Classroom deployment

Better value for money in schools

March 2011
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Introduction

1 Maintained schools in England spent over £35 billion in 2009/10, some £5,000 on average per pupil. They have seen a large increase in available funds, with spending increasing by 28 per cent since 2002/03. Schools spend three quarters of this funding on their workforce. As budgets tighten, school leaders are increasingly focusing on how well that money is spent.

2 Schools make decisions about how they design their provision and how they deploy and manage their workforce. These decisions reflect their individual circumstances and constraints and will depend upon their different priorities. But they all face the challenge of tightening budgets. School leadership teams and governing bodies need to understand the costs and benefits of different staffing models in order to achieve value for money. Councils can help assess the relative positions of local schools and consider where they can offer support.

3 This briefing is one of four published by the Audit Commission in March 2011 which aims to identify where schools can achieve greater efficiency. The briefings examine patterns of spending in maintained schools in England. They build on our national report Valuable Lessons, published in 2009 (Ref. 1). We aim to help schools, governing bodies and councils identify where they have scope for efficiencies without compromising the effectiveness of their provision. This briefing examines classroom deployment. The others look at, curriculum breadth, staff absence and cover, and the wider schools’ workforce.

4 The main findings on classroom deployment are as follows.

- The number of teachers in England has increased by 8 per cent since 1997. With a concurrent drop in pupil numbers, the ratio of teachers to pupils has increased by 9 per cent since 1997.
- Since the introduction of planning, preparation and assessment (PPA) time in 2003 teacher utilisation has declined in primary schools, although it remains much higher than in secondary schools. The scope for increases in teacher utilisation is modest, but may be an option for some schools. Secondary schools are most likely to achieve efficiency gains in this way.
- In 2010 an average class in a primary school contains 26 pupils, while a class in a secondary school contains on average 21 pupils. Variation in class size can be large, even between similar schools. However, only some year groups are large enough to allow a reduction in the number of classes by increasing average class size. Some secondary schools could improve efficiency by increasing their class sizes but scope for savings in primaries is limited.
- The number of teaching assistants has tripled since 1997. They now make up a quarter of the school workforce and cost some £2.2 billion. There is wide variation in the use of teaching assistants between schools and evidence on the impact of assistants on pupils’ attainment or teachers’ workload remains inconsistent.
Improving teacher utilisation

5 Teachers constitute schools’ largest cost, and their greatest asset. Fifty-six per cent of schools’ budgets is spent on teacher pay. Ensuring that teachers spend the greatest amount of time in the classroom, where they add most value, helps schools to achieve value for money. It also helps pupils, with research demonstrating that outstanding teaching has the greatest impact on pupils’ outcomes (Ref.2). Over half of the secondary school business managers we surveyed believed that schools had scope to improve the utilisation of teachers.

6 According to the Department for Education (DfE) Workload Diary Survey, teachers in both primary and secondary schools work around 50 hours per week (Ref.3). Apart from teaching, teachers carry out a range of managerial, extra-curricular, pastoral and disciplinary duties. They also need to prepare and follow up lessons if those lessons are to be effective. In order to reduce the out-of-hours workload of teachers and improve teaching quality, the 2003 National Agreement on workload requires schools to set aside at least 10 per cent of a teacher’s normal timetabled teaching time for ‘planning, preparation and assessment’ (PPA) (Ref.4).

7 In 2010, 426,000 teachers taught 7.3m pupils in primary, secondary and special schools. Funding increases since 1997 have led to an 8 per cent increase in teacher numbers. With a concurrent drop in pupil numbers, the ratio of teachers to pupils has increased by 9 per cent since 1997; 13 per cent in primary schools and 4 per cent in secondary schools (Figure 1). In special schools, where the ratio of teachers to pupils is already over three times that of primary schools, it has increased by a further 7 per cent. Schools have used the extra resources to reduce their teachers’ utilisation and to allow for smaller classes, in about equal measures.

8 We have calculated teacher utilisation in schools by comparing a snapshot of school-level activity with the number of teachers they employ (Ref.5). Of their possible classroom hours, teachers in primary schools teach 82 per cent of the time, while teachers in secondary schools teach 71 per cent of the time. These figures take into account only the hours that are available for teaching, rather than a teacher’s full working day and exclude time to be used for PPA.

9 Between 2006 and 2010, the period for which we have data, teacher utilisation dropped by 3 per cent in primary schools and by 1 per cent in secondary schools (Figure 2). These figures are broadly consistent with changes in teaching hours recorded by teachers themselves, but need to be seen in the context of consistently high overall working hours for teachers, which have not changed since 1996.

Our estimate measures utilisation during the ‘school pupil day’, ie the possible teaching time in a day. It is thus not comparable to other measures of teacher utilisation, such as contact and non-contact time. We are, however, able to examine changes within groups of schools and over time.
Figure 1: The ratio of teachers to pupils has increased
Change in the ratio of teachers to pupils

![Graph showing the change in the ratio of teachers to pupils from 1997 to 2010 for primary and secondary schools.]

Source: Audit Commission analysis of DfE data 2010

Figure 2: There has been a drop in teacher utilisation since 2006
Teacher utilisation in primary and secondary schools

![Graph showing the decline in teacher utilisation from 2006 to 2010 for primary and secondary schools.]

Source: Audit Commission analysis of DfE schools census 2006-2009
The small drop in teacher utilisation in primary schools, during the time period we were able to examine, may be the result of ongoing implementation of the National Agreement on workload. During our fieldwork school leaders told us that in some schools primary teachers are only now taking up their full PPA entitlement.

Despite overall high teacher utilisation, there is considerable variation across schools, indicating that some schools have scope to increase the time teachers spend in front of classes.

- Teacher utilisation is less than 75 per cent in the lowest quartile of primary schools, but above 88 per cent in the highest quartile.
- In secondary schools, utilisation in the lowest quartile is less than 67 per cent, but above 75 per cent in the highest.

We have not found a correlation between teacher utilisation and attainment in either primary or secondary schools. We have also not found a link between teacher utilisation and the percentage of pupils eligible for free school meals or with special educational needs. There is also no clear relationship between teacher utilisation and school size. However, school leaders we spoke to suggest larger schools will have greater flexibility to deploy teachers more effectively.

However, a number of factors may restrict schools' ability to increase teacher utilisation. School leaders we spoke to pointed to the trade-off between high teacher utilisation and management requirements, so schools with a more dispersed management structure may require more non-teaching time. Using teachers to cover for colleagues' PPA time can also reduce the scope to increase non-PPA teacher utilisation. Some primary school leaders told us that they are already increasing contact time for head teachers and those in management roles in response to financial pressures. However, they warned that this puts additional pressure on these staff and could lead to higher staff absence rates.

Given these considerations, we conclude that the scope for increases in teacher utilisation is modest, but may be an option for some schools. Secondary schools are most likely to find efficiency gains from increasing teacher utilisation, although some primary schools will also have scope to improve.

To realise efficiency savings from higher contact time, school leadership teams should examine their timetables to see whether better allocation of teaching time, PPA and management time can reduce under-utilisation. However, schools should monitor the impact on staff absence and, where classroom teachers also have management roles, the potential impact on the effectiveness of school management.
Questions for school leaders, governing bodies and councils

- How does your school make sure that your timetable is efficient, and that all teachers are always allocated to either teach or to PPA or management time?
- How have you ensured that the PPA and management time is sufficient but not excessive for your teachers’ needs?
- How well are your administrative staff integrated into the teachers’ work day to ensure they effectively minimise the amount of non-teaching work teachers have to carry out?
- How well is your school working with other schools to look at the opportunities collaboration could bring to improve teacher utilisation?

Optimising class size

16 A history of academic debate has surrounded the issue of class size for the last three decades. In 1998 the government limited Key Stage 1 classes to 30 pupils. There is a clear relationship between smaller classes and higher cost per pupil; our analysis shows that smaller classes are more expensive. Over 40 per cent of the school business managers that responded to our survey think that increasing class size has some potential to save money. Schools that strike an effective balance between class sizes and the educational requirements of their pupils obtain the best value for money.

17 Since 1997, class sizes have declined by 4 per cent in primary schools and by 6 per cent in secondary schools (Figure 3). However, while primary school classes declined in size mainly between 1997 and 2003, as the statutory class size limits were introduced, secondary school classes started to decline only from 2003. In 2010 an average class in a primary school contains 26 pupils, while a class in a secondary school contains on average 21 pupils.

18 Our analysis focuses on the distribution of class sizes in schools since 2003, when school-level data became available.\(^i\) We have not found a direct relationship between class size and attainment. This is consistent with most national and international research. The most extensive study carried out in England, the so-called Class Size Project only found an effect for class size on attainment for the very early years of schooling (Ref.6).

\(^i\) Because of data limitations, we were not able to examine mixed-age classes and joint year groups. Instead, we confined our analysis to classes with one teacher and in one year group.
19 It is important to note, however, that the relationship between schools’ choices and outcomes is extremely complex. We know that a wide range of factors influence attainment, including the family background of pupils, the neighbourhood in which they live and prior attainment. Furthermore, while larger classes are unlikely to reduce attainment, they may impact the quality of pupils’ educational experience in ways that our data analysis was not able to examine. School leaders have told us that they use reduced class sizes to cope with disruptive pupils or those with greater need for support.

Figure 3: Average class sizes have declined since 1997
Average class size, 1997–2010

Source: DfE 2005, 2010

20 There is considerable variation in class size between different types of schools. In primary schools, average class size is directly related to the size of the school. Primary schools with fewer than 100 pupils only have on average 21 pupils per class, while larger primary schools with more than 350 pupils have 28. In secondary schools, larger schools have marginally larger classes than smaller schools. Secondary schools with fewer than 600 pupils have on average 20 pupils while those with more than 1,200 pupils have on average 21.5 pupils per class. Because sixth form classes tend to be considerably smaller than Key Stage 4 classes, schools with sixth forms have on average three pupils fewer per class than those without, but this effect disappears when we take out their sixth form classes. There is no evidence of a relationship between class size and the proportion of pupils eligible for free school meals or with special educational needs (SEN).
The variation in class size can be large, even among schools of similar size, urban location and sixth form status. School size is the most important factor in this. Smaller schools have less room for manoeuvre in determining their class sizes, while schools with larger year groups have the greatest ability to increase efficiency by increasing class size.

To explore the potential for class size increases, we developed a model of average class sizes in year groups. Figure 4 gives the theoretical number of classes that would be saved if the average class size of a year group was increased. Only some year groups are large enough to allow a reduction in the number of classes by increasing average class size. The chart shows that most primary schools are too small to be able to increase class size, but that it is an option open to some secondary schools. Primary schools, we found, were regulating their class size mainly through altering their intake and by combining year groups.

**Figure 4:** Secondary schools have greater scope to raise class sizes
Percentage of classes that would theoretically be saved by raising average class size per year group in all schools

Source: Audit Commission analysis of DfE schools census 2009
In summary, increasing class size is, in our view, of limited use to the majority of small schools. This view was echoed by the school leaders we spoke to during our fieldwork. Small schools, however, can explore the possibility of combining year groups. Larger schools should examine the potential for increases and the scope for savings. In doing so, they should take into account a range of factors that we were not able to include in our analysis, including:

- the size of the rooms and the building;
- requirements of subjects that require a low pupil teacher ratio, eg technology classes;
- the demands of dealing with disruptive pupils; and
- choices made on streaming.

While these factors can limit schools’ options, the fact that otherwise similar schools have larger classes indicates that they have found innovative ways to overcome these constraints. All schools should consider what scope they have to save within the limits imposed by their school buildings, their curriculum offer and their pupil population.

Questions for school leaders, governing bodies and councils

- How have you considered if your year groups are large enough to allow for potential savings from larger classes?
- How have you considered the limitations from your school building, your curriculum or your pupil population that make larger classes unfeasible?

Deploying teaching assistants

The National Agreement of workload has given teaching assistants greater prominence in the classroom. The agreement aimed to reform support staff roles in order to help reduce teachers’ workloads and better support pupils’ learning and attainment.

Teaching assistants:

- provide one-to-one and group support to pupils with special educational needs and/or behavioural difficulties;
- support teachers with group work in the classroom;
- support teachers by carrying out administrative work for lesson preparations and assessments;
- provide welfare and counselling to pupils;
- take on a range of other roles, sometimes with special training, such as invigilation, data analysis, community liaison and behavioural support; and
- in the case of higher level teaching assistants, cover classes (see our Managing Staff Absence and Cover briefing) (Ref. 7).
The use of teaching assistants is optional to schools. A small proportion of schools do not make use of that option at all, without measurable impact on attainment, although they tend to have higher numbers of other educational support staff. Schools’ expenditure on teaching assistants has also not led to an observable reduction in teacher cost per pupil. While research has shown that teaching assistants can be of use to teachers and pupils if they are well incorporated into the school’s functions, it has also shown that this is rarely the case. In some cases the use of teaching assistants can hinder the progress of those pupils they support (Ref. 8, 9). As a result, reviewing the use of teaching assistants may hold the greatest potential for efficiency savings from classroom deployment.

Figure 5: Teaching assistants are now a greater percentage of the workforce

Teaching assistants as a percentage of the workforce

Source: Audit Commission analysis of DfE census and Consistent Financial Reporting data

The number of teaching assistants has risen by over 90 per cent since 1997 in primary, secondary and special schools. In primary schools they now constitute a quarter of the workforce, a 50 per cent increase since 2003. In secondary schools, teaching assistants now make up 8 per cent of the workforce, nearly four times their 2003 proportion (Figure 5). The expenditure on teaching assistants has been rising as well (Figure 6). Our analysis shows that since 2002/03, spending on teaching assistants has more than doubled to £2.2 billion, of which £1.8 billion is spent by primary schools and £400 million by secondary schools. i

i In this briefing changes in expenditure over time are calculated for 2009/10 prices using the Treasury price deflator.
There is a wide variation between schools in their use of teaching assistants (Figures 7, 8).

- Roughly 12 per cent of primary and 18 per cent of secondary schools do not employ teaching assistants at all.
- Among those that do, around 15 per cent of primaries have at least one teaching assistant to 25 pupils – more than one per class.
- Around 10 per cent of secondary schools have at least one teaching assistant to 50 pupils – roughly one in every other class.
Figure 7: There is considerable variation in the use of teaching assistants in primary schools

Source: Audit Commission analysis of DfE schools census 2010

Figure 8: There is considerable variation in the use of teaching assistants in secondary schools

Source: Audit Commission analysis of DfE schools census 2010
Data from DfE and academic research throw up questions about the impact teaching assistants have, either on pupils’ outcomes or on teachers’ workload. Thus, while qualitative studies report that teaching assistants do reduce teachers’ stress levels, the main quantitative study on teacher workload, the Workload Diary Survey shows no impact on teachers’ working hours (Ref.3). Since 2003, the workload of classroom teachers has hardly reduced, and in both primary and secondary schools 50 hours working weeks are still the average.

Teaching assistants’ impact on pupils is also contested. One study found a statistical correlation between greater numbers of teaching assistants and better GCSE results, other things being equal (Ref.10). However, the most extensive study of the impact on pupils in England found that teaching assistants’ support for individual pupils had negative effects on attainment. The individualised support reduced the contact between pupils and teachers and thus slowed rates of progress (Ref.11). Research by Ofsted showed that teaching assistants often suffered from lack of adequate support, performance management, career development and training. This can limit the positive impact teaching assistants can have on pupils and teachers.

Our data analysis has not found a link between the proportion of teaching assistants among classroom staff and attainment, not even when taking account of special educational needs and the percentage of pupils eligible for free school meals. However, there is wide variation in the use of teaching assistants in similar types of schools. This variation increases with the size of school, and is substantial between primary and secondary schools.

In summary, the use of teaching assistants may hold the greatest potential for efficiency savings from classroom deployment. A large number of schools do not use teaching assistants at all, while their impact on teaching hours and attainment has been inconclusive. However, schools which have the highest percentage of teaching assistants among their teaching staff have a greater proportion of pupils with special educational needs and a greater proportion of pupils receiving free school meals.
Questions for school leaders, governing bodies and councils

■ How have you considered the role and responsibilities of teaching assistants in your school? How have you communicated these roles and responsibilities to the rest of the school workforce, parents and pupils?

■ How have you reviewed how your teaching assistants have reduced teacher workloads, and supported improved educational attainment?

■ How have you considered the contribution your teaching assistants have made to help achieve the school’s objectives and outcomes for pupils?

■ What is the quality of support, performance management, training and development for the teaching assistants in your school?

■ How do you know if the use of teaching assistants in your school has had positive or negative impact on the pupils in your school?

Contact Details

If you have any queries or comments regarding this briefing please email:
schoolsworkforce@audit-commission.gov.uk
References


