

This article was downloaded by: [Institute of Education]

On: 29 November 2012, At: 19:12

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



International Journal of Social Research Methodology

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/tsrm20>

A Multi-method Approach to the Study of School Class Size Differences

Peter Blatchford

Version of record first published: 25 Feb 2007.

To cite this article: Peter Blatchford (2005): A Multi-method Approach to the Study of School Class Size Differences, International Journal of Social Research Methodology, 8:3, 195-205

To link to this article: <http://dx.doi.org/10.1080/13645570500154675>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae, and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

A Multi-method Approach to the Study of School Class Size Differences

Peter Blatchford

This paper describes a multi-method approach to data collection used in a large-scale seven-year longitudinal study of the effect of class size differences on classroom processes. There were five main types of process and the paper concentrates on the results from one of these: teaching interactions with pupils. It was felt that integration of results from quantitative and qualitative methods would help reconcile inconsistencies and limitations in previous research on this topic. Quantitative information was collected from systematic classroom observations and teacher completed time estimates to address relationships between class size and teacher time allocation, and teacher and pupil behaviour in class. But we also wanted a more qualitative assessment of relationships between class size and teaching through the use of methods that captured practitioners' experiences, and through detailed case studies. Examples of integrated results from these four methods are given, along with some reflections on lessons learned.

This paper describes the multi-method methodology used in a seven-year longitudinal study of the effect of class size differences and pupil adult ratios on primary school pupils' educational progress and classroom experience. The research was funded by the Department for Education and Skills (DfES) and Local Education Authorities. Members of the research team were: Paul Bassett, Penelope Brown, Gemma Catchpole, Harvey Goldstein and Tony Russell. The paper will not seek to give a full presentation of results, but will concentrate on our approach to data collection, and will use results selectively to illustrate ways in which different forms of data have been combined. It will end with some reflections on the multi-method approach used in the research.

Peter Blatchford is Professor of Psychology and Education at the Institute of Education, University of London, and Director of the Institute of Education Class Size and Pupil Adult Ratio project. His research interests include school contextual influences on teaching and learning, and school peer relationships and behaviour at break time. Correspondence to: P. Blatchford, School of Psychology and Human Development, Institute of Education, University of London, 20 Bedford Way, London WC1H 0AL, UK. Email: P.Blatchford@ioe.ac.uk

First, though, a little background is needed to the class size issue. There has been a long-standing debate over whether the size of class in schools affects teaching and pupil learning. Some have argued that class size reduction should be a cornerstone of educational policy in the early years (Achilles, 1999; Wang & Finn, 2000), while others see class size effects as modest at best (Hanushek, 1999; Slavin, 1989), and argue in support of alternative uses of funding, e.g. teacher training. Our interest in the topic arose when we were asked to prepare a Briefing for the National Commission on Education (Mortimore & Blatchford, 1993). We showed that large primary class sizes were a problem and many teachers, parents and others thought that smaller classes would mean a better quality of teaching and learning. However, it was also clear that research evidence on the educational effects of class size differences was not clear, and that there was therefore a wide gap between professional judgement and research findings. Our aim was to contribute in a substantial way to the class size debate by conducting a sustained enquiry into the educational consequences of class size and pupil adult ratio differences.

The study had two aims. The first was to examine the effect of class size differences on pupils' educational attainments, and the second was to research in a systematic way the relationships between class size and classroom processes. Our study was conceived in the context of our reviews of previous research (Blatchford, Goldstein, & Mortimore, 1998; Goldstein & Blatchford, 1998) and our identification of limitations in research designs. In brief, in order to answer the first aim, we decided to adopt a non-experimental longitudinal follow-up study of a large sample of pupils from school entry, and used sophisticated statistical analyses to analyse connections between class size and attainment, controlling for possibly relevant factors such as family income, prior student attainment and teacher characteristics. The research design involved a random selection of schools within 15 Education Authorities. There were over 10,000 children at the beginning of the study. Further details on sample schools and children are in Blatchford (2003a).

I do not intend to present results concerning the first aim here, other than to say we found a significant effect mostly in the first year of school (YR) for class size on pupils' progress in literacy and maths, but none for extra staff and other adults for any year (see Blatchford, Goldstein, Martin, & Browne, 2002; Blatchford, Bassett, Goldstein, & Martin, 2003; Blatchford, 2003a).

This paper is concerned with the methodology used to approach the second aim. The need for good information on how class size affects classroom processes is recognized by researchers in the field as a main priority (Anderson, 2000). We felt that existing research evidence on the effects of class size on classroom processes was inadequate. The often-quoted STAR project, for example (see Finn & Achilles, 1999; Nye, Hedges, & Konstantopoulos, 2000), is frustrating in having little evidence on factors that might explain the class size effects on achievement that they found. We felt we needed research evidence on classroom processes that would allow us to understand the possible negative effects of larger classes and the possible advantages of smaller classes. There is not space here to give a full background to the types of classroom processes included (see Blatchford, 2003a). There were five main areas:

1. Within class groupings (e.g. the size and number of within class groups)

Two processes connected to the teacher:

2. Teaching (e.g. amount of individual teaching, procedural, social and disciplinary interactions)
3. Individual support for reading

And two processes connected to the children:

4. Pupil inattentiveness
5. Peer relations (in terms of pro-social behaviour, aggressiveness etc.)

Our choice of methods of data collection was informed by issues and discrepancies revealed in previous research. One discrepancy in particular was the mismatch between studies which had explored teachers' views and experiences of the effect of class size differences and studies, particularly the much cited Canadian study by Shapson, Wright, Eason, and Fitzgerald in 1980 which, using systematic observation (SO), found few effects. This led to the common view that teachers may feel there is a beneficial effect of small classes but in reality they do not change their teaching. But the problem may not be to do with the validity of teachers' views but perhaps to do with the different kinds of evidence produced by different methodologies—that is, SO and teacher survey data. This is magnified when different studies may be looking at somewhat different aspects, as well as using different techniques. There are also limitations in methods of data collection. A number of studies have relied on rather anecdotal accounts of teacher perceptions. One study (Molnar et al., 1999) has been influential in indicating that pupil–adult ratios can have effects on individualization but this is largely based on teacher interviews. Other USA studies have used large-scale databases of teacher retrospective time estimates (Betts & Shkolnik, 1999; Rice, 1999), which are, in a technical sense, more reliable but have involved relatively crude, easily quantified, retrospective judgements of time allocation.

It seemed to us that one way to advance understanding of the connections between class size and teaching would be to use a multi-method approach. We felt it would help reconcile inconsistencies in previous research. We collected quantitative information that would enable us to address basic questions on relationships between class size and pupil–adult ratios, on the one hand, and teacher time allocation, teacher and pupil behaviour in class and children's school attainments, on the other hand. But we also wanted a more qualitative assessment of relationships between class size and teaching and individual support for reading through the use of methods that captured practitioners' experiences, and through detailed case studies. We therefore deliberately sought to combine different methods of data collection, and to integrate quantitative and qualitative forms of data analysis.

The four main forms of data collection were:

1. *Teacher estimates of time allocation.* This provided general survey data on reported time in different types of teaching activities. Data came from termly questionnaires completed by class teachers. They were given a pre-selected set of activities and

asked for a given half day session to estimate the time in minutes spent on each activity. The activities were grouped into two broad types: first, teaching activities (teaching/working with the whole class, working with an individual child, and working with a group of children); and, second, aspects of classroom management and other non-teaching activities, including collecting dinner money, lining the class up, putting on coats etc., taking the register). The three teaching activity categories were added to give an estimate of the total time in teaching activities. Teachers were also asked for estimates of time spent in various reading activities on the basis of which two measures were derived: frequency of reading aloud to an adult in school, and duration of time each child was heard read by an adult. Data came from 279 reception classes, 207 Year 1 classes, and 118 Year 2 classes. Further details on the methodology can be found in Blatchford, Moriarty, Edmonds, and Martin (2002).

2. *Systematic observations.* These provided a detailed quantitative moment-by-moment account of pupil activities in their normal working classroom. The observation component involved a sub sample of children in 18 small (20 or under) and 21 large (30 and over) reception classes. The average in small classes was 19, and in large classes 33. There was a sub-sample of 6 children in each class and 235 children in all. We used a systematic observation schedule that had been developed in previous research (Tizard, Blatchford, Burke, Farquhar, & Plewis, 1988), which involved observations in terms of 5-minute observation sheets divided into continuous 10-second time samples. The schedule had categories describing how children behaved in three 'social modes': when with their teachers, when with other children and when not interacting. Sub-categories within each of these three modes covered work, procedural, social and off-task activities. For full definitions and conventions of categories see Blatchford (2003b).
3. *Teachers' experiences of the effect of class size—data from end of year questionnaires.* Questionnaires sent out near the end of each school year asked teachers about their experiences and views on selected topics, e.g. whether class size differences affected teaching and learning over the year, and the contribution of other staff and adults in the classroom. We analysed questionnaires completed by 151 reception teachers (cohort 2), 208 Year 1 teachers (cohort 1), 130 Year 1 teachers (cohort 2), and 153 Year 2 teachers (cohort 1). The aim was to describe teachers' views and experiences in a thorough way by collecting information from a substantial number each year and by a careful analysis of the range and type of answers given (see Blatchford, Moriarty, et al., 2002, for more details).
4. *Case studies of selected small and large classes.* Case studies were conducted to provide a more detailed portrayal of individual classes, which would provide the basis for a more interpretive and grounded analysis of factors relating to class size. Schools were selected with differing class size categories, i.e. large (30 and over), large medium (26–29), small medium (20–25) and small (under 20). There were two classes in each class size band in each year (Reception, Year 1 and Year 2), totalling 24 classes in all. Selected aspects of classroom learning and

experience, expected to be connected to class size differences, were defined in advance, and then on the basis of field visits were refined into main headings, which included grouping practices; classroom discipline; tasks and curriculum; teacher pupil interactions and knowledge of children; and pupil adjustment and peer relations.

The method comprised whole class and selected child observations in terms of event sampling of significant events; semi-structured interviews with teachers and the head teacher; end of session/day comments and judgements by field workers; summative judgements by field workers, all organized in terms of the main headings. This component made use of experienced teachers as field workers. Quite deliberately, the aim was to marry aspects of systematic observation (which emphasizes the objectivity of data), with professional and interpretative judgements by experienced teachers. For further details see Blatchford, Moriarty, et al. (2002).

Quantitative and Qualitative Data

There is a distinction to be made between methods of data collection and the use of quantitative and qualitative methods of analysis. A study can be multi-method but not necessarily combine quantitative and qualitative approaches. In this study, two of the methods of collection—teacher time estimates and the systematic observations—resulted in data that was unambiguously quantitative—time estimates, expressed in percentages, and frequencies of the occurrence of behavioural categories, respectively. However, the teacher questionnaires resulted in data that could be analysed both quantitatively and qualitatively. This was also true in a different way for the case studies where essentially individual, qualitative material was supplemented by some counts, e.g. of time spent in a classroom in broad teaching approaches, or different subjects. More detail is given below concerning how each method of data collection was analysed.

Results

Results on relations between class size and classroom processes have been examined and published in several papers: class size and within class groupings (Blatchford, Baines, Kutnick, & Martin, 2001); class size and teaching (Blatchford, Moriarty, et al., 2002); class size and teacher's and pupils' behaviour (Blatchford, 2003b); and class size and pupil attentiveness and peer relations (Blatchford, Edmonds, & Martin, 2003). Here I will just look at teaching interactions in classrooms, to show how we used a multi-method approach. We wanted to find out in what ways class size affected the amount, type and quality of teacher–pupil interaction. Each of the four forms of data was directed at exploring effects of class size on teaching interactions in class. Each was first written up separately and then combined. This proved to be an exhausting activity but one we felt worked well.

I look briefly at results from each type of data collection.

Systematic Observation

The SO component was particularly useful. SO has had a lot of criticism, essentially with regard to validity issues. However my view is that for certain clearly defined research purposes SO can be useful, e.g. in comparisons of definite groups in terms of high frequency, easily observed, categories of behaviours.

In the class size project, SO was useful in providing a quantitative but detailed account of how class sizes affected the amount and type of teacher–pupil interaction. Differences between large and small classes in terms of time in the three main ‘social modes’ are shown in Figure 1. It can be seen that children in smaller classes were observed interacting more with their teachers; on average children in a small class were observed 213 times with their teacher, as compared to 144 times in a large class. Conversely, in a large class children interacted more with each other and spent more time not interacting. All differences were statistically significant.

Looking more closely at the type of teacher behaviour towards pupils, the systematic observation results showed that in smaller classes children were more likely to interact with their teachers on a one-to-one basis; the child was more likely to be the focus of a teacher’s attention, whether it was on a one-to-one basis (by definition the child was the focus), or in a group or the whole class; and that children in small classes also experienced more teaching. Conversely, there was more procedural talk (e.g. about getting materials ready) in large classes. All these results were statistically significant (see Blatchford, 2003b, for full details).

Teacher Time Estimates

Looking next at the teacher time estimates, the relationship between total percentage time in teaching (i.e. time teaching to individuals, groups and the whole class) and class

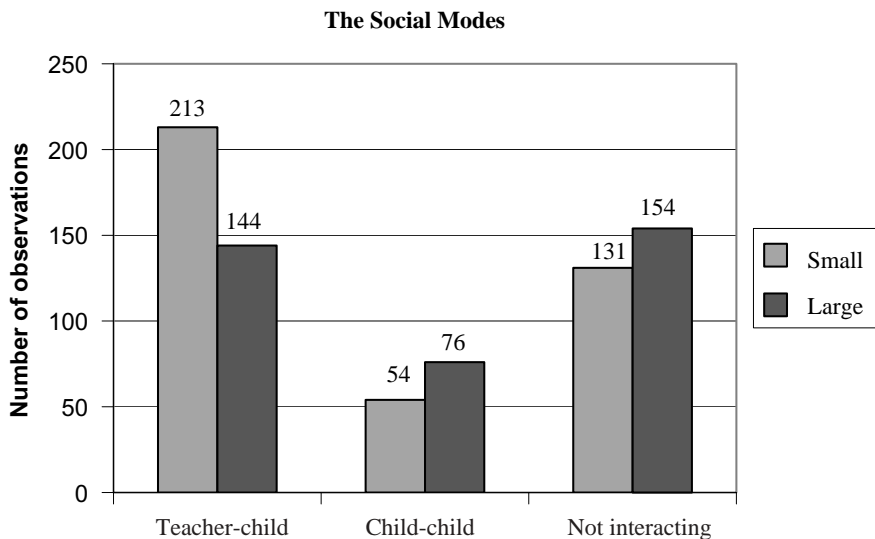


Figure 1 Differences Between Large and Small Classes in the Three Social Modes

size for the reception year is shown in Figure 2. It can be seen that, apart from a little upturn in the case of larger classes (there were few of these), the smaller the class the more teaching overall, or, conversely, the larger the class the less teaching. The result was statistically significant in the case of reception and Year 1, and in the same direction but not significant at Year 2.

Because of the way the variables were defined, these results also mean that there was a correlation between size of class and non-teaching time, such as register etc. That is, the larger the class the more non-teaching time.

Putting together the results from the two more obviously quantitative components therefore showed that children in small classes were more likely to interact with their teachers, there was more teaching on a one-to-one basis, more times when children were the focus of a teacher's attention and more teaching overall. In short, there was more individual teaching and more teacher task time with pupils.

There is not space here to describe results from the two other forms of data collection—end of year teacher completed questionnaires and the case studies—other than to offer a few comments on how the data were handled. In both cases the analyses were extremely time consuming. In each year, teachers were asked a number of questions including a request to comment on how the number of children in their class had affected their teaching that year. All the responses to the question in each year were copied into one document to facilitate their analysis. The responses for one year were then used to devise a coding frame for application across the three years. Two members of the research team analysed the responses independently and drew up a set of categories to act as the coding frame. The categories referred to the effects of both small and large classes, e.g. that large classes presented problems, but small classes presented possibilities, when seeking to maximize individual attention of pupils. The two sets were compared and a high level of agreement was found. The data for each category of

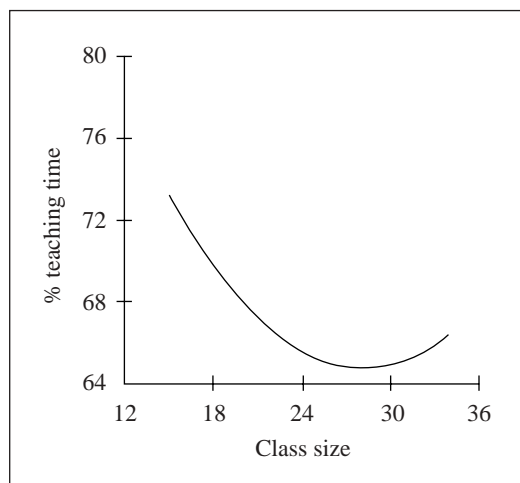


Figure 2 Relationship Between Class Size and Percentage Teaching Time in Morning Session (Reception Year)

response was entered in a table and their percentages of the total number of responses calculated and entered. This numerical presentation of data was then complemented by verbatim quotes from the questionnaires, contrasting the experience of teachers in small and large classes. These were used to illustrate categories by localizing them in particular classroom contexts and in terms of a particular teacher's experience.

The aim of the case studies was to provide a more detailed portrayal of individual classes. For each case study, data from the whole class and child observations and semi-structured interviews with teachers were written up, along with end of session/day comments and judgements by the field workers and summative judgements by the field worker, all organized in terms of the main headings, as described in the case study methodology above. All the individual case studies were then combined into one report, by selecting and integrating material under main themes.

Integration of data across methods of data collection was facilitated by examination of themes common to different methods. In the case of teacher–pupil interactions, data from the questionnaire responses and the case studies were used, along with the systematic observation and time estimate data, to arrive at a multi-layered account; for example, information on the overall quantity of contacts was supplemented by attention to the type of interaction, their duration and focus, and also their quality and pedagogical purpose.

Putting all the results together, from the four forms of data, we can sum up the relationships we found between class size and teaching as follows. In smaller classes there is: (1) more teacher task time with pupils, (2) more teacher support for learning and (3) easier classroom management and control. Overall, we propose that there is support for the notion that in smaller classes there is more likelihood of what we call *teacher support for learning*—more individualization of teaching if you like, though this does not imply it has to be on a one-to-one basis—it could be in group or whole class contexts (see Blatchford, Moriarty, et al., 2002, for a full account).

This kind of multi-method analysis was conducted for each of the main classroom processes. These have been published in papers already cited and were summarized in a book (Blatchford, 2003a).

Reflections on the Multi-method Approach

The longitudinal nature of the research helped because it was possible to adapt methods in the light of emerging results so that types of data collection became progressively compatible, internally consistent and deliberately complementary. So, for example, results from the systematic observations during the reception year were clear about the importance of individualized instruction and the greater amount of peer interactions in larger classes, and these informed the questions asked in the end-of-year teacher questionnaires. The early qualitative analyses of teacher experiences of large and small classes, arising from the teacher questionnaires, helped indicate where questions should be sub-divided in future questionnaires, and what could be attended to in future case studies. Methods were adjusted and fine-tuned in the light of early field visits and data analyses. Another connected feature was the presentation of early results

to teachers involved in the first year of the research. We were able to discuss provisional findings with them and together work through some possible explanations and possibilities of changes to data collection techniques and additional information needed.

In considering what methods to use, we avoided a choice on the basis of a priori decisions about the appropriate way of combining qualitative and quantitative approaches. Our choice was informed by debates in previous research and what methods of data collection seemed best able to address specific research questions and dimensions related to classroom processes considered important. It is doubtful that there are general rules about mixing methods. It needs to be localized in relation to the particular research questions being asked. Indeed, just as there are dangers in sticking rigidly to only one research approach, there may be dangers in being too rigid about mixing methods. We need to avoid what Shulman (1986) called a 'goulash' approach. There may be research questions best addressed with just one technique, but there are times, and we would cite our study of relations between class size and teaching as one such, when results from the integration of different techniques add up to more than the sum of the parts. This is seen, for example, in the way that numerical evidence on the way small classes leads to more individual attention, was strengthened and made more complete by detailed information on how this was expressed in particular classrooms (case studies) and perceived by individual teachers (questionnaires).

The scale of the study affected the methods chosen. We were working with about 10,000 pupils in about 300 classes and the process data had to be consistent with the large-scale quantitative analysis of progress. This meant that we had a lot of teachers involved and methods appropriate to a few would not be suitable for collecting data from all teachers. We therefore combined forms of data collection that used all the teachers and pupils and classes with those on sub-samples for more intensive data collection. The large-scale nature of the study, and the essentially quantitative nature of answers to our first aim, meant that the choice of methods was likely to be more quantitative in nature. The scale of the project was influential in another way. It was possible for a relatively large team of researchers to work on the project, and bring different types of expertise and perspectives. These included psychology, statistics, sociology, teacher education and educational administration.

There are, however, difficult issues involved in the use of mixed method approaches, which require further attention. Two are raised here. It is recognized that the description of the integration of different approaches given above exaggerates the tidiness of this process. The overall integration of methods of data collection over time, described above, masks a number of occasions when data proved to be not useful or unclear. Sometimes there were frustrations, for example, when information from one form of data collection could alert us to the likely importance of a particular effect of class size differences which there was not time, or resources, to then follow up with complementary forms of data collection. An example of this is the case study suggestion that teacher-pupil interactions seemed more sustained in small classes. This could not be followed up more precisely on the basis of classroom observations. Moreover, other suggested effects of small classes, stemming from the case studies, couched in high inference categories such as a sense of community, were just too complex to unpick

with other forms of data collection or analysis, given the time and resources available. The sheer volume of work involved in transcribing, analysing and integrating data within and across methods inevitably meant that priorities had to be set, and some areas of investigation received more attention than others.

A final issue concerns the way that different techniques are used together. Our approach was to develop methods of data collection and analysis that were deliberately complementary. An alternative approach, though, would be to use a particular method of data collection to *test* the claims from other forms of data. There are also problematic issues when it comes to establishing causal relations between class size, classroom processes and achievement, and this is likely to be exacerbated by the use of a mixed method approach. We have seen that one aim was to combine quantitative methods such as time estimates with methods more able to capture the individual situation in classes and give expression to teacher experience. We have in this paper been able to give scant expression to these latter, richer forms of data, and this reflects difficulties involved when seeking to include them in analyses of causal relations. Clearly qualitative and more interpretative data have purposes other than establishing causality, but if it is agreed that there is value in integration then there is a need to think through more carefully ways in which this can take place. This would include ways in which relatively fine-grained data on classroom processes can be used in analyses of causal relations between a factor like class size and pupils' educational achievement and learning.

References

- Achilles, C. M. (1999). *Let's put kids first, finally*. CA: Corwin Press.
- Anderson, L. W. (2000). Why should reduced class size lead to increased student achievement? In M. C. Wang & J. D. Finn (Eds.), *How small classes help teachers do their best*. PA: Temple University Center for Research in Human Development.
- Betts, J. R., & Shkolnik, J. L. (1999). The behavioural effects of variations in class size: The case of math teachers. *Educational Evaluation and Policy Analysis*, 21(2), 193–213.
- Blatchford, P. (2003a). *The class size debate: Is small better?* Maidenhead, UK: Open University Press.
- Blatchford, P. (2003b). A systematic observational study of teachers' and pupils' behaviour in large and small classes. *Learning and Instruction*, 13(6), 569–595.
- Blatchford, P., Baines, E., Kutnick, P., & Martin, C. (2001). Classroom contexts: Connections between class size and within class grouping. *British Journal of Educational Psychology*, 71(2), 283–302.
- Blatchford, P., Bassett, P., Goldstein, H., & Martin, C. (2003). Are class size differences related to pupils' educational progress and classroom processes? Findings from the Institute of Education Class Size Study of children aged 5–7 Years. *British Educational Research Journal*, 29(5), 709–730.
- Blatchford, P., Edmonds, S., & Martin, C. (2003). Class size, pupil attentiveness and peer relations. *British Journal of Educational Psychology*, 73, 15–36.
- Blatchford, P., Goldstein, H., Martin, C., & Browne, W. (2002). A study of class size effects in English school reception year classes. *British Journal of Educational Research*, 28(2), 169–185.
- Blatchford, P., Goldstein, H., & Mortimore, P. (1998). Research on class size effects: A critique of methods and a way forward. *International Journal of Educational Research*, 29, 691–710.

- Blatchford, P., Moriarty, V., Edmonds, S., & Martin, C. (2002). Relationships between class size and teaching: A multi-method analysis of English infant schools. *American Educational Research Journal*, 39(1), 101–132.
- Finn, J. D., & Achilles, C. M. (1999). Tennessee's class size study: Findings, implications, misconceptions. *Educational Evaluation and Policy Analysis*, 21(2), 97–109.
- Goldstein, H., & Blatchford, P. (1998). Class size and educational achievement: A review of methodology with particular reference to study design. *British Educational Research Journal*, 24(3), 255–268.
- Hanushek, E. A. (1999). Some findings from an independent investigation of the Tennessee STAR experiment and from other investigations of class size effects. *Educational Evaluation and Policy Analysis*, 21(2), 143–163.
- Molnar, A., Smith, P., Zahorik, J., Palmer, A., Halbach, A., & Ehrle, K. (1999). Evaluating the SAGE program: A pilot program in targeted pupil–teacher reduction in Wisconsin. *Educational Evaluation and Policy Analysis*, 21(2), 165–177.
- Mortimore, P., & Blatchford, P. (1993). The issue of class size. In *National Commission on Education (1993) briefings* (pp. 167–182). London: Heinemann.
- Nye, B., Hedges, L. V., & Konstantopoulos, S. (2000). The effects of small classes on academic achievement: the results of the Tennessee class size experiment. *American Educational Research Journal*, 37(1), 123–151.
- Rice, J. K. (1999). The impact of class size on instructional strategies and the use of time in high school mathematics and science courses. *Educational Evaluation and Policy Analysis*, 21(2), 215–229.
- Shapson, S. M., Wright, E. N., Eason, G., & Fitzgerald, J. (1980). An experimental study of the effects of class size. *American Educational Research Journal*, 17, 144–152.
- Shulman, L. S. (1986). Paradigms and research programs in the study of teaching. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed.). New York: Macmillan.
- Slavin, R. E. (1989). Class size and student achievement: Small effects of small classes. *Educational Psychologist*, 24, 99–110.
- Tizard, B., Blatchford, P., Burke, J., Farquhar, C., & Plewis, I. (1988). *Young children at school in the inner city*. Hove, UK: Lawrence Erlbaum Associates, Inc.
- Wang, M. C., & Finn, J. D. (2000). Small classes in practice: The next steps. In M. C. Wang & J. D. Finn (Eds.), *How small classes help teachers do their best*. PA: Temple University Center for Research in Human Development.