secondary education. If this is the real motivation for the main part of the students enrolling in Year 10, it reflects a serious defect of the educational system. Either the *Folkeskole* is not able to provide students with the necessary skills to succeed in upper secondary education, or the requirements in upper secondary education are too high compared with the quality of the *Folkeskole*.

If one of these reasons holds true, Year 10 can be seen as some form of year repetition. While year repetition in Denmark is below the OECD average – with 4.7% of 15-year-olds reporting that they have repeated a year – it is at a similar level as in Sweden and clearly above repetition rates in the other Nordic countries (OECD, 2014a), which do not offer their students a comparable Year 10. If enrolment in Year 10 is seen as a form of year repetition, it is highly questionable whether so much of the year repetition in the last year of compulsory education contributes most effectively to student learning. Year 10 is at an age where education no longer is compulsory, and remedial education is more efficient in early ages than towards the end of compulsory education (Heckman, 2008).

An alternative explanation for the high enrolment in Year 10 is that it provides some kind of "leisure" time and an opportunity for young people to enhance their wellbeing, to develop broader social and emotional skills and competencies, and to find out what to do later in life or which upper secondary track to choose. It is a year without much learning pressure on core subjects. The fact that most of the private continuation schools, which receive public funding, emphasise other objectives than basic skills and mainly enrol students from advantaged socio-economic backgrounds, indicates that a change in attitude among parents and students would be desirable. While there can be benefits (e.g. in terms of social competencies and clarity about future career choices), it is questionable whether a year without clear learning intentions for core subjects in school contributes to student performance in upper secondary education and labour market

attachment for young adults. An additional year in education delays entry into the labour market and there is also a risk that children at this critical age start to prioritise leisure activities too highly, and downplay education as a life-long investment.

Distribution of teacher resources

There are concerns about the attractiveness of the teaching profession

A substantial body of research, mostly from the United States, finds a large variation in teaching quality across teachers (Hanushek, 2011; Jackson, 2012b; Chetty et al., 2013). It reflects that individual teacher competencies strongly matter for student learning. Thus, policies for the competency development of teachers and the recruitment of high-quality teachers must be a continuous effort.

It has turned out to be difficult to relate the variation in teacher quality to objectively measured characteristics of teachers. However, some empirical evidence suggests that students have better outcomes when their teachers have high test marks on achievement tests (Ehrenberg and Brewer, 1994; Goldhaber, 2007; Clotfelter et al., 2010; Grönqvist and Vlachos, 2014; Hanushek et al., 2014). A study for the Danish Productivity Commission investigated the relationship between teacher test marks and student test marks at the school level (Produktivitetskommissionen, 2014). This study finds that the average of the teachers' marks on their school leaving exams is positively related to the test marks of their students in lower secondary education.

The attractiveness of teacher education and the teacher profession is, therefore, crucial. Are high-achieving graduates from upper secondary education choosing to become teachers? Experience from different countries suggests a declining interest in the teacher profession in the last decades (Falch and Mang, 2015). In Denmark, there are indications that the teaching profession is not valued very highly. For the OECD TALIS 2013, only 18.4% of lower secondary teachers agreed or strongly agreed that the teaching profession is valued in society (TALIS average: 30.9%) (OECD, 2014b, Table 7.2). There are also concerns that teacher education is at present not particularly attractive for students with the best academic results in upper secondary education. It was reported to the OECD review team that several study programmes for initial teacher education are not able to fill the number of study places they have. Drop-out rates in teacher education are also relatively high. According to data from the Ministry of Higher Education and Science and Statistics Denmark's student register, 15.6% of students had dropped out during their first year of teacher education. Overall, 36% of students in teacher education programmes had dropped out in 2014. These dropout rates have remained relatively stable between 2010 and 2014.

Nevertheless, the number of study places offered by higher education institutions has not been adjusted to declining demand. As teacher education institutions are facing difficulties in attracting high-achieving graduates from upper secondary education, there is a risk that study places may be filled with students with relatively weak prior achievement. Given the Danish funding system for higher education based on student numbers (the "taximeter" system), higher education institutions seem to have a strong incentive to enrol a large number of students. However, in 2013 the new teacher education introduced stricter admission requirements. As a result, the general point average of the admitted students has risen between 2012 and 2015.

Teachers have limited career development opportunities

There are a number of challenges in organising schools in a way such that they offer attractive career pathways for teachers and give teachers the opportunity to take on different roles according to their strengths. In a context of strict working conditions, a highly compressed salary structure, no measurement of school quality and little external pressure on school performance, the incentives and motivations for innovations in teaching methods and teaching technology are limited. Productive innovations in the classroom require teachers that are willing and able to accomplish smart experimenting and adjustment of practice to respond to their students' needs. Act no. 409 has relaxed the rules on working conditions, for example by making it possible to give teachers specific roles such as being a "specialist" teacher with specific professional tasks for mentoring and peer support. This seems to be a change in the right direction (more on this in Chapter 4).

Compared to other professions, however, there are still limited possibilities for career development or salary increases within the teaching profession. The main channel for some kind of promotion is to become a leader or to enter the school administration. However, this kind of promotion seems to be only weakly related to the quality and competency as a teacher. If it was strongly related to teacher quality, it would be the case that the career system sorts the best teachers out of teaching, which would also be undesirable. In general, a career is more attractive for skilled and creative youngsters if they can expect to climb a career ladder to more recognised and better paid positions if successful. However, the principle of associating good professional performance to career progression is not in place in Denmark (Shewbridge et al., 2011).

Policy recommendations

Distribution of funding

Continue to pay attention to using resources efficiently

Developments in the *Folkeskole* over the last years have challenged the system in several ways. There has been a reduction in expenditure per student up to the 2014 *Folkeskole* reform, and the reform aims at a stronger focus on learning environments and student performance. The reform has increased the school day of students without a symmetric increase in the number of teachers. To the extent that the changes improve the student outcomes described in the reform package, these changes will clearly contribute to improved efficiency and effectiveness of the Danish school system.

Whether this can be achieved or not will, however, depend on the ability to use resources efficiently and on the way schools adjust to the new situation. When the average class size has increased and teachers need to teach more classes, it might be a challenge to maintain high quality teaching and learning. If teachers use less time for preparation and collaboration as they use more time on teaching, there can be a risk to both quality and equity in schooling. Therefore, future strategies to develop and allocate human resources effectively in schools will be crucial to the success of the reform. These strategies will be discussed in Chapter 4. It will also be key to ensure that all actors in the school system continue to work intensively on how resources can be used most effectively to improve student learning in relation to the national goals. Knowledge-sharing across schools and municipalities is of specific importance in light of the major systemic changes in the last years. Strategies related to the governance of school resource use will be discussed in Chapter 3.

Share experience about funding formulas across municipalities

As discussed above, the Danish municipalities use a plethora of different funding formulas for their schools, although it is unlikely that the need for adjustments with regard to the socio-economic status of students is very different across municipalities. The intention of such formulas is to give schools the same possibility to have similar learning environments. Except for school size, the main intention of the funding formulas is to have an equitable system in the sense that students with weaker initial competencies should receive more guidance and learning support from teachers than students with strong initial competencies.

There is a lot of potential for municipalities to learn from each other regarding the effective design of school funding formulas. For example, when a municipality develops a new funding system in collaboration with external researchers, the knowledge from the process and the new funding formula itself should be shared with other municipalities. It is unlikely that funding formulas that enhance equity the most are very different across municipalities. At the moment, it seems like many municipalities use a lot of effort on developing and maintaining funding formulas. Although local contexts and different local political prioritisations and decisions obviously need to be taken into account, the sharing of experiences should be encouraged and facilitated to create synergies and to avoid double efforts (for more details, see Chapter 3). LGDK and the association of municipal administrators responsible for culture, day care and education (*Børne- og Kulturchefforeningen* [BKF]) have the potential to play a key role here.

Pay attention to investing in early interventions for groups at risk of underperformance and ensure that the funding system incentivises high quality provision for students with special needs

Taking socio-economic measures into account in funding formulas by itself will not be sufficient to ensure equal opportunities for at-risk students across Denmark, and to reduce the impact of socio-economic background on student achievement in line with the equity goal of the *Folkeskole*. There should be particular attention to investing in early interventions for groups at risk of underperformance in pre-school and primary school. Research evidence clearly indicates that investment in early intervention strategies is more cost effective than remedial support later on in a student's lifecycle.

There is potential to improve competency building for students at risk in the Danish childcare system and throughout the *Folkeskole*, including Year 0 (see Chapter 3), although several initiatives already have been undertaken. One example is the development of clear goals for the instruction in Year 0 (the kindergarten class), which is intended to provide a clearer focus for evaluation, thus helping teachers identify children who are struggling to acquire basic competencies. Another example is the so-called "attention points" from the "Simplified Common Objectives". If a student is struggling to reach a minimum level of proficiency in Danish and mathematics, teachers must initiate a dialogue with the school leader regarding the efforts to be put in place to ensure the further academic development of the student. Further, the Ministry for Children, Education and Gender Equality has financed the development of a test designed to identify dyslexia in students from Year 3 and beyond. This test aims to ensure the identification of students with dyslexia and dyscalculia in order to help schools provide the needed assistance and interventions.

The policy of inclusion challenges the old way of thinking about funding students with special needs. When students with special needs are integrated in regular schools, or even

regular classes, it is important that local contexts have the resources they need to ensure that all children can learn according to their individual needs. Adequate teaching and support most likely depends on the particular circumstances in the learning environment. On the other hand, there is a risk that the support for students with special needs will decline when funding is not targeted and this is a concern voiced by different stakeholders during the review visit. Introducing targeted funding for students with special needs and allocating resources to schools based on the number of students with special needs seems unwarranted as the diagnosis and declaration of students with special needs can be subject to manipulation and may set incentives for schools to seek the classification of students as having special needs to secure additional funding. Securing adequate resources and adequate teaching to every student in a context of inclusion, however, warrants close attention at the school, municipal and national levels. Greater transparency to the school community (e.g. through the school board) about the use of resources at the school level to facilitate inclusion and the way the use of resources translates into learning outcomes for students with special educational needs could help dispel concerns that students with special needs do not have the resources they need to succeed (see Chapter 3).

Organisation of the school offer

Consider reducing enrolment in Year 10

The OECD review team formed the impression that the goals of Year 10 are not clearly defined and that the large enrolment rate in Year 10 only weakly contributes to the educational outcomes in Denmark, even if there may other benefits (e.g. social and emotional skills). The review team recommends that public support for Year 10 should be more focused on those in real need to increase their skills. The obligation for municipalities to provide Year 10 to all students, including students from advantaged socio-economic backgrounds to spend a “leisure time” year, should be reconsidered. The target group for Year 10 could be better defined (e.g. it could be an offer targeted at students achieving below a specific skill level as measured by the final school results in Year 9) and students’ right to enrolment could be linked to certain criteria. It appears highly inefficient that a large share of 16-17 year-old youth spend a year with low focus on improving basic or vocational skills. It should also be considered to implement stricter criteria in order for private schools to receive public financial support for Year 10 education.

For some students it seems necessary to improve their skills before they are ready to enrol in upper secondary education. For these students, Year 10 takes the form of year repetition. Considering that the empirical evidence clearly suggests that remedial education is more efficient the earlier it is introduced for students, the enhanced provision of targeted remedial education at an earlier stage in the *Folkeskole* should be a priority. The 2014 *Folkeskole* reform has the clear goal of improving the skills of students. This should reduce the need for Year 10 education as a means for skill upgrading, and contribute to more students transferring directly from the *Folkeskole* to upper secondary education. Denmark should consider establishing a national goal to gradually decrease enrolment in Year 10.

Develop a more strategic approach to school consolidation

It seems necessary to continue local considerations on school consolidation. The main uncertainty with school consolidation is how it will affect the learning environment and student performance. Further analyses of consequences of school consolidation and knowledge sharing across municipalities would be of help in the local political discourse

on school structure. Continuous effort will be required to ensure that school structures respond to local and system needs in a context of demographic changes and lower municipal budgets compared to the period before the financial crisis.

Clear municipal leadership should help to highlight a key focus on learning environments, student achievement and school quality in any school consolidation process. It is necessary to communicate a vision of quality education to persuade others of the need for change instead of a narrow focus on cost savings. It is also important to provide access to schooling for younger children at a reasonable distance to home. School consolidation must go in line with visible improvements in the quality of the students' school. Otherwise some parents will transfer their children to the private school system based on a shorter commute instead of higher school quality.

Ensure that school competition can happen with regard to school quality not student composition

Information on school performance and school quality seems necessary in order for the relatively large share of private schools in Denmark to contribute to improved performance of the school system. For example, if parents choose schools based on the degree to which students perform relative to the national goals, there can be competition based on school quality. Without information on school quality, school choice will be based on other factors. If school choice is based primarily on peer composition in schools, the large degree of private schools will contribute to school segregation. In addition, parents are likely to be interested in a variety of other factors at schools, such as cultural and sport activities. In the present system, there is a risk that schools compete along these dimensions and that parents put larger weights on such issues than they ideally would prefer, simply because they have very limited information the learning environment and school quality. In this context, developing a shared vision of school quality, refining both external and internal evaluation of school quality and performance and improving parents' access to relevant information will be important to ensure that the large share of private schools can be used more strategically to improve performance and reach national goals (see Chapter 3). Equity concerns in the use of information about school quality, however, also need to be taken into account. As Blanchenay and Burns (2016) pointed out, in most countries, upper middle-class and middle-class families are those most aware of how to use the education system for their own interest and benefit and those more likely to use information about school achievement to place their child in the best performing schools.

Distribution of teacher resources

Make teaching a more attractive profession

A successful development of the *Folkeskole* over time requires that higher education institutions can attract talented secondary school graduates into teacher education. Various groups interviewed by the OECD review team share a concern about the limited ability of initial teacher education programmes to attract high-achieving students. In addition, overall drop-out rates from teacher education are very high. It is reasonable to believe that the high dropout rate is a result of relatively weak students being enrolled in the first place.

There are a range of ways in which the attractiveness of the teaching profession could be improved in Denmark by reconsidering pay, working conditions, career progression, and diversification of the role for teachers. While the starting salary for teachers in Denmark is

relatively high by international comparison, possibilities for salary increases are limited, resulting in a relatively low lifetime income for teachers compared to other countries (see Figure 2.10). In addition, the workload of beginning teachers has traditionally been high as they have been expected to teach the same number of classes as experienced teachers (although school leaders now have greater flexibility to differentiate between their staff under the new working time regulations). Also, the recent disagreements and conflicts between the Danish Union of Teachers and LGDK could have a negative impact on the attractiveness of the profession.

As mentioned above, there are hardly any opportunities for formal promotion within schools (only out of teaching into school principal positions). This traditional approach does not convey the important message that the guiding principle for career advancement should be merit and it does not provide possibilities to reward teachers who choose to remain in the classroom. The lack of opportunities for promotion may reduce the attractiveness of the profession, possibly contributing to both attrition among young teachers and burn-out among older teachers (OECD, 2013b; OECD, 2005).

Research that can improve the understanding of the teacher labour market should be supported. The changes in the initial teacher education system in the last years should be subject to evaluations. In particular, better knowledge of the dropout rate from teacher education could contribute to a better understanding of factors that can make teacher education and the profession more attractive.

Make the incentives structure for teachers more flexible to ensure that the best teacher resources are directed towards the students most in need

Equity in education is particularly important at the level of early childhood and compulsory education, which lays the foundations for further education and skill development. Thus, it is important that students most in need of high teacher quality in order to develop adequate skills get support from experienced teachers with a good record. At present, the *Folkeskole* does not seem to have mechanisms in place to ensure that the best teachers work in the most challenging contexts and that the most vulnerable students thus receive high quality teaching.

The research literature from various countries suggests that teachers prefer schools with an advantageous student body composition (Falch and Strøm, 2005, for Norway; Barbieri et al., 2011, for Italy; Boyd et al., 2013 for the United States; Karbownik, 2014, for Sweden). Teachers might therefore select themselves into schools such that the vulnerable students do not get the best teachers. For Denmark, data from international surveys suggest a slightly mixed picture in this regard. The OECD TALIS 2013 suggests that teachers with five years or more of experience are more likely to teach in schools with more than 10% of students whose first language is different from the language of instruction and in schools with more than 10% of students with special needs. But they are less likely to work in schools with more than 30% of students from socio-economically disadvantaged homes (OECD, 2014b, Table 2.12.Web.1). Teacher shortages (as reported by school principals for the OECD PISA 2012) also seem to be more of a problem for instruction in socio-economically disadvantaged schools and in public schools. Principals in socio-economically advantaged and private schools were less likely to report that teacher shortages in different subjects hindered student learning “to some extent” or “a lot” (OECD, 2013b, Figure IV.3.5, Table IV.3.1). Schools with students from a low socio-economic background on average receive higher amounts of funding than other schools, but typically use extra funding to employ extra

teachers, rather than to attract particular high performing teachers. If the school is not among the most attractive schools at the outset, the learning environment might thus improve only marginally by the extra funding.

A successful equalisation policy should include mechanisms to match the most adequate teachers and students at risk with the highest need of teacher support. Such mechanisms are weakly developed in the *Folkeskole*. School leaders could have more instruments to motivate teachers to work at a school that has challenges with recruitment of teachers and classes with students with special needs. In particular one should think of introducing salary allowances for working in difficult conditions or in areas of teacher shortages. Such policies have been found to have clear positive effects on teacher recruitment (Falch, 2010).

Create career pathways for teachers

There are challenges around the development of the teaching workforce and the longer run foundation for career development and innovation. Lack of career possibilities and remuneration flexibility for teachers and social educators might restrict the school leaders' opportunity to use incentives to promote pedagogical development and learning. Likewise, there are limited tools to attract teachers and social educators in cases of shortages, which seem to be of increasing concern.

It seems particularly important to develop a career structure within the teaching profession with a number of steps that recognises roles and responsibilities in the schools. Such a system of career pathways could introduce teaching standards describing the competencies needed for different career steps. Steps in the career should be associated with description of skills and competencies in professional standards. In a system with promotions, it is important that promotions are not mechanical related to for example experience, but related to professional skills and the teacher's contribution to the learning environment at the school.

A system with career pathways could also improve the possibility to allow for salary increases during the teaching career. The compressed wage structure in Denmark presently does not make it possible to incentivise teachers by better salaries, in contrast to other professions. In addition, the possibility to develop according to specific career pathways during a lifetime position in the teaching profession would stimulate all teachers to continuously review their skills and improve their practice. This is important to stimulate training both at the school and externally, which is necessary to continuously develop the working skills in a changing environment. It would also stimulate systematic appraisal processes so that teachers in need of specific support can be identified and helped to improve skills and teaching practices.

The 2014 *Folkeskole* reform includes many new changes along with Act no. 409. Schools and municipalities are working on developing systems and mechanisms to get the best out of the teaching workforce under the new rules. The goal must be to let teachers with different interest take on different tasks, get a stronger relation between students' needs and the use of teachers, and to improve teacher motivation. The new regulations also make it easier to use the skills in the teaching workforce in accordance with the needs of schools and municipalities. Municipalities and schools are approaching the new legislation differently. This should be used to learn about the good governance of schools. Inspiration should, however, not only come from other schools, but also from other high-skilled professions.

Note

1. Although there is evidence indicating that homework may improve student achievement (Falch and Rønning, 2012), homework also has distributional effects, since students from a high socio-economic status typically receive more help with homework than students from a low socio-economic status. It may be particularly challenging for immigrant parents to support their children with the homework. While homework is likely to have positive effects on students from more advantaged socio-economic backgrounds, who typically perform relatively well at the outset, they might have no effect on the learning of students from less advantaged backgrounds. In this regard, Falch and Rønning (2012) argue that the type of homework matters. Homework seems to have a larger positive effect when it has the form of repetition and serves a complement to in-class learning instead of being a substitute to in-school learning in the sense that topics supposed to be taught in school are given as homework.

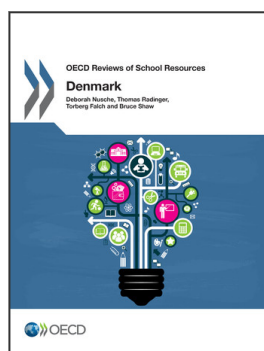
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