

CLASS SIZE

Eastern and Western perspectives

Edited by **Peter Blatchford, Kam Wing Chan, Maurice Galton,
Kwok Chan Lai and John Chi-Kin Lee**



‘At long last a book that moves us beyond the often superficial debate as to whether class size does or does not affect student achievement. The authors focus instead on critical questions intended to advance our understanding of the role that class plays in teaching and learning. Under what conditions do smaller classes result in greater learning? How can professional development help teachers learn to teach more effectively in smaller classes? What advantages do smaller classes offer students, independent of the quality and type of teaching they receive? The inclusion of authors representing different countries and cultures results in more diverse and, hence, substantially more informed answers to these questions.’

Lorin Anderson, *Carolina Distinguished Professor Emeritus,
University of South Carolina*

‘This book brings together a collection of studies which significantly broaden the often sterile debate as to the influence of class size on pupil learning. By moving beyond a reliance on studies undertaken in the West which rely on comparing pupils’ academic achievement scores the book underlines the complex nature of the impact of class size.’

Paul Morris, *Professor of Comparative Education,
UCL Institute of Education and former President,
Hong Kong Institute of Education*

‘A timely volume that makes substantial strides forward in the conceptualisation, internationalisation and methodological bases of class size research. Currently, policy-makers and practitioners are drawing upon class size research in contradictory ways - to increase as well reduce class size. The volume provides up-to-date reviews of class size research with the added dimension of international perspectives - identifying different expectations and bases for class size reduction in schools in Eastern and Western countries. Various chapters examine the need to understand and change teaching and learning practices as the size of classes becomes smaller. Readers of this volume have much information to gain concerning the complexity of class size arguments and policies underlying reductions in class size.’

Peter Kutnick, *Emeritus Professor, King’s College London and Honorary
and Visiting Professor, University of Hong Kong*

‘This book deserves to have a large readership. In Australia and New Zealand right now class size is a very hot topic, but the discussion about it is often simplistic. This book provides answers to what I see as a crucial question, namely why the effects of class size reduction are often modest. But it goes further and addresses what teachers can do to make the most of smaller classes. Uniquely it offers insights from around the world.’

John Hattie, *Laureate Professor, Director of the Melbourne Education Research
Institute, Melbourne Graduate School of Education, University of Melbourne*

‘This is a must-read book on class size. It provides valuable information on the various studies on class size across countries, and many of them would not have been available to international readers without this book. It demystifies many beliefs on class size, especially the hardline beliefs about whether it does or does not influence educational learning outcomes. It rectifies misperceptions of both the West towards the East and the East towards the West on the necessity and functions of class size as a causal factor in effective learning. It provides insights on understanding the issues of class size from cultural and contextual perspectives. The major contribution of this book is its comparative approach, juxtapositioning class size data across countries, showing the world trend in class size reduction and the corresponding learning and teaching reforms that could help towards understanding the meanings of class size in the educational process. Overall, this book fills a significant gap in the literature on class size.’

Wing On Lee, *Vice President (Administration & Development) and
Chair Professor of Comparative Education, Open University of Hong Kong*

Class Size

Much debate, research and commentary about class sizes in schools is limited because of an exclusive concern with class size and pupil academic attainment, and a neglect of classroom processes, which might help explain class size effects (or lack of them). Very little is known about the central question: how can teachers make the most of class size changes? Much of the commentary on class size effects has focused on Western and English-speaking countries but there are promising developments elsewhere, particularly the ‘Small Class Teaching’ initiatives in East Asia in the past decade, which have brought new knowledge and practical wisdom to the class size debate.

This book seeks to move toward a clearer view of what we know and do not know about class size effects, and to identify future steps in terms of policy and research. There is a huge and exciting potential for international collaboration on knowledge concerning class size effects which can help with research-informed policy. The book aims to draw out Eastern and Western international contexts which underpin any understanding of the role of class size in school learning.

The book has chapters by an international team of experts on class size effects, including Maurice Galton and John Hattie. Chapters are organised into four main sections:

1. Socio-cultural and political contexts to the class size debate in the East and West;
2. Research evidence on class size;
3. Class size and classroom processes likely to be related to class size changes;
4. Professional development for small class teaching in East Asia.

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The editors have a long-standing and profound involvement in and understanding of the class size topic.

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Part I

Introduction

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1 Bringing together east and west approaches to the class size issue

An introduction to ‘Class Size: Eastern and Western perspectives’

Peter Blatchford, Maurice Galton and Kwok-Chan Lai

It is interesting that across the many schools in the many countries of the world the classroom environment is often recognisably similar. There is usually a room dedicated to the education of a class of pupils whether, as in many primary schools, for the whole school day, or, as in the case of older pupils, a room which different classes of pupils will visit for separate lessons. There will be a given size and shape, usually rectangular, and an arrangement of tables or desks for pupils and for the teacher. In the west, particularly at primary/elementary level, pupils tend to sit at tables in groups while in the east they tend to sit in pairs in rows. But perhaps the most basic feature of classroom environments is that it comprises a number of pupils and usually just one teacher. This basic feature of the environment within which pupils receive their formal school education is often taken for granted, but it will implicitly affect the types of interactions and relationships that develop, and the nature of learning experienced by pupils and teachers.

Class sizes in schools have been the subject of intense debate and scrutiny. In fact of all the issues in education, debate about the effects of class sizes in schools is one of the most long standing and contentious. A main reason for this is because variation in class size has important implications for educational planning and resourcing, and also because of the way it may have implications for the interactions and relationships between pupils and teachers, and ultimately pupil learning. It seems highly likely that a small class size, of say 15, will result in different teaching possibilities and different interpersonal dynamics in comparison to a larger class size, of say 35. We know that from the teacher's perspective smaller classes allow more individual attention, better relationships etc. Still larger class sizes of 40 plus pupils will severely constrain the kinds of teaching approaches that can be used.

Class size and educational outcomes

The debate about class size has centred on whether class size affects educational outcomes, specifically pupil attainment. The key educational and policy question

often posed is whether reducing the number of pupils in a class has a beneficial effect on pupil school attainments. One of the interesting features of the debate is the gap between two opposing points of view: between the view of most teachers, practitioners, teacher unions and also some researchers and academics – who feel that small classes are beneficial for teaching and learning – and an alternative view, often favoured by economists, policy makers and think tanks, but also some researchers and academics, that class size is not important. The gap between these two points of view is entrenched and long standing.

The head of the Organisation for Economic Co-operation and Development (OECD) Programme for International Student Assessment (PISA) surveys, Andreas Schleicher, recently wrote a piece for the BBC website (4 February 2015) in which he described seven big myths about top-performing school systems. Myth number four in Schleicher's list is the view that small classes raise standards. He states that 'everywhere, teachers, parents and policy makers favour small classes as the key to better and more personalised education.' In contrast, he argues that high performing education systems invest in better teachers and that high-performing countries (many in East Asia) have large classes so the size of a school class can't be important.

Far from being a widely held view, however, our sense is that Schleicher's view that class size is unimportant is currently the most dominant view at least in the west and is becoming more and more accepted by many involved in educational policy and planning, think tanks, and politicians. It has been the view of the OECD for a number of years (PISA in Focus 13, 2012/02), as well as the influential UK Sutton Trust toolkit, and a number of influential reports which include those from McKinsey and Company (2007), Grattan Institute (2012), and the Brookings Institution (Whitehurst and Chingos, 2011).

Class sizes vary markedly between countries around the world. Recent OECD data showed that the average class size was around 21 on average at primary level, with the USA 21, France 23, UK 25 and China 38 (OECD, 2014). Class sizes also vary significantly within countries, e.g. between different regions within China, Japan and the USA, and between different types of schools in the same city. As we shall see, much of the debate about class size has taken place in the west and mainly in English speaking countries, with a lot of attention in the USA, Canada, UK, Holland, Australia and New Zealand. As long ago as the mid 1970s one of the editors (Peter Blatchford) can recall taking part in the construction of a large-scale (unfortunately not funded) research proposal which was designed to investigate the effects of class size differences – an effort to bring systematic evidence to inform a debate that was raging in the UK at the time. The meta-analysis by Glass and colleagues in the US about the same time (Glass and Smith, 1978) shows that even then it was possible to pull together evidence from a number of studies, again to try and bring some clarity to the debate about class size effects in the USA in the 1970s. In the 40–50 years since this time the debate about class size has ebbed and flowed at regular intervals.

An interesting feature of the interest in class size, of direct relevance to this book, is the way that debate about class sizes has become of more recent interest

in East Asia. As we shall see in a number of chapters in this book, there is a different history to the debate in East Asia and the focus on class size has been different. In a number of countries and regions, e.g. in Shanghai, Hong Kong, Taiwan and Macau, there have been government and state-led initiatives to reduce the number of pupils, but the approach to small classes has often been expressed in terms of a distinct approach to teaching (called ‘small class teaching’ or ‘small class education’), rather than just (or even) a reduction in the number of pupils. The reasons for an interest in class size reduction are also different, owing more to demographic changes and a wish to change predominant teaching approaches, than efforts to boost academic attainment, as in the west.

A recent source of data, often referred to in views about class size, are the cross-country comparison of PISA results (e.g. OECD, 2012). These show that countries and regions performing at the higher end of the attainment chart, particularly East Asian countries and regions like Hong Kong and Shanghai, have relatively large classes in comparison to the OECD average. These findings have led a number of people, including Andreas Schleicher, as we have seen, to argue that class size cannot be important. As is discussed in a number of chapters in this book, understandable as this conclusion might be, such cross-country comparisons are fraught with difficulties and there are a host of reasons why high-performing countries do well (or less well). The causal role of class size is very hard to determine using this kind of evidence.

There are a number of western misperceptions about class sizes in East Asia. To give one example: there is a perception by some in the west that high-performing countries not only have larger classes, but are content with them (which might be expected to follow from their success in league tables). But the argument that high-performing education systems are in some sense comfortable with larger class sizes is outdated. This is developed in several chapters in the first section of this book, but here we just mention that the average class size of primary schools in Korea is now, contrary to the view of many in the west, on a par with UK (OECD, 2014). We shall see that deliberate policies are being adopted by governments in the east to reduce class sizes because they are no longer satisfied with their school education which is seen as characterized by a teacher dominated, high stakes examination-oriented culture, high pressure on students and lack of creativity and independent learning. It is perhaps telling that despite the high performance on test scores, PISA results have also shown that Korean students have the lowest expressed interest in mathematics, of all the OECD countries where we have data.

It is the view of the editors of this book that the class size debate, though it now occurs across the world, has often proceeded with, and been limited by, a lack of attention to the cultural and political context which frames the situation and debate in each country. One aim of this book is therefore to draw out the international contexts which underpin any understanding of the causal role of class size in school learning.

Given the ubiquity of meta and secondary analyses like those of John Hattie and Erik Hanushek as the basis for much contemporary discussion about

evidence on class size effects, it might be thought that there are many studies of class size effects. But it is interesting that despite some useful reviews of research (Anderson, 2000; Biddle and Berliner, 2002; Blatchford, 2012; Blatchford, Goldstein, and Mortimore 1998; Ehrenberg, Brewer, Gamoran and Willms 2001; Grissmer, 1999; Hattie, 2005; Wilson, 2006) there have been relatively few high-quality dedicated studies of class size, and this is very unfortunate given the importance of class size in educational debate and resourcing.

This no doubt reflects the fact that getting a firm hold on the causal role of class size presents huge challenges for research. Although this book is not designed to be a technical volume, the authors will discuss issues of design and method where this is judged important to make sense of claims made. For example, as discussed in more detail in Blatchford (2012), much research on class size effects has used a simple correlational design, in which associations between class size and pupil attainment are examined at a given point in time. (This characterises many econometric analyses and the cross-country comparisons of PISA results.) The problem with such cross-sectional correlational designs is that they cannot overcome the problem that extraneous factors might explain the results. In other words, it could be something about the kinds of pupils (or teachers) in small or large classes, or outside-classroom factors like parental pressure and private tutoring, that explain any differences in pupil attainment found.

This is one reason for the high profile achieved by the Student/Teacher Achievement Ratio (STAR) research, in Tennessee. The principal investigators, who included Jeremy Finn, a contributing author to this book, and state politicians and teacher representatives, set up a study with a bold experimental design involving the random allocation of pupils and teachers to three types of classes in the same school: 'small' classes (13–17), 'regular' classes (22–25), and 'regular' with full-time teacher aide. The project involved over 7,000 pupils in 79 schools and students who were followed from kindergarten (aged five) to third grade (aged eight). Pupils in small classes performed significantly better than pupils in regular classes and gains were still evident after Grade 4, when pupils returned to normal class sizes (Konstantopoulos and Chung, 2009; Nye, Achilles, Zaharias, Fulton and Wallenhorst, 1993; Word, Johnston, Bain, Fulton, Boyd-Zaharias *et al.*, 1990).

The STAR project was an important and timely study and results have provided the basis for a number of educational initiatives and policies in the USA and other countries. It is without doubt the single most important study in the class size field and in this book it will be discussed from different points of view, most notably by one of the original principal investigators, Jeremy Finn, and his colleague Michele Shanahan in Chapter 8 and by Diane Whitmore Schanzenbach in her review in Chapter 4.

An alternative approach to the issue of causality is to examine relationships between class size and pupil academic outcomes, as they occur in the real world, and to carefully control and make adjustments for potentially confounding factors such as pupils' prior attainment, level of poverty, teacher characteristics and so on. This was the approach adopted by a large-scale study in the UK (the Class Size and Pupil-Adult Ratio (CSPAR) project), which Peter Blatchford, one

of the editors, directed. This study used a longitudinal, naturalistic design and studied the effect of class size on pupils' academic attainment, and also classroom processes such as teaching and pupil attention (Blatchford, 2003; Blatchford, Bassett, Goldstein and Martin, 2003). The study tracked over 10,000 pupils in over 300 schools from school entry (at four/five years old) to the end of the primary school stage (11 years old). This is discussed in more detail by Peter Blatchford in Chapter 6.

Interestingly, the STAR project and other western studies have been an inspiration in a number of Asian countries which as we have seen have more recently embarked on class size reduction initiatives, even though they often have a different profile of class sizes and different traditions of teaching and learning. What is also interesting, as we have seen, is that recent cross-country comparisons of academic performance, e.g. as in the PISA surveys, have convinced a number of commentators in the west that class sizes are unimportant. By any standards this paradox is fascinating and important and this book allows a good opportunity to explore it fully.

In the east, there have been numerous papers discussing principles of small class teaching and action research, which have not received much attention in the west (see Blatchford and Lai, 2010). But there has been a paucity of published empirical research on class size effects, with the exception of a quasi-experimental study of Hong Kong schools by Galton and Pell (2010).

This book contributes to the literature on class size effects by bringing together authors from the UK, mainland Europe, East Asia, the USA and Australia, all of whom have had extensive experience of dedicated research on class size effects. In the first section of the book we provide a cultural and political context to studies of class size and in the second section provide a review of key findings and conclusions on class size effects. The book will provide background on developments in the east which may not be known to western readers and which we believe will greatly help in understanding the evidence on class size effects.

One of the advantages of a book which explores international perspectives is that we have been able to include important studies of class size conducted in non-English speaking countries and which may not have figured in western journals or other outlets. As well as East Asian studies this also applies to Europe. In particular – and this is a sad reflection on the barriers to communication between academics that can still exist between near neighbours – this book allows us to bring to an English speaking readership a review of some very important studies of class size in France, which deserve to have a wider readership and place in the literature on class size effects. This review (Chapter 5) is by a leading researcher in France – Pascal Bressoux.

Processes of teaching and pupil behaviour connected to class size differences

One feature of recent commentary and research on class size, as we have seen, has been the strong influence of econometric analyses, like that of Hanushek (2011)

which have had a big influence on governments around the world. This interest by economists is unsurprising given the intimate connection with allocation of resources and the need for informed policy decisions. But econometric studies typically do not engage in pedagogical issues or classroom processes and so have a different focus to educationalists.

A second feature of this book, therefore, is that it aims to move beyond the debate about class size and pupil attainment by addressing classroom processes connected to class size differences. The aim is not to avoid hard questions about resourcing but to seek to redress the balance by bringing to the foreground pedagogical issues related to class size. To the editors, much of the debate about class size has become rather formulaic, with a tired rehearsal of evidence for and against class size in relation to pupil academic outcomes, and we believe that a reconnection with pedagogical considerations will help bring the debate closer to the reality in schools, and the important educational issues at stake.

We have seen that there is often a gap between the views of practitioners and the evidence from researchers, policy makers and others when it comes to evidence on the effects of class size. One way of accounting for this difference of view is that the two groups may have in mind a different set of outcomes when thinking about class size effects. While policy makers have in mind academic attainment outcomes usually in the main curriculum areas of literacy and mathematics, practitioners may have a wider set of processes in mind when thinking about the benefits of class size reduction.

Research on classroom processes affected by class size is what Blatchford has called the second generation of research (Blatchford, 2012). This information is important because without it there are difficulties in explaining effects on pupils' academic performance, and it is also difficult to offer practical guidance on how to maximise the opportunities provided by classes of different sizes.

Knowledge about mediating processes might also help explain why previous research has not always found a link between class size differences and pupil academic outcomes. It may be, for example, that when faced with a large class, teachers alter their style of teaching, e.g. using more whole class teaching and concentrating on a narrower range of basic topics. As a result, children's progress in these areas might not be different to children taught in smaller classes. Another possibility is that some teachers do not alter their teaching to take advantage of smaller classes. There was some evidence for this in the Hong Kong study by Galton and Pell (2010) where classroom observation showed that even after three years of class size reduction the percentage of whole class teaching had only reduced by 10% compared to normal classes. As John Hattie says in Chapter 7 this might help explain the relatively small effects from some studies of class size.

There have been some helpful reviews of the literature on classroom processes affected by class size (Biddle and Berliner, 2002; Blatchford 2012; Ehrenberg *et al.*, 2001; Finn *et al.*, 2003). These show that knowledge about mediating classroom processes is still relatively limited and this lack of clear research evidence is not helped by methodological weaknesses in much research in this area.

Perhaps the most consistently identified classroom processes, affected by reduced class size, are individualization of teaching and individual attention (Blatchford, 2012; Ehrenberg *et al.*, 2001; Finn *et al.*, 2003), and pupil inattentiveness in class (Finn and Achilles, 1999). Finn and his colleagues (Finn *et al.*, 2003) claim that student classroom engagement is the key process that explains why smaller classes lead to better attainment and conclude that class size affects student engagement more than teaching. More recent research in the UK (Blatchford, Bassett and Brown, 2011) showed that class size and both individual attention and pupil attentiveness were connected across both primary and secondary stages on education. The situation may be somewhat different in the east since pupil engagement levels can already be extremely high (Galton and Pell, 2010). In this book we are able to bring to western readers chapters from East Asia that discuss class size in relation to individualization of teaching and catering for differences.

Individual attention and pupil attentiveness are important processes but still represent a relatively narrow set of classroom processes. It is highly likely that small classes can promote less tangible features like more positive pupil attitudes, enthusiasm, confidence and ability to learn independently, but these kinds of pupil 'outcomes' have rarely been studied in research. The third section of this book extends coverage of classroom processes potentially affected by class size differences, and moreover considers these in eastern educational contexts.

Class size and professional development and effective teaching

A common view, as we have seen, is that class size is relatively unimportant and some have argued that reducing class sizes is less important than teacher quality and that funds would be better spent in training and professional development for teachers (Rivkin, Hanushek and Kain, 2000). This is also the view of Andreas Schleicher, as we have seen, and the widely read reports by McKinsey and Company (2007), the Grattan Institute (2012), and the Brookings Institution (Whitehurst and Chingos, 2011).

However, the view taken in this book is that it is a false dichotomy to either support teacher training or reduce class sizes. In the view of the editors we need to consider both together, and consider ways of making the most of the opportunities of smaller classes. As Anderson (2000) has said: 'Smaller classes provide opportunities for teachers to teach better; they do not cause teachers to do so' (p. 7). Teachers have to work just as hard to manage learning effectively. Evertson and Randolph (1989) showed that teachers skilled in classroom management were able to make adjustments necessary to cope with academically heterogeneous classes, but that less skilled teachers were not.

We have seen that a key theme in research and commentary on class size differences has been the realisation that teachers do not always change their style of teaching when faced with fewer pupils (eg Evertson, 2000; Shapson *et al.*, 1980). This is also developed by John Hattie in his chapter in this book.

Just reducing the number of pupils in a class is only one partial component of an educational initiative. Equally important is attention to effective teaching in relation to the size of class, and professional development to support this.

A third key theme of this book is therefore the need to consider effective teaching and professional development in relation to class size reduction initiatives. Understanding of class size effects will only be complete by looking at changes at classroom level and to teacher development as a result of changes to class size. Interestingly in East Asia there has been far more progress than in the west not only in terms of the recent government and regional initiatives to reduce class sizes, but in accompanying efforts to ensure that teachers can make the most of smaller classes. In the fourth section of the book we have the chance in one volume to see how educationalists working with schools in Nanjing, Shanghai, Hong Kong and Taiwan have pioneered the development of 'small class teaching' (SCT). Given the enormous financial and staffing stakes involved in decisions about class size, it is vital that we move ahead with an evidence base that can help. This book for the first time allows authors mostly from East Asia who have extensive experience of supporting teachers to enhance the effects of effectiveness of SCT, to describe their work on professional development related to class size changes.

Aims of the book

This book therefore stems from the editors' view that much debate, research and commentary about class sizes in schools is limited in several main ways. Firstly, the exclusive concern with class size and pupil academic attainment has narrowed the focus and moved attention away from pedagogical considerations. Secondly, there has been a neglect of classroom processes, which might help explain class size effects (or lack of them). There have been some studies of individual attention and pupil behaviour, but there needs to be attention to a wider range of classroom processes affected by class size. Thirdly, very little is known about perhaps the central question: how can teachers make the most of class size changes? We have limited knowledge and experience of strategies that can be used to maximize the potential of having fewer pupils in a class.

A fourth and further aim stems from what we feel is a neglect of the international context when considering class size. Much of the commentary has focused on western and English-speaking countries but there are developments elsewhere, particularly in East Asia, but also France, which have re-energized and brought new knowledge to the class size debate. The book therefore aims to cover different approaches to the class size debate across the world and draw out the eastern and western international contexts which underpin any understanding of the causal role of class size in school learning. The view of the editors is that there is a huge and exciting potential for international collaboration on knowledge concerning class size effects which can help with research-informed policy. This book aims to develop better international understanding of the

interplay between curriculum, pedagogy and class size, at a time of growing international cooperation in educational research.

The book also aims to draw out implications for policy. It is no surprise that the class size issue is so contentious because class sizes are a key determinant of educational funding: put crudely, the smaller the class, the more teachers needed. This is the main reason why policy makers are concerned about the extra costs involved in class size reduction programmes, and why there is perhaps an inevitable conflict with the view of practitioners which focuses more on the benefits for teaching and learning. In the literature on class size effects, the policy implications, perhaps uniquely, are often not very far from the surface, even if they are implicit in the findings. In this book the authors develop the policy and practice implications but also provide an overview of the key issues to emerge.

Finally the book seeks to move towards a clearer view of what we know and do not know about class size effects, and identify future steps in terms of policy and research.

Style and content of the book

The editors recognise the potential pitfalls of edited volumes in terms of fragmentation and lack of coherence. To overcome this the editors have been careful to select known authorities but ask them to contribute their chapters in the context of a clear structure for the book, and a clear steer on the proposed content (though not of course the argumentation and evidence used). The aim has been to get authors to write in an accessible style with any technical/statistical details carefully explained for the lay reader.

There are four sections in the book:

1. Socio-cultural and political context

This section has two chapters that examine the different backgrounds to the class size debate in the east and West.

In Chapter 2, Kwok-Chan Lai, Peter Blatchford and Beifei Dong show that although a feature of educational policies in western and eastern countries has been a drive toward some form of reduction in class sizes in order to improve the quality of education, there are significant differences in the definitions, rationale, and objectives between east and west. The chapter explores the different historical, socio-cultural and political contexts within which class size policies are implemented.

In Chapter 3, John Chi-Kin Lee offers more detailed insights into the contexts that affected the formulation and implementation of policies and practices of 'small class teaching' or 'small class education' in East Asian countries and places such as Japan, South Korea, China, Hong Kong SAR, Macao SAR, and Taiwan. This chapter will be of interest to western readers who may not have previously had access to this valuable information.

In other chapters in the book there is additional information on the educational and political contexts behind policies and practices regarding class size.