Rethinking Class Size
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In previous chapters we have examined the way class size affects the classroom processes of teaching, grouping practices and classroom organisation, and also its effect on peer relationships. In this chapter the focus is on the connections between class size and the everyday work activities that pupils engage in. It is about the types of curriculum areas covered and about the tasks and activities through which curriculum areas are covered.

This chapter, perhaps more than any other in this book, shows the extent to which, and ways in which, class size is likely to be interconnected with many aspects of classroom life and processes. We shall see this in the way that class size has implications for the coverage of the curriculum and for tasks and activities used to engage pupils in the curriculum. We shall see also that the relationship between class size and the curriculum and tasks is mediated by three key factors: space, time and resources, which in turn seem to affect the types of activities and tasks that children are given. We shall also suggest that the connection between class size and curriculum and tasks is itself affected by the composition of pupils in the class, and in particular by the range of ability or attainment levels in the class. This, in turn, highlights the issue of class size and differentiation in teaching and task activities.

The curriculum around the world

The content and control of the school curriculum varies across the world. As we shall see, the UK has a national curriculum, devised by government
agencies and covering the subjects and content that are required by law. This is also the case in, for example, Australia, New Zealand and Russia. Examinations are also used as a means of setting and maintaining national standards.

In some countries there is regional variation. In the United States, for example, each state sets its own curriculum subjects and content and exams. A Presidential initiative advocating a ‘common core’ was attempted, aimed at creating ‘national standards’, but adoption was voluntary and not all states opted in to this federal vision of the curriculum.

France has devolved curriculum design, implementation and examination arrangements down to the 28 regions of the country, although in practice these vary very little as they consult with one another on these aspects of education. Central government has set out ‘rules’ about how the teaching of French is to be done, though it seems many teachers ignore them. Teachers are all employed by the government and as such are civil servants.

India has also given curriculum powers to decentralised bodies, the school boards across this vast country. Each state has developed its own curriculum and all exams apart from the school leaving exams in Grades 10 (age 16) and 12 (age 18), are set by individual schools. The result is wide variation in content and standards.

The UK National Curriculum

In this section we need to say a little about the UK curriculum experienced by pupils in British primary schools, because this provides the context for the results presented in this chapter.

The situation in the UK, and Great Britain, is complicated. One complexity – as visitors to Great Britain (or ‘Britain’) are warned in travel guide books – is that Britain is an island region made up of England, Wales and Scotland, commonly referred to individually as ‘countries’. There is a further complication in that Britain is sometimes confused with the sovereign country of the United Kingdom of Great Britain and Northern Ireland (more usually referred to as the United Kingdom or ‘UK’), which comprises England, Scotland, Wales and Northern Ireland. In this book we concentrate more on England and Wales. This is because this is where our data were collected, and because England is by some measure the most populated part of the UK (in 2011 there were 63 million people in the UK, with 53 million of these in England – 10 times the population of Scotland).
The situation is also complicated from an historical point of view. When the authors were themselves at primary schools in the 1950s in East London and Chatham (PB and AR, respectively), teachers had a large degree of freedom to decide on the curriculum experienced by pupils. In 1988, a National Curriculum (NC) for schools in England and Wales was introduced by the then Conservative Government as part of the ‘Education Reform Act’. The NC arose from a number of reasons, but reform was largely driven initially by the concern of politicians in the 1970s with what was perceived as a crisis in educational standards – a speech in 1979 by the Labour party prime minister James Callaghan is often cited as crucial. The NC covered 11 subjects over the age range 5 to 11 years which were separated into Key Stage 1 (KS1, age 5–7) and Key Stage 2 (KS2, age 7–11). (Secondary level education would encompass Key Stages 3 and 4, or KS3 and KS4.) For each subject and for each key stage, programmes of study set out what pupils should be taught, and attainment targets set out the expected standards of pupils' performance. It was for schools to choose how they organised their school curriculum to include the programmes of study. In its original form, the NC contained a huge number of learning objectives, set out in detail in the programmes of study for all its constituent subjects, with the exception of religious education, which was to be agreed locally.

By 1993, the manageability of the NC and accompanying assessment arrangements concerned the Government sufficiently to set up a review, published a year later as the Dearing Review (Dearing 1994). It contained several recommendations regarding the slimming down of the content.

The content of the National Curriculum is excessive and should be slimmed down …

The slimming down of the content should be associated with a review of the number of attainment targets and a reduction in the statements of attainment. (Dearing 1994, 28 and 29)

The Government implemented his recommendations in The Education Act of 1996, which addressed the obvious curriculum overload of the 1988 NC, and a new slimmed-down version of the NC was published, with fewer attainment targets and a reduction in content. By 2014 there was a new version of the NC, which was to be introduced across the period from 2015 to 2017.
By the time of the beginning of the CSPAR study, the national curriculum strategies for literacy and numeracy were also implemented in primary schools, following their introduction in 1998 and 1999. These initiatives by the government of the day were intended to prescribe and control the major elements of the curriculum content and to some extent, the approaches to teaching, at least in English and maths. This degree of control by central government was a new and remarkable departure in Britain and moved much of the freedom of choice from the hands of individual teachers. This inevitably lead to more stress on the selection and development of tasks to achieve the targets defined by the strategies rather than meeting the learning needs of individual pupils, though as the evidence set out below reveals, teachers still have to make many choices on a daily basis about the scope, depth, pace and specific details of the curriculum for their particular pupils.

The National Curriculum Tests (Standard Assessment Tasks/ Tests – SATs)

Another major influence from central government, with an impact on teachers’ choices of tasks and curriculum, was introduced in 1990. The Standard Assessment Tasks, or ‘SATs’, as they became known, were intended to raise pupil achievement by formalising and publishing results from a national assessment regime. The NC for KS1 and KS2 contained the ‘attainment targets’ for each subject, set out across six ‘levels’ of attainment. The SATs were originally used to assess pupil attainment in the three ‘core’ subjects – English, maths and science – in KS1 and KS2, as well as KS3. From the start, the SATs scores were designed to be combined with Teacher Assessments to give a more comprehensive assessment of each individual pupil’s attainment at the end of Years 2 (age 7) and 6 (age 11), as well as Year 9 (age 14). (In Year 11 (age 16), the end of compulsory schooling in England and Wales, schools continued to use the national GCSE examinations as the assessment of their teaching and pupils’ learning in KS4.)

Over time, the SATs were revised, and some were abandoned. For example, the KS1 science SAT in its original form was found to be unmanageable and unreliable, so it did not survive long. The KS3 SATs and the KS2 science SATs were scrapped in 2008. The national testing of science in KS2 was replaced by biennial sample testing in 2014, carried out by
external administrators on a compulsory basis. The 2014 revision of the NC included yet more changes to the assessments. Levels of attainment were replaced by ‘scaled scores’ calculated by teachers, and new English tests were introduced for KS1 and KS2.

In spite of the original broad and laudable aims of the NC, the focus of the SATs was perhaps inevitably on academic outcomes; even the Teacher Assessment regime was not set up to address other ‘softer’ broader pupil outcomes. The emphasis was on the levels achieved by pupils in the SATs. The wider curriculum had quickly become the NC and the ‘flexibility’ and ‘discretion’ which teachers were told they had was largely confined to tasks and attempts to relate the NC programmes of study to local opportunities and interests. The NC and the SATs have dominated schoolwork from their introduction.

Since the SATs were introduced to raise pupil attainment, the means chosen for achieving this outcome was a two-pronged strategy – the publication of school league tables and the use of the schools’ SATs scores by Ofsted (the Office for Standards in Education, Children’s Services and Skills) inspectors when carrying out school inspections. Inevitably, such public external factors were highly salient in teachers’ daily decisions about the curriculum they taught and the tasks they prepared.

Tasks

Non-statutory guidance and Schemes of Work for each of the core subjects were published by the Government in 1989 and 1991 to provide exemplary plans and tasks which teachers could use unchanged or adapt to suit their particular classes. The National Strategies also provided copious amounts of exemplary material for teachers to draw on when preparing tasks for their pupils in English and maths lessons, both of which were prescribed on a daily basis. The greater part of the National Curriculum time was to be used for literacy and numeracy (Dearing 1994).

At each stage in the evolution of the NC, publishers attempted to create materials that teachers could use to construct their lessons, providing ‘ready-made’, ‘off-the-shelf’ tasks for all the core subjects at all Key Stages. This was particularly useful in the relatively newer subjects of IT and design and technology (D&T), which had been novelties when the NC was first launched in 1988. Depending on the availability of financial resources and the personal and professional preferences of heads and teachers, each school was free to choose from amongst the many books
and other materials available. The closer these materials stayed to the ‘programmes of study’ and the ‘statements of attainment’, the more attractive they were to teachers, since they could greatly reduce the time and effort required to prepare lessons day by day. Many published materials attempted to provide differentiated tasks, matched to the range of pupil needs and attainment, as in Nuffield Primary Science, for example.

Over and above national policies on the curriculum and assessments, schools and teachers have input into the curriculum covered in classrooms. Advice and policies on the curriculum will also sometimes come from the larger body to which schools can belong – to Local Authorities, where these still have any influence over schools, and, increasingly, to newer middle tier structures like multi-academy trusts. Individual teachers will also have their own preferences over the kinds of approaches adopted toward the curriculum, and the kinds of tasks and activities they use for teaching purposes.

Social psychological research on tasks and group size

Social psychologists have had a long-standing interest in group performance and processes and one of the main dimensions considered has been the effect of group size on performance (see Baron and Kerr 2003, for a good review). One of the very earliest experiments in social psychology was a study by Ringelmann (1913) who compared the relative performance of individuals versus groups of different sizes on a rope-pulling task. (It was found that performance increased with group size but always less than the last person added.) It was soon realised that there were a number of complications in answering ostensibly simple questions about the effect of group size. An influential analysis was provided by Steiner (1972), who showed that in order to understand the effect of group size one needs to consider potential productivity of the group and process loss. A lot of attention has also been paid to process losses or coordination in groups as they get larger.

From the point of view of this chapter there are perhaps two main conclusions to be drawn from this large body of work in social psychology. The first is that it is not possible to answer questions about group size without reference to the type of task undertaken by the group. Baron and Kerr discuss the main types of task stemming from Steiner’s work, and used in much research on the topic: ‘disjunctive’ tasks, where only one answer can be given and the group must select the answer of a single presumably best member; ‘conjunctive’ tasks, where the group can
go no faster than the weakest member; ‘additive tasks’, where the group product is the sum or average of the group members; and ‘discretionary tasks’, where the group decide on individual contributions in any way they like. The effects of group size differ for these tasks. For example, in the case of disjunctive tasks, larger groups may well help because there will more skills to draw on. But for conjunctive tasks – for example, a climbing team tethered together by a rope – success is determined by how well the lowest performing member performs, and so the larger the group, the less productive it will be.

The second related conclusion is that, as with much research in social psychology, there are questions about the applicability of much of this research – largely conducted under predominantly experimental laboratory conditions – to everyday conditions like classrooms. There are a number of long-standing schemes that could be used to categorise curriculum tasks in schools (for example, Bloom et al. 1956), but in general terms one needs to cover tasks conducted individually, as a group, and directed by the teacher. And these tasks need to provide simple coverage of curriculum ideas (as in worksheets), development of new knowledge, investigations (for example, in science) and problem-solving answers to open-ended questions.

Class size and the curriculum and tasks: The research evidence

So far, we have described the background to the school curriculum and tasks in the UK and taken a brief look at social psychological work on group size, group performance and tasks. But what of the research on a more direct link between class size and the curriculum and tasks? In line with differences in the curriculum in different countries, as discussed above, we might expect that the effects of class size on tasks and the curriculum will vary between countries, for example when comparing countries with a centrally imposed curriculum versus a country with more local flexibility. However, to our knowledge this has not been explored (though see chapters in Blatchford et al. (2016b) for a comparison of the situation in the West and in East Asia).

Indeed there is limited research on the link between class size and the curriculum and tasks. Cahen et al. (1983) argue on the basis of their detailed research that the curriculum is one of the three main classroom processes affected by class size. They show that much of the curriculum taught in the US schools they studied (they only studied four) was not affected too much by class size, because the content of instruction was primarily determined by the textbooks, which was in turn affected by
school policy and teacher beliefs. But they also found that in a number of ways teachers in smaller classes were able to cover the curriculum more effectively: for example, because students were more attentive, lessons were therefore smoother and teachers could cover more content in more depth and more quickly. In smaller classes, curriculum activities were added that had not been done before and were additional to the basic areas of reading and maths – another reason why measuring class size effects only in these basic areas may miss other impacts.

The curriculum and tasks have also figured in other previous studies of class size and classroom processes. Anderson (2000) proposed that reduced class size has its effect on student achievement through greater individualised instruction and more in-depth treatment of material. Zahorik et al. (2002) proposed a main line of causal influence with smaller classes leading to more hands-on activities, which leads to deeper and more content, which leads to more student achievement.

The KS1 phase of the class size research did not set out specifically to collect data about the tasks and curriculum from the schools in the study. However, in looking at other aspects of classroom practice, through the use of questionnaires, systematic observations and case studies, incidental information about tasks and curriculum was gathered. The conclusion in Blatchford et al. (2003b) was:

The results … suggest that class size differences can influence the depth of curriculum coverage. … we did not find clear connections between class size differences and the amount of time that teachers spent in the main curriculum areas of maths and literacy. This is not surprising, especially now that in the UK there are clear guidelines about time to be spent in literacy and maths. Overall, our results suggest that it is the quality of teaching within curriculum areas that is related to class size differences, not the amount of time spent in coverage. (155)

However, we also noted the need for further verification. In this chapter we look at the situation for older pupils over KS2 (7–11 years), and in more detail in comparison to the earlier study.

As far as we know, there are no other UK studies that have looked at class size and the curriculum and task activities covered in classrooms. Our general expectation, given the largely government-set curriculum described above, was that the effects would be felt not so much on the overall coverage of the curriculum but in the activities used to cover the curriculum topic, and in the depth and detail of the coverage. In this
chapter we turned to methods of data collection in the CSPAR study to see what they told us about whether – and if so, how – class size was related to the curriculum and tasks found in the classroom.

**Results on class size and curriculum and tasks**

The connections between class size and curriculum and tasks emerged from study of two main sources of data, which were analysed separately:

1. The first source of data was the responses to the teacher questionnaire (TQ) question on class size and teaching. We looked at the categories that referred specifically to teaching in the chapter on teaching (Chapter 4), but there was a main subset of categories concerning the effect of class size on the types of activities set up by the teacher, and these we present in this chapter.

2. The second source of data for this chapter came from an analysis of answers collated across the various sets of data drawn from the KS2 phase of the CSPAR study (headteachers' and TQ responses in Years 4 to 6 and interviews and observations from the case studies in Years 5 and 6) in which there was any mention of the connection between class size and lesson content and tasks.

Following analysis of the collated data, across both sources, we identified four themes that described ways in which class size was related to the tasks and curriculum in the schools, as follows:

1. Curriculum and class size
2. Tasks and class size
3. Space, time and resources
4. Type and mix of pupils within the class.

We now describe each in turn, and will refer throughout to the source of data used.

**Curriculum and class size**

We need immediately to distinguish between class size and the curriculum, and between class size and the tasks and activities through which the curriculum is experienced by pupils.
The information analysed for this study showed that the relatively fixed nature of the curriculum, as described above, makes it difficult to change its main characteristics, whatever the classroom contextual features, including class size. But when one delves deeper into teachers’ experiences, the results also suggest that there are ways in which class size does have implications for the curriculum as experienced by pupils.

Perhaps the most obvious thing to emerge in the schools studied was how in the last two years of primary education (9–10 and 10–11 years) the NC content, and the accompanying SATs used to assess pupils’ and schools’ performance, created pressures that were dominant in affecting the choices teachers of large classes made about tasks and curriculum. This was most acute in the oldest primary year, Year 6 (10–11 years), where the curriculum overload was felt to be greatest.

Obliged to cover curriculum, I still would do it [if class was larger], but it would be lip-service to it in some respects, because of just charging through, trying to complete everything. (Year 6 large class – teacher interview)

Whatever strategies are employed, Y6 still has a more limited curriculum because of SATs pressure and performance tables. Some foundation subjects are very limited until after SATs. (Year 4 – TQ response)

… you’ve still got the same amount of work to go through, no matter what [the size of class]. In Year 6 you’ve got to get through it all. The pressure of the SATs threatens the curriculum … I try to keep all the subjects going. (Year 6 large class – teacher interview)

The accompanying problem is that class size can have an adverse effect on coverage of subjects that are towards the margins of the core curriculum.

Curriculum coverage would change if the class size changed. If more pupils – slower pace, each child has to keep up. Tied to the curriculum, don’t have any choice, except music. Shy away from using instruments. (Year 5 large class – teacher interview)

In small classes, the whole curriculum as set out in the NC could be more easily covered because the number of pupils made it possible for teachers to deal more easily with all subjects and all pupils’ needs. As
one headteacher reported, teachers of small classes were more willing to extend pupils’ range of experiences by offering extra-curricular activities.

Tasks and class size

We now look more particularly at the kinds of curriculum tasks and activities which children experience on an everyday basis. Teaching is expressed through and supported by different kinds of activities, whether practical, investigative or problem solving, and its success depends on how well the teacher has chosen and set them up. How important is class size to this process?

One general thing to emerge from teachers’ accounts is that as class size increases there is a tendency for approaches to teaching the curriculum to become increasingly restricted, with restrictions on practical activities and fewer investigative and time-consuming activities. If this is true, then such a shift, especially for pupils in the primary years, is regrettable. In spite of the prescribed curriculum perhaps being ‘covered’, there seem to be inevitable negative consequences of a larger class for the depth of activities provided, as well as for the satisfaction teachers feel about the teaching involved.

The TQ responses suggested that a larger class made it more difficult to provide some activities which teachers felt were educationally valuable. These included guided/shared reading and writing, hearing children read, science (especially investigations), and computer-based activities.

When teaching areas such as guided reading, guided writing, due to high numbers children usually only have opportunities to partake in this activity, once per week. This would be more frequent if there were smaller numbers (in the class). Also, guided reading and guided writing are activities … which the children really enjoy. (Year 5 – TQ)

At present I have 31 children in my class, soon to be 32. I feel that this is a large class … Things like hearing individuals read are obviously difficult, as is ensuring all children complete certain tasks, that is computer activities. Because of the large differences in abilities careful planning is essential and takes time. (Year 5 – TQ)
Given the problems of space and time, more likely with a large class, it was the more practical, but also the more investigative and sustained activities, that suffered, and this can compromise any efforts to encourage deeper levels of knowledge and conceptualisation.

**Practical work**

One of the most common types of activity to suffer in large classes, according to teachers, is practical work. As indicated in the next two teacher responses, it is not only individual teaching that suffers in a class with 31 and 32 pupils respectively but practical activities, especially in science.

Large numbers (and my class is not over-large in comparison to other schools by any means!) make it difficult to provide 1:1 attention, organise small intricate activities, e.g. make and do sessions, science practicals, capacity work. You feel guilty if you haven’t spent time with every child each week. (Year 5)

Sometimes I find it quite frustrating when I have to struggle to do practical activities with such a large number of children, e.g. having enough resources, or enough space! (especially indoor PE). (Year 5)

The next response is interesting because it allows a teacher to compare their normal small class of only 19 pupils with a bigger class formed for science.

Having only 19 children enables me to teach and plan! ... Having all the Y5 and Y6 for science, however, has had a negative effect. Many children say they dislike science, which has never happened before. In part this may be due to the restrictions that have been necessary when doing practical work. It has also made it more difficult to undertake longer-term investigations, e.g. monitoring temperature of melting ice. (Year 5)

The following teacher makes explicit what for many teachers was implicit: the constraints on certain educationally valuable activities, when faced with a large class, can have negative consequences for learning.
Not doing enough practical/hands on work. One computer in the classroom (leads to) poor ICT skills. (Year 6)

In the next quotation, the teacher is even more explicit about how a large class hinders the teaching of science.

Difficulties in grouping increase with the size of the class, e.g. in science (to) use equipment, it’s messy, so I have to choose very carefully. I do teacher demonstrations, but don’t like doing them – it’s not true to the nature of science. I can’t do practical science every week with 35 pupils, so use a lot of class demonstrations, pupils are not actually doing it. There are 6 groups all wanting equipment at once. It would be chaotic in this small room if all in the class do practicals at once. (Year 6 large class – teacher interview)

And for the following teacher, who has a small classroom, practical activities in maths were also constrained.

The children are often affected by the lack of space in the room, e.g. practical maths has to be confined to non-movement. (28 pupils, in Year 5 –TQ)

In a similar way, teachers interviewed during the Year 5 case study visits all agreed that increasing the size of the class is likely to produce changes in the tasks given to pupils, with a decrease in the amount of practical work done, and an increase in paper and pencil tasks and teacher demonstrations.

*Investigative work*

Another type of activity that teachers found to be more difficult to set up in a large class is investigative work:

Very rigid regime established with 35 in the class; little time or resources available for the more investigative work, although several sessions are set aside each week for this. Would like to do even more. (Year 5)

Having over 30 children in Y5/Y6 means that physical space is limited. Opportunities for investigative work and experiments is restricted. (Year 6)
The main effect has been the necessary control mechanisms (in a large class) have limited the investigative and experiential teaching and therefore learning. It is a worry that children have excellent teaching not matched by the independent learning opportunities to enable them to put knowledge and understanding into practice. (Year 6 – headteacher questionnaire)

In contrast, teachers of small classes appeared less inhibited in setting up more ‘adventurous’ activities.

Smaller classes = less problems with resources therefore more adventurous teaching! (28 pupils, in Year 5 – TQ)

We see here one way that class size might have a negative effect on learning: larger classes can restrict the range of activities teachers can provide. More creative, adventurous, imaginative and innovative tasks can be more difficult in large classes, even though they help to broaden the curriculum beyond the narrow demands of the SATs, especially in Year 6.

Safety concerns

Another problem with a large class, which is also related to an accompanying lack of space (see below), is a concern with safety and control in the classroom, which in turn can have an impact on the types of tasks teachers selected. Larger numbers were more difficult to control and there is the potential for more accidents, particularly in a crowded room.

One teacher already considers her class too large to allow pupils to do Design and Technology, due to the safety issues. They all regret the ‘narrowing’ effect of larger numbers, with one teacher making less use of references to the wider world due to anxieties about control and safety. (Year 6 large class – case study report)

For some teachers the safety concerns with a larger class affected classroom management in some subjects.

In Technology, safety becomes more and more an issue. I split the class in half to control the dangers. (Year 6 large class – teacher interview)
Design and Technology safety would stop me doing some tasks. I would use the knives in a group (only) with me (there). Not enough room in ICT room for full class. Don’t use the kitchen area as much because too many pupils. Design & Technology is pretty much squeezed out: we do it, but bare minimum we do it. (Year 6 large class – teacher interview)

Worksheets

Worksheets usually consist of a set of written questions or instructions on a printed sheet which children have to complete on their own. They usually demand individual work without accompanying teacher interaction (though they often follow teacher input) or collaboration with peers. Of course the use of worksheets will be influenced by teacher and school practices, independent of the size of the class, but one specific way that class size can affect teaching activities is through worksheets being given to pupils as a way of coping with large numbers.

We have always attempted to provide an inclusive education and therefore have a diverse and challenging teaching environment. With larger classes the staff are not as able to meet the needs of individual pupils which in turn creates stress and frustration. Staff work exceptionally hard to provide a high quality of teaching. However, there is a greater dependency on worksheets and lessons are very structured in order to keep all children on board. (Year 6 – headteacher questionnaire)

So here, despite a wish to provide an inclusive education and a high quality of teaching, a large class can mean teachers have to compromise and one way to keep all pupils engaged can be a reliance on structured lessons and the use of worksheets.

Class size, tasks and marking

We address the connection between class size and marking in Chapter 8, but here we note that teachers reported that tasks were sometimes deliberately chosen by them to reduce the amount of marking and hence the time needed to complete it. Some commented that the quality of the marking with a large number of pupils could be adversely affected and therefore of less value to pupils.
35 in the class. Little physical space. Children can’t move around the classroom easily. Too many for me to get to know properly. Too hard to give individual feedback from work. Marking takes too long – can’t do it as thoroughly as I would like. (Year 6 large class – TQ)

In the next quotation, a teacher openly admits that they set tasks deliberately to limit the amount of marking, rather than for purely educational reasons.

For my own sanity I have to reduce their workload to reduce my marking. 136 books a day! (34, in Year 6 – teacher interview)

Here we see one logical effect of class size that is rather easily taken for granted. Having to look at this large number of texts day after day is a huge undertaking, and it is no wonder that teachers attempt to control the flow of work. This is clearly a reasonable survival strategy with a large class size, but it carries potentially negative implications for teaching and learning.

Having 37 in the class, I think twice about the work I plan for the children, such as practical activities. I also have to consider the quantity of work the children are given as the marking becomes unreasonable – if it is to have any real value. (37 pupils in Year 6 – teacher interview)

We pick up the issue of class size and marking in more detail in the next chapter, but here we note that regulation of the marking workload was an attempt, not only to cope, but also to protect the quality and value of the results of marking. Teachers properly saw marking as another vehicle for effective teaching, directed at the needs of each individual child, and revealing and providing support for misunderstandings and knowledge.

Marking, for a start and planning is just … I find it difficult; I mean I know people say you don’t have to mark stories, but I do, I mark them, and to mark 35 scripts is … I find it very daunting, in fact it makes me exhausted at times, it takes me hours and hours to do and it’s consistent, it’s every day, every day. Now if I had to mark 40 scripts … I think it would be physically impossible, because I like to make proper, constructive comments on it and even spellings, I like them to get it right. If they’re going to copy some writing, I like it to be nice so that they can see it as it should be. (Year 6 large class – teacher interview)
If teachers with large classes become overwhelmed with marking, then its value is bound to be diminished, and consequently its potential as a strategy in helping individual pupils will be squandered. Curtailing marking, through the selection of tasks which generate little or none, runs the risk of reducing the value of the tasks, but, equally, marking which is superficial and without an element of feedback is also of limited value.

Space, time and resources

In this section we deal with three mediating factors that emerged from our analyses of themes in the relationship between class size and tasks and the curriculum. These three sub-themes seem to us at the heart of a more general understanding of how class size affects classroom processes and learning, and we return to them when we present the overall model in Chapter 10.

**Space**

One needs to be careful in assuming an inevitable link between class size and the teacher’s use of space. It was clear from the case studies that teachers could vary in their choices over how they make use of space available to them in the classroom.

The arrangement of the tables in all 10 classes [5 small and 5 large] is not just a reflection of class size, as three classes in each group have blocks and two have rows. In both groups, the teachers who have chosen to seat pupils in rows cite the same reasons, which are based on having tried other groupings and found rows to ‘work best’ for their particular class. How far this is a reflection of their own preferences and how far they have approached the question with an open mind, is impossible to say. However, it is not the case that larger classes lead inevitably to more ‘formal/traditional’ grouping of tables. (Year 5 – case study report)

But in general, it was clear that teachers in the case studies found that with larger classes space and shortage of resources became an issue, and this included considerations concerning safety and keeping control over a large number of pupils when engaged in using equipment and moving about. Rooms with a smaller number of pupils when engaged in using equipment and moving about. Rooms with a smaller number of pupils in them offered space which teachers could use flexibly, for example, to offer pupils alternatives
to sitting in one place all day doing desk-bound tasks. Teachers identified classroom space as a main factor in their choice of tasks and activities. It was a positive feature of a smaller class:

Children are (in smaller groups) allowed to know and understand their peers better. There are more opportunities for practical teamwork activities in smaller groups and community projects … more easily managed. (Year 5 small class teacher)

Larger class sizes meant there was usually less space available and this often meant that the provision of areas being set aside for certain activities, common in many primary classrooms, could not be achieved.

No extra space for ‘corners’ in the classroom. (Year 6 large class – TQ)

The loss of a carpeted area where the whole class could combine for short sessions (common with younger primary pupils) was another consequence of a large class. But lack of space also affected other mainstream curriculum activities. One teacher reported that if she wanted to rearrange pupils and seating for particular curriculum activities, this took time away from teaching and learning and so she was reluctant to do it.

Because of the large class – space is at a premium. This has impacted on the curriculum. It has affected Technology, Science, Art in particular. Practical subjects …. have to have military style precision – not really conducive to creative exploration. Our classrooms are only 45 m² with 36/37 pupils. Y6s are big, so is the furniture they need - there is no room to swing a mouse let alone a cat! (Year 6 – headteacher questionnaire)

Teachers want to arrange the room to facilitate learning but can be constrained by the size of the class in relation to the size of the room. They then have to compromise:

There is little chance of flexibility as far as seating goes. It is not possible to have a proper class library area with cosy seating and displays of books, etc. Also, it would take time and trouble to organise an area large enough for children to sit on the floor, closer to the teacher for whole class sessions – in literacy, etc. Therefore,
the setup is rather formal for most of the time and some children find it difficult to sit at their desks for any length of time. (Year 5 large class – TQ)

All the Year 6 case study teachers agreed that they could make good use of more space if it were available. Various improvements to the classroom layout were identified, including breaking up larger blocks of tables and relocating computers and other items. With larger classes, furniture has to be put close together, some items may have to be relocated outside the room, the carpet area may have to be removed, as we have seen, or reduced. Two teachers with large classes remarked that the tables would have to be put into rows to facilitate movement.

30 is manageable – just! My room is very small so I can’t arrange furniture and working areas best suited for maximum learning potential. (Year 5 – TQ)

In line with comments in Chapter 4, a combination of class size and lack of space can also affect pupils’ behaviour in class:

Many arguments in class – too many children working too close together. Find practical tasks a trial – sharing equipment. More children, therefore more problems with relationships. Cannot always support SEN children appropriately, as a large number of children take up more time in helping with [relationship] problems. (34 pupils, Year 5 – TQ)

This account of how class size and physical space interconnect is another illustration of how a focus on class size on its own in relation to pupil outcomes misses the way this works. Instead, we need to view the classroom as a distinct environment within which a large number of interacting factors operate – change one thing and others will be affected. As we see in more detail in Chapter 10, the complex system we call a classroom is dynamic and involves a range of influences, all operating concurrently. The examples below illustrate this well:

Because of the high number of children in the class, every desk and chair is occupied and there is no room to provide children who have challenging behaviour or short concentration spans with individual tables. It would also be beneficial to have a separate art area with
tables in the classroom for small groups to work on at a time, but, again, this is not possible. I have had to have my desk removed from the classroom to fit all the tables for the children in. Resources have to be shared, sometimes between a group of 5 or 6, which is not satisfactory. Also, it is difficult to move around the room without asking children to move their chairs – this disrupts them working and causes problems. (Year 4 large class – TQ)

The children are often affected by the lack of space in the room. … Cannot separate the children who are disruptive, so that they do not affect the others. (28 pupils, Year 5 – TQ)

Time

Time is another factor that emerged from teachers’ experiences of the relationship between class size and tasks. One consequence of a smaller class was that teachers felt able to devote more time to planning and teaching, and this was of benefit when seeking to match tasks to individuals. As we saw in Chapter 4, teachers of small classes said they had the time to get to know their pupils well enough to be able to identify the needs of individuals, and the smaller numbers allowed teachers the opportunity to plan tasks accordingly.

Small numbers in a class: enables differentiation to be more effective – teachers will have from Level 3 to Level 5 to plan for as well as more severe SEN pupils, and gifted and talented. Enables teachers to maintain the breadth of curriculum we strive for in the foundation subjects – teachers have more time to plan and deliver the curriculum. (Year 6 – headteacher questionnaire)

Certain types of work set to pupils need to be assessed in process as well as in product and large numbers of pupil in the classroom made this problematic. To observe and assess pupil activities as they happen requires time for the teacher to pay close attention to what is being done and how. Lack of time and the necessity to carry out some tasks in groups, especially in large classes, can hamper such assessments.

… when children are working practically it’s difficult to assess a child’s ability and skill processes as group work is necessary due to constraints of resources. (Year 4 large class – TQ)
One of the factors, therefore, when considering class size and tasks and curriculum, is time. It is very time consuming to produce a variety of tasks for each curriculum subject, matched to the range of individual needs in a large class; much time can be spent after school hours, eating into the teachers’ own time, and adversely affecting teachers’ work/life balance. Added to the time for preparing such detailed and numerous tasks, is the heavy marking load which a large class generates (see above and also see Chapter 8). Compromises seem almost inevitable for teachers of large classes. We return in Chapter 10 to the role of time in understanding class size effects.

Resources

Apart from space, another type of physical factor mentioned by teachers of large classes was resources, including textbooks, equipment and materials. Some teachers reported that the school purchase of a particular number of textbooks for each class was out of line with the actual numbers in the classes.

The class is not resourced for 35 children so even with sharing there are not enough books. This means I have to spend longer finding appropriate work in other schemes. (35 pupils, Year 5 – TQ)

This issue also covered computers, science equipment and materials for creative tasks in art and design and technology.

Lack of materials/equipment e.g. only 12 computers in suite. (34 pupils, Year 5 – TQ)

Where the lack of resources was significant, it meant teachers either resorted to setting tasks which did not rely on every pupil having access to resources or chose to manage the potentially disruptive sharing of resources. Combined with the lack of space, this shortage of resources was a main reason why teachers reduced practical, investigative and creative tasks (see above). Compounding the problems of space and resources were the worries about safety and class control, as we have seen. A possible consequence of large class sizes, therefore, is that lessons can became more formal, with pupils more static and having less opportunity for independent learning.

Children’s desks arranged more formally. Teaching is more from the front and to the whole class rather than small groups. Teaching
is done by subjects rather than an integrated approach. (Year 4 – headteacher questionnaire)

**Type and mix of pupils within the class**

Another theme when considering the relationship between class size and tasks and curriculum is the ability/attainment range and composition of the class. Teachers and headteachers pointed out that larger numbers of pupils widened the range of needs, and the greater likelihood of having pupils with SEND in the class could also further extend the range. We deal in detail with class composition and class size in Chapter 9, but here we show that a wide range of pupil attainment levels found in larger classes challenged teachers to plan tasks and support.

The following examples encapsulate the tension faced by teachers of large classes who are trying to meet these diverse learning needs while also trying to cope with the drive to cover the curriculum and meet targets. These needs are hard to achieve simultaneously.

As the class size increases: I think it’s much harder to address all the ability levels of the class and constructively teach to the curriculum, I mean the curriculum’s very heavy as it is and trying to be inclusive of everybody in the class, becomes impossible. (Year 6 small class – teacher interview)

As we shall see in Chapter 9, the issue of differentiation emerges as one of the most pressing consequences of increasing both class size and, in result, the diversity of pupils in the class. The larger the number of pupils, the wider the range of learning and the harder it is to differentiate tasks. This constrains teachers’ choices and can push teachers into adopting approaches that make differentiation difficult and meeting the learning needs of all pupils less likely.

We examine differentiation in more detail in Chapter 9 but here we note that an analysis of the process of differentiation brings together class size, the composition of the class and coverage of the curriculum and types of activities. Teachers and headteachers in the study revealed their awareness of this, as the quotations below illustrate.

As our pupils progress through Key Stage 2 the range of ability widens, making the teaching of a subject more complex, if effective differentiated activities are to be provided. The situation is made more complex with the full range of curriculum demands. (Year 4 – headteacher questionnaire)
With huge differentiation, finding suitable activities for all pupils so they can have equal access to the curriculum is very difficult. How can you fully teach to pupils at really low levels and those reaching the highest levels? There is too much content in the curriculum to do any pupil justice. (Year 5 – TQ)

It is clearly an expectation that all teachers will differentiate tasks, regardless of class size, but responses from headteachers and teachers show that small classes made it much easier to match tasks to needs. Teachers had the time to identify each pupil’s needs more accurately and the time to prepare differentiated tasks to match them.

**Differentiated tasks and teaching methods**

As we saw in Chapter 4, teachers of larger classes saw the use of whole class teaching as one unwanted solution to the problem of having so many pupils. It was seen by some teachers as leading to a less differentiated curriculum, ill-suited to the individual pupil’s needs. This was candidly admitted by some:

> Having 30+ children in a class is only a part of the problem affecting teaching. The wide range of abilities, attitudes, aptitudes or behaviour is an equal problem as is the curriculum overload and the pressure to raise [attainment] for SATs. A large class means more class teaching and less genuine differentiation. Teaching is decided on the ‘average’ and more able or less able children do not make the progress of which they are capable. (Year 6 – headteacher questionnaire)

Small classes allowed teachers to maintain small groups, and these were seen by some teachers as useful as a context for teaching. The tasks worked on could be more focused on the group’s attainment and needs.

> Small groups, giving more individual attention from the teacher, pupils more on-task. Pupils able to move around the classroom freely from activity to activity in a more relaxed environment. (Year 5 small class – TQ)

Differentiation is much easier to organise because it’s more convenient to divide children into smaller groups based on ability. (Year 4 small class – TQ)
The case studies in large classes indicated how difficult it was for teachers to differentiate teaching and tasks. In one Year 6 large class the day was formal, with class-based, abstract exercises, very similar throughout. Few attempts were made to match the work to pupils, and this clearly did not suit the needs of some individual pupils.

On the other hand, smaller numbers meant more time was available and therefore there was more possibility of more targeted planning of differentiated tasks to match an individual pupil’s learning needs more effectively.

The small Y6 teaching group means that work is tailored much more to children’s individual needs. The teacher is able to give more one-to-one time with individuals. She still plans and prepares differentiated activities … (Year 6 – headteacher questionnaire)

Teachers interviewed during the Year 5 case study visits all agreed that the particular pupils included in a larger class were a very important factor. With reliable, trustworthy pupils it might be possible to continue with the same level of practical opportunities as a smaller class, but this might well be difficult with more difficult and badly behaved pupils.

Conclusions

Results in this chapter are summarised in the Key Themes box below. For completion, and in order to be consistent with the corresponding area of Figure 10.1 we also represent the background, contextual features of the curriculum and assessment arrangements, described at the beginning of this chapter.

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<th>Key Themes</th>
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<td><strong>Context:</strong> Curriculum/assessment arrangements</td>
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<td><strong>Teaching:</strong> Tasks and curriculum activities</td>
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<td>• Curriculum</td>
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<td>• Space, time and resources</td>
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<td>• Type and mix of pupils</td>
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The curriculum and tasks

This chapter relied to a large extent on the reported experiences of teachers and other staff in schools. Teachers are privileged informants on the kinds of activities their pupils experience, not least because they usually prepare and manage them, but we need, as discussed elsewhere, to be cautious about strong claims about the effect of class size without supporting evidence from other forms of data collection. The results summarised here should therefore be treated as suggestive rather than definitive and, as with other areas covered in this book, there is a clear need for further research.

The evidence presented in this chapter indicates that though the curriculum coverage does not change much as the class size increases, the impact of the curriculum is ‘diluted’, as one teacher put it, with more pupils to monitor and support. Classroom tasks on the other hand seem more likely to change in relation to class size, in terms of the types of activities the teacher sets up, and the kind of teacher support for them.

The curriculum may therefore be largely ‘a given’ but the teacher remains responsible for selecting tasks and teaching approaches which meet the needs of all the pupils in their class. Compromise is an unavoidable aspect of teaching, but teachers’ experiences suggest it is particularly prevalent in a large class.

We have seen that a larger class can make it more difficult to set activities which teachers feel are educationally valuable, including practical work and more investigative and sustained activities. Larger classes can mean more likelihood of a restricted range of teaching approaches, as the teachers juggled resources, space, class control and the learning needs of all their pupils. It is likely that activities like investigative work will encourage deeper levels of knowledge and conceptualisation, and so it is concerning if these kinds of activities are found less often in larger classes. Once again, though, this suggestion needs further confirmation from other forms of data collection.

Interconnectedness

We said at the start of this chapter that results concerning class size and the curriculum and tasks brought out the reality of the interconnectedness of classroom factors at work. As with so much else when considering class size effects, the relationship with class size and types of activities overlaps with other factors, in particular space and time, resources and
materials, and types of pupils in the class. We have seen how the factors are interrelated, and we cannot separate them easily from each other. Looking at associations between separate factors may work for analytical purposes but to fully capture how the classroom works we look to capture their full interconnectedness and interdependence. We develop this theme more explicitly in Chapter 10.

Class size and tasks and curriculum: Pedagogical implications

We have seen in this chapter that differentiation of pupil tasks, to match the learning needs of all the individuals in the class, is perhaps the greatest challenge facing the teacher of a large class. This is especially difficult when the class contains pupils with SEND, as we see in more detail in Chapter 9, because it extends still further the range of pupil needs and attainment levels within the class. Pedagogical issues and strategies therefore need to be considered when working through how best to adapt the setting up of tasks in classes of different sizes.

One way of considering the pedagogical implications is in terms of the three interactive contexts for learning seen in other chapters in this book – that is, to the whole class, groups and individuals. We have already discussed the issues regarding whole class teaching. We just add here that where whole class teaching is done – and of course this form of teaching will be necessary for many purposes – it needs to be carefully considered and not become a way of teaching simply dictated by the sheer number of pupils in the class.

As discussed in Chapter 4, one of the key problems in a large class is the difficulty of providing individualisation of teaching, to which we can add individualisation of tasks and activities (see Chapter 9 for more on different forms of differentiation). One solution we suggested at the end of Chapters 4 and 5 is relevant here as well, namely, to think through more carefully the positive possibilities of group-based teaching and task allocation. As we saw in Chapter 5, pupils are often allocated to groups but there is less evidence of carefully worked through pedagogical strategies for teaching to these groups. This strategy also provides a degree of differentiation, but not one forever frustrated because individual support is not possible for all in a large class, while whole class teaching is found to be unsatisfying because it is hard to provide any real form of differentiated teaching.

We have seen that teachers can come to rely on worksheets as one form of task allocation with large classes. Worksheets can have a role to play in teaching, of course, and are one vehicle for differentiation, but
they need to be allocated sparingly and strategically. Otherwise, they can become uninteresting for pupils, and simply used to fill time while the teacher is occupied elsewhere.

One of the main things we have seen in this chapter is the problem teachers can have when setting up certain kinds of tasks, particularly practical activities, in large classes. When allocating practical tasks, one strategy in the face of potential worries about danger and resourcing, is to ‘stagger’ practical tasks with groups so that all pupils get to do them at some point. The rest of the class can be doing independent tasks as the teacher works on practical tasks with groups.

This last point leads to a more general strategy which can help with the management of large classes. Teachers, and indeed the school leadership team, should be doing all they can to encourage independent learning. Many would no doubt say they already do this but, in our experience, it can be rather implicit. A more formal approach is required so that when teachers are working with groups or individuals around certain tasks the rest of the class can be working independently – or collaboratively – on other tasks. This approach to pupil independence, as early and as much as possible, allows teachers more freedom to give attention to individuals and groups. We have found that this is facilitated by initiatives such as the SPRinG collaborative group work programme, as described in Chapters 5 and 6.

We have seen above troubling accounts of how teachers decided not to put on some ostensibly valuable tasks because of worries about the heavy demands of marking. It needs to be recognised that the bigger issue here concerns class size and teacher workloads and marking policies in schools. It seems clear that alternative solutions need to be sought, as we discuss in more detail in the next chapter, though we repeat here a point raised in Chapter 4: one strategy is to conduct more ‘live’ marking in class, so it reduces the amount of out-of-class marking.

There is also a particular and positive role for TAs here. Although we consider TAs in more detail in Chapter 9 with regard to pupils with SEND, we mention here a couple of ways TAs can be used to help with tasks in the classroom. Some teachers in large classes, as we have seen, avoid certain labour-intensive activities like practical and investigative activities; one strategy is to deploy TAs to help manage such tasks. To avoid the negative consequences of routine ways of deploying TAs, discussed in Chapter 9 and in Blatchford et al. (2012), such deployment should be designed to complement and support the teacher and not, as is often the case, substitute for the teacher. TAs can help reduce dangers and disruptive behaviour during practical tasks and allow a more varied
diet of work. The TA can also take on other roles, for example, a ‘roving’ role to supplement the more targeted support given by the teacher to certain groups and their activities. Differentiation of tasks can be managed more easily with a TA.

It is recognised that even with careful attention to the suggestions here, there are still likely to be inherent problems for teachers with large classes. One overriding issue is the curriculum which, as discussed above, is not easily adapted. The work for this chapter suggests to us that current discussions in the UK about the curriculum content need to be conducted not in a policy vacuum, but mindful of the realities of classroom life and the everyday difficulties teachers face, especially in covering the curriculum when faced with large classes and a range of attainment levels in their class. This book has shown how all facets of classroom life are interdependent, and the curriculum is no exception. We come back to policy issues arising from our work in Chapter 11.