Rethinking Class Size

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Published by University College London

Blatchford, Peter and Anthony Russell.  
Rethinking Class Size: The complex story of impact on teaching and learning.  
Project MUSE. muse.jhu.edu/book/81855.

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Bringing it all together: Toward a social pedagogy of classroom learning

In this book we have sought to understand the effects of class size. We have seen that much of the argument about class size has hinged on the strength of the association between class size and academic attainment. We have also seen that for the majority of commentators the strength of this association is judged to be modest at best, and the natural conclusion, accepted by many, is that class size is not important. For many, that is all one needs to know about class size. From our point of view, however, this is far from the end of the matter. To judge class size effects simply in terms of the strength of the association between class size and academic attainment is misleading and limited. To counter this point of view, the bulk of this book has been an examination of the relationships between class size and a number of classroom processes. We have seen that the association between class size and academic outcomes is embedded in, and needs to be understood in the context of, these interconnections.

In this chapter we seek to develop an integrated and comprehensive way of viewing the full range of class size effects.

Our model of class size effects: Mapping the interconnectedness

This book has drawn on extensive and varied methods of data collection, including large-scale questionnaire surveys, case studies and systematic
observations from the CSPAR, DISS, MAST and SENSE studies, to map out effects across a wide range of factors. In Chapter 3 we examined the effects on pupils and showed that the effects are multiple, not singular. We have seen that the almost exclusive concern with class size effects on pupil attainment, which has dominated research and policy, risks seriously underplaying and even misunderstanding the effects of class size. The rest of the book has been a close examination of what we have learned about the effects of class size on key classroom processes: on teaching (Chapter 4), grouping practices and classroom management (Chapter 5), peer relations (Chapter 6), tasks and curriculum (Chapter 7), and administrative aspects of teaching (Chapter 8). We also looked at the connections between class size and types of pupils in the class (Chapter 9).

The model in Figure 10.1 summarises our results. The size of the data base does not of course necessarily guarantee its quality, and in several chapters we were more reliant on the views of practitioners without the complementary data from, for example, classroom observations. But we feel confident that this model captures the nature of the processes and their interconnectedness which we have found to be crucial to understanding how class size effects work. In the interests of space we do not refer much to other research in this section (see Chapter 2 for a review).

Figure 10.1 is divided into three sections: contexts, processes, and effects on teachers and pupils, each encompassing several boxes. The following summarises each of the areas within the corresponding boxes in Figure 10.1.

Contexts

*Classroom contexts: Time*

This box captures two main aspects of the classroom context that are affected by class size and which in turn have strong implications for all classroom processes.

We have come to the view that time underpins many of the issues that arise throughout the book. As we have seen in a number of chapters, a central problem is that a large class size increases pressures on time, and that time – or rather the lack of time – seems to be a key underpinning
Figure 10.1: Class size and classroom processes: Summary model. Diagram by the authors.
factor that makes a large class difficult for a teacher. The consequences of time are difficult to pin down since they are rarely mentioned by teachers specifically as a main influence. As a result we did not create a specific category for time when coding, for example, the TQ responses. Time has not to our knowledge been investigated as a primary mediator of class size in relation to pupil outcomes, but it seems clear from the numerous sources of data in this book that it underpins many of the problems teachers and pupils faced in large class sizes. A lack of time makes it more difficult for the teacher to attend to all pupils, give individual attention or attention to small groups, or provide a variety of tasks and activities, and adds to pressures on marking, assessment and report writing.

Types of pupils in the class: Composition

We saw throughout the book, but specifically in Chapter 9, that class size interacts with the types of pupils in the class in two main ways: first, the increased diversity of attainment levels and the presence of pupils with SEND becomes progressively more problematic as class size increases, because of extra demands on teacher time and management, and, second, a larger class meant some types of pupils, in particular pupils with SEND and low-attaining pupils, can suffer more.

Classroom contexts: Physical

Throughout the book we have seen how space in the classroom affects a number of aspects of teaching and pupil learning and behaviour. We saw, particularly in Chapter 4, that, given a fixed classroom size, the space available for teachers and pupils tends to decrease as class size increases. And we saw that this affects teaching approaches (for instance, a large class and lack of space mean a teacher is forced into whole class sessions, leading from the front), classroom organisation, pupil behaviour, problems with conducting group work and managing pupils with behaviour problems.

As we also saw in this book, class size can affect another physical feature of the classroom context: the resources and materials used for teaching. A large class size can affect access to science equipment and computers, for example, with negative implications for teaching and pupil involvement in the work. Noise levels also increase with the size of class and this can have negative implications for learning.
Context: Curriculum and assessment arrangements

Another feature of the classroom context is the curriculum and assessment arrangements which set a framework within which teachers and schools have to work. This is different to the adaptations teachers make to these arrangements, in terms of tasks they use in the classroom.

Processes

In Chapters 4 to 8 we described a number of classroom processes affected by class size. These are represented in the ‘Processes’ section of Figure 10.1.

Teaching: Interactive contexts

In Chapter 4, across the range of different methods of data collection, we found that class size affects the balance of the three main interactive contexts for learning: individual, whole class and group.

Individual attention. The clearest result from the observation analysis was that as class size increases, the amount of individual attention and one-to-one interaction between the teacher and the pupil decreases. The converse also applies: as class size decreases, the amount of individual attention increases. An allied finding was that the child’s role becomes more passive in larger classes, with a tendency to just listen to the teacher talking to the whole class or another pupil. Conversely, as class size decreases there is more likelihood that the pupil will be more active, initiating and responding to the teacher’s talk. We also learned that teachers perceived teaching to be at its best when they engaged with the individual learner, working on the child’s present ideas and capacities, then using their expertise to choose the tasks and the approaches which would best support the child in making progress. A large class therefore frustrates them, and they feel they are not doing as good a job as they would like.

Groups. Class size also affects a second interactive context for learning – groups of pupils within the class. This was seen in terms of how organising pupils into groups becomes problematic as class size increases. A large class meant teachers did not have time to teach small groups (which like individual attention was seen as pedagogically desirable); group size increases with class size, making teaching and classroom management more difficult.
Whole class. The third interactive context affected by class size is whole class teaching. Teachers adapt to having more pupils in their class by necessarily engaging in more whole class teaching than they would like. None of the teachers in this study suggested that whole class teaching was an acceptable alternative to individual support of pupils’ learning, and so felt it reduced their effectiveness. While in smaller classes pupils get more individual attention, in larger classes they spend more time listening to the teacher talk to the whole class. They may get more educational input, but this is at the expense of it being largely passive and part of a large group.

Teaching: Interactive qualities

The next part of the model as seen in Figure 10.1 describes the nature or quality of the teaching that takes place in the three interactive contexts.

Teaching quality. In their own words (see Chapter 4), teachers said that smaller classes mean teaching is more likely to be in-depth, higher quality, effective, thorough, better, more varied, more adventurous and more attentive to pupils. There were three particular features of teaching, cited by teachers when considering the effect of class size: control/management, live feedback and knowledge of pupils.

Classroom control/management/organisation. As class size increased, more attention was given to discipline, control and classroom management. Teachers described how they were forced into ‘crowd control’ mode, with adverse consequences on their overall teaching. Findings from the DISS systematic observation study showed that there was a consistent trend across both primary and secondary education stages for low-attaining pupils to receive more critical comments from teachers in larger classes.

Live feedback. Another feature of teaching seen by teachers to be affected by class size is the amount and quality of ‘live’ feedback to pupils, that is, immediate feedback on pupils’ work. The benefit of a small class is that it allows teachers to do a better job of monitoring and assessing pupils’ work while they are working on it. This feature is clearly related to more individual attention. It seems similar to Brophy’s (2000) 11th generic principle of effective instruction – ‘goal orientated assessment’.

Knowledge of pupils. Another quality of teaching connected to class size, and clearly shown in Chapter 4, is the way that having fewer children in the class allows the teacher to get to know each pupil more
thoroughly. This is likely to mean that teachers build deeper relationships or ‘connections’ with pupils, which also aids teaching.

**Grouping practices and classroom management**

Although groups in the classroom is one of the interactive contexts of teaching already discussed, we have identified in addition a separate box in Figure 10.1 because, as seen in Chapter 5, detailed analysis of teacher-completed questionnaires and interviews with teachers and pupils as part of case studies in schools showed the important way in which class size affects the teaching and management of classroom groupings.

The setting up of within-class groups is a predominant feature of British primary schools, and we have seen the way that increases in class size necessarily lead to bigger or more numerous groups, and pressures on space and resources. We see that these features, and the mix of characteristics of the students in the class, also set the context for important but difficult classroom management and teaching decisions.

**Peer relations**

Another process affected by class size is peer relations. We saw in Chapter 6 that the majority of teachers in both the case studies and the TQ were clear that, other things being equal, peer relationships were likely to be better in a small class and worse in a large class. In the case studies there were comments on how smaller classes led to more positive relationships and less conflict, more cohesive relations and less fragmented social and friendship groupings. A similar picture emerged in the analysis of the TQ responses, and we identified from teachers’ responses six main ways in which peer relationships were positive with small classes or negative with large classes: (1) General on positive relationships (for example, in larger classes pupils don’t get along with each other, there is more friction in relations, there are more arguments, fights and petty squabbling); (2) Cohesiveness/integration (for example, gelling and forming a close bond as a group in small classes; more fragmentation of peer relationships in larger classes); (3) Supportive and caring toward each other; (4) Quality of friendship relations (for example, in terms of durability, security, depth and lack of conflict); (5) Tolerance (for example, integrating newcomers and children with SEND, and less bullying); (6) Better working relationships (for example, working as a team, better
group work, longer and more detailed conversations between pupils). As we said in Chapter 6, it was only when addressing the benefits of small classes and the problems of large classes that teachers commented on the quality of peer relations, for example in terms of cohesiveness, supportiveness and tolerance. When teachers in large classes pointed to positives for peer relations it was only with regard to the potentially larger pool of potential social contacts.

Teaching: Tasks and curriculum activities

This box in Figure 10.1 identifies the relationship between class size and the curriculum, tasks and activities. While class size may not much affect the curriculum covered, because of constraints set by the National Curriculum and assessment arrangements in Britain, it can affect the breadth and the quality of coverage within each curriculum area, in terms of the types of activities the teacher sets up, and the support provided for them. Though the curriculum may therefore largely be a given, the teacher still remains responsible for selecting tasks and teaching approaches for pupils in their class. Compromise is an unavoidable aspect of teaching, but it seems particularly acute in a large class. We saw in Chapter 7 that a larger class made it more difficult to provide activities which teachers felt were educationally valuable, including practical work and investigative and sustained activities. It is likely that these kinds of activities will encourage deeper levels of knowledge and conceptualisation. The danger is that as class size increases, the variety and type of educational experiences narrows, leaving the children with a potentially limited range of experiences of the curriculum.

Teaching: Administrative

The administrative aspects of teaching can be taken for granted but are often a particular burden for teachers in the UK, with the heavy emphasis on regular assessments and individual reports. In Chapter 8 we identified three main subcategories: marking/assessment, reports, and planning and preparation; teachers’ accounts showed that these became more demanding for teachers as the numbers of pupils in a class increased. Comments from teachers in interviews and questionnaires show how much these extra demands have a negative impact on their own teaching, well-being and satisfaction with their job. Worryingly, we saw examples of ways in which the administrative burdens resulting
from a large class could influence teachers’ decisions about the types of
tasks and materials for pupils, in the interests of classroom management
and teacher workloads rather than learning.

There also appeared to be a connection between some aspects of
administrative work and instruction, particularly concerning marking in
the form of immediate feedback on work done by pupils. The quality of
this feedback is clearly vital for pupils, and we saw in Chapter 8 that it is
more likely to be shorter and less detailed with a large class.

*Teaching: Differentiation*

We have added another box to our model in Figure 10.1 because, as we
saw in many of the chapters in this book, and especially in Chapter 9,
differentiation of teaching and pupil tasks, to match the learning needs
of individuals in the class, is perhaps the greatest challenge facing the
primary teacher with a large class. We found that differentiation was
especially difficult when the class contains a wide range of attainment
levels and, following educational policies toward inclusion, which have
been a feature of education in the UK in recent years, this includes pupils
with SEND. A large class would not be such a problem if children were
similar in terms of their attainment, behaviour and motivation.

Differentiation is different to the other boxes in our model, being
an extra and, in a way, superordinate process to those described in
the individual chapters. Differentiation is carried out, for example,
by changing the balance of the interactive contexts, by changes in the
interactive qualities of teaching, and through the provision of tasks and
activities. In this respect it might be considered an overarching second-
level factor rather than a primary effect.

*Relationships*

The final box in the ‘Processes’ section of Figure 10.1 can be considered
as another second-level factor, in the sense that it is an overarching
theme which permeates other aspects. Relationships are not often cited
specifically by teachers but might be considered to be the web that binds
many other processes together. We adopt a broad approach to the idea of
relationships and identify three main components. Most obviously, our
approach includes the quality of interactions between pupils and teachers
in terms of, for example, warmth and individual knowledge of pupils.
As we saw in Chapter 4, teachers can get to know each student better
in smaller classes, and this allows pupils to be supported emotionally and respected as individuals. There are strong reasons for arguing that teacher–pupil relationships are a key part of successful teaching. There is a strong educational psychological literature on the importance of teacher–pupil relationships (for example, Hamre and Pianta 2010; Pollard and Tann 1993; Kutnick 1988). Second, it includes relationships between pupils in the class – a theme developed in Chapters 5 and 6. Third, it includes a broader way of thinking about relationships and class size, which we have considered specifically in this book, but feel it appropriate also to mention here. There are a number of allied terms used in the literature but the main terms suggested by the results in this book are classroom learning environment, psychological sense of community, cohesiveness, connectedness and belonging, and interpersonal climate (Bateman 2002; Galton et al. 2015; Finn et al. 2003; Finn and Shanahan 2016; Finn 2019; Zahorik et al. 2002). Finn and Shanahan (2016) argue that although some of these factors can be seen in larger classes, under the right conditions, others are only really possible in small classes; for instance, close relationships with each student, and a high group cohesiveness.

Effects

The third section of Figure 10.1 concerns effects of class size on teachers and pupils.

Effects on teachers

One clear consequence of large class sizes, revealed in the TQ and case study results (see Chapter 4, but also in other chapters), is the cost to teachers themselves, in terms of feelings of guilt, stress, tiredness, having less creative energy, and their health. These effects should not be underestimated. When critics state that class sizes are unimportant, because all that matters is pupil attainment, they overlook the very real consequences for teachers with large classes in terms of strain and exhaustion.

Effects on pupils

In Chapter 3 we explored the literature on the relation between class size and pupil attainment, and also showed results from our own CSPAR study. We made the point that the usual way of looking at academic
effects is quite narrow, and usually restricted to the core subject areas of literacy and mathematics. We looked at observation and questionnaire data to show how class size affects other aspects of pupil functioning, including engagement in class. We made the point that knowledge is still scant on other broader aspects of pupil functioning, for example in creative areas, even though the effects of class size may be more marked there, given that pressures on schools and teachers mean that core areas can be prioritised over other areas.

**Toward a social pedagogy of classroom learning:**

**Exploiting the potential of the interconnectedness**

The boxes in Figure 10.1 can be considered the ‘elements’ in the classroom context that we have found to be connected to class size. The elements comprise the classroom processes and contextual factors we have identified in the chapters in this book. The classroom can be considered as being a dynamic system and perhaps the three main points to emerge from the results in this book and in our summarising model in Figure 10.1 are, first, the interconnectedness of components in the system, second, the fallacy of isolating an individual component for examination and, third, the need to examine elements in context. As Heft (2001) puts it: ‘Psychological functions at any given moment emerge from a confluence of multiple dispositions to act expressed in conjunction with the multiple and changing conditions of the environment confronting the individual over time. And considering the active character of animate processes and the changing character of environmental conditions, this is a dynamic, ceaselessly shifting process’ (318). The challenge is to identify ways of approaching the ‘multiple dispositions to act’ and the ‘changing conditions of the environment’ at work in relation to changes in class size. We believe that the search for the interconnections between classroom contextual factors and classroom processes is not only important conceptually but also in terms of policy and practice.

The elements in Figure 10.1 define the structure of the ecosystem of the classroom; the next step is to identify the interconnections within and between classroom processes and contexts when the classroom ecosystem adapts to changes in class size. It would help make this step, it seems to us, if we set out to consider systematically the appropriateness of the adaptations made in the face of class size differences. This is important because we have seen how the adaptations made by teachers to class size are not always for the best, as, for example, when teachers
don’t change their teaching approaches, or they adapt to a large class by hearing children read at lunchtime and marking for hours over weekends.

In order to help with a way of conceiving of adaptations to class size with an eye on their pedagogical intent, we use the idea of a ‘social pedagogy of classroom learning’ as one way of moving this kind of thinking on, with conceptual benefits for understanding class size effects and practical benefits for schools.

Social pedagogy of classroom learning

We have argued that class size is best conceived as a classroom context for teaching and learning that interconnects with other classroom contextual aspects and processes. It is these interconnections, and, in particular, the way that teachers manage the interconnections which are the key factor when considering effects on educational outcomes.

We have mentioned that Blatchford et al. (2003d) originally coined the term ‘social pedagogy’ to help show how learning in schools is not simply the result of teachers exerting an influence on pupils but that learning takes place in a distinct physical and social setting within which complex, multiple decisions are taken about how to best coordinate and manage the various factors involved, including class size. Kutnick and Blatchford (2014) then went on to show that classrooms involve distinct physical and social settings within which decisions are taken about how best to coordinate and manage the various factors involved. These components exist in dynamic relationship with each other, and effective teaching requires an understanding of their separate and interconnecting influences.

Kutnick and Blatchford (2014) use the notion of social pedagogy to show how different aspects of the classroom environment – group size and composition, teaching roles, learning tasks – come together in a dynamic relationship that is both social and pedagogical. One basic idea is that it is important to adapt teaching – the classroom interactions, groupings, activity contexts, etc. – to more ‘fixed’ classroom-level factors like class size, classroom size, seating arrangements, characteristics of children and the curriculum.

Effective teaching, then, is not just, for example, about determining what teaching approaches and interventions work best, in a sense out-of-context. It also involves recognising the interconnectedness between elements, and, going further, understanding what might be called the social pedagogic potential of these interconnections.
Following Kutnick and Blatchford (2014) we can use the example of groups and groupings within primary school classrooms. Each dimension of a classroom group (for example, its size, composition and degree of stability in membership) will have a different pedagogic ‘potential’ and this will also be affected by the interconnections between dimensions (to give an example, group size in relation to attainment-level composition). This might seem obvious but, importantly, observational research has shown that there is often little relationship in practice, for example, between the size of groups and the learning tasks or types of interaction assigned to them by the teacher (Kutnick and Blatchford 2014). Most children, no matter what their age, can be observed to be seated or working in pairs, or in small or larger groups, and, moreover, still often working on individualised tasks. Given this, it is worrying that the social pedagogic potential for learning in classroom groups is not often considered by teachers, or a part of initial teacher training.

Returning to ecological psychology for a moment: despite its insights and strengths, it can be criticised for implying a degree of determinism in the influence of the context on teachers and pupils. In order to take the social pedagogical idea further, we then also need to factor in how teachers make decisions and adapt to the classroom elements and class size. Teaching is an intelligent activity and intelligence is required in adapting constructively to the interconnections between elements in the classroom, as well as to the curriculum. This leads us to consider how teachers can best take advantage of the pedagogical potential of these interconnections – how to take advantage of the affordances in the classroom environment. The idea of a social pedagogy of classroom learning needs to be developed further, and this is something PB is currently working on. Our hope is that this can build on ecological psychology by providing the basis for identifying the pedagogical potential of the interconnections between elements in the classroom system. We can though, on the basis of findings in this book, provide an analysis of class size and what we call ‘realising the social pedagogic potential’ of classroom processes.

How to make the most of class size: Realising the social pedagogic potential

One key problem in realising the social pedagogical potential of classrooms is, as we have repeatedly seen, that teachers do not always
change their style of teaching and therefore do not capitalise on the potential pedagogical and learning benefits of smaller classes (Cahen et al. 1983; Evertson and Randolph 1989; Finn and Shanahan 2016; Shapson et al. 1980). Stasz and Stecher (2002) conclude: teaching practice is ‘…resistant to change and … teachers adapt their practices slowly and marginally to new materials and techniques that are introduced’ (29). Perhaps the most obvious example of how not to adapt teaching to make the most of small classes is when a teacher sticks to a largely lecturing style even when given a small class. The important issue here therefore is what pedagogical strategies to introduce to make the most of opportunities afforded.

One approach to how best to adapt teaching to class size changes is to base one’s pedagogical strategy on views and research on effective teaching more generally. The review of class size effects by Biddle and Berliner (2002a, 2002b) draws heavily on such research evidence. Galton and Pell (2010) and Galton et al. (2015) argue that the principles of effective teaching are the same in classes of all sizes, and put forward six principles of effective teaching which have since been used in Hong Kong to guide professional development work for ‘small class teaching’.

This approach is helpful but might be taken further. A next step, we believe, is to also recognise the value of specific research on class size and classroom processes. Zahorik et al. (2002) show clearly how one teacher in their SAGE project made good use of the opportunities accorded by a small class, while a second teacher did not. Their discussion shows how class size reduction on its own is not enough to guarantee effective teaching will follow.

Existing sources of research and advice on teaching in relation to class size are not numerous. Readers will find ideas on effective teaching in small classes in Cahen et al. (1983); the books edited by Wang and Finn (2002) and Finn and Wang (2002), especially the chapters by Zahorik et al., Stasz and Stecher, Anderson and Bateman; the National Center on Education in the Inner Cities (CEIC) Review (2000); and papers from Eastern and Western countries in the recent book edited by Blatchford et al. (2016b). Evertson and Randolph (1989) argue, on the basis of an analysis of STAR classrooms, that a switch from the skills-/knowledge-based curriculum found in Tennessee schools at the time, to a more learner-centred one, with an emphasis on learning processes rather than products, would do much to help take advantage of a small class environment.
As above, we need to recognise that teaching is about making sometimes difficult pedagogical choices. The problem we are raising here is that pedagogical choices can often be made with little regard to class size and what is known about taking advantage of small classes and maximising the pedagogical potential of larger classes. As we have seen, too often they will continue with the same methods, whatever the size of class. Consistent with the idea of a third generation of research on class size (see Chapter 1), it is not just a matter of reducing (or increasing) class size but of what changes to teaching then take place to make the most of the contextual change.

**Box 10.1: Pedagogical/teaching implications**

Teaching: Interactive Contexts

Whole class teaching

Individualisation

- Management versus learning focus
- Live feedback and assessment
- Dangers of individualisation: Over realising the potential?

Differentiation

Using extra adults in the classroom

- The strategic use of TAs
- Extra teachers

Teaching small groups

Collaborative group work

Relationships

Tasks and curriculum

Administrative aspects of teaching

Size of teaching units

In this section we draw on the results presented in this book, as well as insights from ecological psychology and social pedagogy, to identify some ways in which the social pedagogic potential in relation to class size can be realised. We draw together the pedagogical implications that we placed at the end of the individual chapters in this book. These are summarised in Box 10.1.
Interactive contexts

We saw in Chapter 4 that class size profoundly affects the balance of the three interactive contexts, with the likelihood of more whole class teaching and less individual attention in large classes. One of the key pedagogical implications is to think strategically about the balance of these three interactive contexts in relation to the size of class. We address the first two interactive contexts now – that is, whole class teaching and individualisation – and then look at teaching to small groups a little later in this section.

Whole class teaching

In Chapter 4 we saw that whole class teaching is the most common interactive context but that teachers were often not satisfied with the amount of time they were forced to spend on it. The size of class was a major factor for this reliance on whole class teaching. None of the teachers in the CSPAR KS1 and KS2 studies suggested that whole class teaching was an acceptable alternative to individual support of pupils’ learning. Indeed, we concur with Jeremy Finn’s (2019) point that he has yet to meet a teacher who enjoys teaching large over small classes.

The authors have witnessed exceptional teaching to the whole class, with clear explanations, insightful examples, and the careful drawing out of sometimes difficult concepts. But we have also witnessed whole class teaching which is superficial and formulaic, following the predictable three-step dialogic sequence of closed question, simple pupil answer, followed by equally brief teacher response. With whole class teaching the size of the class is fairly irrelevant – it does not really matter if there are 20 or 40 in the class.

Whole class teaching is an appropriate method of teaching for some topics, but it is not a sufficient approach to teaching the whole curriculum when, as in England, there are relatively large classes and often wide differences in attainment levels within a class. Teachers in large classes are in an especially difficult situation, as we have seen, given that alternatives to whole class teaching – individual instruction and support in particular – are more difficult. But the same problem can affect teachers lucky enough to have smaller classes, because they can still prefer whole class teaching over small group instruction (see also a review in Finn and Shanahan 2016). If they stick to the same amount of whole class teaching then they are not making the most of the opportunities of smaller
classes, which would include deeper forms of learning over passing on information. This resistance to changing teaching approaches in the face of different class sizes is likely to be a main reason why research has found only modest effects of class size reduction.

The pedagogical implication is therefore to judge the appropriateness of whole class size teaching in relation to class size and to search for alternatives when it is found to be too dominant. We examine some alternatives below.

**Individualisation**

The second interactive context affected by class is teacher interactions with individual students. There is consistent evidence from this book and other research (Finn 2019; Zahorik et al. 2002) that the most obvious benefit of smaller class sizes is increased attention to individual pupils. A recurring theme of Chapter 4 was the value teachers attach to individualisation of instruction, and the way this is compromised by large classes. Teachers perceive teaching to be at its best when they engage with the individual learner, because they have the time to apply their skills to identifying the child’s present ideas and capacities, and can then use their expertise to choose the tasks and the approaches that would best support the child in making progress. This appeared to be a core principle, which meant teachers struggled in large classes.

In Chapter 4 we saw some of the qualities of teaching possible with the greater likelihood of more individual attention in smaller classes. We saw that a very important benefit of smaller classes is that it is easier to get to know more about individual pupils, a point made by Finn (2019), Finn and Shanahan (2016) and Zahorik et al. (2002) (see above).

Here we highlight our thoughts on two specific aspects of individualisation of teaching in small and large classes.

*Management versus learning focus*

We saw in Chapter 4 that one specific aspect of teacher–pupil interaction, seen to be affected by class size, was that a smaller class meant classroom management was easier and pupil behaviour was more likely to be on-task and engaged (see also Finn and Shanahan 2016). In Chapters 3 and 9 we saw that lower-attaining pupils and those with SEND suffered more in larger classes in terms of more off-task behaviour and more critical/disciplinary comments from the teacher. But, crucially, it is
important that teachers make the most of this ease of management in smaller classes.

As Anderson (2002) reminds us, one of the key ways that smaller classes can help teachers is to allow them to shift from a concern with classroom management to a concern with learning. Smaller classes might allow more individual attention and easier classroom management, but one needs to be careful that this does not become an end in itself; attention in a smaller class should not be so much on the ease of management, but on a transfer of attention to learning goals. Anderson sees this as a shift from teacher ‘personal’ concerns to a concern with student learning. In short, the shift is from the teacher to the students and: ‘As part of this transition, they become more able to see classrooms through their students’ eyes rather than their own’ (Anderson 2002, 58).

*Live feedback and assessment*

We have seen that one advantage of a smaller class is the increased possibility of live feedback on student work, and that this is in line with Brophy’s (2000) 11th principle of effective instruction: ‘goal orientated assessment’ – that is, a variety of formal and informal assessment methods to monitor progress toward learning goals. Smaller classes allow teachers to assess pupils informally during the course of everyday activities, and this can allow teachers to obtain a deeper appreciation of what children know, and consequently follow up instructional support when needed. This speaks to one of the crucial aspects of the interactive aspect of teaching. It is likely to be more difficult in a larger class to monitor every student, while in a smaller class a teacher is better able to gauge when to provide additional explanations and when they can move on so fewer students will be left behind. So rather than simply determining whether or not a student has understood a concept – a relatively limited pedagogical strategy – the teacher can dig deeper and determine the causes of any learning difficulty.

The advantages of a smaller class therefore seem clear, but what about a larger class? At the heart of the problem about providing live feedback in large classes is the problem about individual attention. In a situation where the teacher faces a large class of over 30, say, the management of the rest of the children while attending to the assessment of the individual pupil or small group is problematic. It is therefore worth considering whether there are alternative ways of managing feedback and live assessment.
For instance, as described in Chapter 4, the authors visited a primary school in Oxfordshire where pupils in a class of 34 received live feedback in groups, assessment was based on teacher and peer groups judgements, and the school prioritised live feedback and had a policy of not taking marking home.

Dangers of individualisation: Over-realising the potential?

The implicit pedagogy of many UK teachers stresses the value of maximising the individual support for individual pupils, and the TQ results showed clearly that teachers prefer to have more opportunities for individual attention and individual support for children, especially those who are struggling. However, we query whether this is always the best use of their time.

One of the ways increased individualisation may not be pedagogically valuable is if the increased freedom then leads too easily into personal and social activities and goals. This is an additional but related point to that made above about management versus learning goals. Zahorik et al. (2002) found that teachers in small classes that included pupils with the least impressive academic gains fell into this trap. The logic here is that a more child-directed environment possible in smaller classes – one in which pupils have more choice over activities – needs to be treated cautiously if it takes away the focus from learning goals. ‘In short, teachers in reduced-size classes need to seize the moment and redouble their efforts to increase the academic learning of their students’ (Zahorik et al. 2002, 16). Similar ideas about the need for a constant vigilance when it comes to maximising learning opportunities in smaller classes can be found in Brophy (2000).

A key theme, therefore, is to ensure we do not get seduced by smaller classes into a freer but less productive use of time and to ask whether we may be missing their pedagogic potential.

Consideration of concerns over the social pedagogic value of individualisation also suggests to us that teachers can invest time more efficiently through alternative interactive contexts – for example, teaching to groups and developing collaborative group work. We consider these contexts in more detail below.

Differentiation

First, though, we look at a closely connected aspect of pedagogy to individualisation – differentiation. One of the key drivers of the desire for
more individual attention is to provide the differentiated input teachers feel is essential. As we have seen in several chapters, and especially Chapters 7 and 9, differentiation of teaching and 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. One of the strongest pedagogical justifications for a smaller class is that it allows more potential for differentiation.

The need for differentiation connects strongly with the types of pupils in the class. We saw in Chapter 9 that differentiation is necessary when there is a wide diversity of attainment levels in the class, as is common in British primary schools. The inclusion of pupils with special educational needs and disabilities (SEND) in mainstream schools can result in difficult decisions regarding classroom organisation and management, and these are likely to be affected by the classroom context; specifically, the number of pupils in the class.

It is obviously important to think through appropriate pedagogies for pupils with SEND, but it is also important to be aware of the educational contexts within which teachers have to work and which can make pedagogical strategies effective or not. We have seen throughout this book that one of the key ways in which teachers usually provide differentiation is through individual attention, but there is no point in having such a pedagogical strategy when the reality is that this is impossible to achieve with the size of class the teacher has to manage.

We repeat the point made in Chapter 9: if individualised attention is so difficult to achieve, and the use of TAs to provide it is problematic, then this reinforces the value of thinking through group-based approaches to differentiation. The four common forms of differentiation we found in relation to pupils with SEND (see Chapter 9) were largely based on individual attention and the use of TAs; rethinking differentiation in terms of group-based teaching can be both efficient and valuable, for example through the setting of group-based tasks and instruction. We say more about group-based teaching below, but before that we look at more strategic ways of using TAs and other adults.

Using extra adults in the classroom

The strategic use of TAs

We saw in Chapter 9 that TAs have become, in effect, the main way that schools in the UK have tried to apply inclusion in the face of large
class sizes. TAs have been used to provide differentiated instruction when schools have a wide diversity of attainment levels, and we saw in Chapter 9 that TAs are a consistent and central feature of the educational experiences of pupils with SEND in both primary and secondary schools.

As we said, the increase in TAs had much to do with class sizes; it is difficult enough for teachers to manage a class of say 30 pupils under normal circumstances, but their task can be made more challenging when some of these pupils have SEND. We have seen from the DISS study that TAs often support pupils with SEND and that teachers find this helpful because they can then better attend to the rest of the class. However, we have seen that using TAs in this way lets down the children with the highest level of needs. The key problem is the, understandable but inappropriate, way TAs have been used as an informal alternative form of provision to hard-pressed teachers, and this is compounded by the lower level of classroom talk from TAs and the lack of time for preparing TAs to work with such pupils. It is widely recognised that what pupils with SEND need above all else is careful attention and monitoring from trained teachers, and we have seen that this is difficult to achieve with large class sizes.

Following the DISS project, as well as concerns about the inappropriate use of para-professionals in the education of pupils with SEND in the USA (Giangreco et al. 2005), there was therefore a clear case for challenging the status quo: that is, institutional arrangements and classroom practices that result in pupils with SEND having less time with teachers, and more time with TAs, relative to other pupils. In Chapter 9 we described the Wider Pedagogical Role (WPR) model, with the components deployment, preparedness and practice, developed in Blatchford et al. (2012), which is designed to be an explanatory framework but also as a useful organising structure for rethinking the management and deployment of TAs in ways that can make them more effective. Guidance for schools and teachers can be found in Webster et al. (2016) and guidance for TAs can be found in Bosanquet et al. (2016).

Extra teachers

Another obvious solution to the problem of large class sizes is not often discussed (no doubt because of the obvious problem of costs involved). This is to use extra teachers to provide the individual differentiated high-quality instructional support needed, especially in the case of continuing large class sizes and wide student diversity. This strategy, used flexibly,
may be affordable and, while more expensive than TAs, could overcome
the main problems with using them. This approach is being adopted and
tested in Norway as a result of a government-led initiative there (see
Solheim and Opheim 2019).

As with TAs, the use of extra teachers does not in itself provide a
strategy: it still leaves open questions about how these extra teachers
would be deployed. There are a number of alternative forms of
deployment, for example, to conduct individual or small group pull-out
interventions, team teaching with the class teacher, within-class
individual support, etc. Solheim and Opheim (2019) discuss alternative
ways of using extra teachers.

For several teachers in the CSPAR study who had responsibility for
pupils with SEND it was the provision of extra teaching time that was of
most help; with it, they could plan for a division of labour that enabled
quality teaching. For example, extra time allowed grouping practices to
be used to maximise the input of two teachers, and powerful, focused
teaching could be built on identifying the strengths and weaknesses of
individual pupils.

Teaching small groups

We now return to the third interactive context within classrooms. We
have seen the issues connected to whole class teaching and the under-
standable drive in smaller classes to provide more individualisation but
also some of the potential pitfalls. As we saw in Chapter 4, however, there
is another interactive context – within-class groups – and in our view a
more considered, strategic approach to this context can help release its
pedagogical potential. We argue that this can follow two specific routes:
first, teaching to small groups and, second, collaborative group work in
small groups.

We have found that both these routes are uncommon in British
schools: that is, teaching to small groups is rare and does not seem
generally well thought-through, and pupils also spend little time working
together on tasks. For most of the time, the grouping practices are little
more than a way of managing the seating arrangements.

As outlined at the ends of Chapters 4 and 5, we suggest more can
be done to encourage teaching to small groups. One way that teachers
can seek to maximise individualisation and differentiation is to avoid the
time-consuming attempt to somehow connect with individual pupils,
one at a time, and instead organise their teaching to small groups. This
could have some of the benefits of interactive whole class teaching but would be potentially more focused and better differentiated in terms of pupil ability. It is in groups, therefore, where one might seek to maximise the effectiveness of instruction.

One of the main issues here is that teaching to groups in Britain is connected to the very common practice of setting up and working with within-class groups organised into homogeneous ‘ability’ levels. The point of ability grouping is that pupils within each group are closer in levels of knowledge, attainment and skill and this therefore makes it easier for teachers to provide explanations and support. But we have found little evidence of differentiated tasks and teaching for different groups in the class. Instead, teachers tend to support individual pupils within groups. In the interests of effective forms of differentiation within classrooms, we need to develop efficient ways of teaching to smaller groups, and this is likely to be particularly helpful for teachers faced with larger overall class sizes. This is a good example of a social pedagogic analysis of interconnected aspects of the classroom environment – in this case, class size, within-class groups, pupil attainment levels and teaching approaches.

Collaborative group work

The second way of looking at the social pedagogic potential of small groups is in terms of collaborative approaches, that is, pupils learning together with a deliberate attempt to minimise the teacher’s input and encourage pupils to have more control over the learning that takes place.

As we have said, although pupils are often allocated to small within-class groupings there is little evidence of pupils working collaboratively in these groups. This is unfortunate given research showing that collaborative group work has a positive impact on learning and skills of negotiation, communication and argumentation and it is increasingly realised across the world that students not only need to acquire knowledge but also the desire and skills to work well together. We have seen that psychological theory shows that collaboration between peers is a powerful force in conceptual development, active learning and communication, and collaborative learning is one of the most effective approaches in the reviews of effective interventions in education (for example, Hattie 2009).

Group work may be particularly helpful for teachers with large numbers of pupils, in terms of maximising their own time with other
pupils, while encouraging independence in learning. Interestingly, as stated earlier, we have also found that group work is less likely to be seen in small classes, probably because of the natural tendency to devote more time to individual attention. The case for group work is therefore strong for all class sizes.

As described in Chapter 6, without effective strategies for teachers to promote successful group work in everyday classroom settings, attempts to implement and utilise group work often result in frustration among teachers and pupils and the marginalisation of collaborative group work within the curriculum (see Kutnick and Blatchford 2014). In Chapter 6 we looked at the SPRinG project, which designed and implemented a new approach to group work in primary and secondary school settings in the UK. As described in that chapter, the SPRinG project was based on the need to develop four key principles: (1) pupils’ social and communication skills; (2) teachers’ skills to organise the classroom environment for group work; (3) learning activities that warrant group working and enable integration with other instructional approaches; and (4) how teachers can support groups undertaking group work.

We have argued, therefore, that there are two ways in which the third interactive context of small within-class groupings can be used pedagogically to maximise the potential of small and large classes. Developing a strategic approach to teaching groups and to collaborative learning in groups is important in its own right, but is also a way in which teachers can help deal with the management problems we have seen resulting from large classes.

Relationships

The above discussion, centred on Figure 10.1, summarised three aspects of relationships within school classrooms: teacher–pupil relationships, relationships between peers and more general aspects of relationships in the classroom, including a psychological sense of community and connectedness.

Relationships in the classroom can be seen as underpinning and informing many teaching and management decisions and, as we suggested above, relationships can be considered in the same way as differentiation, as a kind of second-order factor. Relationships are central to the idea of a social pedagogy of classroom learning.

The most obvious way to consider relationships is in terms of those between teachers and pupils. When allocating pupils to groups
or differentiating work the teacher will draw on what she or he knows about their abilities, temperament, personality and their relationships with other pupils, and this will be aided by the more in-depth knowledge of individual pupils. Relationships are vital to classroom life, not least because successful instruction and support depends on the quality of the relationships in the class. The instructional and the relational are closely interconnected: for example, teacher morale is increased in smaller classes, which in turn means the class is more manageable, which means that students see the class as a warm and accepting place, which in turn means that the quality of support and instruction is enhanced.

In our visits to schools we have seen many examples of some teachers quickly establishing classroom order, such that at a signal pupils can quickly stop what they are doing and focus their attention on the teacher. Yet in other classrooms the teachers do not seem to have established the ground rules, and no matter how hard they try, some pupils do not easily attend to what is being asked of them. Obviously, successful classroom control will be affected by the kinds of pupils in the class, but one underlying factor behind a productive classroom and attentive pupils is the quality of the relationship teachers have established with their pupils. The nature of the relationship and its creation is a highly complex thing, and it is fascinating how many teachers do it implicitly – but then relationships in everyday life are mostly implicitly developed, not contrived. It seems clear that strictness and punishments are not enough – this might ensure order in the short term but is likely to lead to passive and subservient pupils. Much better is the development of a relationship in which the teacher is necessarily in charge but within which a trust develops which allows degrees of freedom and a mutual focus on learning not control.

The quality of relationships between teachers and pupils is important in classes of any size, and can help pupils in smaller and larger classes develop greater pupil autonomy and independence, thus releasing the teachers to devote themselves to pupils who need more direct support. The strategy here is in a sense to ‘make a virtue’ of the limitations of a larger class and to avoid the potential pitfalls of a smaller class. Trust is a fundamental aspect of relationships, and facilitating pupil autonomy, so the loosening of overt control and attention has to be built on the foundation of trust established by the teacher over time. Problems can arise when the trust of the teacher is not developed enough to let go of the reins. Obviously, much depends on the teacher – a more experienced and confident teacher, for example, could relax more and
tolerate a higher level of minor rule breaking (see also Galton et al. 2015; Pollard and Tann 1993).

Teacher–pupil relationships are clearly important, but we have argued in this book that relationships between pupils are also crucial, and are also affected by class size. In Chapter 6 we saw the importance of peer relationships within the classroom and raised questions about what teachers can do to help develop high-quality relationships. We are not suggesting there is a serious problem with teachers’ management of peer relations. What we are suggesting, however, is the value of encouraging productive relationships between pupils within the class which also benefit learning. This is of value not only in large classes, in that it could help teachers make best use of more limited time with each pupil, but also in small classes (where, as we have seen, we tend to find less group work taking place) and as a drive to individual attention from teachers.

In Chapter 6 we referred to the SP-RinG project’s emphasis on a ‘relational approach’ to develop collaborative learning and group-work skills. This is perhaps particularly important in large classes because the teacher is less able to monitor each group. In brief, working on the basis that one cannot just put children into groups and expect high-quality group work, group-work skills need to be developed through a developmental sequence, starting with the development of trust and dealing with conflict, and moving through basic communication skills such as taking turns, active listening, giving and asking for help etc., and on to what we called ‘advanced’ group-working skills such as making group decisions, compromises and coming to a consensus. The key aim of value in large and small classes is to encourage pupil independence rather than directly teaching pupils. The rationale and principles of the SP-RinG project are set out in Baines et al. (2017).

We also mentioned above the broader aspects of relationships. The key idea here, in line with the first of Brophy’s twelve principles of effective instruction (Brophy 2000), is that children learn best in cohesive and caring learning communities – what he calls a ‘supportive classroom climate’. Brophy argues this is more easily attained in small classes. This may be the case, other things being equal, but the adoption of a relational approach, as just described, could be part of a deliberate drive to cultivate a sense of community in classes of all sizes.

Tasks and curriculum

We saw in Chapter 6 that the pedagogical implications arising from the data on class size and tasks and curriculum overlapped with those
addressed in other chapters. We saw that differentiation of pupil tasks, to match the learning needs of all the individuals in the class, is, as also discussed above, perhaps the greatest challenge facing the teacher of a large class. This is especially difficult when the class contains pupils with SEND, as it extends still further the range of pupil needs and attainment levels within the class. One solution we suggested at the ends of Chapters 4, 5 and 8, and also in this chapter, is to think through more carefully the positive possibilities of group-based teaching and task allocation, because individual support is not possible for all in a large class, and whole class teaching is found to be unsatisfying because it cannot easily provide differentiated teaching.

Other pedagogical strategies are related to the types of tasks. We saw in Chapter 8 that worksheets, which we found can be used as a way of coping in large classes, need to be allocated sparingly and strategically. We also saw that one way of dealing with the practical difficulties of setting up certain kinds of tasks (particularly practical activities, in large classes, for example, because of safety concerns and resourcing) is to ‘stagger’ work so the rest of the class can be doing independent tasks as the teacher works on practical tasks with groups in turn.

We also in Chapter 8 made the point, now reinforced by our discussion on group work in this chapter, that teachers should be doing all they can to encourage independent learning so that the rest of the class can be working independently on other tasks when a teacher is working with someone else. Schools should develop pupil independence as early and as much as possible, to allow teachers more freedom to give attention to individuals and groups.

We also mentioned the potential role for TAs here. In order to put on labour-intensive activities like practical and investigative activities, one strategy is to deploy TAs to help manage these. To avoid the flaws in TA deployment mentioned in Chapter 9 and in this chapter, such deployment should be designed to complement and support the teacher and not, as is often the case, substitute for the teacher. 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.

Administrative aspects of teaching

We saw evidence in Chapter 8, and also elsewhere in this book, of the way a large class adds to the amount of marking, assessment and record
keeping. At the end of Chapter 8 we looked at what steps might be taken to help. We argued that if class sizes and the curriculum, at least in the short term, are ‘givens’ and difficult to change then perhaps we need to go back to basics and ask fundamental questions about the purpose and need for, for example, marking, assessments and record keeping. We looked briefly at the literature on assessments in schools and showed that it now leans towards the view that marking pupil ‘products’ after the event has limited formative value for the pupils. More valuable are formative assessment opportunities arising in the moment by moment informal interactions between teachers and their pupils.

Concerns about the excessive workloads resulting from large classes led us in Chapter 8 to argue for rethinking the type of assessments and record keeping common in schools, which teachers with large classes struggle with. We mentioned some possible strategies, including the creation of a school level ‘audit’ of the existing record keeping, assessments and marking that takes place, followed by a critical reflection on the value of existing practices. We gave the example of one primary school where they had taken a radical look at assessment arrangements in the school and moved to a prioritisation of verbal feedback to individuals and groups. We also referred the reader to a recent helpful report on reducing teacher workload by Richardson et al. (2018), summarising initiatives in schools designed to reduce teacher workloads, including marking and assessments.

Size of teaching groups

But any change to assessment practices, along with the other suggested pedagogical changes suggested here, can only be at best a partial solution to the problems teachers have with large class sizes. It seems clear that a class size of over 30 will inevitably lead to excessive administrative demands and other problems, which we have argued are not factored into the common view that class size is not important.

There is a key classroom contextual issue here, which is the underlying need, especially in the case of pupils with SEND, for a small teaching unit to provide the degree of individual quality attention required. As we have said elsewhere, problems stem from the pedagogical requirement (of individualisation) being out of line with classroom contextual realities. The constant frustration we have heard from teachers in this book is the conflict between a recognition of the need for individual attention and feedback, on the one hand, and the
difficulties of providing that with existing class sizes on the other hand. Hence the reliance on TAs.

There seems therefore little alternative but to try as far as possible to reduce the size of the teaching groups for pupils with SEND while at the same time ensuring that the amount of high-quality attention from teachers is not reduced. This is the last component of our model in Figure 10.1, and extra to the other classroom processes and contexts. It is appreciated that this is expensive but seems essential. This is standard in special schools and in Units or Additional Resource Provision in mainstream schools. A small teaching unit does not guarantee quality teaching, of course. We have mentioned anecdotal evidence about how relatively small low-attaining sets in secondary schools can still be unsatisfactory because of the low expectations and curriculum challenge pupils experience. We have also experienced small class teaching in special schools that was exceptional in terms of the social and emotional support provided but very limited in terms of the focus on learning, even given the existing levels of the pupils involved.

All the pedagogical implications discussed in this sense can benefit from a smaller teaching unit.

Conclusions

In this chapter we have pulled together the results presented in each chapter in the book. We have seen the interconnectedness of classroom processes connected to class size and looked at previous models of classroom effects. We presented in Figure 10.1 a summary model of effects. We have looked at the classroom as a system and seen the importance, when it comes to class size, of how best to make adaptations to class size differences. We introduced the idea of a social pedagogy of classroom learning and the idea of realising the social pedagogical potential of interconnections between classroom elements. We summarised in Box 10.1 some specific ways in which we can realise the social pedagogic potential of classroom elements.

The work in this chapter and the book as a whole is a start but we believe there is more work to be done to build a social pedagogy of classroom learning. This will involve interrogating and integrating existing analytical frameworks of classroom influences on learning. It is hoped that enough has been said to show that what is intended here goes beyond the role of classroom context in models of teacher effects.
on learning, work on ‘classroom environments’ and ecological influences on development – each of which have a more narrow and limited application. It will involve the search for and testing of a framework to represent influences and processes identified.

We now need to draw out policy and practice recommendations from our work. This is our task in the final chapter of this book.