every pupil counts

the impact of class size at key stage 1

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1. INTRODUCTION

1.1 Background

Class size has been the subject of investigation by educational researchers for much of this century — '*for more than eight decades*' according to Burstall (1979) and at least since the 1920s according to Slavin (1990). Most of this research endeavour has gone into establishing whether a relationship exists between the size of a class in which pupils are taught and the level of their attainment. In recent years, the debate in England and Wales has intensified as class sizes at primary level have increased, coinciding with changes to legislation on school admissions and the tightening of public spending by central government. As Day *et al.* (1996) point out, this has led to a certain polarisation of the class size debate, with, on the one hand, OFSTED and the DfEE asserting that there is no direct link between class size and pupil achievement, and, on the other, teacher unions and professional associations, education pressure groups and some researchers declaring that being taught in a large class has a detrimental effect upon children's education. Research evidence has been used by opposing groups to support their cases. Meanwhile, throughout this process, many teachers and parents have held it to be common sense that a class in which the teacher has to divide his or her time amongst a smaller number of pupils must be of benefit to those children, both in the acquisition of knowledge and skills and in their personal and social development.

In England and Wales, the policy context changed after the 1997 General Election. The belief that smaller class size will lead to raising educational standards is now at the centre of the Government's policy, despite the inconclusive nature of the debate among politicians, educators, parents and researchers. A pledge was made that, by the end of the school year 2001–2002 (since revised to school year 2000–2001), no child of five, six or seven years old will be in a class of more than 30 pupils. *'Our pledge to reduce class sizes for 5, 6 and 7 year-olds will be a key factor in improving standards in primary schools'* (GB. Parliament. House of Commons, 1997a). As a political message, this is simple and clear. However, the indications are that the effects of this one measure of reducing class size across all schools by central intervention are likely to be far-reaching and far from simple — having repercussions for school budgets, staffing levels, accommodation and parental choice.

It is also clear that class size, even if of major concern, cannot be isolated from the cluster of issues which affect the organisation of schools and the organisation of provision at local authority level. These issues include, at local authority level:

- determining school admission numbers;
- reconciling limitations to the number of pupils on roll in an individual school with parental choice and parental right of appeal;
- the link between the number of pupils on roll in schools and school funding.

Subsequent to these issues are those operating at individual school level:

- the belief, held by many headteachers and teachers, that pupils benefit educationally from being taught in smaller classes, leading to a desire to keep class sizes within limits;
- the consequences of parental preference for the school's ability to control class sizes when the parental appeals system can oblige a school to admit pupils;
- the conflict between the desire to keep class sizes within what are seen as reasonable limits and the need to retain staff and sustain resource levels, when the school budget is directly determined by the number on roll;
- the employment and deployment of classroom assistants;
- the organisation of classes in terms of whether children are taught in single age groups or mixed age groups;
- the available teaching accommodation in a school which may have implications for behaviour management and for approaches to teaching and learning.

The 1988 Education Act (GB. Statutes, 1988) required schools to admit pupils up to their capacity as defined by the DfEE. Schools are funded mostly according to the number of pupils they have on roll — every additional pupil means more money. At the same time, what could be described as a market-led approach to school enrolment has emerged. Over the past ten years, parents have been encouraged by the political rhetoric of parental choice and by the publication of OFSTED inspection reports and 'league tables' to 'shop around' among competing schools before deciding where to send their children. The appeals procedure, by which parents can challenge a school's refusal to admit their children, has further encouraged this trend. Therefore, the pressure on headteachers to admit more pupils has had three sources — legislative, financial and parental (through appeals). This, it has been argued, has caused school rolls and class size to rise (Bennett, 1994).

In some areas, this process has created popular and less popular schools. Less popular schools tend to attract fewer pupils, with a consequent reduction in their funding, which in some cases could mean the loss of teachers and therefore a rise in class sizes. This process can result also in increases in class sizes in the popular schools which cannot withstand the pressures to admit more children, resulting in classes becoming larger in these schools too. Thus, as has been argued by Blatchford and Mortimore (1994), rising class sizes are an inevitable consequence of the approach to school enrolment contained in the 1988 Education Act (GB. Statutes, 1988). The trend towards larger classes has also coincided with tightening public spending limits, reducing the ability of schools to employ teachers and causing a trend towards increasing pupil–teacher ratios (PTRs). The increase in PTRs has been cited as one reason for the growing strength of primary-level independent schools, which normally guarantee that pupils will be taught in classes considerably smaller that in the maintained sector.

1.2 The Current Situation

While schools have, in general, welcomed Government initiatives aimed at reducing class size, it is clear that there may be difficulties for schools and LEAs in implementing measures designed to achieve this. The first initiative to implement the recent pledge on class size was a grant of £22 million released from phasing out the Assisted Places Scheme, which Local Educational Authorities (LEAs) bid for in September 1997. Sixty-five were successful in this bidding and funds have been allocated to them to reduce infant class sizes for the 1998/99 school year. This will affect an estimated 100,000 children. The funding may be spent on teaching staff and, in some cases, on transport.

The Government pledge will be supported by legislation. The School Standards and Framework Bill (GB. Parliament. House of Commons, 1997b) proposes to give the Secretary of State powers to *'impose limits on class sizes for infant classes at maintained schools'*. All LEAs have to indicate how they will achieve the figure of no more than 30 pupils in infant classes in statements included in their three-year education development plans to be submitted to the DfEE by September 1998.

The requirement to limit class sizes to 30 pupils or fewer has several implications which LEAs will have to address. A key issue will be parental choice. While the School Standards and Framework Bill will allow schools to refuse to admit a child if

this would make a class size of more than 30, existing legislation gives parents the right to appeal to a special admissions panel which can overrule a school's decision. This apparent contradiction will have to be resolved. At the time of writing, a draft document providing *'guidance for LEAs upon the preparation of statements'* (GB. DfEE, 1998a) has been sent to LEAs for comment as part of a consultation exercise. This document states:

> *While it is not possible to guarantee all parents that their child will gain a place in the school of their choice, LEAs' class size plans must however not lead to a reduction in parental preference, but an enhancement of it...*
>
> *...surplus places in poor schools should not be filled by keeping children out of schools that offer higher standards and a better quality of education...*
>
> *...where extra places are needed, they should be created in popular, over-subscribed schools with high standards...*

In stating the Government's adherence to the principle of parental preference, this answers some questions but poses others as to how the parental preference/limited class size dilemma is to be resolved. Each LEA is expected to provide its solution in the statement, which is expected to contain *'details of how plans are consistent with the enhancement of parental preference'* (paragraph 22). The draft guidance refers to the provision of contingency funding to pay for extra teachers in certain circumstances where parents prefer a school in which the class has reached 30 and no other suitable school is available, and possibly also for capital spending.

Equally challenging for headteachers and LEAs is the extent to which class size reduction may affect the funding of individual schools. Under the existing arrangements, schools could lose financially if class size reduction meant an overall reduction in numbers on roll. As yet, no draft guidance on Local Management of Schools (LMS) and reducing infant class size has emerged, as this will depend on the outcome of a separate consultation on LMS arrangements.

Accommodation is also an issue. Limiting classes at key stage 1 to 30 pupils would mean that, in some schools, an extra class or classes would have to be created, requiring another classroom. Many schools do not at present have such a room and therefore would require alterations to the existing buildings or the construction of additional accommodation, a situation which is acknowledged in the DfEE draft guidance document.

Schools in the more remote locations also present a possible problem. If there is no alternative school for many miles, any

children whose presence would raise the size of a class to over 30 present a challenge, unless the regulations allow for exceptions in such cases. The draft guidance document states *'LEAs should ensure that no child will have to travel an unreasonable distance to school because of class size limits'* and goes on to outline arrangements for contingency funding in specific cases to pay for an extra teacher and, *'if higher pupil numbers seem likely to recur'*, for the expansion of provision in the school.

1.3 What Do We Mean by Class Size?

Class size, as reported by the Government, is measured on the basis of annual returns to the DfEE which provide 'snapshots' of all classes on one day. This procedure provides overall figures which, at the primary phase, can best be described as the registration group sizes in a school. However, it is not that easy to obtain an accurate picture of class size in terms of the numbers in teaching groups experienced by pupils. Figures published annually by the DfEE, for example, do not take into account a number of factors such as the non-contact time of teachers or the use of part-time and peripatetic teachers. Also, teaching groups may vary during a school week. A child in a registration group of 30, for example, may experience teaching and learning in groups ranging from, say, 25 to 35. The pupil–teacher ratio (PTR) also is an unreliable measure on its own. The PTR is usually calculated by dividing the total number of full-time equivalent pupils on a school's roll by the total number of full-time equivalent teachers. This, of course, takes no account of time during the school day when some teachers are not teaching but engaged in other tasks. Thus a school with a PTR of 17 may have an average class size of 20 and actual class sizes may be spread over a wide range. Defining class size is further explored in Chapter 3 and examples of the variations that can occur in the size of teaching groups are described.

1.4 Research into the Effects of Class Size

Twenty years ago, researchers in the USA undertaking a retrospective review of research into class size concluded: *'The problem with class size is the research. It is unclear'* (Smith and Glass, 1980). More recently, Robinson (1990) concluded that research evidence provided *'little support that decreasing class size will by itself improve student learning'*, adding, however, that *'the most positive effects of small classes on pupil*

learning occur in grades K-3' (key stage 1 in England and Wales). More recent reviews of research in this field, by Mortimore and Blatchford (1993) and Day *et al.* (1996), while agreeing that the research evidence on the benefits of smaller classes is not entirely clear-cut, point to the strong claims made for research in the USA, notably Project STAR in Tennessee (Word *et al.*, 1990).

Much of the debate on class size has concentrated on the question of whether children at school perform better in large or small classes, and the research effort has been devoted to the collection of performance data to prove one case or the other. As Burstall (1979), Day *et al.* (1996) and Mortimore and Blatchford (1993) all have pointed out, the major problem with class size research which tries to link class size with pupils' attainment is that most of the investigations were carried out using existing classes in whatever range of sizes was available. Therefore, researchers were unable to isolate the effects of class size from other influences such as the ability and motivation of pupils, the experience or expertise of teachers, resourcing levels and so on. More recent experimental research, such as the Tennessee Project STAR, has tried to isolate the effects of class size by specially creating classes of 15–17 pupils. These projects have demonstrated that in such small groups, teachers can achieve significantly better pupil performance on standardised reading and mathematics tests than with randomly selected pupils in regular-sized classes. It also appeared that the pupils in the smaller classes continued to out-perform the others two years later. While these projects have not been without their critics, they appear to show a connection between class size and pupil performance. Recent analyses of British and American research conclude that the effects of class size reduction on pupil performance are most marked in the early years (key stage 1) and with disadvantaged pupils. However, to achieve any significant improvements, classes have to be very small, below 20 pupils, a level which cannot realistically be supported by education budgets.

The recent OFSTED report, *Class Size and the Quality of Education* (1995), based not on research specifically on class size but on data from OFSTED inspections, also states: '*Small class sizes are of benefit in the early years of primary education. Once pupils have achieved competency in basic learning, particularly in literacy, they are more able to learn effectively in larger classes.*' The report goes on to suggest that some factors have more influence than class size: '*within the range of classes inspected, the selection and application of the teaching methods and forms of class organisation have a greater impact*

on learning than the size of the class.' It might be reasonable to suggest, however, that the selection and application of teaching methods and the form of classroom organisation are themselves influenced by the size of the class. As Mortimore and Blatchford (1993) wrote: '*Reductions in class size whether initiated at DfEE, local or school level, should always be accompanied by a review of teaching methods, classroom management and in-service training in order to maximise potential benefits.*'

1.5 The NFER Research Project

The public debate has referred largely to research aiming to establish simple correlations and has often tended to judge the class size issue in terms of the attainment levels which appear to be directly associated with large and small classes. However, this research has usually depended upon measuring outcomes using standardised tests, for example, of reading and mathematics, and it could be that pupils from larger classes do not score significantly less well in these areas because here their teachers concentrate their efforts, knowing that they are to be tested. This may be achieved by adopting formal teaching methods for more of the time or by diverting the pupils' energies to these 'basics' at the expense of other curriculum areas.

Class size is just as likely to exert an influence on pupils' development in ways which may be significant in the longer term, but which may not be evident in learning outcomes in the short term. For example, it could influence their settling into school, adjusting to the routines of the class, becoming accustomed to working alongside others and learning to learn. It could also influence the teacher's ability to deal with children who misbehave or disrupt the work of others, thus affecting pupils' progress in the long term. There are also the important considerations of teachers' classroom practice, their workload and stress levels, all of which are influenced by class size and which have a bearing on teachers' effectiveness. It is possible, for example, that teachers' workloads may be increased and their stress levels made worse by their own efforts to compensate for the potential disadvantages to their pupils of being in larger classes. These, along with related questions of school management, are the areas which the NFER research project, *The Impact of Class Size,* chose to address.

While research aiming to establish correlations between class size and educational attainment will undoubtedly continue, it will not contribute to an understanding of the effect on pupils and teachers of conditions associated with differing class sizes. The NFER project set out to investigate how class size affects the work of schools and teachers by considering, on the one hand, the strategies adopted by school managers to regulate the numbers in classes and teaching groups, and, on the other hand, the classroom experiences and views of teachers of larger and smaller classes at key stage 1, for example, how the increase in class size is reconciled with the requirements of the National Curriculum and National Curriculum assessment and with traditional and well-established beliefs about effective teaching and learning.

2. AIMS AND ORGANISATION OF THE RESEARCH

2.1 Aims

NFER's research sought to generate information about class size at key stage 1 and about the experience of schools and teachers working with smaller and larger classes. The project, which ran from May 1997 to April 1998, was part of NFER's Membership Programme of research. It had a number of objectives:

- to investigate recent trends in key stage 1 class size in maintained schools in England and Wales;
- to investigate the nature of school policies on class size and the implications for schools of reducing class size at key stage 1;
- to generate information about the classroom experience of teachers of smaller and larger classes;
- to explore ways in which class size affects classroom processes and the effectiveness of teaching and learning;
- to investigate the kinds of teaching method and classroom organisation which may be more or less relevant to particular sizes of teaching group.

The project did not attempt to explore the link between class size and pupil attainment, but, in recognising the current political and educational debate, set out to explore the views of headteachers and teachers on managing class size and its influence on teaching and related activities, focusing on classes of pupils aged between five and seven years old.

To achieve these objectives required an investigation of how headteachers made decisions about the size of classes and teaching groups in their schools and an investigation of teachers' decisions about teaching and learning at classroom level. This involved a survey of headteachers and teachers in a national sample of schools, and interviews with a smaller sub-sample of teachers and headteachers. The research design provided the teachers with the opportunity to record and reflect on any aspects of their teaching or related activities which illustrated the influence of class size on the process of teaching and learning. In the weeks between the interview with a researcher at the beginning of the autumn term, and the interview at the end of term, teachers were asked to keep records. These records formed the basis of the second interview. The research methods are described in more detail below.

2.2 Research Methods

The project employed both qualitative and quantitative methods and was carried out in three phases:

1. The first phase was an initial survey of a representative sample of 1,500 maintained schools in England and Wales with pupils at key stage 1, using a short pro forma to the headteacher to determine trends in class size and to elicit information about staffing levels (amongst both teachers and classroom assistants) and relevant policies. Responding headteachers were asked also to indicate whether they would be willing for their school to participate further in either the second phase only or the second and third phases of the project. The pro forma was sent to schools in June 1997 and the final responses were received in August 1997.

2. The second phase was a questionnaire survey of selected key stage 1 teachers in a representative sub-sample of 500 schools to investigate teachers' views on class size and their perceptions of its influence on classroom practice. This phase was carried out between October and November 1997.

3. In the third phase of the project, which ran between September 1997 and January 1998, members of the research team made two visits to each of 18 schools, half with smaller classes (25 pupils or fewer) and half with larger classes (33 pupils or more). At the beginning and end of this period, teachers of 21 classes across the 18 schools were interviewed about their experiences in relation to class size and its effects on their classroom practice. Between the two visits, those interviewed were asked to keep a record (or 'log') of any occurrences which they considered demonstrated the impact of class size on teaching and related activities, using a booklet supplied for this purpose; and to complete a record, over two weeks, of variations in the numbers of pupils they taught. On each of the two occasions that the schools were visited, in-depth interviews with headteachers were also conducted.

2.2.1 The questionnaire surveys

Between June and August 1997, 953 headteachers responded to the pro forma survey, giving an overall response rate of 64 per cent. Schools responding to the survey were broadly representative of all schools in terms of geographical location, free school meal eligibility and, for those schools to which it applied, pupils' performance at the end of key stage 2. A

number of pro formas were received with missing data, relating particularly to the number of pupils on roll, the number of teachers and classroom assistants and the total number of staff and pupils for each class. During July 1997, telephone calls were made to as many as possible of these schools in an attempt to fill the gaps.

In October 1997, three questionnaires were sent to each of 500 schools which had indicated a willingness to take part in the second phase of the research, with the request that one Reception, Year 1 and Year 2 class teacher should each complete a questionnaire. Of the 500 schools, 403 returned at least one completed questionnaire, giving an overall response rate from schools of 81 per cent. In total, 756 teachers returned completed questionnaires, a response rate of 50 per cent of the maximum potential total of teachers (assuming that all of the schools had three separate classes). Questionnaires were returned by three teachers in 103 schools. Data from the headteacher survey are discussed mainly in Chapter 3. Data from the teacher survey are used mainly in Chapter 4. Response tables appear in Appendix B.

2.2.2 The school-based research

In August 1997, a shortlist of schools which contained at least some classes at key stage 1, in either the smaller or larger class size categories, was identified from those whose headteachers had indicated a willingness to take part in the second and third phases of the project. The headteachers were contacted by telephone and asked if they were still willing to receive visits from researchers. They were asked also if they had an experienced teacher who would be willing to participate in the research and who, preferably, had experience of teaching key stage 1 classes in both of the class size categories. From the shortlist, a final group of 18 schools was recruited in September 1997, two of which each contained classes in both class size categories with teachers who were willing to participate in the research. In the initial stages of the selection process, one of these schools adopted measures to reduce the size of its very large class from 36 to 30 pupils. In addition, the size of its smaller class rose. However, although this school now fell outside the applied selection criteria, a decision was taken to include it in the project since the measures it had taken to reduce class size were intrinsically illustrative. In a third school, the headteacher found it impossible to select one member of staff from the two which taught smaller classes, and since both staff were keen to participate in the research, it was decided to include the two of them rather than just one as originally intended.

The characteristics of the schools visited and of the 21 classes on which the research team focused are set out in Table 2.1 below. The schools selected were more or less evenly divided between inner city, urban, suburban and rural locations. Their catchment areas represented a range of socio-economic circumstances, as indicated by the numbers of pupils entitled to free school meals, which ranged, for example, from none in one school to 70 per cent in another. With regard to pupil attainment, nine teachers said their pupils represented the *complete range*, five described their pupils as having an *overall tendency towards high attainment*, three as having an *overall tendency towards the middle range of attainment* and one as having an *overall tendency towards low attainment*. Of the 21 teachers interviewed, 19 had experience of teaching both smaller and larger classes. The data gathered during the school visits are discussed in Chapters 4 and 5 and four case studies of schools can be found in Appendix C.

Table 2.1: Characteristics of the schools visited and the classes of teachers interviewed

SCHOOL		CLASS	
School type	**Number on roll**	**Year group(s)**	**Number on roll**
5-11	82	1/2	17
5-11	365	1	19
5-11	573	1	21
5-11	232	1/2	22
5-7	152	1	22
5-7	114	2	24
5-11	471	2	26
5-11	210	2	35
5-7	125	2	35
5-7	209	2	36
5-7	228	2	36
5-11	484	1	36
5-7	215	2	37
5-11	235	1	37
5-11	495	2	38
5-11	342	2	21
		2	22
5-7	220	1	25
		2	34
5-11	186	1	26
		2	30

Initial visits to the schools took place between September and October 1997, so, in several cases, recording in the logs did not begin until the middle of October. Some teachers, therefore, continued keeping records until the end of January 1998. The logs invited the teachers to keep a record of their experiences, both in the classroom and in other aspects of their work, which they considered reflected or illustrated the impact of class size. The logs had two purposes: to provide researchers with a detailed account of key incidents over the term of their completion, and to remind the teacher of these key incidents when being interviewed by a researcher during the second visit to the school. Most of the second visits were made in January 1998.

3. CLASS SIZE PATTERNS AND TRENDS

3.1 Introduction

The issues associated with class size are many and varied. Some relate to questions of overall provision and resources and are the concern of the Government and LEAs. Others relate to the management of schools or to the management of individual classrooms. Headteachers' flexibility in managing class size in their schools is determined by Government policies such as those relating to admissions and how schools are funded. How they allocate children, teachers and classroom assistants to classes in turn affects how these classes are managed. This chapter is concerned with the overall management of class size in schools. Using data from the headteacher and teacher surveys, it provides a comparative overview of the organisation of classes in the schools surveyed and the extent to which class size numbers are governed by school policies. It also considers the day-to-day realities of organising pupils for teaching and learning, and explores the consequent variations in teaching group as opposed to class size. In addition, it examines trends in class size in the schools, the balance of single and mixed age classes and the level of allocated classroom assistance. Tables referred to in the text appear in Appendix B.

3.2 The Headteacher Survey

On the pro forma sent to them during the first phase of the research, headteachers were asked to record the size and type of all classes in their schools, together with the allocation of teaching and support staff time to each class, as this stood in June 1997. Complete information, considered suitable for analysis,[1] was obtained on 6,105 primary classes in 832 schools. The schools were a mix of those containing pupils from key stage 1 only (infant schools, of which there were 155 in total[2]) and those containing pupils from both key stage 1 and 2 (first and JMI schools, of which there were 677 in total).

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[1] Data were considered to be suitable for analysis where the stated number of pupils on roll (NOR) was consistent with the figure derived from totalling the number of pupils stated for each class across the school; and where respondents had supplied complete information regarding the year group designation of classes, the number of pupils within them and the allocation (FTE) of teaching staff to them.

[2] Fifteen classes (from a total of 1,034 classes) within the 155 infant schools contained a very small number of pupils from key stage 2, possibly due to some kind of pupil retention.

3.2.1 Class organisation

At least one mixed age (vertically grouped) class was to be found in 60 per cent of the 832 schools. First/JMI schools were more likely to have at least one mixed age class than infant schools, nearly two-thirds of which had organised their classes by single age group only (see Table 1). One-fifth (20 per cent) of all schools had only mixed age classes, but this was considerably more likely to occur in first/JMI schools (24 per cent) than in their infant counterparts (three per cent).

Mixed age classes constituted 29 per cent of the 6,105 classes in the survey, a small number of which (two per cent) spanned the two primary key stages (see Table 2). In first/JMI schools, where classes were mixed age grouped within a key stage, this was more likely to occur in key stage 2 than in key stage 1.

Further differences in patterns of class organisation could be seen when comparing classes containing only key stage 1 pupils in schools with and without pupils at key stage 2. This type of class was more likely to be single age grouped in infant schools than the same type of class in first/JMI schools (see Table 3).

In comparing patterns of mixed age grouping combinations, infant schools were moderately less likely to group Reception and Year 1 pupils together than to group Year 1 and Year 2 pupils together. There was no observable pattern of mixed age pupil grouping combinations in first/JMI schools.

Taken as a whole, schools appeared to prefer forming single age grouped classes, especially at key stage 1, and to avoid forming classes which spanned both key stages in particular. Headteachers' written comments clearly indicated that mixed age classes were rarely formed for educational purposes, but in reluctant response to the pressure of pupil and/or staff numbers. They were also concerned that any legislation to ensure that key stage 1 classes should always contain 30 pupils or fewer might force the creation of more mixed age classes.

3.2.2 Class size

National figures published in 1997,[3] reporting on 1995/96 school data, give average primary school class size figures of 27.5 pupils in England and of 25.9 pupils in Wales. Centrally produced statistics such as these are useful in providing the broadest points of reference in, for example, year-on-year class

[3] GREAT BRITAIN. OFFICE FOR NATIONAL STATISTICS (1997). *Regional Trends 32*. London: The Stationery Office.

size trends, nationally and regionally. Otherwise, however, their use is limited. In presupposing that all primary classes are directly comparable to each other, 'global' averages over-simplify a complex pattern of real class size distribution, masking a number of significant trends and features. To explore these adequately, it is necessary to consider the context of each class: the type of school in which it is located, its key stage (key stage 1 or 2), and its composition (single age or mixed age grouped). To this extent, the analyses which follow are not based on 'global' survey school averages, but, instead, take into account each of these variables.[4]

On the pro formas, headteachers identified 6,105 classes (almost certainly *registration* groups) in total (1,034 in infant schools and 5,071 in first/JMI schools). The overwhelming majority of classes (91 per cent), which ranged in size from five to 53 pupils, were reported by headteachers to have one full-time teacher. In other cases, headteachers reported groups, which ranged in size from 14 to 70 pupils, taught by more than one full-time equivalent (FTE) teacher. Here, the ratio of pupils to FTE teachers (the PTR) was used as a surrogate class size. Thus, a 'class' of 70 pupils with 2.0 FTE teachers was treated as the equivalent of one class of 35 pupils with one teacher in the analyses.

The relationship between school type and key stage 1 class size (all classes). Across the schools as a whole, the majority of key stage 1 classes fell into average class size ranges of 30 pupils or fewer (see Table 5). However, average class sizes of 25 pupils or fewer were more likely to be found in first/JMI schools than in infant schools, an explanation for which may be that a potentially greater flexibility in pupil grouping in first and JMI schools, given their greater number of year groups, is often used to create smaller key stage 1 classes.

The relationship between school type and key stage 1 class size (single age and mixed age group classes). Further differences were reflected in the range of key stage 1 class size when comparing types of class in infant and first/JMI schools (see Table 6). Single age grouped key stage 1 classes in first/JMI schools were a little more likely to fall into the 25 pupils or fewer average class size ranges than their infant school counterparts. At the same time, mixed age grouped key stage 1 classes with 25 pupils or fewer were considerably more likely to be found in first/JMI schools, while mixed age grouped key stage 1 classes of more than 30 pupils were considerably more

[4] For this reason, it has not been possible to compare nationally published class size data with those derived from the NFER survey of headteachers. Moreover, the data would not be directly comparable, since the NFER sampled all schools with key stage 1 pupils, not all primary schools, i.e. those with key stage 2 only pupils were excluded.

likely to be found in infant schools. Moreover, mixed age grouped classes in infant schools were significantly more likely to fall into the more than 30 pupils average class size ranges than single age grouped classes in the same type of school. These findings may be attributable to the fact that infant schools, with only three year groups, have less flexibility to adjust class sizes than first/JMI schools with five, seven or eight year groups.

Available evidence suggests that schools most often create mixed age grouped classes when forced to by circumstance. Infant school headteachers, when faced with this situation, might wish to provide the teacher of a larger, mixed age group with more classroom assistant time. In practice, however, this did not seem to be the case (see Table 12). The data indicate that mixed age grouped key stage 1 classes in first/JMI schools were likely to have more classroom assistance than the same type of class in infant schools. This may possibly be because first/JMI schools, typically larger institutions with more pupils, are likely to have larger budgets than infant schools, potentially more classroom assistant time to allocate and greater flexibility in how it can be allocated. Thus, some infant schools appear to be in the unavoidable position of having larger-sized, mixed age key stage 1 classes with what might be regarded as less than adequate levels of support. Written comments from headteachers indicated their concern that, should fixed limits to key stage 1 classes be introduced, and the existing primary school funding formula remain, this unwelcome situation could arise more often.

The relationship between key stage 1 and key stage 2 class size in first/JMI schools (all classes). Examination of the range of average class size in first/JMI schools revealed a tendency for key stage 1 classes to fall into the up to 20 and 20 to 25 pupils average class size ranges more frequently than their key stage 2 counterparts, while key stage 2 classes were slightly more likely to fall into the over 30 and over 35 pupils average class size ranges than their key stage 1 equivalents (see Table 7).

The relationship between key stage 1 and key stage 2 class size in first/JMI schools (single age and mixed age grouped classes). There was also a slight tendency for single age grouped key stage 1 classes in first/JMI schools to fall into the lower average class size ranges than single age grouped key stage 2 classes in these schools. Single age grouped key stage 2 classes in first/JMI schools showed a corresponding tendency to fall into the higher average class size ranges (see Table 8). This reflects the expressed intention of many responding headteachers to keep class size lower at key stage 1. However, mixed age grouped classes in first/JMI schools showed no discernible pattern of average class size distribution within key stages.

Similarly, no discernible pattern of average class size distribution emerged when comparing single age grouped and mixed age grouped key stage 1 only classes in first/JMI schools. However, mixed age grouped key stage 2 classes were more likely to have 25 pupils or fewer than their single age grouped counterparts (see Table 9).

3.2.3 Teaching group size

Published class size data tend usually to relate to the number of pupils in *registration* groups. However, given the great diversity in learning contexts experienced by primary pupils on a daily basis, a registration group number may mask considerable variety in actual *teaching* group size. This is of some importance in attempting to consider children's educational progress in relation to the size of group in which they are taught. For example, a pupil in a registration group of 35 pupils may receive most of their maths lessons in a much smaller teaching group, and it would be misleading, therefore, to consider the pupil's attainment in mathematics in terms of their membership of the much larger group.

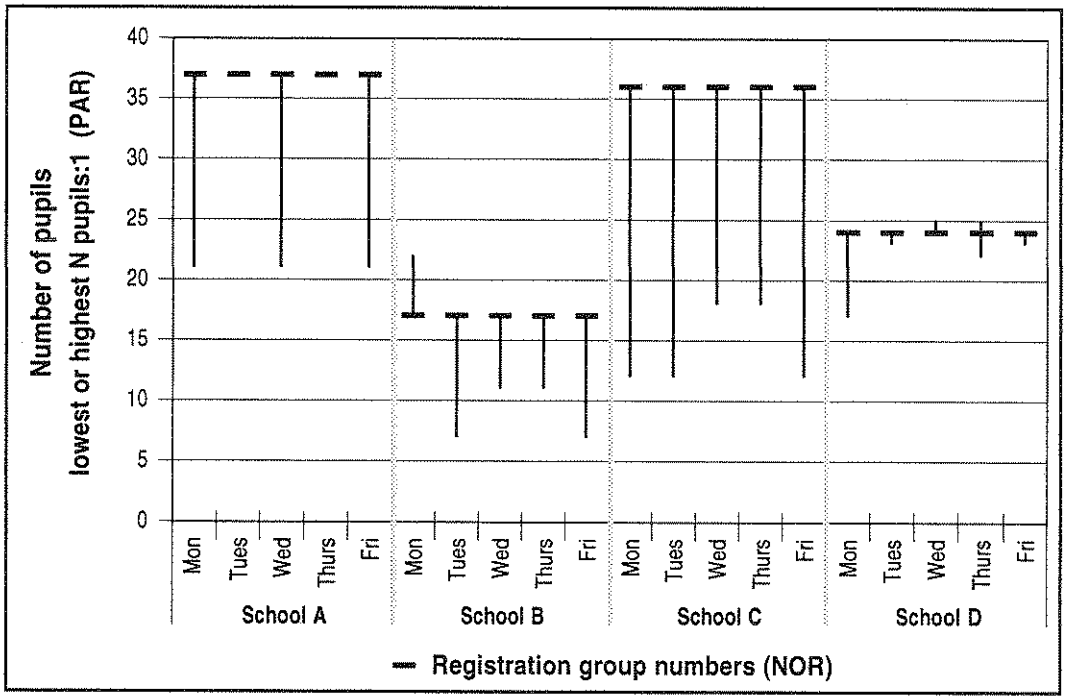
In order to gain some measure of this variety, teachers in schools visited were asked to keep a daily record, for two weeks, of variations from registration group numbers (NOR) where variations were a result of curriculum arrangements. The contrasting experiences of four of the classes over one week of record keeping are shown (in part) in Figure 3.1 below and (in full) in Table 4.[5] As can be seen, pupils in all four classes did experience teaching groups which mirrored the size of their registration group for at least some part of the week. However, pupils in the ostensibly large classes in Schools A and C also experienced teaching groups that were smaller in size by more than ten pupils each, while those in the apparently smaller classes in Schools B and D experienced teaching groups which were larger by at least five pupils. Taking pupil–adult ratios (PAR) into account, pupils in the large School C registration group were as likely as those in the smaller School D registration group to experience a teaching group with a 12:1 PAR. However, whilst the PAR in the School B class could be as low as 7–8:1, that in School A never dropped below 18:1. To this extent, it may be meaningless in many cases to talk in terms of 'class size' when referring to the experience which pupils have in school at

[5] Supplied figures recorded the number of pupils remaining with the class teacher where any variations from registration group size were the result of curriculum arrangements (rather than absences or withdrawals for non-routine purposes). Where group size remained unchanged during a session, this figure was entered in the **whole** am/pm column. Where group size fluctuated during a session, the smallest (first **part** am/pm column) and largest (second **part** am/pm column) group sizes were recorded, so as to establish the range of group size. The number of adults (including the class teacher) working with pupils was also recorded, as was the reason for the variation.

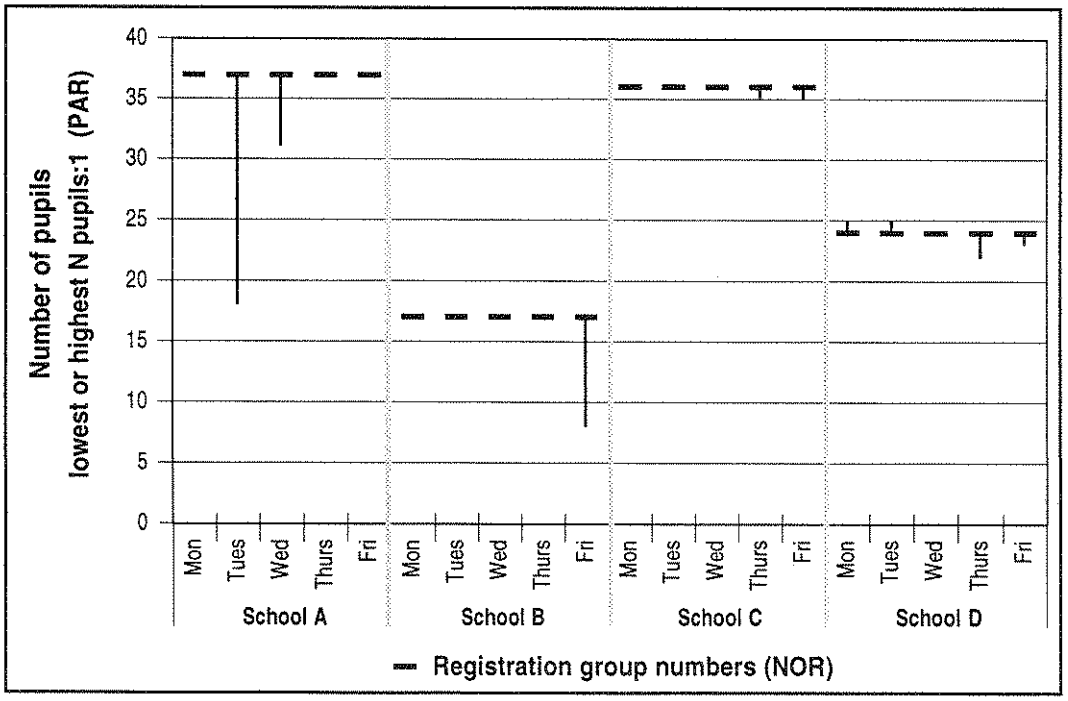
different times of the teaching day or week, both within and between registration groups. However, 'class size' is likely to be more relevant when considering class teacher workload and responsibilities and the deployment of resources (human and material) by schools. These issues are explored further in Chapters 4 and 5 of this report.

Figure 3.1: Variations from registration group numbers in four KS1 classes

MORNING



AFTERNOON



3.2.4 Classroom assistance

Respondents were asked to indicate the level of paid full-time equivalent (FTE) assistance supplied to each class they recorded.[6] Reported levels of assistance ranged from none to three FTE. However, slightly over one-third of the 6,105 classes in the survey (35 per cent) were reported to receive no assistance at all, while nearly half of the classes in the survey (49 per cent) received up to 0.5 FTE assistance (equivalent to one person for two-and-a-half days per week). Just one per cent of classes had a greater than 1.0 FTE level of assistance.

The relationship between school type and levels of assistance in key stage 1 classes (all schools). In comparing the range of levels of assistance in key stage 1 classes across the schools, classes of this type in first/JMI schools were slightly more likely than those in infant schools to have a 0.2 or lower FTE level of assistance and more likely to have no assistance at all. They were also slightly more likely to have a greater than 0.5 FTE level of assistance (see Table 10). This could reflect, variously, the tendency of this type of class to have 25 pupils or fewer ('smaller and requiring less assistance'), or to be mixed age grouped ('challenging to manage and requiring more assistance').

The relationship between school type and levels of assistance in key stage 1 classes (single age and mixed age grouped classes). When comparing types of class across the schools, single age grouped key stage 1 classes in first/JMI schools were more likely to have no assistance or very little assistance (0.2 FTE or lower) than their counterparts in infant schools, perhaps because classes of this type tended to fall into the lower ranges of class size (see Table 11 and compare Table 6). At the same time, mixed age grouped key stage 1 classes in first/JMI schools were considerably more likely to have a greater than 0.5 FTE level of assistance (see Table 12 and compare Table 6 and discussion in Section 3.2.2).

The relationship between levels of assistance in key stage 1 and key stage 2 classes in first/JMI schools (all classes). In exploring the range of FTE levels of assistance in first/JMI schools, key stage 1 classes were less likely to have no assistance compared with classes which spanned both key stages, and considerably less likely to have no assistance compared with key stage 2 classes. Key stage 1 classes were also more likely to have a greater than 0.5 FTE level of assistance than key stage 2 classes or classes which spanned both key stages (see Table 13).

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[6] A 1.0 FTE level of assistance is taken to represent one person working alongside a class teacher all day, five days per week. Thus, a class teacher with a 0.2 FTE level of assistance would receive, notionally, the help of one person for one day per week. In practice, however, this might be a cumulative total of two 0.1 FTE assistants who each worked for half a day.

The relationship between levels of assistance in key stage 1 and key stage 2 classes in first/JMI schools (single age and mixed age grouped classes). When analysed by type of class, single age grouped and mixed age grouped, key stage 1 classes in first/JMI schools were considerably less likely to have no or little assistance than key stage 2 classes in the same type of school (see Table 14). Mixed age grouped key stage 1 classes in first/JMI schools were also less likely to have no or little assistance when compared with classes which spanned both key stages. It would seem clear from these findings that school managers regard classroom assistance at key stage 1 a higher priority than at key stage 2. As can also be seen from Table 14, single age grouped key stage 1 classes were slightly less likely to have any assistance when compared with their mixed age grouped counterparts. There was a more marked tendency for single age grouped key stage 2 classes to have no assistance compared with their mixed age grouped counterparts, and for mixed age grouped key stage 2 classes to have a greater than 0.2 FTE level of assistance.

3.3 Headteachers' Views on Class Size Trends

Headteachers were asked whether class sizes had, in general, risen, fallen or stayed about the same since school year 1994/95 (see Table 15). In this time, class size had fallen in fewer than ten per cent of schools at both key stages. In the rest, class size had remained about the same or had risen in the same proportion of schools in both key stages. Headteachers were asked to indicate the reason(s) for any significant change in the size of classes; 425 commented on class size changes at key stage 1 and 301 commented on class size changes at key stage 2. For both key stages, the reasons given most frequently for an upwards trend in class size were the same: that, generally, the school roll was rising, in particular because of *an influx of new families into the area* and because the *school was gaining in popularity*, or that *financial constraints forced class size increases*, particularly as *more pupils attracted funding which made it possible to maintain staffing levels*. The most frequent explanation for a downwards trend in class size at both key stages referred to an overall drop in the number of pupils on roll, caused by the *movement of families away from the area* or a *smaller intake at Reception*. A key finding was that scarcely any headteachers attributed a reduction in class size at either key stage to the adoption of a specific strategy to achieve this (the recruitment of additional teaching staff, for example).

Asked to predict class size trends for the coming academic year (1997/98), few headteachers predicted a fall in overall class size; instead, most expected class size to remain about the same (see Table 16). Headteachers gave the same reasons for predicted upward and downward trends as they had for past trends.

3.4 Teachers' Views on Class Size Trends

Based on their experience of the school in which they were currently teaching, key stage 1 class teachers who completed questionnaires were asked whether class sizes had, in general, risen, fallen or stayed about the same since school year 1994/95 (see Table 17). Here, their views were broadly in keeping with those of headteachers: class sizes had risen or remained static in the experience of the majority of respondents. Class teachers were asked to indicate the reason(s) for any significant change in the size of classes; 408 did so. The reasons given most frequently for an upward trend in class size mirrored those given by headteachers: that, generally, the school roll was rising, in particular because of *new housing in the area* and because the *school was gaining in popularity*, or that *financial constraints forced class size increases*. The most frequent explanation for a downwards trend in class size referred to an overall drop in the number of pupils on roll, caused by a *fall in the birth-rate, the movement of families away from the area into new housing* or *competition for pupils between schools*. Again, very few teachers attributed a reduction in class size to the adoption of a specific strategy to attempt this; just eight respondents noted that class sizes had been reduced through the *creation of additional classes*.

Class teachers were also asked whether they anticipated any change to the size of the class over the course of the 1997/98 school year. Around two-fifths (41 per cent) anticipated some change and, of these, 78 per cent expected the size of their class to rise, compared with six per cent who expected it to fall and 12 per cent who expected it to fluctuate. The most frequent reason given for an anticipated rise, noted by 105 respondents was, in fact, a certainty and one for which class teachers could be prepared: *the staged intake of Reception pupils to the school*. However, respondents referred also to more random increases in the size of their classes as additional pupils joined due to *the movement of children into the area* (71 respondents), *the enforcement of the school's pupil admission limit* (24 respondents) and as a result of *successful appeals* (six respondents). As is discussed further below, pupil transience and parental choice were also frequently identified by headteachers as factors which could prevent schools from fixing or maintaining class size limits.

3.5 Class Size Policies

Headteachers were asked to supply information about the class size policies in place in their schools. Reported policies ranged in formality from what might be described as statements of intent in approaches to class size management, to fixed limits on class size, which might take into account a variety of determining criteria. As might be expected, the finer details of each policy tended to be unique to the institution reporting it and, thus, class size policies could more easily — as far as the amount of detail provided by each school would allow — be categorised by type rather than analysed by content (see Table 3.1 below).

Around a quarter of schools' policies could be categorised as 'statements of intent'. Of these, the most common intent, reported by 175 respondents, was to keep PTRs *as small as possible*. Ninety-seven respondents reported that their intention was *to have a size differential (lower pupil numbers) for particular key stage 1 classes compared with other key stage 1 and/or key stage 2 classes*. Regarding classroom management, the intention of 68 respondents was *to avoid vertical grouping and maintain single age grouping*, and 49 respondents reported an intention *to provide as much classroom assistance as possible*.

Table 3.1: School policies on class size

Policy type	Percentage of schools
School does not have a policy	6
School has a policy (no further information provided)	2
School has a policy (regards it as determined externally)	13
Number limit stated (no further information provided)	20
Number limit stated (information provided on determining reasons)	6
Number limit stated (indication that factors prevent school maintaining it, however)	14
Flexible number limit stated (indication that school policy alters to meet particular criteria)	4
General statement(s) of intent	28
Other response	2
Invalid/missing	4
N = 953	

Due to rounding errors, percentages may not sum to 100.
Source: NFER survey of headteachers, 1997.

Fourteen per cent of respondents drew specific attention to an inability to maintain their schools' policy limits on class numbers. The most commonly given reason for this, as reported by 67 respondents, was that schools could not effectively resist appeals procedures, either because LEAs insisted on pupil admission limits and/or because parents *always* won appeals. In addition, 39 respondents made reference to pupil transience making it impossible, in practice, to predict or fix class sizes, meaning instead that numbers enrolling determined the size of classes. Additionally, 26 respondents noted that their schools' financial situation made it impossible to maintain preferred limits. A further 13 per cent of respondents indicated that they considered their school policy on class size to have been determined externally, that is by the DfEE, LEA or diocese in setting standard numbers or pupil admission limits. In many cases, respondents clearly indicated that these limits might be contrary to schools' wishes or judgements.

Respondents were asked also to detail the implications of their class size policies. A number drew attention to the educational benefit they felt derived from having class size limits, namely maintained or improved levels of academic achievement, particularly by less able pupils or those with special needs, because teachers were able to spend more time with individual children. In a typical comment, one headteacher noted that their school's policy to keep classes as small as possible and to target additional support in '*larger than desirable classes*' meant that:

> *standards have been maintained/have risen and children with learning difficulties have received the support they have needed; teachers have also been able to monitor progress and stress levels have been eased.*

On the whole, however, respondents reported the negative effects of policies limiting class sizes. In the words of one headteacher, '*small classes mean a financially impoverished school*', and many respondents similarly described how lower class size (and the high salary costs this entailed) had been financed, effectively, at the expense of spending on resources, buildings maintenance, INSET, non-contact time for senior managers and, in some cases, classroom assistance. Several of these schools were now facing a substantial budget deficit. Other headteachers noted that they were trying to maintain overall staffing levels by employing less experienced teaching staff or teaching staff on temporary contracts, or by cutting back on promoted posts. Not all respondents, though, had felt able to introduce a wished-for lower class size limit because their schools could not afford the reduced total school budget that would follow as a consequence. One headteacher, in a school with a policy maximum of 35 pupils per class, summed up the dilemma faced by a number of his colleagues in:

> *having to accept too many children into classes, making pupil–teacher ratios less effective [and] needing to accept too many children to maintain budgets and therefore staffing levels.*

Respondents also noted the implications for admissions of having class size policies. A considerable number reported that, as a result of introducing policies on class size, their schools were over-subscribed, numbers of appeals had risen, places were being refused to siblings and in-catchment children, and parental choice was being limited. '*Bulges*' or fluctuations in the pupil population were highlighted as causing particular problems, for example, '*turning away eight [pupils] one year, being under-subscribed by 13 the next*'. In the circumstance that a year group was under-subscribed, a number of headteachers indicated that they would take additional pupils in '*popular*' year groups to compensate for the budgetary shortfall; as was noted by one respondent:

> *children do not enter the school in uniform numbers across the classes; it is, therefore, inevitable that, in reaching the maximum school roll, there will be some large classes and some small or vertical grouping.*

Headteachers also noted that that pupil transience restricted their ability to maintain policy-led class size limits or to accommodate children according to more traditional admissions criteria. '*We have no choice on the year group* [into which] *children from new families enter*' and '*our classes are over-subscribed and children on the main admittance register gain access to the school before those ... who move* [into the village] *once the admission list is complete*' were typical comments in this respect.

Finally, many respondents drew attention to the accommodation implications arising from their class size policies: overcrowded classrooms in those schools without 'spare' space or pupils being taught in converted, non-classroom areas such as kitchens and special needs rooms.

Teachers were asked to indicate what factors determined the size of their current class, as far as they were aware. A key finding was that very few respondents referred to a specific school policy as being a determining factor. Thus, just 24 respondents noted that the size of their class had been determined by school policy to group pupils in single age classes, and 15 respondents that it had been determined by school policy to keep Reception and Year 1 classes as small as possible. A further handful of teachers noted that their classes had been kept smaller because they contained, variously, a number of SEN or behaviourally challenging children, or were mixed age, or had been allowed to be larger because classroom support was

available or the class was single age grouped. On the whole, teachers most frequently (and unsurprisingly) attributed the size of their class to the number of children on roll (125 respondents), in the year group (166 respondents) and in the school's catchment area (99 respondents). In addition, teachers referred to the size of their class being determined by *finance* (101 respondents), *growth in the school's popularity* (46 respondents), *available staffing* (44 respondents), *available space* (41 respondents), *successful appeals* (38 respondents) and *the movement of pupils into the area* (36 respondents).

3.6 Teachers' Views on Ideal Class Size

Any legislative limit to class size is likely to reflect an implicit compromise between an 'ideal' (however defined[7]) pupil–teacher ratio which maximises pupils' educational experience and achievement, and a 'realistic' pupil–teacher ratio which, at national level, can be adequately resourced within spending restrictions. In the state primary sector, what is considered to be an affordable class size limit is unlikely ever to approach what is felt to be ideal, and to this extent, with the balance of consideration in favour of costs, the determined limit may simply mark the legislators' estimation of the maximum number of pupils per class that practitioners and parents will, at best, tolerate. Moreover, regardless of the number of pupils at which it is set, a global limit takes no account of the context of individual classes, in particular whether they are single or mixed age grouped and whether or not classroom assistance is available to them.

As part of the questionnaire survey, key stage 1 teachers were asked to indicate what they considered the maximum number of pupils should be in a teaching group when taking into account a number of contextual variations: whether the class was single age or mixed age grouped and whether or not it had an assistant. In answering this question, respondents were free to specify any number of pupils they wished, that is, they were not asked to indicate an ideal class size *range*, although for analysis purposes, their responses were grouped in this way. Responses to this question were also cross-tabulated with data on the length of respondents' teaching experience, the size of the classes they taught and the composition of their classes.[8]

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[7] For example, see NATIONAL UNION OF TEACHERS (1992). *Our Overcrowded Classrooms.* London: NUT. This report sets out the NUT's class size objectives of *'a maximum class size of 23 in classes consisting wholly or partly of children in their first year of infant education'*, 26 pupils for primary standard classes and 21 pupils for primary mixed age range classes.

[8] Thirty-one of the 756 survey respondents did not report the composition of their class and were excluded from the cross-tabulation analysis, giving an N of 725.

As can be seen from Table 18, very few respondents considered teaching groups with more than 30 pupils to be ideal and, as such, it appears that the Government's legislation will encompass the absolute class size maximum which teachers in the NFER survey were prepared — ideally — to be expected to teach. However, other than in the situation of a teacher teaching a single age class with an assistant, the majority of respondents favoured class size limits of 25 pupils or fewer or 20 pupils or fewer, particularly in classes without an assistant. Given that 79 per cent of infant school key stage 1 classes and 72 per cent of first/JMI school key stage 1 classes reported by headteachers had over 25 pupils (see Table 5), it would seem that many respondents were teaching classes far larger than they considered ideal.

The length of respondents' teaching experience (which, amongst those responding to the survey, ranged from one to 36 years, with over 50 per cent having 15 or more years of teaching experience) influenced their responses to this question. Regardless of the number of years they had been teaching, the majority of respondents favoured class size limits for single and mixed age grouped classes with assistants in the 21–25 pupils and 26–30 pupils ranges and for single and mixed age grouped classes without assistants in the 20 pupils or fewer and 21–25 pupils ranges (see Table 19). However, the likelihood of opting for classes in the lower class size range (21–25 pupils in the with-assistant classes of either type, 20 pupils or fewer in the without-assistant classes of either type) increased — on the whole — with the length of teachers' experience. Thus, for example, 56 per cent of teachers with one to six years of teaching experience favoured a limit of 20 pupils or fewer in a mixed age class without an assistant – compared with 73 per cent of those with 21–36 years of teaching experience. This may reflect that, for less experienced staff, the implementation of the National Curriculum is part of their ordinary working life, whereas longer-serving teachers, familiar with what they perceived to be more flexible alternatives, often commented on the greater ease with which they had managed teaching in larger classes when curriculum content was not absolutely prescribed.

The size of class currently taught by respondents also influenced their responses to this question. For single and mixed age grouped classes with an assistant, the majority of teachers favoured classes in the 21–25 pupils and 26–30 pupils ranges, and for those without assistants, classes in the up to 20 pupils and 21–25 pupils ranges (see Table 20). In most cases, the likelihood of opting for smaller classes in the lower class size range (21–25 pupils in the with-assistant classes of either type, 20 pupils or fewer in the without-assistant classes of either type) decreased as the actual size of class taught by respondents

increased in size. However, while respondents who taught classes in the higher class size ranges (26–30 pupils and 31+ pupils) consistently opted for classes in the same size or lower class size ranges, a considerable number of those who taught classes in the lower class size ranges (21–25 pupils and, in particular, up to 20 pupils) frequently opted for classes in a higher class size range.

3.7 Summary

During the third phase of the research, one headteacher commented that, with regard to setting a class size limit, '*there is no right number per se, but there are wrong numbers*'. This comment aptly summed up the message, emerging from data relating to actual class size patterns, schools' policies on class size and to teachers' views on ideal pupil numbers, that there was no *one* number of pupils to which class size should be limited. Instead, practitioners overwhelmingly indicated that the number of pupils in individual classes should vary in response to certain contextual factors (variously the key stage of the class, its composition and the availability of classroom assistance[9]), and, indeed, many schools appeared to be trying already to adopt flexible approaches (subject to particular constraints) to grouping pupils. To this extent, many respondents felt that the imposition of a legislative, 'global' limit, as well as being set at too high a number, might also be too inflexible.

A second factor noted by many respondents as already impinging on their pupil grouping flexibility was the difficulty they experienced in reconciling school policies on admissions and class size, both with 'natural' fluctuations in pupil numbers, due to the birth-rate and a certain level of pupil transience (new families in the area, for example), and with parental demand for places. Overwhelmingly, it appeared that most schools largely reacted to demand for places rather than strictly determining the number of pupils on roll. It was difficult for many respondents to see how fixed limits for key stage 1 classes could be allied with parental choice and rights of appeal. At the same time, many schools wished to retain some discretion over the number of children in classes so as to be able to meet traditional admission criteria (accepting all siblings, or serving a distinct local community, for example).

[9] Other contextual factors such as teachers' experience, teaching and learning methods and pupils' ability, are explored in Chapters 4 and 5.

It was widely feared that a fixed limit would compound the difficulties schools faced in maintaining a flexible approach to class sizes in the face of their financial situation, as determined by the number of pupils on roll and, in turn, available staffing levels (teaching and non-teaching). Given existing funding formulae, headteachers often reported that they were in one of two situations. They could have larger than desired classes so as to maintain teaching staff levels and prevent classes from growing even larger (that is, avoiding cuts in overall pupil numbers which would lead, eventually, to the employment of fewer teaching staff and/or classroom assistants and, therefore, an increase in the PAR). Alternatively, they could attempt to limit class sizes to what they considered to be more appropriate numbers and yet retain existing staffing levels by using the budget for building maintenance, resources and, in some cases, classroom assistance to partly underwrite the higher salary costs. In either situation, headteachers felt the introduction of a legislative limit to key stage 1 class size needed to be accompanied by an overhaul in the way in which primary schools were funded so that it was no longer done on a *per capita* basis. In being able to predict properly and afford their budget for staffing, headteachers felt they would then be in a better position to employ and deploy class teachers, peripatetic teachers and classroom assistants. Adequate staffing levels (PTRs or PARs) would ensure that, regardless of the size of *registration* groups, *teaching* groups could be as small as was felt necessary. Headteachers were particularly anxious to avoid securing reductions in key stage 1 class sizes through an increase in mixed-age classes or, in those schools to which it applied, at the expense of very large class sizes for key stage 2 pupils. These were regarded as inevitable consequences of the introduction of a legislative limit for key stage 1 classes combined with existing current funding arrangements.

4. MANAGING CLASS SIZE IN SCHOOLS

4.1 Introduction

Any discussion about the optimum numbers in classes or teaching groups needs to be set against the background of resources for education and the limited scope for reducing numbers, as Chapter 3 makes clear, as well as the constraints under which school managers operate in regulating class size. It also needs to acknowledge the realities of class organisation, which, as we have seen, mean that numbers are subject to considerable variation as a result of planning decisions taken at school level.

The 18 headteachers whose schools were visited represented a wide range of experience of teaching and managing schools. Six were headteachers of infant schools, 12 of JMI schools. Their experience as headteachers ranged from one year to 28 years, the average being seven years and their service as teachers ranged from 16 years to nearly 40, giving an average teaching service of 23 years. Almost all had taught classes in the larger and smaller class size ranges, across the range of 18 to 38 pupils. The two extremes were a class of 14 pupils, a half-sized class created because of the high numbers of pupils with special needs, and a class of 54, taught in 1959 by the longest serving head who commented:

> *It was the C stream in a school streamed A–C and I had no assistant. In those days, we used to say 'If only we could get the numbers down to 40...'*

4.2 Class Size as a Priority

In an attempt to determine what priority headteachers gave to reducing class size at key stage 1, the initial pro forma invited headteachers to select from a given list, and place in merit order, the three areas on which they would choose to spend a hypothetical five per cent additional funding. Their responses are shown in Table 4.1 below.

As can be seen, class size reduction was the main priority for half of responding headteachers, and for over two-thirds it was one of their three main priorities. In addition to the options given, some respondents added their own spending priorities. The most frequently mentioned of these were concerned with class size or adult–pupil ratios: *providing additional classroom*

support (88 respondents), *reducing class size at key stage 2* (15 respondents) and *maintaining or increasing teaching staff levels* (12 respondents).

Table 4.1: Headteachers' spending priorities

Value label	*Percentage of heads citing option as* main spending priority	one of three main spending priorities
Textbooks and teaching aids	9	51
Equipment (e.g. computers, music keyboards)	7	44
Premises maintenance or furniture	4	33
Reducing class size at KS1	51	69
Administrative/ secretarial staff	2	24
Library books	3	24
Consumable resources (e.g. paints, craft materials)	1	14
N = 953		

A multiple response question.

918 respondents selected 1, 2 or 3 spending priorities, but not all respondents 'merit ranked' their choices.

The headteachers of schools visited were asked about the importance of class size as an issue for their staff. All replied that it was an important issue and most that it was one of their top priorities. Many commented on the pressures and frustrations of trying to ensure that all pupils in a large class of infants received their entitlement — a view echoed by the classroom teachers. In so doing, they paid tribute to the efforts of teachers of larger classes. As one commented in a remark typical of the headteachers in schools where classes were larger:

> *I am still close to the classroom and I know very well that they feel they cannot do their job efficiently and children who need their attention don't always get it. They work through breaks — working hard — and still feel that they are failing.*

The headteachers also were conscious of pressure on them and on their teaching staff from parents. They reported that on first visiting the school, more often than not, a parent's first question was about class size (or else about National Curriculum assessment results). In many of the schools, there was also a constant trickle of parents asking how often the teacher listened to their child read on an individual basis, especially where they considered their child to be in a larger class. This may have been an additional factor in reinforcing teachers' strongly held view that more individual attention to pupils was needed. It must also have been a powerful influence on headteachers' views about spending priorities.

Yet whilst being sensitive to the workload and stress levels of their staff, headteachers also had to consider questions of overall funding levels and budgeting. Their approaches to managing class size in relation to these factors are explored below.

4.3 Class Size and School Organisation

The scope for organising classes in infant, first and JMI schools is obviously more limited if there is only one class per year group. Five of the six infant schools visited had two classes per year group. The sixth was a small rural school with three mixed age classes. Four of the JMI schools had one class per year group and eight had two or more. Two of the JMI schools with one class per year group had mixed age classes created to keep class sizes smaller. Another had mixed age classes because, being a small rural school, staffing levels would not permit single age classes. The opportunities and challenges presented by having pupils in mixed age classes are discussed later on in this chapter.

In the infant schools, where possible, headteachers had kept classes small. In three of the six, three classes had been created in a year group instead of two to reduce class sizes to the range of 21–26 pupils. Two of the others had all of their classes in the larger size ranges (33–38 pupils), and the third had fairly small classes of between 21 and 26 pupils. The headteachers of the JMI schools had also tried, where possible, to keep class sizes lower at key stage 1. Two had done so by creating three classes instead of two, restricting them to between 20 and 25 pupils in Years 1 and 2. In year groups where there were two classes, these tended to have 30 pupils or more. Two schools, as mentioned above, achieved smaller classes at key stage 1 by creating mixed age classes. Three of the remaining JMI schools tended to have classes in the larger size ranges and had no leeway to direct extra staff to larger year groups. The others had varied class sizes across the years with no consistent pattern of larger or smaller classes.

How the classes were organised in each of the schools visited was the result of several factors, many of them outside the direct control of the headteacher and governors. The headteachers' options were therefore often very limited.

4.4 Determining Class Sizes

As was seen in Chapter 3, it was clear from an analysis of headteachers' comments that the ability to formulate an unequivocal policy on class size and to implement it consistently is a rare situation in schools. The headteachers interviewed in schools visited mentioned a number of factors limiting their scope for determining class size.

The first limiting factor mentioned was finance. In all schools, the bulk of the annual budget is used to pay teachers' salaries. Budget levels depend, more than anything else, upon the total number of pupils at the school. The specific funding for each school is calculated using a funding formula which varies to some extent from one LEA to another, but always pays more per secondary school pupil than per primary school pupil. The discrepancy between class size in the early years and in the secondary and tertiary phases was repeatedly questioned by respondents to the headteacher pro forma. Two examples show the strength of feeling:

> *It is odd that supposedly numerate, literate beings* [referring to A-level students] *should be in small groups whereas small children, embarking on education and acquiring basic skills, should be herded together.*
>
> *...because of the hierarchical nature of education in this country it is considered unacceptable to have groups of 25–30 in university but classes of 30–40 in infants is OK...*

Respondents were not advocating a reduction of class size at key stage 1 at the expense of group sizes for older students, but rather were stressing the interdependence of all stages in the education process. To benefit fully from opportunities in secondary school and beyond, they argued, young people needed better opportunities at the stage when they were acquiring the all-important basic skills and knowledge.

Primary headteachers' choices, when it comes to class size, are constrained immediately by having to balance the need to maintain overall numbers to secure staffing levels with the wish to keep class sizes at what is thought to be a reasonable level in terms of teachers' workload and the quality of pupils' educational experience. The headteachers interviewed were acutely aware of the need to maintain overall numbers, resulting often in class sizes being larger than they and their governors would want ideally.

One strategy was to keep classes bigger and use the funding to pay for a higher level of assistant support. Deciding to keep class size relatively high also enabled heads to plan more confidently:

> *Teachers can get a lot of work done in small classes — they can get around to all of the pupils in a lesson. But 35 in a class can generate a lot of money and stability is derived from large classes. We have three adult helpers in key stage 1 — two full-time in Reception, and 0.5 for each of Years 1 and 2.*
> (infant school with two classes per year)

Others had opted to keep classes as small as possible at key stage 1, because, in their particular circumstances, they felt that the needs of the pupils made this necessary:

> *We believe that, in this school, it is most important to keep classes small in Reception and Year 1 — the work in these years is the foundation for the rest of their time in school and these children have very special needs.*
> (infant school in a socially deprived area, many of the children lacking language skills on entry)

This headteacher was typical of many who gave priority to keeping classes smaller in Reception and Year 1. There were others, however, who chose to give priority within key stage 1 to keeping classes smaller in Year 2 because this was the year of National Curriculum tests. Thus, if they could not manage to keep classes smaller throughout key stage 1, but could reduce the size of some classes, headteachers had to choose between the foundation teaching in Reception and Year 1, or assessment in Year 2.

The second constraint upon headteachers' ability to control class sizes was parental choice supported by appeals procedures. Even in situations where the standard admission number of a school had been reduced, successful appeals by parents could overrule it. The comments from the headteacher of a two-form entry JMI school describe a situation familiar to his colleagues:

> *We have seven year groups and 14 classrooms and are supposed to admit 70 pupils per year group. However, there is a high demand for places locally and successful appeals by parents can result in classes of up to 40.*
> (there were two classes of 38 and two of 37 at that time and only five of the 14 classes were of 35 pupils or fewer)

This headteacher also admitted that the local funding formula meant that the additional pupils brought an important addition to his budget.

Headteachers, although at times frustrated in their attempts to limit class sizes by successful parental appeals, were sensitive to the concerns of parents. Very often headteachers sympathised with parents' situations even when their schools were officially 'full', and their sense of obligation to their communities sometimes outweighed their desire to keep to class size limits. Thus, headteachers of village schools tended to accept children from the immediate area rather than have them travelling several miles. Church schools, too, were in a similar position: *'As a Catholic school, we cannot reasonably deny places to Catholic children'*. This was accepted by headteachers as part of the function of a church school, but at the same time they pointed out that this placed them at a disadvantage, especially where the standard admission number set for church schools was different from that for comparable other schools, for example 35 as compared with 30: *'It's not a level playing field'*.

How circumstances can lead to a school's agreed class size limit being exceeded can be seen from the following account of one school's experience.

This JMI school had an agreed limit of 33 pupils per class. There were seven year groups and seven classes. By the summer term of 1997, the Reception class had been allowed to rise to 36 pupils, when siblings of existing pupils were admitted in accordance with the school's policy, and in the belief that the situation would be short lived, as two families were expected to move from the area and enrol their children in another school. There were numerous enquiries by local parents at the end of the summer term for September places in Year 1, all of whom were told that the school was over-subscribed. In two instances, parents chose to appeal to the LEA and the LEA directed the school to offer places to these families. It was then discovered that the two families who had been intending to move had changed their plans and their children stayed on roll, bringing the number up to 37 in Year 1 in September 1997.

This became clear only very late in the year, too late to form any mixed age classes. In any case, moving children either into Year 2 or into the Reception class was not considered appropriate as experience had shown that moving a small number from their peer group at this stage could have a detrimental effect upon their progress in the long run. All the school felt it could do was to provide as much support as possible for the class teacher: 75 per cent of a classroom assistant's time and help from the headteacher during PE sessions to make them more effective and safe.

Some headteachers preferred the predictability of having all places filled at the start of the year. The headteacher of one Catholic primary school had decided to admit pupils to the limit at the start of the year, believing that it was better to fill up the classes with the children who had opted for the school initially

than having to take pupils during the year because the LEA had to find places for them. She felt that motivated parents who subscribed to the ethos of the school were far preferable to others who might not. Several headteachers of JMI schools made similar points, especially as they believed, based, they claimed, on past experience, that pupils who transferred to their schools from others midway through a key stage were likely to bring down their overall results in National Curriculum assessments, on which, like it or not, the school was judged.

Most of the headteachers of JMI schools visited made a point of stressing that, if a choice was required, they would choose to keep class sizes lower at key stage 1, believing that these years were crucial to establishing basic foundation skills and attitudes to learning. Of the teachers who responded to the questionnaire, 83 per cent felt that classes should be smaller at key stage 1 than at key stage 2, 15 per cent that they should be the same size and only one per cent that they should be larger, though we should bear in mind that they were all teachers of key stage 1 classes. Headteachers of the infant schools visited, if forced to choose, tended, for similar reasons, to use resources to keep class sizes lower in Reception and Year 1:

> *Any leeway we have in the budget goes to make Reception and Year 1 classes small — even to the disadvantage of other things such as office staff levels.*
> (multi-ethnic urban infant school)

The options available to headteachers in determining class sizes, therefore, would appear to be:

- in the balance of investment in teachers, classroom assistants and office staff and in the use of headteachers' time;
- in positively discriminating in favour of particular groups when deploying teachers and assistants and when deciding the size of classes in particular year groups (though the latter could often result in larger classes in other years).

Another, less popular, option was to create mixed age classes. This was often done as a solution to the problem of having too many pupils in a year group to form one class, but not enough teachers to form two.

In one of the JMI schools, 70 pupils in Years 1 and 2 were allocated to three classes, 25 in a Year 1 class, 23 in a Year 2 class and 22 in a mixed group of Years 1 and 2. As they could not staff four classes of 18 pupils and two classes of 35 would be too large, it was decided that three classes of 25 pupils or fewer would be the best arrangement for teacher workload and educational opportunities for the children. This also enabled the school to place members of a small but demanding group of pupils with emotional and behavioural difficulties in one moderately sized class with an experienced teacher. Some extra support was provided in the form of a classroom assistant for the mixed age class. A similar situation applied in this school at the other end of the age range. There were two mixed age classes of Years 4 and 5, one of 5 and 6 (with 23–24 pupils in each) and a Year 6 only class. Without this arrangement there would have been 40 pupils in a single Year 6 class. However, for some of the time, the 40 Year 6 pupils were taught together, for example, when being prepared for the key stage 2 National Curriculum assessments. This was thought to be the best solution to the problem and worked well in the opinion of the headteacher, as only three of the 40 pupils in Year 6 were not achieving what was reckoned to be their potential level. However, there were problems, such as trying to give the kind of status normally associated with being in Year 6 to the pupils of that age in the Year 5/6 class. It should be noted here that the flexibility in determining class sizes, which enabled this headteacher to make these arrangements could be curtailed, in the case of key stage 1 classes, by the new legislation on class size. Reduced class sizes may, therefore, be achieved at the expense of some freedom to plan effectively.

In another school, which had only one class in each year, an unusual combination of years was created by putting six Year 2 pupils in the Year 3 class. Cross-key stage groups of this kind were rare, as the data reported in Chapter 3 show. The Year 2 class in question had contained 36 pupils throughout Reception and Year 1. It was felt that, in spite of the considerable efforts made by teachers, the quality of provision for pupils had been impaired and this could not continue in Year 2, both for the sake of the pupils' education and of the teacher's workload. The choice was either to keep some pupils in a Year 1 class for a year, or to move some pupils to the Year 3 class. The first option, in the opinion of the class teacher and the headteacher, was preferable in that it would have benefited a small number of pupils who were less mature and had made less academic progress than the class in general. However, it was known that their parents would not accept such an arrangement. In fact, some parents were blaming their children's lack of progress on being in a larger class. Therefore, in order to reduce the size of the Year 2 class, six pupils were moved at the end of Year 1 to a Year 3 class. The size of year groups fluctuated in this school, largely due to intake being determined by the birth rate: it was a local school which had served an established community for several decades. The Year 3 class happened to be smaller that year and could accommodate the additional six pupils. The moves resulted in a Year 2 class of 30 pupils and a Year 3 of 28, made up of 22 Year 3 and six Year 2 pupils. The six Year 2 pupils who were chosen were not academically the most able, but were considered mature and capable enough to cope with the more formal structure of Year 3.

In this school, the indications at the end of the first term were that this arrangement had been a success for the six pupils concerned. During the spring term, a support teacher was employed to help the Year 2 teacher prepare all of the children in Year 2 for the National Curriculum assessments, concentrating her efforts on the six low achievers.

In each of the cases above, pupils were being taught in mixed age classes largely in response to circumstances. In another school, all pupils were taught in mixed age classes because, being a very small village school with 85 pupils on roll, it could not afford to staff all seven year groups separately. There were, in fact, four classes, a Reception/Year 1 class of 17 pupils, a Year 1/Year 2 class of 17 pupils, a Year 3/Year 4 class of 27 pupils and a Year 5/Year 6 class of 24 pupils. The school had 3.5 (FTE) teachers and, in order to maintain the four classes, the headteacher accepted only ten per cent non-contact time and undertook some of the school administration to save money, thereby financing some classroom support for the two larger key stage 2 classes. In this small school situation, the mixed age classes were thought to work well.

Generally speaking, headteachers and class teachers said that they would prefer not to have pupils in mixed age classes, especially at key stage 1, where the wide spread of ability and maturity made mixed age groups undesirable. Some had strong feelings about this issue, especially those working in schools where many of the pupils had learning difficulties, where there was a high proportion of pupils for whom English was not the first language, or where many of the pupils came to school ill-prepared for the learning situation, with poor social skills and limited spoken language ability. Others said that for pupils at key stage 1 especially, mixed age classes limited the range of activities which could be undertaken and that for development of core literacy and numeracy skills, pupils would have to be taught in ability groups within the mixed age class.

However, although most of the respondents reported that they would prefer not to have mixed age classes, for a few it did not appear to be an important issue. They felt there was little difference between mixed age classes and single age classes in which there was also a wide range of ability. The headteacher of a small rural JMI school which had four classes, each mixed age, ranging in size from 15–25 pupils, was plainly in favour of mixed age classes, giving as reasons to justify this viewpoint, that:

- the ability range did not vary much more than in single age classes;
- mixed age classes gave greater flexibility in fixing numbers;
- teachers knew children better if they kept them for two years;
- children benefited from having prolonged contact with the same adult mentor;
- there was no effect on delivery of the National Curriculum or on assessment.

However, she too said that she would restore year group teaching for literacy and numeracy sessions. The importance of having the flexibility to plan different group sizes for the implementation of initiatives such as the literacy hour and the numeracy hour was mentioned also by some of the headteachers responding to the questionnaire survey.

4.5 The Implications of Limiting Class Size to 30 Pupils at Key Stage 1

The Government's pledge that no five-, six- or seven-year-old would be taught in a class of more than 30 by the year 2002 was welcomed by the headteachers interviewed, provided it was not achieved at the expense of other factors which contributed positively to the children's education. This figure was seen by them as a realistic maximum but their ideal was somewhere between the low 20s and 30. Regarding the Government's proposals, the details of which had not been announced at the time of interviewing, headteachers had several concerns, largely to do with the possible cost to the schools of class size reduction, both in financial terms and with respect to pupil grouping, accommodation and related resources. These concerns have subsequently become the subject of much comment in the educational press.

As was discussed earlier in this chapter, schools' funding is linked directly to the number of pupils on roll. If reduced class sizes meant fewer pupils overall in a school, there would be a significant loss of funding unless the formula was adjusted to offset this. One headteacher, voicing the concerns of many, put it quite forcibly when he wrote:

> *It would be inappropriate to reduce class size without making a financial increase in the budget to compensate. If all our classes were reduced to 30, we would lose 18 pupils or over £20,000. This would mean reduced ancillary assistance. We would prefer the money.*

If overall pupil numbers were not reduced, in some schools, extra classes would have to be created. This would either involve increasing the number of classes by year group or creating mixed age classes. The former solution could be expensive in staffing and would require additional accommodation. The latter was considered by most to be educationally undesirable. A report commissioned by the Local Government Association (Coopers and Lybrand, 1998) suggests that increased mixed age teaching will be an inevitable consequence of reducing class sizes and warns of the opposition of some governors, headteachers and parents. It would also

involve expenditure on additional teachers. Headteachers of larger JMI schools were concerned that employing more teachers at key stage 1 to create smaller classes could mean that they had reduced flexibility in staffing and would have to create larger classes at key stage 2. However, the recently published draft regulations and guidance (GB. DfEE, 1998a and b) suggest that such arrangements would be unacceptable:

> *There will be no statutory limits on key stage 2 classes. However, plans will not be approved that show reductions in infant class sizes being achieved at the cost of increases in KS2 class sizes arising from a transfer of funding from junior to infant classes.*

Many of the schools visited had no leeway with accommodation and therefore could not house extra classes at all without additional buildings, permanent or temporary. Others, often after years of planning and fund raising, had achieved a situation where each class had adequate teaching accommodation and they had also created space for necessary specialist activities such as IT, for support and enrichment activities such as music practice, for TV viewing, for a parents' room, or a quiet reading room. They expressed fears that having to accommodate an extra class or more could mean the loss of these hard-won benefits.

The greatest fear expressed by both headteachers and teachers was that the financial cost of limiting class sizes to 30 pupils would mean a marked decrease in the hours of classroom support which they could afford. These trained support staff were viewed as the most important resource in the school after the teachers. A number of interviewees went as far as to say that they would rather have slightly more than 30 pupils in a class with several hours of support from a good classroom assistant, than 30 pupils or fewer with no assistant time. This is further discussed in Chapter 5.

An earlier section of this chapter explained how headteachers were largely unable to implement a class size policy which restricted pupil numbers to a set limit because of several factors: the link between funding and pupil numbers, their sense of obligation to children in their community or who were members of their faith, the parental appeals procedure and limits to their teaching accommodation. The fulfilment of the Government pledge on class size, it appears, will place headteachers in the difficult position of having no choice but to operate a set limit, yet with all of these factors still in place.

At the time of writing, the detail of any proposed legislation and how it will address these issues is still emerging. Draft DfEE regulations and guidance to LEAs on class size reductions,

discussed in Chapter 1, partly explain how these factors will be addressed, but the detail of how this will work in practice remains to be seen. At present these draft regulations would appear to have important implications for headteachers' freedom of action and for resourcing and educational provision at LEA level.

Although welcoming in principle the Government's pledge to limit class sizes at key stage 1 to 30 pupils or fewer, headteachers had concerns about how funding, staffing, pupil grouping, accommodation and resources might be affected. As the details of how the Government will implement this pledge emerge, heads may have further concerns about their capacity to manage class size in their own schools being further eroded.

4.6 Summary

In the current context, although headteachers see reducing class size as a priority, they are limited in their scope for managing class size by the funding arrangements, by parental demands supported by appeals procedures, by legislation and by LEA admission policies. They can have some impact on the size of classes by adjusting how they employ their available funds in employing teachers, classroom assistants and administration staff, by how they decide to employ their own time and by how they organise pupils in single and mixed age classes. Headteachers of JMI schools can also decide on the balance of resourcing between key stages 1 and 2, for example opting for more generous staffing at key stage 1 to create more and smaller classes. The extent of how much adjustment can be made in these areas is of course limited, and the result is inevitably some form of compromise arrived at within the confines of the available budget, the particular needs of the children at that school, and the physical capacity of the buildings.

As far as the constraints identified above will allow them to, headteachers have to plan how many pupils should be in particular classes or teaching groups. They will share with classroom teachers a desire to create the most favourable conditions for teaching and learning, while also considering the needs of individual students, the nature of available accommodation, teachers' workloads and teacher stress.

5. CLASS SIZE AND TEACHING AND LEARNING

5.1 Introduction

This chapter examines the impact of class size at classroom level by considering the views of teachers and their experiences with larger and smaller classes. The 756 responses to the teacher questionnaire survey and the data collected in the schools visited provide most of the evidence for this chapter. Classroom teachers in these schools played a central part in the research by keeping records for most of the autumn term of how they considered class size had influenced any aspect of their work as teachers, and of specific events which were significant in this respect. These teachers' classes fell into two groups, a smaller class group of between 17 and 26 pupils and a larger class group of between 30 and 38 pupils. The teachers had an average of 14 years teaching experience and all had taught classes in both the smaller and the larger ranges of class size.

The influence of class size cannot be viewed in isolation but has to be considered alongside that of the other conditions under which teachers operate, such as the varied characteristics and needs of the children, the levels of adult support available, the quality and level of resources and the physical space available. There is great variation in children's ability, maturity and preparedness for learning when they first enter school. The key tasks of the teacher in the early years of instilling the basics of literacy and numeracy and, equally important, of socialising children into the school community and equipping them with the skills of learning, must take account of the different levels of maturity and development of the children on entry to school. The children in a class may vary greatly in this respect. For example, some may enter school having already embarked upon the rudiments of reading, while at the other extreme, some will have developed only limited ability in spoken language. An equally crucial factor is the variation in the time of starting school. By the time they reach the end of key stage 1, pupils, often in the same Year 2 class, may have experienced up to nine terms of school or as few as six. Thus, matching learning opportunities to children's individual needs is of considerable importance. The teachers interviewed reported that larger class sizes restricted their ability to differentiate effectively, and a recent study of differentiation in primary and secondary schools reports: '*For primaries, class size was (after time) the most significant constraint on effective differentiation*' (Weston *et al.*, forthcoming).

The requirement to cover the National Curriculum content and carry out National Curriculum assessments places great demands upon teachers, especially in terms of making optimum use of the time available. Effectively meeting the needs of all of their pupils, and ensuring their curriculum entitlement, were a concern for all of the teachers interviewed, especially for those with larger classes. Meeting these individual needs and covering the National Curriculum in the time available must, at times, present teachers with choices over priorities — giving individual time to pupils can make considerable inroads into teaching time. The number of pupils in a class is likely to be a factor in this process.

Both of the above factors, the need to differentiate and the need to ensure pupils cover the curriculum, relate closely to the feature of classroom practice which was identified more than any other as related to class size — the amount of individual attention and individual teaching which pupils receive from the teacher. Teachers attach great importance to opportunities for individual attention. Put simply, the amount of time which a teacher can devote to each pupil is to a large extent determined by the number of pupils in the class. This time factor is likely to have implications for monitoring individual progress, the identification of individual needs, the matching of learning opportunities to those individual needs, and the duration and frequency of teacher–pupil interactions.

Teachers are often supported in these tasks by the presence in the classroom of a classroom assistant (CA). Their use has increased in recent years. According to official statistics (DFE, 1994) quoted by Moyles and Suschitzky (1997a), the numbers of educational support staff in primary schools rose from 13,641 in 1991 to 21,914 in 1994, an increase of 63 per cent. While this will obviously reduce the pupil–adult ratio, to what extent will it compensate for the effects of larger class size? While the contribution of CAs was generally welcomed by headteachers and teachers, the quality of their contribution appears to be governed by factors such as their availability, their skills and the level of training given to them (and to teachers in how best to employ them).

If class size has consequences for the amount of a teacher's time each pupil is liable to receive, it must equally have consequences for the amount of physical space available for each pupil. Unless a larger room can be allocated as a class increases in size, the amount of space per pupil will decrease. This must eventually restrict the ways in which the teaching space can be organised. It would seem likely that this would in turn limit the number and/or the nature of teaching and learning activities which could be undertaken, as some require more space than

others. Research suggests also that this consequence of increasing class size, less physical space per pupil, is also associated with increased pupil misbehaviour (Bennett, 1994) and the issue of classroom control.

In a more general sense, control is a central issue when considering the impact of class size — teachers' control of their workload, of the organisation and delivery of the curriculum, and of pupil behaviour. To this should be added the observation that these combined pressures of time, space and the difficulty of remaining in control are very likely to increase teacher stress and diminish their effectiveness.

Thus, there is a cluster of interrelated factors surrounding the central issue of class size which needs to be included when considering the relationship between class size and teaching and learning. In considering the impact of class size in the context of these other factors, this chapter considers the following questions:

- What can we learn about the practice of teachers and the quality of learning experienced by pupils when conditions vary because of class size?
- What do teachers believe about the constraints and opportunities associated with differing class sizes?
- What can we infer about the impact of different sets of conditions on teachers' effectiveness and on pupils' educational attainment?

5.2 Teachers' Views of the Importance of Class Size

The questionnaire invited teachers to comment on the importance of class size relative to other influences on their work. This was an open-ended question, inviting written comments. All but 150 of the 756 respondents made some response to this question. Responses tended to be expressions of their views on the benefits of smaller classes and the drawbacks of larger classes. Benefits of smaller classes, identified in this way, were: being able to give more individual attention to pupils (221 responses); aiding good discipline (123); making teaching more effective (112); making resources more accessible (108); and better opportunities for pupils to acquire basic skills (106). Their comments on the drawbacks of having larger classes concerned similar aspects of their work: restricting the amount of individual attention received by pupils (103 responses); threatening the standard or quality of teaching and learning (93) and increasing

the demands on teachers' time (68). It is interesting to note that the aspects which teachers identified most often were all concerned with pupil–teacher interaction and pupil learning. This link between class size and teaching and learning is also apparent in teachers' responses when asked to indicate whether having a smaller class (25 pupils or fewer) would have a beneficial effect on key aspects of their work, which were listed in the question. They could indicate either *a very beneficial effect*, *some beneficial effect*, or *no beneficial effect*. For most aspects, the great majority of teachers felt that smaller classes had at least some beneficial effect, and for many aspects, the great majority felt that this effect was very beneficial. Once again, aspects directly concerned with teaching and learning were identified by the greatest number. That teachers should believe that smaller classes nearly always have a beneficial effect is hardly surprising; their views on which particular aspects of teaching and learning had a very beneficial effect are, however, worthy of consideration. Between 80 and 96 per cent felt smaller class size had a very beneficial effect on giving children individual attention, helping children who had special needs, managing pupil behaviour, using IT equipment and other equipment for practical work, organising the teaching space in different ways and working with children in small groups. In each case, almost all of the remaining respondents indicated that these aspects had some beneficial effect. Interestingly, the other aspects which over 80 per cent of respondents identified as benefiting greatly from smaller class size were all concerned with teacher well-being: lowering teacher stress levels; improving teacher morale and job satisfaction.

Activities which supported classroom teaching were also seen to benefit from having a smaller class: developing pupils' personal and social skills, matching tasks to children and finding time for reflection, planning and preparation were seen by between 60 and 77 per cent of respondents as benefiting greatly and by most of the rest as benefiting in some way. Coverage of the curriculum was thought to benefit greatly from smaller class size by 61 per cent of respondents while 28 per cent thought it benefited to some extent. As can be seen in later sections of this chapter, teachers interviewed felt that they covered the National Curriculum adequately irrespective of class size, but class size influenced the way in which that coverage could be achieved. It is interesting to note that not quite half of the respondents thought that smaller class size had a very beneficial effect on whole-class teaching, while most of the rest thought it had some effect. Teachers of smaller classes interviewed after completing logs of their term's experiences felt that although they were tending to employ more whole-class teaching with infant classes of all sizes, with a smaller class they could make it a more varied, interactive experience.

These responses would appear to indicate that the main benefit to teachers of smaller class size is an enhanced ability to support individual children and assess their work, to organise practical activities and to manage pupil behaviour. They also saw class size as a powerful influence on teacher morale and stress levels. All of these would be strongly associated in the minds of teachers with more effective teaching and learning.

5.3 Class Size, Planning and Preparation

Nearly two-thirds of the teachers surveyed by questionnaire felt that having a smaller class would greatly benefit their ability to plan and prepare, and the teachers interviewed considered class size as something which had to be considered carefully at the planning stage. Several said that they only fully appreciated this when they had been assigned a class which was much smaller or larger than that which they were accustomed to, and found that what they had planned had to be substantially adjusted once they tried to implement it. There were also indications, from interviews and teacher logs, that teachers who were assigned to smaller classes after being assigned to larger classes for a number of years tended to continue for some time at least to teach in the same way, before discovering what could be achieved with a smaller class. Although this would appear to indicate a need for in-service training, there was little evidence of such training being available.

The experience of changing from having a smaller class to a larger class also required adjustments. One teacher, who had a class of 36 pupils after having 30 or fewer, discovered that a given activity took much longer and some activities which had worked with 28 pupils were just not practical with 36. The practical implications — what could realistically be planned — were described by a teacher in another school, who also had 36 pupils:

> *Some things you just can't do. For a start, there is more time needed for settling and thus less time for teaching and learning. Some activities are rejected — for example, some of the cooking because of lack of adult supervision. You cannot ask them to work together and stay quiet, so having some groups active, and others thinking, only works with a relatively small class, of about 25.*

Many interviewees agreed that detailed planning was not always possible at the start of a year if the teacher had no knowledge of the pupils, but they also agreed that the size of the class alone could influence what planning they did.

Interviewees' comments about planning the programme for larger and smaller groups can be summarised thus:

***With a larger class*:**

- briefing the class and any support staff will take longer;
- groups within the class will tend to be larger, which might influence the amount of practical work it is possible to do;
- some activities may be unrealistic to attempt because of safety implications;
- more adult supervision may be required for some activities;
- coverage of topics will take longer;
- physical space may be a limiting factor.

***With a smaller class*:**

- the pace may be faster and more activities can be included in a given time;
- more practical work may be undertaken.

The conclusions of teachers were that the teacher may therefore plan a less ambitious programme and that fewer restrictions on the available time and space can mean that more imaginative approaches can be included.

Preparing materials also took longer with a larger class, especially where individual resources were needed. Classroom assistants and other adult helpers were a great asset in these circumstances. Physical space relative to class size often influenced the planning of activities. With a larger class, it was often difficult to vary the layout of the classroom for different activities, too much furniture in a confined space reducing the options. This sometimes meant that pupils had to do science practical activities in small groups, either in a screened-off area of the classroom or outside the room altogether, because there was insufficient room for several groups to work at once. Planning had to recognise these practical aspects, sometimes before any other considerations.

5.4 Class Size and Managing Teaching and Learning

Headteachers and teachers who were interviewed, and those who responded to the questionnaire, did not identify any teaching approaches which were specifically used for larger or for smaller classes. This accords with the findings of a study by Galton *et al.* (1996) in which they report '*...individual teachers did not change their styles sufficiently: rather their own styles seemed to persist across large and small class settings*'. Teachers in survey responses and interviews also reported that teaching approaches with classes of varying sizes had not featured in their initial teaching training or in-service courses. However, the teachers interviewed believed that the range and variety of approaches which they could employ were influenced by the conditions brought about by larger or smaller class sizes. While most headteachers felt that their staff tried to maintain the use of a variety of approaches it was easier to do so with smaller than with larger classes. All sources of evidence in this research pointed to a number of constraints placed upon the practice of teachers by having larger classes and a number of opportunities presented by having smaller classes.

First of all, some of the constraints. In the schools visited, teachers who had larger classes, of 34 pupils or more, all said that the demands of meeting the needs of so many pupils in a limited time meant that they had to concentrate their efforts on class control, on teaching the National Curriculum content and on related assessment. More time was spent with larger classes than with smaller on organising and managing class activity and, depending on the nature of the class, on managing pupil behaviour. It took longer to settle a larger class down at the start of a lesson, to brief the children on what they were going to do and to check that they were all engaged in the allotted activities. Teachers claimed that larger classes tended to require more teacher discipline, even when the pupils were not particularly given to disruptive behaviour, because of competition for the teacher's attention and the pressures on pupils of closer physical proximity to one another. The need for class control sometimes meant that a more structured approach was adopted with more directed work. Headteachers felt that although larger classes did not usually result in a more formal approach overall, 'low key' activities might be chosen more often as they needed less supervision and they made it easier to get a large group down to work.

The main effects on classroom practice of having larger classes which were identified by the teachers interviewed and in questionnaire responses were:

- pupils receiving less of the teacher's time individually;
- a more restricted range of teaching and learning activities;

- whole-class teaching sometimes employed for reasons of control and keeping pupils on task;
- restricted opportunities for pupil assessment and individual feedback of that assessment;
- teachers having to work extremely hard to offset the constraints of having a larger class.

There were also benefits identified from having smaller classes. The headteacher and the teachers interviewed were unanimous in their view that smaller classes were of benefit to teachers and pupils, though some also identified some drawbacks to very small classes. The benefits identified by the headteachers and teachers were in most cases the converse of the constraints of having larger classes:

- teachers being able to devote more time to pupils as individuals;
- hus providing more scope for individual pupil tasks, individual pupil support;

and

- better quality assessment and feedback to pupils;
- more opportunities to adopt a less formal, more interactive approach;
- the opportunity for more active learning, especially practical activities;
- more reasonable teacher workloads.

However, there was a belief, shared by a few of the headteachers interviewed, that there were drawbacks to having children in what they considered to be very small classes. What they meant by this varied somewhat, but they seemed to agree that classes of much less than 20 pupils could have certain disadvantages of which teachers need to be aware. These were as follows.

- In such small groups, social interaction could suffer and pupils might not develop the skills of sharing and working together.
- Pupils could become too reliant on, and demanding of, adult support since it is more readily available, possibly restricting the opportunity to learn to work independently.
- There could be insufficient direct teaching because self-directed activities become so manageable. Pupil tasks, although valuable, do not always provide for rapid enough progress in covering the curriculum.
- Conversely, the teacher might be too dogmatic, and creativity could be stifled.

- There could be reduced opportunities for large group activities — such as team games and choral singing, which serve to socialise children — though this could be remedied by combining classes.

While interviewees were convinced of the benefits of smaller classes and the constraints of having larger classes, and referred to their experiences to support this belief, the message was not one of pupils in larger classes being at a great disadvantage compared with their peers in smaller classes. The headteachers believed that, thanks to the efforts of their teachers, pupils were not denied their educational entitlement in larger classes. However, they did concede that there was inevitably some loss in terms of the quality of classroom interaction, the range of learning experiences and in the amount of individual attention given to each pupil, as a more detailed examination of the data in the rest of this chapter will show.

5.4.1 Teaching and learning activities

Teachers of larger classes felt that their pupils received the basic content of the National Curriculum but that the ways in which they experienced it were more restricted than for smaller classes. All of the headteachers interviewed felt that the teachers of larger classes worked very hard to ensure that their pupils received their entitlement.

Evidence from teachers strongly suggested that it was in practical activities such as those in science, technology and art that pupils in larger classes tended to have more limited experiences. Teachers reported that, for larger classes, more materials had to be prepared, setting up the classroom took longer, the activities inevitably took longer to complete and the close monitoring which practical tasks required was more difficult to do. Restricted physical space also was a consideration. The result of these factors was that the pupils had restricted experience of 'hands-on' tasks or that the tasks had to be spread over a longer time period, meaning that discussion and follow-up work were either postponed or were undertaken in small groups and not as a whole-class activity, which would have been preferred. Two extracts from a teacher log illustrate some of the challenges involved:

A science activity was undertaken with a whole Year 2 class of 38. All pupils watched an experiment demonstrated by the teacher:

> *I would like to have done this a group at a time but it would have taken too long. All 38 pupils recorded what we had done in their own words — it was not possible to keep a check on all of them or assist all individuals who required help during this exercise.*

Following these difficulties the teacher decided to change the way in which science tasks were done:

> *The class was divided into two groups. One group worked on art activities with a non-teaching assistant while the other group worked with me on a science task. This meant that I repeated a whole discussion as well as the activity. I felt that repeating myself in this way was not the best use of time and the class missed out from not receiving teacher input for art.*

In discussion, this teacher added that, although it had the disadvantage of fragmenting the activity, teaching half the class at a time meant that she was able to get around all of the children and ensure that they had understood the work. She also pointed out that her choice of how to approach an experiment was not determined by the size of the class alone. A demonstration by the teacher, with pupil input, might be preferred, as it could be more effective than individual or group attempts which might not always succeed or demonstrate the concept well. With certain activities, she ensured that all children had 'hands-on' experience, for example, wiring a battery-powered lighting circuit or cutting shapes.

In this school, and in others visited, larger class size and limited physical space meant that corridors were sometimes used for investigations, especially if the teacher wanted each group to approach the task afresh, not influenced by watching others. One teacher who had taught a class of 36 pupils the previous year and had 26 pupils in the same teaching space during the NFER research project, contrasted the two experiences:

> *Investigative work in science and mathematics did not work in the larger class with pupils in independent groups. Each group heard and saw what the others were doing. One group at a time worked in a screened-off area, which was very time-consuming. This year, three groups can work at a time. As there is less pressure, they can investigate properly and enjoyment has come back. This class is no more able than last year's but more progress is being made.*

Other teachers also reported that having a larger class could result in fragmenting the activities. As it is more difficult to keep pupils on task in a larger group, it is harder to achieve uninterrupted and focused teacher input and to establish constructive relationships. One teacher with 37 pupils described herself during one session as *'flitting from one child to another instead of giving any of the children quality teaching'*.

Teachers of smaller classes compared the progress being made by their current pupils with that made by pupils in larger classes which they had taught in the recent past. They reported that, overall, those in the smaller classes appeared to be making better progress, even when allowing for differences in the types

of children in the classes. They noted, for example, that many pupils were embarking on independent writing earlier, that practical tasks, such as making puppets, which had taken a larger class half a term to complete, had been successfully completed in much less time by all pupils and that children's ability to coexist in the class and to talk together about their work was more advanced. The teachers attributed this to their being able to provide better individual support to the smaller class, enabling all pupils to contribute to discussion and to having the physical space, the time and the positive class atmosphere to employ more informal interactive methods. None of the approaches was specifically designed for teaching a smaller class. The important point was that the range of teaching methods was not as restricted as with a larger class and they were more able to explore ideas further and occasionally extend the curriculum beyond what was prescribed.

5.4.2 Pupil assessment

While there is a substantial element of what could be termed 'marking' of pupils' work at key stage 1, much of the ongoing assessment of individual pupils' skills has to be undertaken individually, either through specific assessment activities, such as hearing each child read, or by observing the child engaged in tasks or interacting with others. An essential feature of assessment is the feedback from the teacher to the learner and, as key stage 1 pupils can, at best, read only very basic comments written on their work, this can only be achieved orally, usually by the teacher with the child on a one-to-one basis. Therefore, assessment is a time-consuming activity. Teachers of larger classes reported that it was usually difficult to find the time to talk to all of the pupils about their work. As with hearing children read, the pressures on class time often meant that teachers, especially of the larger classes, undertook some of the assessment work with children at breaks and lunchtimes. It was also reported by teachers of larger classes that they were unable to assess each child on as many different occasions, and across a wider range of topics and activities, as they would have liked.

Year 2 teachers reported on undertaking National Curriculum assessments with larger classes. Arranging the classroom in order to spread pupils out for the written tasks often proved difficult and the reading assessments were very time-consuming. The workload of marking also increased inevitably with larger classes.

Teachers of smaller classes greatly valued having the time to discuss progress with each child and especially the opportunity to give praise and recognition, which was not always possible

with larger classes when the time would often have to be devoted to pupils who were experiencing difficulties. These teachers also reported that they were able to assess individual progress over a wider range of activities and on several occasions, because they were not in a constant hurry trying to keep a large class on task or to give support to several individuals and groups. Teachers of larger classes said that assessment had to be more formal and based on fewer, more specific tasks. It was sometimes retrospective, while with a smaller class it could be done at the time of doing the task. Teachers of the smaller classes recorded several occasions when they found they were able to assess pupil skills which were not the primary focus of the activity, for example, assessing language skills during a maths or science investigation. They added that this could only rarely, if ever, be achieved with a larger class. Some teachers of smaller classes also reported that they were able to set individual targets for their pupils and had the time to explain these to parents at parents' evenings.

5.4.3 The role of classroom assistants

Recent research carried out by Moyles and Suschitzy (1997a) suggested that financial constraints on school spending had led to the employment of more lower-paid classroom assistants (CAs), sometimes in lieu of teachers: '*Heads freely admitted to choosing to employ full-time CAs where the budget would otherwise have allowed the employment of only a part-time qualified teacher.*' They estimated that '*on average, there is now one full-time equivalent non-teaching assistant to every eight teachers across primary schools in England and Wales*'. The perceived importance of support staff has been further evidenced by the DfEE in establishing pilot courses in 1996 for Specialist Teacher Assistants (STAs). These courses were intended to help trainees to provide support for teachers particularly with basic skills teaching and learning at key stage 1.

All of the teachers involved in the third phase of the NFER research received regular support from paid CAs or from unpaid volunteers, usually parents of pupils or ex-pupils. Of the teachers surveyed by questionnaire, 86 per cent had some paid classroom assistance assigned to their classes at the time of the survey and 79 per cent had unpaid assistance. Reflecting broad trends in the national survey, the schools visited tended often to direct most support to the larger classes. However, heads and teachers agreed that CAs were not in schools to offset larger class size, but to improve the quality of the educational experience of all pupils, irrespective of the size of the class they were in. Many reported that pupils at key stage 1 benefited from a good CA, not only in terms of their progress in the basic skills,

but also in terms of the diversity of their experience and their personal and social development. It would appear that the Government's view is that CAs are not to be seen as there to offset larger class size and that class size reduction is not to be achieved at the expense of CA time. The draft guidance for LEAs (GB. DfEE, 1998a) states:

> *The presence of support staff will not be a factor in whether a class complies with class size limits; only the number of teachers will be a factor. This should not affect the deployment of support staff in infant classes, as the Department would expect similar numbers of support staff to be used to assist teachers.*

Headteachers believed that good teachers could teach classes of almost any size, even though larger classes were far from ideal. Most added, however, that with a larger class, or one containing many disruptive pupils or pupils with special needs, this would only be possible with a CA: *'A teacher and a good classroom assistant can have almost all children reading and using numbers well by the end of key stage 1 in a large class'* was one view to which some, but not all, of the heads subscribed. Many did not wholeheartedly agree with the view that classroom assistance could totally offset the disadvantage of much larger class size or fully compensate for the teacher being so stretched. Pupils at key stage 1, it was felt, needed the stability of the relationship with the class teacher, and to make this possible that teacher had to be available to them.

Teachers interviewed felt that CAs were a necessary resource for them at key stage 1, whether they had a larger or smaller class. Opinions among them varied, however, as to whether they preferred to have a smaller class with no CA time or a larger class with CA time. With many, it came down to *'it depends on the class and the assistant'*. As part of the questionnaire survey, teachers were asked to express a preference either for a larger class (34 pupils) and a paid CA or for a smaller class (27 pupils) with no CA. Perhaps not surprisingly, opinion was evenly divided, with 43 per cent opting for 34 with CA time, 42 per cent for 27 pupils with no CA time and 13 per cent either saying that it depended on the CA and the class or that neither choice was acceptable.

The most common reasons given for preferring a class of 34 pupils with a paid CA were that the CA reduced the pressure on the teacher and gave the teacher greater flexibility, a comment made by 56 per cent of those who expressed that preference. The second most common reason for this choice, given by 43 per cent, was the fairly obvious one that it increased the pupil–adult ratio. Twenty-eight per cent of those who opted for 27

pupils with no CA argued that the pupils were ultimately the responsibility of the teacher, not the CA, and therefore the smaller the class the better chance the teacher had of being able to fulfil that responsibility well. The most common other reasons for their choice given by those who preferred to have 27 pupils and no CA time were that teaching was less effective in larger groups even with an assistant (21 per cent), that it was easier to give support to individual pupils in small groups (19 per cent) and that it was easier to manage the teaching space (18 per cent). That there could be valid arguments for both options is shown by the second of these reasons, that it was easier to give support to individual pupils, also having been given as a reason for having the larger class with a paid CA by 25 per cent of respondents who chose that option.

The trend in the schools visited was to integrate CAs into the work of the schools and the teachers. Teachers interviewed said as far as possible they took care to brief their CAs fully on their programmes of work and the tasks which the children were undertaking, even though this took up quite a lot of time, especially with a large class with a broad ability range. The Moyles and Suschitzky study (1997a and b) suggests that such exchanges between teachers and CAs often take place during snatched brief moments of time, '*which does not result in clear learning intentions being conveyed by teachers to CAs with understandable consequences for the quality of their interactions with children*'.

In schools visited by NFER, CAs with sufficient training and expertise were given a direct teaching role, sometimes working with up to half of a class, for example, on art activities while the teacher took the rest of the class for science or maths investigations, or assisted the teacher to support groups engaged in differentiated tasks. This was a minority of the CAs overall, but most paid assistants, irrespective of their training levels, were used not only for maintenance activities, such as setting up resources, making materials, and clearing up, but also were involved in working directly with the children, if only to hear them read aloud. The teachers of the larger classes reported that the only way in which all children could be heard read in this way at least three times a week was using CAs and/or voluntary help.

At the same time, these teachers acknowledged that issues of class size and classroom support had to be considered in relation to the quality of that support. A number of the teachers interviewed, while affirming the vital role played by CAs in such tasks as hearing pupils read, recognised that they often had limitations which meant that they should not be considered as

substitute teachers. For example, some teachers reported that CAs were often more concerned with the outcome rather than the learning process. At a very simple level, one interviewee illustrated this by saying: '*They give them the answer too soon and don't wait long enough for them to work it out themselves.*' There was also a greater emphasis by CAs on '*getting it right*'. This was also a finding of Galton (1996): '*Teachers were observed using more strategies which encouraged children to think, to reflect upon their learning, to become independent and solve problems. Classroom assistants tended to work from a basis of emphasis on the task to be completed rather than conceptual knowledge.*' While the quality of support provided by CAs might be improved through more and better training of CAs, a remedy suggested by some of the teachers, it should also be pointed out that teachers also need to be trained on how to work effectively with their CAs and to make the best use of their abilities, a remedy not suggested by any of the teachers.

Teachers of smaller classes who had paid CAs reported that CAs were invaluable in enabling them to undertake much more individualised assessments, provide planned individual support for less able pupils and provide extension activities for the most able — thus improving the overall quality of the pupils' experiences. Some respondents felt too that, at its best, the teacher and the CA working together was a very creative partnership: '*We generate ideas together and find new and better ways of tackling the work.*'

Headteachers agreed with the teachers as to the value of CAs. While some saw their role as in part compensating for larger class sizes, many, however, did not agree with the view that classroom assistance could totally offset the disadvantages of much larger class size, nor did they see this as the main reason for having CAs. Many felt that even in a relatively small class, children benefit enormously from a good CA, not only in terms of their progress in the core skills, but also in terms of the diversity of their learning experiences and in their personal and social development.

In most cases, the headteachers of the schools visited provided higher levels of paid classroom assistance for teachers of larger classes and channelled unpaid assistance in their direction also. Heads themselves often devoted time each week to helping with larger classes, either taking small groups out of the class for targeted support or taking the rest of the class when the teacher did so. Such support often went to the larger classes rather than the smaller ones, even though they were not necessarily very small. Many heads believed that the role of CAs should not be to make up for overly large classes but should be to improve the

quality of teaching and learning for all. The wide range of ability and maturity among pupils at key stage 1 was for them an argument for having some CA time for all key stage 1 teachers.

Finally, heads made it clear that even though CAs were a vital resource, they could not fully compensate for the teacher of a larger class being over-stretched. At key stage 1 especially, the children needed the stability of the relationship with the class teacher and to make this possible the teacher had to be available to them, a benefit inevitably reduced in a larger class. The overall impression, however, was that in the opinion of teachers and headteachers, the key tasks of establishing basic literacy, the routines of school working and the foundation skills of learning within such a diverse group as a key stage 1 class required the support of another adult in addition to the teacher in all but the very smallest of classes.

5.5 Class Size and Managing Pupils

Many of the findings reported in this section confirm the findings of a study by Galton *et al.* (1996) on the effects of class size on teachers' classroom behaviour. The authors reported on observing a group of 'expert teachers' teaching larger and smaller classes. Only a small number of teachers were observed, and the authors acknowledged that the differences noted in the results did not reach statistical significance, but this research suggested that when such teachers, who have been coping with large classes, are given the opportunity to teach considerably smaller ones, there is:

- more time spent on talk about the task;
- more sustained interaction;
- more higher order questioning of students;
- more feedback on work;
- less time spent on routine supervision;
- less time spent housekeeping (sorting out papers, books, etc.).

The views of the teachers and headteachers involved in the NFER research were largely consistent with these findings.

When asked to identify key areas of difference between teaching larger and smaller classes, survey responses from 86 per cent of the teachers indicated that larger class size imposed restrictions

of some kind. Addressing individual needs was mentioned by 67 per cent, organising the classroom by 50 per cent and organising group work by 48 per cent.

5.5.1 Small group and whole-class teaching

Both headteachers and teachers in the schools visited said that there was a tendency towards more whole-class teaching irrespective of class size. Reasons given for this trend included the need to prepare for National Curriculum assessments in Year 2, recommendations from OFSTED inspectors and, to a limited extent, pressure from a general change of opinion that saw so-called 'traditional' methods as desirable. Generally, what was meant by 'whole-class' teaching was presentation to the whole-class by the teacher followed often by small groups, organised in broad ability bands, engaged on differentiated tasks. The session would usually end with the whole-class coming together again to talk about what they had done and thus reinforce key learning points. Interviewees felt that there was a greater emphasis on the 'whole-class' element of teacher-led and teacher-directed activities in contrast with what in the past had been greater concentration on pupil activities which were more self-directed or which involved groups working on different tasks in different curriculum areas at the same time.

Teachers of smaller classes tended to choose to teach the whole-class because it was the preferred approach for that task with that class, not as an aid to class management. A teacher with a class of 22 Year 1 pupils reported that an investigation of the taste of food could be done as a whole-class, not in groups, enabling everyone to take part in the discussion and hear everyone else's views: '*There is no need to create groups — the class is the group.*' While teachers of larger classes also chose whole-class teaching because it was most suitable for the learning task, exercising control and keeping pupils on task were given by many respondents as additional reasons for undertaking more whole-class teaching, as achieving a controlled working environment was often more difficult with group work in a larger class. Most interviewees felt that when organising working in groups with larger classes, there was a limit to the number of groups which they could oversee. A number felt that more than five groups was too many to supervise and support effectively, though this could mean, in larger classes, that the size of the groups was larger than the teachers would have liked. Five or six in a group was thought to be satisfactory, but once a group reached seven or more, not all pupils would play a full part or experience all practical tasks directly. All of the teachers of larger classes reported that with a smaller class they would probably do more group and individual work, choosing when to do whole-class teaching as appropriate.

Whole-class teaching with a larger class could have its disadvantages. Interviewees reported that they found themselves teaching to the middle level of what was a wide ability range without adequate time to follow the work through and support individual pupils as well as they would have liked. One also reported their impression that an inexperienced teacher of a larger class had resorted to group work as she found it too difficult to manage the whole-class.

Whole-class teaching was often the preferred option with smaller classes. The teachers of smaller classes reported that they were able to teach the whole-class in an interactive way, including all pupils in the exchanges. For example, the teacher of a class of 22 Year 2 pupils, a much smaller group than she had been accustomed to, reported on a science activity investigating the taste of food. Pupils were asked to predict the taste of each food before tasting. The teacher reported that this promoted good discussion and questioning. In comparison with doing the same exercise as small group work, she found the children more readily talking to and questioning each other with no need for teacher intervention. She was therefore able to observe the interaction and assess the use of vocabulary. The whole-class approach was considered to have been generally more successful than the small group approach.

Teachers of the smaller classes were generally able to employ a greater variety of approaches and provide a wider range of tasks, though this also, to an extent, depended upon the abilities and nature of the class. They employed a planned mix of whole-class, small group and individual work. They felt that whole-class teaching could be interactive and dynamic, involving all pupils, probably with groups up to about 25 pupils and that the smaller class enabled them to combine the best of group work and the best of whole-class teaching. The smaller class size, their consequent better knowledge of the individual pupils and the reduced need to actively apply discipline meant that more sustained interactions could be achieved and most of the teacher–pupil exchanges were concerned with the task in hand.

5.5.2 Supporting individual pupils

Virtually every teacher and headteacher interviewed, and many who responded to the questionnaires, indicated that a key difference between teaching and learning in larger and smaller classes was the amount of individual attention which the teacher could give to each pupil. Many pointed out the simple comparison of dividing one teacher's time amongst 25 pupils compared with dividing it amongst 35. It was noted that a teacher could only talk to a limited number of pupils about their work in a session. Beyond that number, the teacher had to select

pupils on the basis of most need. Headteachers and teachers felt that, for many parents, an important indicator of how well a school was performing was this element of individual attention as shown by the number of occasions upon which the teacher could hear their child reading in a week.

However, the impact of class size on the amount of individual attention pupils can receive from the teacher has wider implications. Interviewees indicated that, in addition to the question of one-to-one teaching, the teacher's ability to give pupils individual attention influenced how well the teacher could know every pupil in the class which would in turn influence the quality of teacher–pupil interaction in the classroom. As Galton *et al.* (1996) report:

> *The most salient difference for all the teachers between teaching in a small class and a large one undoubtedly was time to spend with individual children, although most said that this did not change their ways of teaching, merely the time they could spend with each child.*

Teachers felt this to be central to the class size issue: fewer pupils meant that the relationship between the teacher and the pupils was capable of being improved, as it was based on more individual contacts and better knowledge of the pupils. They agreed with the teachers researched by Galton *et al.* (op. cit.) that *'knowing the children'* was the key concern and having a smaller class meant getting to know the children better and sooner. The relationship with pupils, in teachers' minds, was not just about individual needs, but an important contributory factor to the quality of classroom interaction. In this more positive learning environment, the conditions were more suitable for active participatory learning.

The question of individual attention is of particular relevance to pupils with special needs. The less able were usually targeted with extra support whatever the class size, so the concern expressed was often for those in larger classes who lacked confidence, rather than for those who lacked ability. Many interviewees were also concerned that the most able were sometimes not sufficiently challenged in a larger class. Such pupils were better equipped to work on their own, but as one headteacher said *'they shouldn't have to'*. There was also concern that in larger classes of varying ability, quiet children in the middle ranges could be overlooked at times because of the demands of those at the extremities.

The impact of class size on the teacher's ability to support individual pupils was not just a question of how much time the teacher could give to each pupil individually. At the end of the period during which they had kept their log of events, teachers

of smaller classes commented on how it was much less likely for individual children to get 'lost in the crowd', or for shy or less motivated children to hide in the class. The teachers found that they could involve all children more readily in class activities and discussion, drawing out the more retiring children and keeping others engaged on the task. One teacher, in the situation of having a class of 22 pupils after some years with classes of well over 30, reported: '*The children took it over and discussion took off, everybody taking part, asking and answering questions. There was a growing confidence to express views, suggest and predict.*'

It should be noted here that developing independence in learning was an important task at key stage 1 in the opinion of many respondents and interviewees. They saw a central task of key stage 1 teachers as equipping pupils with the skills of learning and with the working practices that would enable them to access the curriculum effectively thereafter. They believed that this could be promoted more effectively in smaller classes than in larger, once again because the teacher of the smaller class had the time to devote to individuals or small ability groups and foster these skills. It should be noted, however, that some headteachers added that teachers of very small classes should be aware of the risk of their pupils relying too much on the attention of an adult and not developing sufficiently the skills of independent learning. Teachers who were aware of this possibility could ensure that the balance of whole-class, small group and individual work provided opportunities for developing these skills.

5.5.3 Behaviour management

The headteachers interviewed recognised the increased challenge of coping with disruptive children in a large group where the options for effective action could be constrained by time pressures and physical space: ' *Discipline is at the forefront with large classes.* ' One headteacher, of a JMI school in which most classes contained 33 or more pupils, said:

> *...large classes can be managed when most children conform and most are achieving, but just one child with emotional or behavioural difficulties can seriously disrupt this...*

Some headteachers expressed concern about the policy of placing more children with learning difficulties in mainstream schools rather than special schools, particularly where classes were large and the teacher was already hard pressed.

The teachers of larger classes all reported that settling the class down at the start of a session was more difficult and time-consuming than with a smaller group, and that it was a much

more demanding job to keep them all on task once a lesson had begun. Keeping the children on task in a larger class was made more difficult by several factors. As the teacher's attention was spread over a large number of pupils, some tried to secure it through disruptive behaviour. If this was seen to succeed in drawing the teacher's attention, others, not normally given to misbehaviour, could be led to emulate it. Experienced teachers had strategies to manage these situations, but those who had larger classes found having to devote so much energy to doing so could be very frustrating. At the same time, those pupils who were less inclined to make an effort to learn used the situation of being in a larger class to keep a low profile in the hope that their lack of effort would not be noticed by the busy teacher. Teachers, well aware of this possibility in larger classes, noted that in a smaller class they could more easily draw everyone into the class activities and no one could 'coast' in this way.

Relations between pupils were likely to be better in smaller classes, in the opinion of teachers interviewed, especially if the smaller class meant that the pupils had more individual space. Noise levels tended to be lower, the atmosphere calmer and children were less likely to get in one another's way. In small classes, too, strategies for resolving difficulties or disputes and for developing tolerance, cooperation and the ability to listen to other's views were easier to employ. For example, it was thought that Circle Time worked best in smaller classes because children sitting on the carpet were all fairly close to the teacher and could be involved. In larger classes, with restrictions on physical space, there was a risk that those at the back would lose interest and get tired of waiting for their turn to speak.

5.6 Class Size, Teacher Workload and Teacher Stress

Much of the section above reveals how larger classes can involve a teacher in considerable work just to ensure that the pupils receive their basic curriculum entitlement and that they are supported and encouraged in their learning. A larger class also meant more equipment to set up, more assessments to carry out, more reports to complete and more parents with whom to communicate. Yet, while having a smaller class was described as being less stressful than having a larger class, it was not regarded as an easier option. The important point for just about all teachers was that the smaller class gave them the opportunity to do their job well. They would finish up working just as hard as with a larger class, but at the end of the week they were more likely to feel that they had achieved something really worth while.

With the larger classes, the same teachers said they felt they had survived, that they had managed to cover the curriculum, but no more, after putting in their maximum effort. With the larger classes, there was a constant feeling of racing against the clock to cover the curriculum and to meet all pupils' needs. The impression given by many teachers of larger classes was that, in their own judgement, they were not personally satisfied with what they were achieving. Feelings of guilt and failure were often expressed by teachers of larger classes and they felt that the children deserved better. The following remarks were typical:

> *I am more relaxed and can get around to look at everyone's work. All pupils have a chance to read back what they have written. There is less time pressure and we can do proper investigations. The enjoyment has come back. Last year I felt I was dragging the class through the National Curriculum.*
> (teacher of 26 pupils who had 36 the previous year)

> *Some young children lack confidence and need a lot of one-to-one attention to reassure them — you are so stressed by coping with the numbers to do much of this.*
> (teacher of class of 37 Y1 pupils)

> *At the end of this term, I feel proud of the progress my class have made and I feel I have realised most of my targets for this term. Previously, with larger classes, I have felt very stressed at the end of a term about plans that have not been carried out, goals that have not been achieved.*
> (teacher of class of 25 Year 2 pupils, having previously taught 36)

The impression given by headteachers and teachers was that, if being in a larger class did not materially disadvantage the pupils, this was because the teachers worked hard to compensate for any negative effects. Many headteachers were clearly aware of the strain which larger classes placed upon teachers. Even when they gave the larger classes to the teachers who were more experienced and more skilled, these teachers found it to be a very demanding and at times frustrating experience. The cost to the teachers was recognised by headteachers, who knew how hard teachers worked in these circumstances, hearing children read and carrying out assessments at lunchtimes and breaks, working regularly for long periods after the school day and at weekends, and devoting extra time to parent consultations. The pressure would sometimes result in even the best teachers having to take extended sick leave.

Most teachers who had taught both larger and smaller classes in recent years noted how differently they had felt about being teachers in the two situations. With the smaller class, the task

became enjoyable again and they put in the extra effort not to survive and get through the day, but to get the very best they could from each pupil. Many who had moved from teaching a very large class to a much smaller one used the same expression: *'the fun has come back'*.

5.7 The Impact of Different Conditions on Teachers' Effectiveness and Pupils' Educational Attainment

Almost all of the teachers who were interviewed had recent experience of teaching both larger and smaller classes. They were asked to reflect on class size as it influenced their practice and the experience of the children in their classes. A strong consensus emerged from teachers in all 18 schools: having a smaller class meant that they knew the children better and were able to devote more time to individual needs and to spend teaching time talking with the class. Much of what they reported corroborates the findings of earlier studies of teachers' views of class size (see Day *et al.*, 1996 and Galton *et al.*, 1996).

It was also clear that, for teachers who had been teaching larger classes for some years, the opportunities afforded by being assigned a smaller class only became apparent during the first term of that school year. They began with similar expectations of the smaller class as they had had of the larger class. It was only through experience with the smaller class that they realised what could be achieved and how to achieve it. This suggests that student teachers need to experience teaching classes of varying sizes in primary schools and serving teachers may benefit from in-service training on classroom approaches with smaller groups.

All interviewees agreed that having larger classes, irrespective of the context of the school, adversely affected how much time they could give to children individually, the ways in which they could organise their classrooms, the range of teaching methods which they could employ and the ways in which they could assess children's progress. In larger classes, potential disadvantages for the children were offset by the teachers teaching more formally for more of the time, concentrating on the essentials of the curriculum, and working extremely hard (or, in some cases, overworking). It has been claimed (Burstall, 1979 and OFSTED, 1995) that the quality of teaching is a more important factor than class size. Headteachers interviewed have stated that a good teacher can teach any size of class. What was often evident, however, was not good teaching proving that class size does not matter, but teachers showing how determined they can be to offset the disadvantages to their pupils of being

in larger classes. It may appear that the quality of teaching matters more than class size, but sometimes only because good teachers work harder than perhaps they should reasonably be expected to, to compensate for their pupils being in larger classes. Many quite reasonably thought that all this effort and commitment would be better channelled into lively, innovative, creative teaching of smaller classes.

When teachers had smaller classes, in addition to not experiencing the adverse effects associated with larger classes, they reported that:

- the ethos of the class was improved; the atmosphere was more relaxed, yet more conducive to work and pupils were more likely to participate in discussion and remain on task;
- there was time to explore areas of interest in discussion and to recognise and praise good work and behaviour;
- pupils and teachers enjoyed teaching and learning a lot more;
- these positive experiences seemed to be associated with greater pupil confidence and better progress.

These gains did not arise spontaneously from having smaller classes but were the result of teachers using the opportunity of reduced class size to:

- make more frequent use of a greater range of teaching methods and in doing so to make their teaching more interactive;
- attend to the learning needs of individual pupils — not just the less able and those who were experiencing difficulties but those in the middle band of the class and also the most able;
- use the teaching space imaginatively;
- assess pupils' progress using a greater range of methods in more varied contexts and provide more individual feedback to them.

Taken together, the evidence provided by the headteachers and teachers surveyed strongly supports the view that teachers can use the opportunity afforded by having smaller classes to improve the quality of teaching and learning and thus contribute to enhanced school effectiveness. Whether such improvements would be demonstrated in pupils' test scores was beyond the scope of this research. However, the link between smaller classes and pupils becoming adjusted to school and to learning, thus laying better foundations for children's learning over the longer term, seems to be the main conclusion to draw from the experiences of the teachers who took part in this research.

6. MAIN FINDINGS AND KEY ISSUES TO BE ADDRESSED

6.1 Patterns and Trends in Class Size at Key Stage 1

This research has shown that, while the registration group remains the unit in which pupils are taught in primary schools, pupils at key stage 1 often experience teaching groups which vary considerably in size from their registration group. A pupil in a larger class may, in practice, be taught regularly in a group which is considerably smaller, perhaps by up to ten pupils, while one in a smaller class may be taught for part of the week in a larger class. The teachers' records suggest that, for most of the time, most pupils are taught in their registration group class, but, when considering class size, it is important to remember that class size is not a fixed entity. Some interviewees held the view that while, as the basic teaching unit, smaller classes were definitely preferable, some flexibility to enable combining classes or creating smaller teaching groups was always desirable.

Just how much control a school has over determining class size must be central to the class size debate. If a school has little room to manoeuvre, notions of the optimum class size for the benefit of the pupils could remain an unattainable ideal. For most schools, this would appear to be the case, as their scope for determining class sizes is limited by funding arrangements for schools, parental demand for places and LEA admission policies. Individual school policies on class size were frequently found to be statements of intent such as to keep numbers below determined levels for certain classes, to avoid mixed age classes by keeping all classes single age grouped and to provide as much classroom assistant (CA) time as possible. These intentions were frequently frustrated by the need to maintain overall numbers on roll because this, more than anything else, determines the school's level of funding. Furthermore, schools whose intake could vary greatly from year to year, perhaps under-subscribed by eight pupils one year and over-subscribed by ten the next, could be obliged to create mixed age classes or have larger class sizes in one year than in another. Schools' attempts to limit class sizes could also be thwarted by successful parental appeals. The direct link between every pupil on roll and the school's level of funding meant that the only options open to schools to influence class size and the pupil–adult ratio in the classroom were in the balance of investment in teachers, classroom assistants, office staff and in the use of the headteacher's time.

The results of the survey suggested also that, as a general rule, infant schools, with only three year groups and with smaller budgets, usually had less flexibility to adjust class size than first and JMI schools. This reduced flexibility appeared to affect class sizes. While across all of the schools surveyed, the majority of classes tended to fall into the ranges of 30 pupils or fewer, smaller classes of 25 pupils or fewer, at key stage 1, were more likely to be found in first and JMI schools than infant schools. In spite of many headteachers' reservations about them, mixed age classes, when they occurred at key stage 1, tended to be larger in infant schools than in first and JMI schools.

Infant schools could be similarly disadvantaged by having smaller budgets in terms of being able to employ classroom assistants (CAs), even though most respondents agreed that there was a greater need for CAs at key stage 1. In first and JMI schools, which were more likely to have larger budgets and greater flexibility, the allocation of CA time appeared to favour the key stage 1 classes. There was evidence to suggest that CA time was allocated on the basis of class size — smaller classes receiving less time and larger classes receiving more. This was probably because of the need to ration limited resources, rather than from a belief that the purpose of CAs was to offset the effects of larger class sizes.

In most of the schools surveyed, class sizes were either fairly stable or on the increase. Over the previous three years, they had fallen in less than ten per cent of the schools and in the rest had risen or stayed the same in equal measures. The most frequent cause of increasing class sizes was a rising school roll. Headteachers, while they may have deplored the increasing class sizes from the point of view of the pupils and teachers, could only welcome the increased funding which the rising roll brought to the school. If a rising school roll could bring about larger class sizes, so too could a falling roll. As the school roll decreased, at first class sizes would become smaller, but as it continued to fall, reduced funding led to cuts in the number of teachers which meant the creation of larger classes through classes being combined, either within a year group or to form mixed age classes.

The views of headteachers and teachers suggested that most schools would prefer to have all of their pupils in single age classes. However, the factors which limited a school's ability to manage the number and size of classes also extended to its ability to maintain this class pattern. Sixty per cent of the schools surveyed had at least one mixed age class. First and JMI schools were more likely to have mixed age classes than infant schools, and in these schools they were more likely to occur at

key stage 2. Teachers who had mixed age classes did not find this a great disadvantage provided that the classes were in the smaller size ranges; they considered the range of ability to be as important as the age range.

6.2 Implications of Externally Imposed Limits to Class Size

Headteachers who took part in this research project all felt that smaller classes had benefits for teaching and learning, especially in terms of the amount of time a teacher could devote to each child and for the length of time children remained on task. Many pointed out that good teachers would manage to teach a class of almost any size successfully, though with larger classes this was at some cost in terms of teacher stress and the range of learning experiences for the pupils. Yet, although headteachers might have preferred to have a policy of limiting class sizes to an optimum number, implementing such a policy was not a practical consideration because of four key factors: the link between pupil numbers and school funding and therefore staffing levels; their self-confessed duty to provide places for local children and/or members of their religious faith; the parental appeals system, which could oblige them to accept additional children; and, in some cases, the limited teaching accommodation available in their schools. By September 2000 at the latest, schools will be expected to implement a class size limit, with these same factors still operating.

This is the consequence of the Government's pledge, soon to be given the force of legislation, that no child aged five, six or seven will be in a class of more than 30 pupils by that time. Headteachers who took part in the research welcomed the pledge in principle, but were concerned about the factors of funding, staffing, parental choice and accommodation. Recent draft guidelines for LEAs have provided partial answers to some of these questions: those of parental choice, accommodation and a school's duty to provide for local families and members of a religious faith. The implications for school budgets remains an unresolved question.

6.3 Teachers' Beliefs about the Constraints and Opportunities Associated with Varying Class Sizes

Most of the teachers surveyed thought that class size was the factor which had most influence on the effectiveness of teaching and learning and on teachers' well-being. Teachers who had larger classes believed that the demands of meeting the needs of so many pupils in a limited time meant that they had to concentrate their efforts on class control, on teaching the National Curriculum, and on assessment. More time was spent with larger classes than with smaller on organising and managing class activity. The need for class control could mean that a more structured approach was adopted with more teacher-directed activities. Almost all headteachers and teachers who took part in the research referred to how smaller classes gave the teacher greater opportunities for working with individual children and how larger classes constrained their ability to do so. The main opportunities and constraints believed to be associated with larger and smaller class sizes are set out below:

LARGER CLASSES	SMALLER CLASSES
Pupils receive less individual attention	Pupils receive more individual attention
A more restricted use of teaching and learning activities	Flexibility to vary teaching and learning activities
Whole-class teaching sometimes employed for control and keeping pupils on task	Whole-class teaching employed when appropriate to the activity
Group work hard to manage because of too many or too large groups	Group work can be employed effectively and flexibly
Restricted opportunities for pupil assessment and individual feedback	Better quality assessment and feedback to pupils
Limitations to practical activities	More opportunities for active learning
Teacher working extremely hard to offset the effects of larger class size	More reasonable workloads enabling teachers to put their energies into meeting the needs of all pupils

Teachers were confident, however, that in spite of the constraints, they covered the National Curriculum sufficiently with larger classes, but felt that there was inevitably some loss in terms of the range of learning opportunities and the amount of individual attention given to each pupil. All of the headteachers interviewed felt that the teachers of larger classes worked very hard to offset any immediate disadvantages to their pupils of being in larger classes.

6.4 The Practice of Teachers and the Quality of Learning Experienced by Pupils when Conditions Vary because of Class Size

The teachers in the schools visited did not claim that some particular teaching methods were best suited to larger classes and some to smaller ones. Rather, they believed that there were many effective approaches to teaching and learning, irrespective of the size of the class, and that a blend of approaches was most effective, with no one approach dominating. With a larger class, however, the teacher's ability to use different approaches flexibly was often constrained and, especially if larger class size were combined with other factors such as limited physical space and high numbers of pupils with special needs, some activities could not easily be undertaken. It was clear from interviews and from the teacher logs that while teachers found themselves obliged to change their teaching when faced with a larger class, such as by teaching more formally or restricting the content of their teaching, they did not alter their teaching when assigned to smaller classes, or at least not straightaway. Some headteachers said that their teachers had their own ways of working and tended to continue to use approaches which they felt they could rely upon.

Teachers reported that, with larger classes, practical activities took longer to prepare, set up and carry out. Physical space also was often a limiting factor. This could mean that the work was spread over a longer time and undertaken not as a whole-class activity but in smaller groups. When a topic was presented by the teacher rather than approached through individual pupil or group activities, it was not because the larger class size required it; rather it appeared that teachers opted for 'front of class' presentation when that seemed a more reliable way of covering particular aspects of the curriculum. For certain activities, especially where skill development was involved, teachers of classes of all sizes arranged for all pupils to participate actively even though, with larger classes, this could mean an activity

taking place over several days with groups of pupils. Thus the difference was in the length of time needed to complete the activity.

Pupil assessment, with larger classes, often had to be more formal and based on fewer activities than with smaller classes and sometimes had to be retrospective, as the teacher was too occupied with class management during the activity. With smaller classes, there were more opportunities for informal or unplanned assessment, such as of pupils' language skills during a mathematics activity.

Headteachers and teachers generally reported an increase in the amount of whole-class teaching, part of a trend towards slightly more formal methods in order to cover the National Curriculum and conduct assessments. There was evidence too that when teachers had larger classes, they would sometimes teach the whole-class to ensure that they had all of their attention and that all were settled and 'on task'. Group work was employed for much of the time with classes of all sizes, though with the larger classes, there were often too many groups or groups were too large for the teacher to be able to support and monitor them to her satisfaction. Having a smaller class gave teachers the opportunity to choose the approaches which best suited the teaching and learning requirements at that time — this often included whole-class teaching, which could more easily be undertaken in a constructive and interactive way.

Teachers and headteachers agreed that there was an association between class size and pupil behaviour which affected how it could be managed. In smaller classes, teachers reported that noise levels tended to be lower, the atmosphere generally calmer and relationships better. In larger classes, simple lack of physical space often made for a more disruptive climate. The teacher's options for behaviour management also could be constrained by physical space and by time pressures. Strategies for resolving disputes and developing in the pupils qualities of tolerance and the ability to cooperate, such as through the use of Circle Time, were easier to employ in smaller classes.

It was found that some of the pressures associated with larger class sizes were alleviated by the presence of classroom assistants (CAs). Interviewees, while acknowledging this, felt that CAs could not totally offset the disadvantages of larger class size and, in any event, this was not seen as their primary purpose. This was to improve the quality of teaching and learning for all pupils by supporting the teacher in teaching pupils of varying ability, maturity and confidence. Even in smaller classes, CAs were recognised as having an important role to play in enabling

the teachers to undertake more individualised assessments, provide planned individual support for less able pupils and provide extension activities for the most able. There was a recognition that in order to make best use of CAs, who were recognised by all as a valuable resource, they should be afforded appropriate status, have some shared ownership of the teaching process, and benefit from professional development. Equally important for their successful deployment is the training of teachers in how to make best use of their abilities.

6.5 The Impact of Class Size on Teachers' Effectiveness

Class size inevitably increases the workload of teachers simply in terms of the everyday tasks which have to be performed — setting up learning materials, helping young children change before and after for PE, marking, assessment, giving feedback to individual children and in terms of other less-frequently recurring tasks — report writing and meeting with parents. Records kept by teachers who had classes of 36 showed that the increased workload from these activities could be considerable. For example, preparing such a large number for PE could result in the time devoted to the PE activities being noticeably decreased.

In addition to these practical effects, class size influenced teachers' effectiveness in other significant ways. Teachers of larger classes in all of the schools visited reported their feelings of frustration at being constrained from providing as varied a range of learning experiences as they would have liked. All teachers reported how great a contrast they found teaching a smaller class compared with a larger class, even when other factors were considered. With a larger class they found themselves working very hard to teach all of the pupils and meet their individual needs, but rarely feeling properly satisfied with what they had achieved. Just as much effort was expended by teachers of smaller classes, but they were much more likely to feel that each child was being given the chance to realise his or her full potential, and that there were many more occasions when learning was judged to be purposeful, involving and enjoyable. Teachers of smaller classes spoke more confidently about their teaching, about pupil's progress, and about their ability to support those with special needs, including the most able, than did teachers of larger classes.

Interviews with teachers and headteachers suggested strongly that the morale, motivation and self-esteem of teachers were influenced by class size. They believed that larger class sizes,

combined often with the overcrowding of classrooms, had negative effects on pupil behaviour. There was concern that larger class size affected teachers' ability to control their workload, their classrooms and how they covered the curriculum, thus increasing teacher stress and reducing their effectiveness.

This research project did not aim to measure pupil attainment in relation to class size. However, the weekly records kept by class teachers, and interviews with teachers and heads, supported the contention that the quality of teaching and learning benefited from smaller class size. The vast majority of the teachers visited had considerable experience of teaching both larger and smaller classes, often with similar children in the same school, and they were convinced that in smaller classes, pupils made greater progress in reading, independent writing and numeracy. They claimed that this belief was supported by the more varied and frequent monitoring and assessments which they were able to undertake.

6.6 Conclusions and Issues to be Addressed by Schools

This research has added to the evidence from other studies that class size at key stage 1 has an impact on school organisation, on teachers and on the learning experiences of children. In particular it points to two conclusions, the first of which is associated with the management of teaching and learning. While, on the one hand, there is a certain trend towards more whole-class teaching, for example, as seen in the requirements of the literacy hour and for the teaching of numeracy (though both of these recommendations are for a blend of whole-class, individual and group work), headteachers and teachers continue to emphasise the importance of individual contact between the teacher and the pupil and thus for classes to be as small as practically possible. With larger classes, teachers appear to focus their concern on curriculum coverage and on content to ensure that immediate needs are met. With smaller classes, teachers have a sense that pupils are able to work in an environment which is more likely to develop independence and promote learning skills. This understanding of the impact of class size on children's development in school is consistent with the principle governing the decision to reduce class size at key stage 1.

A second conclusion concerns the management of educational provision and class size numbers. It is clear that there needs to be effective coordination between all parts of the system — the Government, LEAs and schools — if schools themselves are to

make best use of the resources intended to improve conditions for pupils in key stage 1. Is the new legislation a suitable framework within which LEAs and schools can realise the aims of the policy on class size? What role can the LEAs play in mediating national policy so that the potential benefits are maximised at local level? And how can schools benefit from the policy without losing that flexibility in managing class and teaching group size which characterises school organisation?

Finally, it is important to acknowledge that schools and LEAs, in facing these challenges, have to work within a situation where external demands may not always coincide with local priorities. Central government requires LEAs to formulate plans for class size reduction at key stage 1, and individual schools will have to operate within the context of these plans. Schools and LEAs will be seeking to retain some flexibility of local decision-making to enable them to make best use of individual circumstances and best meet the needs of local communities.

Half of the classes visited in the course of the research had well over 30 pupils. This, it appears, will not continue for much longer at key stage 1. The situation in schools is about to be changed when the School Standards and Framework Bill (GB. Parliament. House of Commons, 1997b) becomes law. With certain exceptions, mostly temporary ones, class sizes at key stage 1 will be limited to a maximum of 30 pupils. This could mean that, for some of the school week, many children will be taught in even smaller classes, but, allowing for the influence of parental choice, limited budgets and available accommodation, for much of the time classes will probably be at the maximum of 30 pupils.

School budgets are an important issue here for there is concern that the current funding regime results in underfunding of the part of the system, the early years, in which the foundations for learning and for personal and social development in the rest of the system are laid. The problem is being addressed to some extent by the provision of funds for implementation of the legislation limiting class size, but there are still unanswered questions about the ongoing funding of education at key stage 1.

The principle behind this significant change is nevertheless welcomed by schools and LEAs, in spite of the problems which implementation will present. In this situation, schools are faced with a new set of opportunities and challenges:

- The figure of 30 pupils is still much higher than the optimum class sizes recommended by studies such as Project STAR and identified by teachers in this survey. Research has shown that lasting benefits are most likely to be derived from reducing class sizes to around 20 pupils. Teachers who have 30 pupils will still have to meet some of the challenges of larger class size, especially that of giving all pupils sufficient individual attention.

- At the same time, teachers who for some time have been accustomed to teaching much larger classes (over 35 pupils) may need training and support to enable them to make best use of the opportunities afforded by being assigned to classes of 30 or fewer pupils.

- The proposed regulations contain exceptions which would allow classes of more than 30 pupils to accommodate children with statements of special needs. Headteachers and teachers felt that classes with such pupils need to be smaller, not larger.

- Maintaining all teaching groups at 30 or below may work against existing arrangements, which are often operated flexibly so that pupils working in some areas of the curriculum (e.g. maths) can be taught for at least part of their time at school in much smaller groups.

- Where mixed age classes result from organisational changes in schools to comply with new regulations on class size, teachers may need additional training and the support of suitably trained classroom assistants.

- All those interviewed stressed the need to maintain at least the existing level of paid classroom support. Funding class size reduction by reducing expenditure on classroom assistants would be seen as a retrograde step.

- Teachers need training on how best to manage and work with their classroom assistants to gain maximum benefit for pupils.

APPENDIX A:
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APPENDIX B:
TABLES

Table 1: Class organisation in infant and first/JMI schools

Type of school	Type of class organisation (percentage of schools)			Total %	N
	Single age grouped only	Mixed age grouped only	Both		
Infant	64	3	33	100	155
First/JMI	34	24	41	99	677

Due to rounding errors, percentages may not sum to 100.
832 respondents provided information on their class organisation.
Source: NFER survey of headteachers, 1997.

Table 2: Class organisation within key stages

Type of school	Type of class organisation (percentage of schools)		Total %	N
	Single age grouped only	Mixed age grouped only		
KS1 only pupils	78	23	101	3305
KS2 only pupils	67	33	100	2671
KS1/KS2 pupil mix	-	100	100	129

Due to rounding errors, percentages may not sum to 100.
Source: NFER survey of headteachers, 1997.

Table 3: Class organisation within key stage 1

Type of school	Type of key stage 1 class organisation (percentage of schools)		Total %	N
	Single age grouped only	Mixed age grouped only		
Infant schools	87	13	100	1019
First/JMI schools	73	27	100	2286

Due to rounding errors, percentages may not sum to 100.
Source: NFER survey of headteachers, 1997.

Table 4: Variations from registration group numbers in four KS1 classes

	Morning				Afternoon			
	Whole	Part	Part	Code	Whole	Part	Part	Code
Monday								
School A [nor = 37]	-	21:1	37:1	6	37:1	-	-	
School B [nor = 17]	-	17:1	22:1	5	17:1	-	-	
School C [nor = 36]	-	24:2	36:1	1	36:1	-	-	
School D [nor = 24]	-	24:2	30:2	4	-	24:1	50:2	4
Tuesday								
School A [nor = 37]	37:1	-	-		-	37:2	37:1	
School B [nor = 17]	-	22:3	17:2	5	17:1	-	-	
School C [nor = 36]	-	24:2	36:1	1	36:1	-	-	
School D [nor = 24]	23:1	-	-		-	24:1	50:2	4
Wednesday								
School A [nor = 37]	-	21:1	37:1	6	-	31:1	37:1	3
School B [nor = 17]	-	22:2	17:1	5	17:1	-	-	
School C [nor = 36]	-	36:2	36:1		36:1	-	-	
School D [nor = 24]	-	24:1	50:2	4	24:1	-	-	
Thursday								
School A [nor = 37]	37:1	-	-		37:1	-	-	
School B [nor = 17]	-	22:2	17:1	5	34:2	-	-	4
School C [nor = 36]	36:2	-	-		35:1	-	-	
School D [nor = 24]	-	22:1	50:2	4	22:1	-	-	
Friday								
School A [nor = 37]	-	21:1	37:1	6	37:1	-	-	
School B [nor = 17]	-	22:3	17:2	5	34:4	-	-	4
School C [nor = 36]	-	35:3	30:1	2	35:1	-	-	
School D [nor = 24]	23:1	-	-		23:1	-	-	

Codes:

1. Pupil(s) withdrawn for curriculum support
2. Pupil(s) withdrawn for special needs support
3. Pupil(s) withdrawn for learning skills development
4. Combined with another class
5. Additional pupils join class for specific curriculum activity
6. Pupil streaming for specific curriculum activity

Table 5: Key stage 1 class size range in infant and first/JMI schools

Type of school	Range of average key stage 1 class size (percentage of classes)					N
	Up to 20 pupils	Over 20 & up to 25 pupils	Over 25 & up to 30 pupils	Over 30 & up to 35 pupils	Over 35 pupils	
Infant schools	5	17	50	26	3	1019
First/JMI schools	8	21	44	26	2	2286

Due to rounding errors, percentages may not sum to 100.
3,305 key stage 1 classes were represented in the survey.
Source: NFER survey of headteachers, 1997.

Table 6: Key stage 1 class size range in infant and first/JMI schools

Type of school	Range of average key stage 1 class size (percentage of classes)					N
	Up to 20 pupils	Over 20 & up to 25 pupils	Over 25 & up to 30 pupils	Over 30 & up to 35 pupils	Over 35 pupils	
Infant schools — single age	6	17	50	25	2	883
First/JMI schools — single age	7	20	44	27	2	1680
Infant schools — mixed age	1	14	46	32	7	136
First/JMI schools — mixed age	10	21	43	24	2	606

Due to rounding errors, percentages may not sum to 100.
3,305 key stage 1 classes were represented in the survey.
Source: NFER survey of headteachers, 1997.

Table 7: Class size range in first/JMI schools

Type of school	Range of average class size (percentage of classes)					N
	Up to 20 pupils	Over 20 & up to 25 pupils	Over 25 & up to 30 pupils	Over 30 & up to 35 pupils	Over 35 pupils	
KS1 only pupils	8	21	44	26	2	2286
KS2 only pupils	5	17	46	30	2	2656
KS1/KS2 pupil mix	10	22	49	19	1	129

Due to rounding errors, percentages may not sum to 100.
5,071 first/JMI school classes were represented in the survey.
Source: NFER survey of headteachers, 1997.

Table 8: Single age grouped class size range in first/JMI schools

Type of school	Range of average single age grouped class size (percentage of classes)					N
	Up to 20 pupils	Over 20 & up to 25 pupils	Over 25 & up to 30 pupils	Over 30 & up to 35 pupils	Over 35 pupils	
KS1 only pupils	7	20	44	27	2	1680
KS2 only pupils	4	16	48	30	3	1775

Due to rounding errors, percentages may not sum to 100.
3,455 single age grouped first/JMI school classes were represented in the survey.
Source: NFER survey of headteachers, 1997.

Table 9: Key stage 2 class size range in first/JMI schools

Type of school	Range of average key stage 2 class size (percentage of classes)					N
	Up to 20 pupils	Over 20 & up to 25 pupils	Over 25 & up to 30 pupils	Over 30 & up to 35 pupils	Over 35 pupils	
Single age grouped	4	16	48	30	3	1775
Mixed age grouped	7	20	41	30	2	881

Due to rounding errors, percentages may not sum to 100.
2,656 key stage 2 first/JMI school classes were represented in the survey.
Source: NFER survey of headteachers, 1997.

Table 10: Levels of FTE assistance in key stage 1 classes in infant and first/JMI schools

Type of school	Range of FTE levels of assistance (percentage of classes)					N
	0.0	0.01–0.2	0.21–0.5	0.51–1.0	1.01+	
Infant schools	17	20	42	19	2	1019
First/JMI schools	22	19	34	23	2	2286

Due to rounding errors, percentages may not sum to 100.
3,305 key stage 1 classes were represented in the survey.
Source: NFER survey of headteachers, 1997.

Table 11: Levels of FTE assistance in single age grouped key stage 1 classes in infant and first/JMI schools

Type of school	Range of FTE levels of assistance (percentage of classes)					N
	0.0	0.01–0.2	0.21–0.5	0.51–1.0	1.01+	
Infant schools	17	20	41	20	2	883
First/JMI schools	23	19	33	23	2	1680

Due to rounding errors, percentages may not sum to 100.
2,563 single age grouped key stage 1 classes were represented in the survey.
Source: NFER survey of headteachers, 1997.

Table 12: Levels of FTE assistance in mixed age grouped key stage 1 classes in infant and first/JMI schools

Type of school	Range of FTE levels of assistance (percentage of classes)					N
	0.0	0.01–0.2	0.21–0.5	0.51–1.0	1.01+	
Infant schools	16	23	46	13	2	136
First/JMI schools	20	19	36	23	3	606

Due to rounding errors, percentages may not sum to 100.
742 mixed age grouped key stage 1 classes were represented in the survey.
Source: NFER survey of headteachers, 1997.

Table 13: Levels of FTE assistance in first/JMI schools

Type of school	Range of FTE levels of assistance (percentage of classes)					N
	0.0	0.01–0.2	0.21–0.5	0.51–1.0	1.01+	
KS1 only pupils	22	19	34	23	2	2286
KS2 only pupils	53	28	15	4	0	2656
KS1/KS2 pupil mix	37	24	33	4	3	129

Due to rounding errors, percentages may not sum to 100.
5,071 first/JMI school classes were represented in the survey.
Source: NFER survey of headteachers, 1997.

Table 14: Levels of FTE assistance in first/JMI schools

Type of school	Range of FTE levels of assistance (percentage of classes)					N
	0.0	0.01–0.2	0.21–0.5	0.51–1.0	1.01+	
KS1 only pupils (single age grouped)	23	19	33	23	2	1680
KS2 only pupils (single age grouped)	56	28	13	4	0	1775
KS1 only pupils (mixed age grouped)	20	19	36	23	3	606
KS2 only pupils (mixed age grouped)	47	27	19	6	1	881
KS1/KS2 pupil mix (mixed age grouped)	36	24	33	4	3	129

Due to rounding errors, percentages may not sum to 100.
5,071 first/JMI school classes were represented in the survey.
Source: NFER survey of headteachers, 1997.

Table 15: Class size trends since school year 1994/95: views of headteachers

Trend in class size	Key stage 1 classes (percentage of schools)	Key stage 2 classes (percentage of schools)
Risen	46	36
Stayed about the same	45	38
Fallen	9	7
Not applicable/missing	1	19
Total	101	101
N = 953		

Due to rounding errors, percentages may not sum to 100.
Some schools did not have pupils at key stage 2.
Source: NFER survey of headteachers, 1997.

Table 16: Class size trends predicted for school year 1997/98: views of headteachers

Trend in class size	Key stage 1 classes (percentage of schools)	Key stage 2 classes (percentage of schools)
Rise	26	24
Stay about the same	63	50
Fall	10	6
Not applicable/missing	1	19
Total	100	99
N = 953		

Due to rounding errors, percentages may not sum to 100.
Some schools did not have pupils at key stage 2.
Source: NFER survey of headteachers, 1997.

Table 17: Class size trends since school year 1994/95: views of class teachers

Trend in class size	Percentage of teachers
Risen	42
Stayed about the same	38
Fallen	12
Don't know	7
Not applicable/missing	1
Total	100
N = 756	

Due to rounding errors, percentages may not sum to 100.
Source: NFER survey of key stage 1 teachers, 1997.

Table 18: Teachers' views on ideal class size

Maximum size of teaching group	Size of class (percentage of teachers)			
	Up to 20 pupils	21–25 pupils	26–30 pupils	31+ pupils
Single age grouped class; one teacher with an assistant	3	41	51	4
Single age grouped class; one teacher without an assistant	42	50	6	-
Mixed age grouped class; one teacher with an assistant	20	53	24	1
Mixed age grouped class; one teacher without an assistant	65	29	2	1
N = 725				

Due to rounding errors, percentages may not sum to 100.
Source: NFER survey of headteachers, 1997.

Table 19: Teachers' views on ideal class size: influence of number of years' teaching experience

Number of years' teaching experience	Size of class (percentage of teachers)				
	Up to 20 pupils	21–25 pupils	26–30 pupils	31+ pupils	N
	Single age grouped class; one teacher with an assistant				710
1–6	5	33	57	6	177
7–14	2	40	54	4	168
15–21	2	49	47	2	190
22–36	3	45	49	3	175
	Single age grouped class; one teacher without an assistant				708
1–6	34	57	8	1	176
7–14	45	48	7	1	166
15–21	48	47	4	-	190
22–36	43	52	6	-	176
	Mixed age grouped class; one teacher with an assistant				704
1–6	17	46	35	2	176
7–14	18	55	26	1	165
15–21	20	62	17	1	188
22–36	26	53	21	1	175
	Mixed age grouped class; one teacher without an assistant				702
1–6	56	40	3	2	176
7–14	65	33	2	1	164
15–21	74	24	1	1	187
22–36	73	23	3	-	175

Due to rounding errors, percentages may not sum to 100.
Source: NFER survey of key stage 1 teachers, 1997.

Table 20: Teachers' views on ideal class size: influence of actual class size

Actual class size	Size of class (percentage of teachers)				
	Up to 20 pupils	21–25 pupils	26–30 pupils	31+ pupils	N
	Single age grouped class; one teacher with an assistant				715
Up to 20 pupils	6	51	40	3	87
21–25 pupils	4	54	38	4	165
26–30 pupils	3	44	49	4	252
31+ pupils	1	26	70	3	211
	Single age grouped class; one teacher without an assistant				713
Up to 20 pupils	60	38	1	1	87
21–25 pupils	54	41	4	1	166
26–30 pupils	41	50	8	-	250
31+ pupils	27	65	8	0	210
	Mixed age grouped class; one teacher with an assistant				709
Up to 20 pupils	33	49	17	1	86
21–25 pupils	22	56	21	1	165
26–30 pupils	23	50	25	2	248
31+ pupils	11	59	30	1	210
	Mixed age grouped class; one teacher without an assistant				707
Up to 20 pupils	76	23	0	1	86
21–25 pupils	75	22	2	1	165
26–30 pupils	65	31	4	-	247
31+ pupils	60	37	1	1	209

Due to rounding errors, percentages may not sum to 100.
Source: NFER survey of key stage 1 teachers, 1997.

APPENDIX C:
THE IMPACT OF CLASS SIZE IN DIFFERING SCHOOL SITUATIONS

The issues identified in Chapter 5 — how class size can effect aspects of teaching and learning — can be further illustrated by short descriptions of the experiences of some of the teachers in the schools visited. What follows are four accounts of such teacher experiences, two with larger and two with smaller classes.

School A

This was an infant school sharing a site with the junior school to which its pupils moved at the end of Year 2. Children entered the school at different stages, some in September of the Reception Year, some in the summer term of the Reception Year, and some, even, at the start of Year 1. This meant that by Year 2, pupils could have had very varied lengths of time in school — three, four or five terms. The baseline of attainment of many children entering the school was very low, because, as the headteacher indicated, in many cases there was no pre-school learning at home and many pupils did not come to the school organised for learning. In addition, the school had a high proportion of pupils for whom English was an additional language and many of the parents were not literate, both in English and in their mother tongue. Because of these circumstances, the school policy was to have classes in Reception and Year 1 as small as possible so that pupils could have more individual attention from the teacher.

The teacher who took part in the research had been at the school for 20 years and had taught classes of up to 35 children. Her current class was a Year 1 class of 22 pupils almost all of whom had been in the school for two terms in the Reception year, and only three of whom were not very fluent in English. There was no paid classroom assistant but there was regular support from a parent for two mornings and two afternoons per week. This parent had begun helping in the school when her own child was a pupil and continued to do so after she had left. She listened to children reading, talked to them about what they had read and helped with technology — setting up materials and working with the children. There was also support from a Section 11 teacher for the pupils who were not fluent in English for five sessions per week, each approximately one hour long.

After teaching the class for a term, and keeping a record of her impressions, the teacher was able to compare her experiences of this class with those of teaching much larger classes in the same school. The important differences in her view were as follows:

More could be done in a lesson than with a larger class. There was time for individual discussion with the pupils. The pupils were beginning independent writing and individuals needed a lot of help. In the past, with a class of 30 or more, the teacher had often only been able to write spellings and new words in a child's book and move on to help the next one. With the smaller class, she found herself able to talk to the child about the spelling or the aspect of language and use the request for help as a teaching opportunity. Class activities, such as puppet-making, which, in the past, had sometimes taken a term, were completed in half a term, allowing more time for other activities and assessment.

Practical work in science and technology was easier to arrange and manage and more of it was done. All of the pupils could take part actively. For example, in one lesson each pupil had an object and described it to the others — how it felt, what it was made of, etc. All could take part as it did not take too long with only 22 pupils; if one did not know the word for a material from which something was made, the others could suggest words. The teacher found that she was able to assess each child's use and command of vocabulary during this lesson — something which had not been possible with larger classes. Whole-class discussion was possible with children asking and answering questions, expressing views and predicting — a larger class would have required working in several groups, which would not have produced this interaction.

More whole-class teaching was done, but because of the size of the class this was more interactive and all pupils were involved. The teacher found herself undertaking more whole-class teaching. In her view, this was because the pupils in the smaller class were more supportive of each other, suggesting ways of working and discussing among themselves with the teacher sometimes directly teaching and sometimes acting as facilitator. A maths lesson might start with some shared spoken maths activities, using and building vocabulary, with all the class taking part, followed by individual formal number work, with the teacher supporting individuals, and then return to a whole-class discussion of what was done in the lesson. The teacher described this as the best of group work and whole-class work combined, only possible with a smaller class.

Assessment was undertaken on more occasions and discussing the work with the pupils was easier to fit into the programme. Discussing each child's work with them was found to be possible on more occasions with the smaller class. Assessment could be carried out while the class was engaged in tasks, both assessing the subject of the lesson and assessing language competence. The teacher reported that this had not been possible to anything like the same extent with larger classes. Feedback to individual pupils could also be undertaken more frequently. This provided additional opportunities to celebrate success, give praise and promote self-esteem. In the teacher's words, with the smaller class *'there is time to do the job properly'.*

The teacher felt more relaxed. She was not in a constant hurry to get through the work as she had been with the larger class. Thus, because she did not feel under pressure to ensure that all of the pupils covered the basic programme, she found half way through the first term that more activities could be planned and the class were getting through more work. She felt she was able to stretch the class more in terms of her expectations of what could be covered and what they could achieve.

The teacher was asked how much of the success she felt she was having with these children was because of it being a smaller class and how much because they were a cooperative, motivated, able class. Her response was that the class was not especially well behaved, compared with the larger class which she had taught the year before. The current class contained more difficult children, with one potentially very disruptive boy. She felt that she was fortunate in that the class was mostly of average ability or better, but that in a larger class, opportunities to misbehave would have been greater and controlling such behaviour more time-consuming. With the smaller class, it was possible to involve all of the children in contributing to the activities, which were also more enjoyable because not under so much pressure. She also pointed out that less willing pupils, who might try to evade attention, were unable to do so in a smaller class. The teacher could ensure that they stayed on task and were more likely to form the habit of regular sustained work at key stage 1.

Admittedly after only one term, the teacher felt that pupils in this fairly average class were maturing quickly in terms of their attitude to work, were becoming less egocentric and more conscious of how they treated each other and were progressing faster than expected, for example, in terms of independent writing. After having taught a much larger class for some years, she had been surprised that she could hear most of them read every day and could talk to them individually about their work to encourage them and promote their development.

School B

This was a JMI school in a small town. The ability range of the pupils was described as average and above average. Less than one per cent of the pupils had statements of special educational need. The school contained very few pupils from ethnic minorities and only 17 per cent were eligible for free school meals. The high demand for places and the school's popularity meant that the standard admission number of 70 pupils per year group was often exceeded. With seven year groups and 14 classrooms, each year group consisted of two classes. Class size varied from 30 to 38, most being 35 pupils or more. The teacher studied had a Year 2 class of 38 pupils over the period of the research. She was mathematics coordinator, a year group leader and key stage 1 coordinator with responsibility for curriculum, planning and assessment. For these responsibilities she received one period of non-contact time per week, from break until lunchtime on one day. She received some regular classroom support — a curriculum support teacher for four-and-a-half hours, a nursery nurse for two and a non-teaching assistant for nine hours per week.

The teacher had considerable experience of teaching large classes and had taught a smaller class in the past, of 26 pupils. In her opinion larger classes led to:

- increased behaviour management problems;
- more whole-class teaching because of the need to settle a large class to work;
- less individual and group work;
- difficulty in giving all pupils access to experiences.

Whole-class teaching in maths, English and some topic work was the preferred strategy with this class to keep them on task because if all pupils were working in the same curriculum area, the support teachers and non-teaching assistant could work with the groups of children on their tasks, especially the lower ability pupils.

Two of the class were on the register of special needs because of their behavioural problems. They were very attention-seeking and did so through disruptive behaviour. The teacher had not only to contain this, but ensure that other members of the class did not emulate this behaviour to gain attention themselves. With 38 pupils in a small-to-average sized classroom, there was nowhere to move disruptive children to separate them from the others or settle them down. The teacher felt that the physical proximity of the pupils in a crowded room could promote some misbehaviour. Generally more time had to be devoted to class control, while in a smaller class, misbehaviour could often be predicted and dealt with at the early stages.

With support teachers on hand, the teacher felt that the work was being covered by the class, but not in an entirely satisfactory way. The school was taking part in the National Numeracy Project, which advocated whole-class teaching. With such a large class, the teacher found this to be helpful in becoming aware of each child's strengths and needs and their level of understanding. Whole-class teaching revealed to her which pupils were coping with the work. Low-ability children presented a challenge. The non-teaching assistant worked with these children, on tasks designed by the teacher, but as the work in maths became more demanding during the term, the teacher did not know how their understanding was developing and feared that they were falling behind the rest of the class. There was not sufficient time for the teacher to teach the more demanding work to the majority of the class, and support the low-ability pupils.

With such a large class, the teacher at times found it difficult to follow the Individual Education Plans for pupils with special needs. On days when the class remained on task, it was possible to do so, but if there was disruption, this aspect tended to suffer. The support teachers and assistant were of great help but could not always follow the plan consistently as they were not always in the classroom.

This teacher spoke for many other interviewees when she expressed concern about the quality of the experience being given to all pupils in larger classes. She felt that they received insufficient individual feedback from her assessments. Every pupil was heard reading, just about every day, only because of the help of several parent volunteers. She also felt that she was not meeting the needs of the more able sufficiently and that in smaller classes, they could be *'pushed further'*.

School C

This village infant school had 120 pupils on roll and for some time had a policy of aiming for smaller class sizes for the youngest pupils and maintaining single age classes throughout the school. The experience of this school illustrates how falling intake numbers can frustrate attempts to implement a policy of this kind, which had been maintained until the school year when the school took part in this study, 1997/98. For the previous year, there had been two Reception classes each with 21 pupils, two Year 1 classes of 26 and 25 pupils and a Year 2 class of 32 pupils in the school. Falling intake numbers meant that the school lost a teacher at the end of that year and this meant that they could no longer maintain all of the classes as single age. With reluctance, they created a mixed age class of the youngest Year 2 and the oldest Year 1 pupils. The class structure for the

year of the NFER project was a Reception class of 26, a Year 1 class of 30, a mixed Year 1 and 2 class of 30 and a Year 2 class of 35. The teacher of the Year 2 class took part in the NFER research. She had two afternoon sessions of classroom assistant help and occasional help per week from parents.

The experiences of this teacher illustrate well the challenges faced by teachers of larger classes as they strive to cover the National Curriculum and give all pupils individual encouragement and support. The headteacher described the school as '*coming from the Plowden era: child-centred and activity-led*', but gradually changing under her leadership since 1994, with the need to give more consideration to National Curriculum coverage and to literacy and numeracy with more whole-class teaching and more planned differentiation. The teacher of the Year 2 class ran five of the 10 sessions each week on 'integrated day' principles with directed independent working and five on whole-class teaching and whole-class differentiated activities. The class was divided into five groups of seven pupils. The teacher log described how the teacher employed different strategies '*to teach more of the children more of the time*'.

Classroom management: practical work in design and technology, science and art. A skills exercise, teaching pupils to use a saw accurately and safely was undertaken by the teacher working with a small group at a time, while the other 28 pupils were working on other activities. This was not ideal: the groups of seven still proved to be too large for the available equipment, resulting in pupils having to wait for long periods of time. The teacher felt that the quality of the work produced was not as good as it should have been.

Science and art teaching had been part of the integrated day, and the teacher was not satisfied with the quality of the work. She decided to move the science teaching to the two afternoons when she had the help of a classroom assistant (CA). Half of the class did art with the CA while the others did science with the teacher, swapping activities for the next session. This involved the teacher in careful planning of activities for skills teaching by the CA, but she felt that it worked well for both subjects. It helped greatly that they had the use of two rooms and so the class was genuinely split. Undertaking the science activities with 17 or 18 pupils meant that the teacher could introduce the topic more easily and ensure they understood, could teach and have discussion with the 'whole' class and properly supervise the activity part of the session. However, she feared that as more of the week became timetabled in this way, she would lose any opportunities for flexibility and spontaneity as much of the

week would be constrained by the timetabled activities. There could also be loss of flexibility within the teaching of subjects as, for example, she was not involved in the art sessions and could not influence them as they progressed, and as science was not a whole-class activity, she had to make the two sessions as similar as possible.

Classroom management — whole-class teaching and individual pupil support. The teacher felt that she was unable to provide sufficient individual support for the children as they worked through their mathematics course and decided to have half of the class writing stories while she visited each of the pupils in the other half to help them with mathematics. This was fairly successful regarding mathematics but it meant that she did not hear all pupils read their stories and so not all of them received the feedback and praise which they deserved. The teacher felt that she had more success when she combined the mathematics work with work on shapes. Some whole-class teaching on shapes was followed by some children doing shape activities while she worked with the others on mathematics.

A whole-class poetry session began well with reading and discussion followed by writing rough drafts, but it proved impossible to comment on 35 children's drafts in the time available. Not all pupils were able to complete the drafts in that lesson. The teacher was unhappy with the lesson as a whole, but the pupils had greatly enjoyed the whole-class reading and discussion.

On one morning per week, all Year 2 pupils were placed in two ability groups for mathematics. The teacher interviewed had the more able group of 31 pupils. The teaching approach was based on the National Numeracy Project — a 'carpet session' for the whole group, an activity and a final plenary session. The teacher saw merits in this approach as it enabled her to cover the work, but she felt that as there was still quite a wide range of abilities, she spent most of her time moving swiftly from one child to another and, in her view, not giving them the level of support she would have liked to.

Use of the classroom assistant. The classroom assistant (CA) was essential to some of the activities, enabling the teacher to give intensive support to half of the class, for example, in science. These sessions required more detailed planning and the CA had to be fully briefed. The teacher felt that the CA preferred this arrangement and enjoyed having a planned activity, the teaching of a skill and an end product. There was a feeling of trust and cooperation between her and the teacher. The important contribution of the CA was highlighted when, for two

sessions, she was absent, giving support to other classes on out-of-school visits. There was a stark contrast between these sessions and sessions with the CA in what the teacher was able to achieve and in the general class atmosphere.

This teacher felt that she was succeeding with the class, but that much more could be achieved with the children in smaller groups. She was managing to cope most of the time because of having some help from a CA whose skills she could develop and to whom she could give increasing responsibility. Physical space was also a key factor. Having access to an adjoining room meant that activities could be spread out, and the pupils were not always herded together in a confined space which made for noise and a certain amount of friction. The combination of larger class size and limited physical space did not, in her view, make for good pupil experiences. She also felt that she was aided by the nature of the children in the class, whom she described as noisy but well-behaved and motivated to learn. In her experience, in a class of this size, even a handful of badly behaved children could destroy the class atmosphere and disrupt learning.

School D

This was a small infant school of 114 children including a nursery class of 32 and a small special needs group of 11. There were three infant classes, ranging in size from 21 to 24 pupils. The teacher of a Year 2 class of 24 pupils took part in the research project. Fourteen pupil from the class were receiving additional help with reading. There was no paid classroom assistant time, but two, sometimes three, parents came in each week and assisted with preparing resources and hearing some children reading.

The teacher had divided the class into four ability groups of six pupils, and teaching sessions usually took the form of a whole-class teacher-led activity followed by work in groups, sometimes in smaller groups because of the pupils' abilities or for purposes of control. The teacher reported that, at first, she thought 24 pupils was a very low number, especially after having had 38 pupils in her previous school, but after some weeks she felt that 24 was just about the right size. In a class of this size, she found that she and the pupils had greater freedom to move around and she was able to monitor what was going on more easily. She could move freely from group to group rather than viewing the whole-class; after having 38 pupils this was a move from *'overseeing to involvement'*.

At the start of the year, this teacher had thought that the effect of class size would depend very much on the type of child. But after a term she thought that smaller classes had some advantages, whatever the circumstances: '*Physical space, differing abilities, lack of maturity — all can be dealt with more easily in a smaller class.*' Having taught only mixed age classes until her current class, the teacher did not consider mixed age classes to be an important issue at key stage 1, less so than the range of ability, though she would prefer single age classes at Year 2 because of National Curriculum assessment.

With four groups and only 24 pupils in all, the teacher found that indoor PE was more active, more manageable and safer, and a practical technology exercise could be completed in one day by a group of eight pupils and thus by the whole-class in three sessions. Designing and making Christmas cards could be completed in one day by the whole-class. However, with only one computer in the classroom, even with 24 pupils it proved very time-consuming for each member of the class to use the computer individually.

There were no paid classroom assistants assigned to the class. The teacher felt that, because of the relatively low numbers, she could give more personal attention to the children in this class, but that a classroom assistant would have enabled her to give more support to the less able and provide opportunities for the more able to make greater progress.

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every pupil counts: the impact of class size at key stage 1

Many parents and teachers believe that children learn more effectively in smaller classes, and class size has been the subject of educational research for many decades. Research into the relationship between class size and achievement at secondary school level has produced inconsistent results, while recent studies (such as the Tennessee project STAR) have demonstrated the benefits of marked reduction in class size in the early years of primary schooling.

Early years class sizes are currently the renewed focus of educational and political debate. In England and Wales, pupil numbers in primary school classes have increased steadily in recent years. The UK government has given a pledge to reduce class sizes for five, six and seven year olds to 30 or below by the school year 2000–01.

This study, based upon the findings of research undertaken in schools during 1997–1998, sets out to explore the influence of class size on classroom practice and on pupils' learning as well as its effect on the workload of teachers. It also explores the implications of selective class size reduction for the management of schools and the organisation of classes and teaching groups.

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