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WILLIAM JOHN MARSHALL

THE INFLUENCE OF THE SIZE OF A SECONDARY SCHOOL ON ITS ORGANISATION, ITS TEACHERS AND THE ACADEMIC AND PERSONAL DEVELOPMENT OF ITS PUPILS

ABSTRACT

The issue of secondary school size has been of interest throughout my teaching career, in which I have worked in schools ranging from 435 to 1,450 pupils. The early 1970's, were a period of expansion and comprehensive reorganisation. By the mid 1980's most schools were experiencing falling rolls. Many were faced with closure and some LEA's proposed to phase out traditional sixth form teaching in schools.

Although school size is frequently discussed in educational literature, little attention has been paid to the influence of size on the outcomes of the school. There is no general agreement as to the optimum size for a secondary school, and this lack of consensus prompted my choice of research topic.

It may be said that five identifiable groups are involved in education: politicians, administrators, teachers, parents and pupils. Some individuals, mainly parents, are members of more than one category, but nevertheless each group has its own priorities. As with other educational issues, these conflicting objectives lead them to regard the question of school size differently.

Throughout this thesis reference is made to the views and experiences of all five "subsets", though no attempt is made to use these divisions as a framework. However Chapter 2, on costs, is concerned with politicians and administrators, whilst Chapter 7 deals with teachers' views. Academic issues are discussed in Chapters 3 and 4, with pastoral care and extra curricular provision being the themes of Chapters 5 and 6. Although much material studied was written during the period of expansion, the research was undertaken during contraction, and Chapter 8 deals with the implications for schools of falling rolls. Chapter 9 summarises the relevant literature, leading to the conclusion that the size of a secondary school has little quantifiable influence on its outcomes.

THE INFLUENCE OF THE SIZE OF A SECONDARY SCHOOL ON ITS  
ORGANISATION, ITS TEACHERS AND THE ACADEMIC AND PERSONAL  
DEVELOPMENT OF ITS PUPILS

WILLIAM JOHN MARSHALL

for the degree of

MASTER OF ARTS IN EDUCATION

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14 JUL 1989

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CHAPTER 1  
INTRODUCTION

1.1 Opening comments

The influence of size on the performance of secondary schools has attracted much comment, both informed and otherwise, during the past thirty years or so. When comprehensive schools were being planned from the mid 1950's it was generally believed that they would be considerably larger than the grammar, technical and modern schools they were to replace. Some schools of 2,000 pupils or more were established, the highest roll being that of Exmouth Comprehensive, Devon, with 2,582 pupils in 1979-80 (1). Much of the educational debate since the Second World War was conducted in a period of population growth.

Since the mid 1970's however, the situation has been markedly different; the birth rate has been lower than anticipated and the number of pupils receiving secondary education is expected to fall by 40 per cent between 1975 and 1991. At the same time local education authorities have had to become more cost conscious than for many years, and there is now considerable pressure from the Secretary of State to reduce the number of schools in an attempt to finance education more effectively. The debate on the re-organisation of education on comprehensive lines in the 1960's and 1970's to some extent centred on the issue of

large schools, whilst the problem of falling rolls in the mid 1980's is discussed when parents, teachers, councillors and others are seeking to maintain many small schools, primary and middle as well as secondary, which are threatened with closure.

Despite, almost by implication, the numerical background to the debate on school size, there has been surprisingly little research on the influence of size, and only part of that has been of quantitative rather than qualitative nature. The object of this thesis is to assess the influence of size, as distinct from other variables, on the performance of secondary schools.

Much of the published material has been written from a biased angle, to 'prove' the merits of either large or small schools, and statements by one writer are often diametrically opposed to those by another. Even where there is numerical data available conclusions are rarely statistically significant, and disagreements on the validity or otherwise of statistical techniques go beyond the scope of this thesis.

Table 1.1 shows the distribution of comprehensive schools by size in January 1985.

Table 1.1 Number of Schools with the following numbers of full time pupils on the registers.

January 1985

Maintained comprehensive schools

Number of Pupils	Up to 16		Up to 18	
	Number of Schools	%	Number of Schools	%
Up to 200	9	0.7	9	0.5
201 - 400	54	4.5	35	1.8
401 - 600	222	18.5	142	7.3
601 - 800	354	29.5	329	16.9
801 - 1000	318	26.5	505	26.0
1001 - 1200	159	13.3	392	20.2
1201 - 1500	69	5.8	384	19.7
1501 - 2000	14	1.2	138	7.1
2001 and over	0	0.0	10	0.5
	1199	100.0	1944	100.0
Mean size	c800 Pupils		c1020 Pupils	

Source: Department of Education and Science. Statistics of Education : Schools 1985 Taken from Schools by Size and Type, Table A3/84, p23.

This survey is chiefly concerned with maintained schools in the United Kingdom, but reference will be made, where appropriate, to independent schools and schools in other countries. In his forward to *Big and Beautiful*, Williams says "Size is not a charge levelled against distinguished institutions like Eton (1240), Manchester Grammar School (1440) or George Watson's School, Edinburgh (1,100 boys and 950 girls" (2).

However, in 1985 there were only 8 independent schools (0.3 per cent) with over 1,200 pupils compared with

630 in the maintained sector (2.6 per cent). (3) The contrast is probably even more marked, since the figures for some independent schools will include children from 9, or even 5 upwards, whilst it is most unlikely that any of the maintained schools will cover such wide age ranges.

## 1.2 Definition of Size

A major problem is that terms such as 'large' and 'small' are purely relative, and it is not clear from all writers how they define their categories of size. James (4) for example, defines a large school as having over 1,200 pupils whilst noting that the average size of the French Lycee is between 1,700 and 2,000. In the United States high schools of 2,000 are quite commonplace. Some Chicago schools have over 5,000 pupils. At the same time, however, some of the American Studies referred to in subsequent chapters of this thesis show that many schools in the United States are considerably smaller than occur frequently in Britain.

Also definitions of size vary over time. In the 1920's a school of 250 to 300 pupils was considered to be large. By the 1950's the average size of modern schools was around 300 whilst grammar schools had between 300 and 500. (5) Even by 1965 (see Fig 1.2) over three quarters of secondary schools had fewer than 600 pupils, with hardly 3 per cent having over 1,000. By 1986 under one quarter were

Table 1.2 Numbers of maintained secondary schools by size range 1965-1986

Size Range	1965		1970		1975		1983		1986	
	no	%	no	%	no	%	no	%	no	%
under 200	422	6.7	216	4.1	99	1.5	44	1.1	33	1.0
201-400	2081	32.9	1303	24.7	476	10.4	206	5.3	185	5.1
401-600	2229	35.2	1837	34.8	1025	22.5	562	14.4	573	15.6
601-800	1064	16.8	1094	20.7	1085	23.8	839	21.5	879	24.0
801-1000	328	5.2	438	8.3	723	15.8	901	23.0	850	23.2
1001-1500	204	3.2	316	6.0	962	21.1	1135	29.1	1013	27.6
over 1500			76	1.4	222	4.9	218	5.6	130	3.5
	6328	100.0	5280	100.0	4562	100.0	3908	100.0	3663	100.0

Source: Department of Education and Science. Statistics of Education : Schools (HMSO). Compiled from various tables relating to the appropriate years.

under 600 and almost one third over 1,000, this latter proportion being smaller than in recent years because of falling rolls.

Few writers give actual definitions of size, though Rutter et al (6) regard a large school as having a 7 to 12 form entry. Burgess, writing of the growth of Bishop McGregor School, London, says that by 1973, when the school roll was 1,269, it qualified for the description of a large comprehensive school "For the head the critical point was reached in 1972 when we had over 1,000 pupils. He started his entry in the school log book with the words "The beast has changed". (7) Pedley, in similar vein, says that schools reaching 1,000 pupils were the "educational equivalent of the sound barrier" (8)

An anonymous article in 'Comprehensive Education' (9), written during the period of expansion, begins by commenting on the difficulty of defining 'big'. The author, who defines 'very large' as being over 1,400 pupils says there is a need to find if there are different degrees of success between size ranges 700 to 900 and 900 to 1,100, which covered most of the 1,800 comprehensive schools in 1973. Whilst I agree with this observation, it would seem worthwhile to extend the analysis to cover schools of between 500 and 1,500 or even 1,700 pupils.

The article also asserts that the problems faced by larger schools arise because they are more likely to be found in deteriorating inner city situations, and were formally secondary modern schools. Both these arguments are generalisations and there must be many cases where they would not stand up to critical examination.

Neither the government nor local education authorities have rigid definitions of what constitutes a 'large' or 'small' secondary school. Circular 10/65 (10) suggested 6 or 7 forms of entry as being the smallest desirable size and the latest government proposals (11) also suggest a minimum of 6 forms (These sizes will give 11 to 16 schools of around 1,000 with up to 1,200 if the school has a sixth form). However throughout the last twenty years or so many smaller schools have been allowed to operate because of particular circumstances.

The size ranges used in recent issues of the Department of Education and Science Statistical Bulletins (12), and the latest HMI report (13) for 11 to 18 schools, are 1 to 600, 601 to 900, 901 to 1200 and 1201+, suggesting that the first and the last categories could be regarded as 'small' and 'large' respectively. However the Audit Commission use a different grouping in their report on surplus capacity. The report (14) uses a different grouping: 1 to 400, 401 to 800, 801 to 1500 and 1500+. In

an earlier work, Bates(15) cuts across both these classifications, defining a school with between 750 and 1,250 pupils as 'medium size'. Presumably he considers schools of below 750 'small' and above 1,250 'large'.

### 1.3 Size and geographical location

It is widely assumed that smaller secondary schools are to be found in rural areas and larger schools in towns.

Indeed more than one writer has seen fit to equate the problems of the large school with those of the inner city. Benn and Simon (16) found in their survey that the average size of comprehensive schools in rural areas was much smaller than in cities and towns and Ross et al (17) also observed that school size was linked to geographical situation.

However, this generalisation cannot be considered statistically meaningful; the Exmouth school, situated in a seaside town with a population of only 27,000, is perhaps an extreme exception. Comparison between local education authorities is difficult; some, for example Essex, Dorset and Lancashire contain both *sparsely* and densely populated areas. The following table is for illustrative purposes only, giving figures for some of the extremes in terms of population density of local education authorities in England and Wales with significant numbers of 11-18 comprehensive schools.

Table 1.3 Population density and school size in selected local education authorities

LEA	Persons per hectare (a)	No.	11-18 Schools (b)		
			Mean Size	Largest	Smallest
Powys	0.2	12	726	1230	390
Cumbria	0.7	26	1005	1850	150
Norfolk	1.3	12	1031	1380	780
Sheffield	14.6	23	1159	1800	740
Bromley	19.4	23	875	1200	370
Brent	56.8	18	804	1700	260
ILEA Div.1	102.0	15	773	1470	380

Sources: (a) Office of Population Censuses and Surveys. Census 1981, Preliminary report (HMSO, 1981)

(b) Education Authorities Directory 1986. (The School Government Publishing Company Ltd 1986.)

Note. ILEA Div.1 covered Hammersmith, Fulham, Kensington and Chelsea.

The above authorities were selected more or less at random, except that Powys is the most sparsely populated local education authority and Hammersmith, Fulham, Kensington and Chelsea the most heavily populated. It may be argued that the existence of single sex schools in some urban areas reduces the mean size, but the fact that the relevant authorities have, to date, not chosen to amalgamate schools (thus increasing the mean size) does not weaken the suggestion that schools in towns and cities are not significantly bigger than in country areas.

## Chapter 1 Footnotes

1. Guinness Book of Records. (Guinness Books, 1987) p213.
2. David Williams, Foreward to "Big and Beautiful". (Secondary Heads Association, 1979), p1.
3. Department of Education and Science. Statistics of Education Schools, (HMSO, 1985) Table A3/85, p24.
4. Walter James, Large Schools. Conference (HMC), October 1970, p4.
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6. M. Rutter, B. Maughan, P. Mortimer and J. Ouston, Fifteen Thousand Hours. (Open Books, 1979) pp99-100.
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8. Robin Pedley, op cit, p91.
9. Anon, Sizing up Size, Comprehensive Education 26. Spring 1974, p7.
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12. Department of Education and Science. Statistical Bulletins 8/86 (table 9) and 10/87 (table 9). (HMSO, 1986 and 1987)
13. Department of Education and Science. Secondary Schools - an appraisal by HMI. (HMSO, 1988) tables 15-17, pp77-78.

14. Audit Commission for Local Authorities in England and Wales. Surplus Capacity in Secondary Schools: A Progress Report, Occasional Paper 6. (HMSO, 1988) p4.
15. A.W. Bates, "The Administration of Comprehensive Schools" in T.G. Monks (ed) Comprehensive Education in Action. (Slough, National Foundation for Educational Research, 1968) p56.
16. Caroline Benn and Brian Simon, Half Way There. (McGraw Hill, 1970) p75.
17. J.M. Ross, W.J. Bunton, P. Evison and T.S. Robertson, A Critical Appraisal of Comprehensive Education. (Slough, National Foundation for Educational Research, 1972) p15.

CHAPTER 2  
ECONOMIC AND FINANCIAL ASPECTS OF SIZE

2.1 Introduction

A recurring theme of this thesis is that the measurement of the output of a school is difficult, if not impossible. For the purpose of this section, however, we will assume that the output of a school is the number of pupils on roll in a year, in the same way that we might consider the output of a coal mine the number of tonnes produced in a year. No importance is attached to the quality of education, its implications for the pupils and the benefits, or otherwise, for the community as a whole.

The provision of any good or service involves costs being incurred. Costs may be classified as fixed, ie costs which do not vary with output, or variable, which are costs which increase as output increases. In the long run, which may be regarded as an indeterminate number of years, all costs become variable, but we may assume that capital and maintenance costs, together with some salaries are fixed, whilst stationery, textbooks and running costs (eg electricity) are examples of variable expenditure. Teachers' salaries, which are of course, the major cost are to some extent both fixed and variable, and it is the existence of this "grey area" which poses considerable

problems, for the administrators of both the private and maintained sectors of education.

## 2.2 Economic Theory

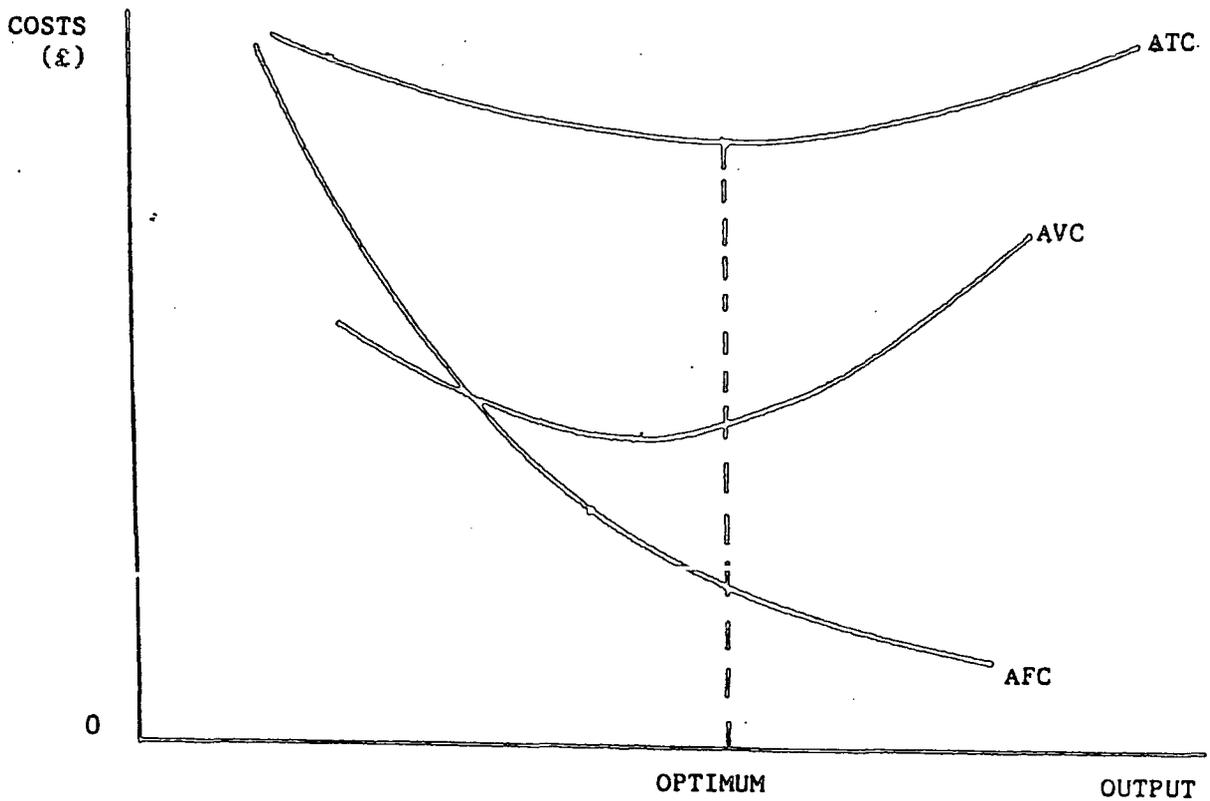
In conventional economic theory average fixed costs (AFC) fall continuously as output increases, whilst average variable costs (AVC) fall at first but begin to rise beyond a certain point. The average total costs curve (ATC), which is the vertical sum of the AFC and AVC curves is shown below. (fig. 2.1)

The optimum level of output is defined as that level of output at which average total cost is a minimum; in educational terms this is the number of pupils in a school which can be taught for lowest average cost to the local education authority.

Even if it is possible to obtain an optimum size for a school, given its geographical situation and educational objectives, there is no reason why educational effectiveness should be maximised at the same size. This is also true in the world of business and commerce : only under conditions of perfect competition (which can never remotely be considered to apply in the maintained education sector) is the profit maximising output co-incident with the level of output which minimises average total cost. In practice the profit maximising output for a firm is below

the optimum level of production, and therefore it should not be surprising if a similar situation should exist in education. However it should be borne in mind that profit maximisation benefits the firm, or seller, rather than the consumer of a good, or user of a service.

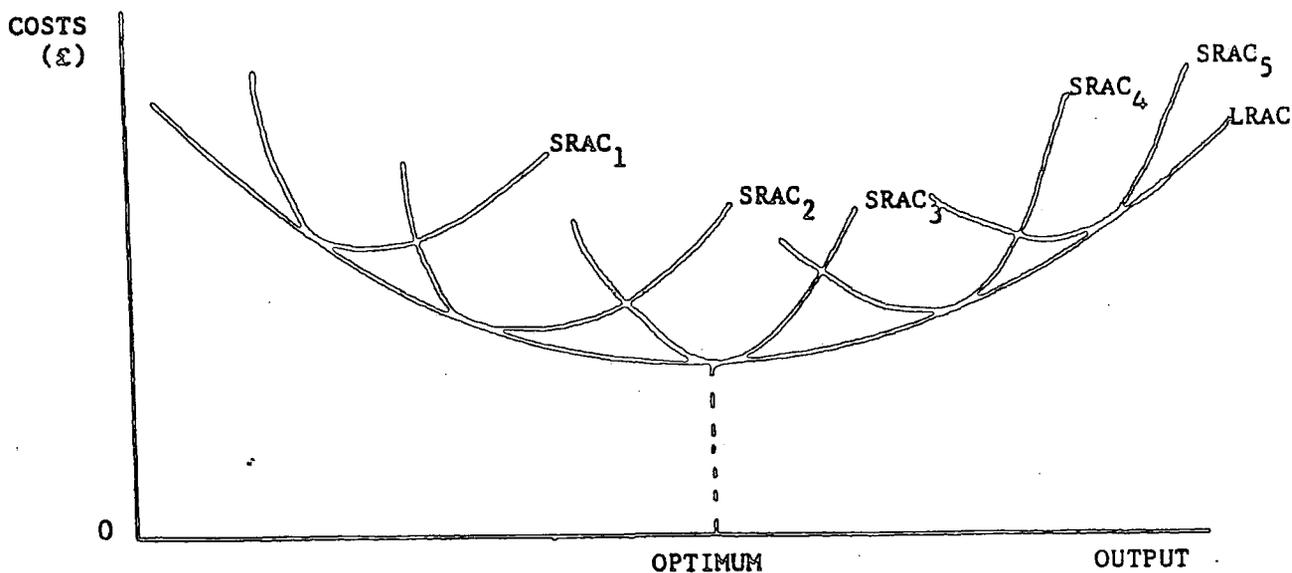
Fig 2.1 Short run cost curves



The short run average cost curves are invariably "U"

shaped, as above and it is widely assumed that the long run average total cost curve (LRAC) is also "U" shaped, being the envelope of the short run curves (SRAC<sub>1</sub> etc) (Fig 2.2).

Fig 2.2 "U" shaped long run average total cost curve

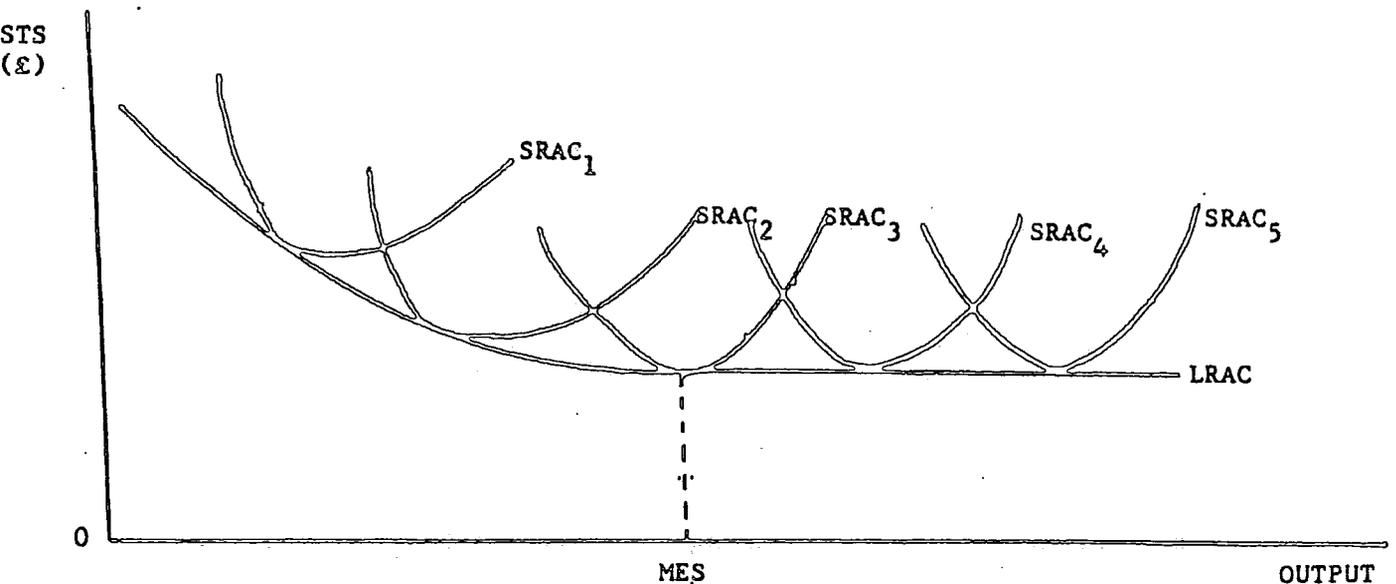


However not all economists accept that the principle of the "U" shaped long run average cost curve is valid, claiming that it is not supported by empirical evidence. Silbertson (1) argues that as the size of an organisation increases capital costs per unit may not rise proportionately whilst operating (variable) costs per unit may fall.

Because increased size facilitates greater specialization of factors of production, this allows for more efficient use of equipment. Silbertson therefore suggests that curve is "L" shaped.

As outlined earlier, ATC falls initially as the scale of operations increases, but after reaching a minimum they remain constant. Therefore, applying the argument to schools, there is a minimum efficient scale (MES) at which costs per pupil are at their lowest, beyond which there are neither economic advantages nor disadvantages of expansion.

Fig 2.3 "L" shaped long run average total cost curve



Unpublished studies carried out for the Department of Education in Northern Ireland produced somewhat tentative results, partly because records are not kept in such a way as to identify accurately all costs incurred by individual schools. (2) In the short run it may be that the ATC curve is "U" shaped because of the need, as pupil numbers increase, to use more expensive mobile classrooms. It is also possible that management diseconomies of scale

could lead to "U" shaped curves.

However in the long run the evidence suggest that the ATC curve is "L" shaped; there is an element of fixed cost, together with variable costs which are then proportional to pupil numbers.

The preceding two paragraphs must be qualified in light of the observation that costs differ between schools of the same size, ie that not all schools are on the theoretical ATC curve. What is observed is not so much differences in costs, but in the operation of the financial allocation system.

It is questionable as to the degree which economic theory can usefully be applied to the operation of schools.

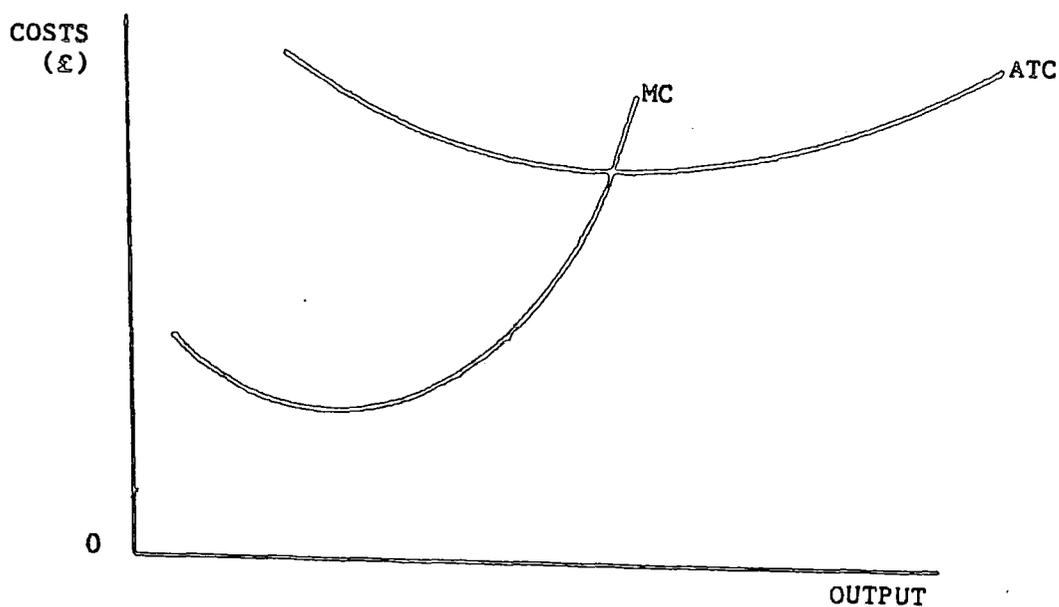
Although schools, like firms, take a set of "inputs" (teachers' time, books and equipment, the use of buildings) and combine them to produce "outputs" (skills, new knowledge, socialisation), comparison between business and schools, especially in the maintained sector, is of limited value. Measurement of output is extremely complex (see Chapter 9). True it is possible to evaluate the costs of providing educational services in school, though there is disagreement amongst economists as to which costs should be included.

It would be easier, perhaps, to study the independent sector, in which only 6 percent of our secondary pupils are educated, and reference will be made to the work of Bee and Dolton (3) and Watt (4). However it is false to deduce that independent school fees can be taken as an accurate measure of the costs of providing education. Some schools are more generously endowed than others, standards of attainment and provision of facilities vary widely in the fee paying sector as in state schools.

A particular problem when attempting to calculate the average cost of educating a child is that costs vary because of circumstances (location, age and type of buildings, previous patterns of education and so on). Fixing price equal to marginal cost (MC) is a feature of the financial policy of many of the public corporations responsible for our nationalised industries (Marginal cost is defined as the extra cost incurred in the provision of one additional unit of output). Perhaps this might be an appropriate consideration, though the empirical evidence suggests otherwise.

The smooth curves in fig 2.1 imply a smooth marginal cost curve with marginal cost increasing as the size of the school increases. (Fig 2.4)

Fig 2.4 Marginal and average total cost curves



However this is not so. The additional capitation allowance for one pre "A" level student in Cambridgeshire was only £80 in 1985-6, (5) an insignificant figure if only one new child is added to the roll, but should numbers rise by, say, 20 this would entail the employment of an additional teacher, extra capital equipment and possibly the acquisition of an additional classroom.

There is much disagreement between economists about educational costs. Merrett (6), in putting forward the case for ratepayers exercising greater control over spending on education claims that a greater rate of return

should be required. Preston (7), answering Merrett in a subsequent article disagrees, suggesting that "the whole point of public finance of education is that they [ie educational institutions] cannot yield a commercial return in the narrow sense that he [Merrett] conceives it. To argue that a rate of return, correctly calculated, is relevant and interesting is one thing. To say that it is to be the only criterion is commercial technocracy gone mad".

### 2.3 American studies of school costs

Two of the major studies of the economic implications of school size were undertaken by Riew and Osburn in the 1960's, both in the United States.

Riew (8) studied 109 high schools in Wisconsin and deduced that the roll which minimised average total cost was 1,675 pupils. He admits that it is difficult to evaluate educational qualities, but states: "based on what may be considered as reasonable assumptions, the study of Wisconsin high schools suggests that economies of scale at this level of public education are very important". (9)

However the table below suggests that the difference in average cost per pupil between the largest range of school sizes (1,601 to 2,400 pupils) and the next largest

range is negligible. The lowest average cost range in the table is 701 to 900, a result which Riew does not explain, although he does comment that within the range of enrolment between 200 and 900 the advantages of a larger school may be considered overwhelming. The most noticeable economies are to be seen in the lowest size ranges, as enrolment increases from below 200 pupils, a size which is rarely found in British secondary schools. Not only is expenditure per pupil considerably reduced as the school increases in size, but, as will be discussed in Chapter 4 there are decisive advantages in curriculum provision and teacher specialisation. Riew found that only 18 percent of variation in per pupil operating expenditure is explainable in terms of variation in enrolment. (10)

**Table 2.1 Operating Expenditure and Size of School**

No. of schools	Average daily attendance	Operating expenditure per pupil (\$)
6	143 - 200	532
12	201 - 300	481
17	301 - 400	446
17	401 - 500	427
14	501 - 600	443
13	601 - 700	413
9	701 - 900	374
6	901 - 1100	433
6	1101 - 1600	407
7	1601 - 2400	406

Source : taken from John Riew, Economies of Scale in High School Operation. Review of Economics and Statistics (48) no 3, 1966, Table 1, p282

The case for larger schools would Riew claims, be strengthened if capital costs, which he states were roughly

a quarter of total expenditure, had been included. These costs would have increased cost variation between schools, the higher overheads being expected to fall on smaller schools. (11)

Osburn (12) in 1966 studied 433 high schools in Missouri, and concluded that the optimum size was even larger at 2,244 pupils. (13) However according to his study, benefits of expansion were not as great as in Riew's study. Osburn claims that savings per pupil were \$47 per annum when the size increased from 200 to 2,244, whilst Riew gives a figure of \$200. (14)

Table 2.2 Economies of scale arising from increased school size

Increase in roll from	to	Fall in average cost per pupil (\$)
200	500	12.74
500	1000	16.74
1000	1500	11.14
1500	2000	5.53
2000	2244	0.66
200	2244	46.81

Source : Donald D. Osburn, Economies of Size Associated with Public High Schools, Review of Economics and Statistics (52) no 1, 1970, p115

Osburn and Riew's articles are interesting for the greater importance each attaches to statistical techniques than the educational implications of their findings, an indication of the difficulty in attempting to apply strict mathematical interpretation to imprecise data. Osburn's

main criticism of Riew is that the Wisconsin study excluded transportation costs from the expenditures variable. (15)

In a subsequent article Riew (16) justifies this exclusion on the grounds that, contrary to general belief, transport costs do not differ widely. In the most densely populated counties average annual transport costs per pupil were \$54, whilst in the four most sparsely populated counties the figure was \$65.

Cohn's study of 377 high school districts in Iowa (17) suggests the existence of significant economies of scale. He arrives at an optimum size of 1,500 pupils with a 95 percent confidence limit of 1,277 to 1,663, but goes on to say that there may be no basis for specifying an upper limit to the optimal school size within the range of data (suggesting some support for the notion of the "L" shaped, rather than "U" shaped ATC curve). Significantly however Cohn states that no account was taken of quality differences between schools.

Sabulao and Hickrod (18) also found the existence of economies and diseconomies of scale, ie (illustrated by the "U" shaped average cost curve). However they qualify this by stating that there is a need for more research in the region of diseconomies, ie above the optimum size. Their sizes for economic efficiency in secondary school districts

are: minimum 175 average daily attendances, optimum 500 ADA and maximum 2,000 ADA. From the administrative angle the economic efficiency sizes are much greater: minimum 420 ADA, optimum 2,500 ADA and maximum 12,000 ADA. (19)

The above figures cover such wide ranges that their value, especially in the British context is limited, but it is noticeable that the optimum size for gross expenditure of 500 is considerably smaller than other writers suggest.

Sabulao and Hickrod are also concerned that there are many other educational considerations beyond seeking to achieve minimum average cost size of schools. (20) They say that the situation is complex and suggest that a possible reason for diseconomies arising is that as a school grows it provides a different mix of services. (21)

#### 2.4 British Studies of school costs

A particularly interesting study was made by Knight (22) in attempting to estimate the economic effects of increasing or decreasing the rolls of Holyrood School, Somerset by 30 percent. His calculations are summarised below. (Table 2.3)

The above exercise is useful in that it is one of very few studies made of differing sizes for the same school. Most other studies are either entirely theoretical

Table 2.3 Marginal costs for Holyrood School 1979/80 (model of 30 percent change in numbers)

	Costs for current size (1088 pupils)		Costs if roll falls 30% (762 pupils)		Costs if roll increases 30% (1414 pupils)	
	Total costs	Cost per pupil	Total costs	Cost per pupil	Total costs	Cost per pupil
	£	£	£	£	£	£
LEA overheads	157100	144.4	151660	199.1	162540	114.9
Teaching costs	519980	478.0	403480	529.5	639670	452.4
Premises costs	115240	105.9	110870	145.5	116680	82.5
Transport costs	35290	32.4	30000	39.4	40580	28.7
Other costs	41250	34.2	32740	43.0	49760	21.2
<b>Total</b>	<b>868860</b>	<b>798.6</b>	<b>728760</b>	<b>956.4</b>	<b>1009230</b>	<b>713.7</b>
Change in total and per pupil costs			-16.1%	+19.8%	+16.2%	-10.6%

Source: Brian Knight, Managing School Finance, Heineman Organization in Schools, 1983 (extracted from Table 2.3, pp 40 and 41)

or make comparison between schools in different situations.

Of necessity Knight made many assumptions, the most significant being that no premises would be taken out of use if contraction took place and no new buildings would be provided if the school expanded. (23) The latter possibility appears extremely unlikely.

Whatever the size of a school teachers' salaries are the major item of expenditure as Knight's table shows.

Table 2.4 School size and teachers salaries

Size of School	762	1088	1414
Teachers' salaries (£)	330,000	428,520	530,000
as a % of total costs	45.3	49.3	52.5
as a % of school based costs	57.2	60.2	62.0
Teachers' salaries per pupil (£)	433.1	394.8	374.8

Source: Brian Knight, Managing School Finance, Heineman Organization in Schools, 1983. Taken from table 2.3, pp40-41.

However the reduction in teachers' salaries per pupil as the school increases in size would produce only relatively small economies, especially when expressed as a percentage of total school costs. Knight commences his section subheaded "Comparisons by size" (24) by stating that there is a general belief in the existence of economies of scale in schools, "probably based on the simple observation that in most other industries there are trends towards larger units on grounds of financial efficiency". (25) He goes on to say "At secondary level, at the height of the comprehensive debate, one of the arguments, usually in very general terms and supported by

hard evidence, was that larger schools were more efficient financially, and that this would make for a better quality of provision for the same expenditure". (26)

Knight refers at length to Hough (27) and is somewhat surprised by the latter's inability to find "strong and extensive evidence of economies of scale in relation to secondary size". (28) Knight's overall impression is that large schools do provide economies of scale but these are often overlaid and outweighed by other factors connected with the growth of a school. (29) His final paragraph on the subject of size and costs gives lukewarm support to the proponents of the "U" shaped average costs curve. "There are suspicions that schools with around a thousand pupils are cheaper to run per pupil than smaller schools, but that larger schools become slightly more expensive again. This is open to debate". (30)

Atkinson (31), concurring with Hough, (32) also states that economies of scale will be found in large secondary schools, although the position is more complex in secondary than in primary schools, thus appearing to agree with Cumming (33) in his study of Scottish schools. Atkinson refers to the economic benefits of the large sixth form where, as is seen below, there are considerable economies of scale in teaching costs.

Table 2.5 Staff requirements and costs for Sixth Forms

No. of pupils	65	104	156	208	260
No. of staff	10	10	13.2	16.7	16.7
Total teaching cost	£60,000	£60,000	£97,000	£101,000	£101,000
Average teacher cost per pupil	£908	£577	£512	£486	£389

Source: Webb P.C. "Teaching Cost Models for Sixth Forms". Educational Policy Bulletin No.7 Vol.1, Spring 1979. Taken from G.B.J. Atkinson. The Economics of Education, Hodder and Stoughton, 1983, table 4, p129.

The Audit Commission (34) found higher teaching costs associated with small sixth forms in a metropolitan district. They suggest a linear relationship with average teaching costs per student falling from over £1400 for a sixth form of 25 students to below £950 for 225 students. Their data, published in the form of a 'line of best fit' superimposed on a scatter diagram, shows considerable variations in costs between sixth forms of similar size. It is interesting to note that the four schools with the lowest teaching costs all had between 150 and 170 sixth form students. The benefits of, and indeed some would claim the need for, the large sixth form are considered in Chapter 4.

Hough (35), in a comprehensive study reviews the work of a number of writers referred to elsewhere in this chapter, and an entire chapter (36) deals with economies of scale. Much of the chapter is concerned with statistical analysis and interpretation, together with comment on the

difficulties incurred in compiling data when local education authorities do not produce expenditure data on a school by school basis which is required to test properly for economies of scale. He agrees with Dawson (37) that there is the need for research on a school by school basis and concludes that school size is not a significant determinant of expenditure. (38)

## 2.5 Local authorities and school costs

The attitude of local education authorities vary, but the overall impression is that they do not have, or are not able to hold, rigid views on the desirable size for secondary schools, mainly because decisions always have to be taken from the starting point of existing accommodation and population projections. There is considerable overlap of material in this section and Chapter 8 on falling rolls.

Answering letters, a principal education officer of Essex County Council (P. Joslin) states: "Costs are always a relevant factor when schemes of reorganisation are being discussed and elected members do take into account the viability of existing sets of buildings and their expansion possibilities", (39) whilst the Director of Education for Sunderland (Jackson Hall) says that when reorganisation was being discussed in anticipation of falling secondary rolls: "No research was carried out in Sunderland on the relative costs of different sized schools". (40)

The reorganisation proposals of these and other authorities, including Sheffield, Cambridgeshire and County Durham are concerned more with the curricular rather than economic implications of different sized schools. This does not mean, of course, that financial considerations can be ignored, when discussing what should be included in "a good curriculum"(41) and we will return to this theme in Chapter 4. Financial considerations are, of course, a major element in the response of local authorities to falling rolls and the issue is also discussed in Chapter 8.

Sheffield City Council's proposals for reorganisation (42) set a minimum size of between 650 and 750 pupils in the 11/12 to 16 age range in order to be entitled to sufficient staff and other resources. It was felt that if numbers fell below the minimum figure the costs would rise "above the assessed entitlement in order to provide a range of opportunities no less favourable than in other schools".(43) At the same time the authority decided that education of 16 to 19 year olds should be concentrated in eight tertiary colleges. It was stated that keeping up a lot of spare places costs money and, the most important reason for closing school sixth forms was that the cost of providing for many small "A" level classes would be unacceptably high.(44)

However the authority subsequently qualified its earlier decision by accepting the need to maintain six (out of 25) schools below the stated minimum size. It was agreed to keep open the smallest secondary school, with an estimated roll in 1987/8 of 430, because the school, as well as being isolated from the rest of the city had an excellent reputation for serving the needs of a community with acute social problems. The other five schools were to be kept open, despite having likely four form entries of around 120 pupils, because the authority recognised the need for schools to be identified with their communities and to avoid unreasonably long journeys to school. (45)

Little appears to have been written about the implications of school size or split site schools on the administrative costs of local education authorities. It seems almost inevitable that if, for example, a county has 30 schools with an average size of 1,200 instead of 60 schools with an average size of 600 administrative costs will be reduced. However no authority has proposed that any potential cost saving in this field should be taken into consideration, even though some cost cutting exercises have been implemented in for example, school cleaning, lunches and ground maintenance. Here a number of schools are grouped into teams and meals are cooked centrally before being taken to individual schools by van. Teams of groundsmen descend on schools and carry out gardening and

playing field preparation according to supposedly cost effective schedules. I have no experience of "meals on wheels" but observed the implementation of the economies in groundsmen's duties in Essex. There was an immediate decline in the overall appearance of school grounds, and the quality of playing fields deteriorated to the point that cricket pitches became unsafe. Money may have been saved, but only at the expense of the quality of education.

## 2.6 Independent school evidence

Two studies of independent schools produce results which conform to the general pattern. Watt (46) puts forward the case for investigating school costs by stating that if there is a certain size of school which minimises unit (or average) cost, there must be scope for what may be in total considerable savings in educational expenditure. He finds that for boys the cost minimising size is 1,812 pupils, which was outside the range of sizes which he studied (397-1,414), therefore making it difficult to place any reliance on the figure. For girls the cost maximising size was 1,046 pupils, again outside the range studied.

Bee and Dolton (47) also found the existence of economies of scale in the independent sector. Their estimate of the size of school which minimised average cost was between 1,865 and 2,440 pupils, concurring with the

estimate of Riew of 1,675 (48) and Osburn of 2,444 (49). Only Riew's figure lies within the size range studied by Bee and Dolton (200-1728). (50) However their calculations are performed on the assumption that average cost is equivalent to the fees charged by the school. (51) Evidence suggests that this is unlikely to be reliable, for schools which are well endowed may be able to charge lower fees whilst actually spending as much, if not more, per child than those schools whose only source of income is fees.

Table 2.6 Average Expenditure per pupil and school fees 1984-5

School	Total (a) Capitation expenditure £	Pupils	Average expenditure per pupil		Day pupils' fees	
			£	Rank	£	Rank
A	95200	613	155	5	3405	1
B	125000	488	256	2	2706	4
C	78562	658	119	8	2442	6
D	141350	530	267	1	2736	3
E	116957	747	157	4	2283	5
F	190000	800	238	3	3084	2
G	94761	776	122	7	1878	7
H	57706	454	127	6	1839	8

Spearman's coefficient of rank correlation = 0.596, not significant ( $p > 0.05$ )

Note (a) includes expenditure on apparatus and equipment, purchase of text books, office equipment and stationery, telephone and postage, furniture and fittings and external examination fees.

Source: Information supplied to Hubert Ward by schools. Numbers of pupils obtained from Whitakers Almanack 1986, pp535-538.

This may be illustrated by referring to Table 2.6 above. The data for capitation expenditure by eight HMC

schools in East Anglia was compiled by Hubert Ward, Headmaster of The King's School, Ely for submission to Cambridgeshire County Council's Education Committee, of which he is a member. The purpose of Ward's exercise was to show that capitation expenditure per pupil in maintained schools was considerably less than in independent schools.

The above figures do not include capital costs, comparison of which would be extremely difficult, and teachers' salaries, but they do show that whilst expenditure on operating costs is greater in schools where fees for day pupils are highest, the relationship is not sufficiently close to justify the claims of Bee and Dolton.

Bee and Dolton go on to study the link between costs and attainment, using three measures of achievement: the average number of passes at "A" level, the average number of grade A's at "A" level and the percentage of pupils going on to read for degrees.(52) They found that although the consensus of results showed the existence of economies of scale in the operation of very large schools, this did not imply that minimum cost sized schools are necessarily producers of highest performance. "Such results indicate that costs are not related to the production of examination successes and indeed large or small schools can produce good quality results or indeed poor results".(53) They suggest that the relationship between costs and performance

is extremely complex and that large or cost efficient schools need not be the most conducive to good examination results.

## 2.7 Other Studies

The characteristics of a school which are related to its academic achievements may well be unquantifiable. This conclusion is supported by Kiesling's earlier work in New York (54). He found that relationship between expenditure and performance was disappointingly weak and that considerable differences in school district efficiency seemed to exist even after allowing for differences in background and intelligence.

Surprisingly perhaps, some of the major works on secondary schools make very little reference to the economic effects of size. Halsall (55) says little apart from quoting Riew (56) and others. She suggests that economies of scale may exist in British schools up to around 1600 pupils (57) and that debate on the economic aspects of school size centre on sixth form provision (58).

There is no mention of economic factors in Barker and Gump (59), nor in Monks (ed), other than a reference to the close correlation between the size of a school and the number of Burnham points allocated to it. (60)

James (61) comments that larger schools can afford

better facilities, libraries and so on, whilst Grubb (62) also believes that the larger school is a "better economic force". He argues that there should be less waste in large schools because greater flexibility is possible. One of the reasons for small schools being run less efficiently, from an economic point of view, is that they are constrained by tight capitation controls. Nick Levine, headmaster of the 2,200 pupil Beacon Comprehensive School, Sussex, is quoted in Durham (63) as claiming that "economies of scale are easy to find". He does not expand upon this statement, but goes on to say that big schools seem to suffer from being disproportionately under resourced.

Ross et al are in a minority who stress the importance of financial aspects, saying that, "apart from sixth form size the arguments for establishing large schools are mostly economic". "If facilities such as drama halls, language laboratories and science equipment are centralized they can be more fully used and their provision be worthwhile. This means that a greater variety of educational experience can be offered and specialisation, important for some minority groups of pupils can be fostered". (64)

Smith (65) quotes American research saying that average cost per pupil falls up to a certain size, but also

comments that internal organisation is an important factor in achieving any economies. He concludes his article, reviewing Halsall's work on school size, by stating that if, as much evidence suggests, school size is unimportant as a determinant of pupil outcomes, there may be a case for larger schools to ensure that scarce resources are used efficiently. (66)

Butel and Atkinson (67) note that a number of researches found significant economies of scale as schools grew in size, but these were not universal and it is often difficult to make comparisons because other factors intervene. They also say that if very small schools are excluded the importance of cost as a determinant of the size of a school is less important than other factors .

## 2.8 Conclusion

There is virtually complete agreement that economies of scale do exist in the operation of secondary schools, though Woodhall (68) quotes research suggesting that there is no clear and consistent relationship between school size and costs. Verry (69) makes a similar observation, he says that whilst schools with 1,000 pupils will incur greater costs than those with 500.... "[but] the cost per pupil in the 1,000 pupil school could be higher, lower or identical to the unit cost in the 500 pupil school". These economies are greatest as size increases from very small,

say 200, and this is consistent with the situation to be found in most spheres of business and commerce. The main reason is that the burden of fixed costs is spread over a greater number of pupils and thus average total cost falls quite rapidly as size increases.

However as the size of a school increases the difference between average fixed cost and average variable cost becomes smaller and the situation becomes less clear. Some writers, believe that diseconomies of scale begin to occur at some point, thus favouring the notion of the "U" shaped ATC curve. They imply that there is a size, or size range at which average cost per pupil is at a minimum and there is, therefore an optimum sized school from an economic angle. Others are less clear about diseconomies and tend to favour the L shaped ATC curve, ie suggesting that once a certain size has been reached costs are relatively stable. Watt (70) says "although there are strong a priori reasons for believing in the likely importance of economies of scale in the very smallest educational units, such economies may be exhausted fairly rapidly. He and others would argue that once the minimum efficient size for a school has been reached factors other than cost should be taken into account.

All writers agree that no decision on size should be taken with the sole aim being to minimise cost. What is

more important is to maximise educational outcomes, however they may be defined, and there is little evidence to suggest that there is a very close relationship between expenditure and outcome, academic or otherwise. Bee and Dolton (71) suggest that there are significant differences in average costs which appear to be unrelated to quality differences.

It was disappointing, at least initially to find relatively little material on this theme, but the shortage is perhaps not too surprising. No two schools are in the same situation, in terms of geographical and historical circumstances. Whereas there may be an economic case for aiming to operate schools within a particular size range this may not be practical in view of changes which would have to be made to existing schools.

If a tentative conclusion may be made, it is that schools are probably most efficient from an economic angle if they are large rather than small, with an optimum size of perhaps 1,200 or more pupils, a size exceeded by only 14 percent of secondary schools in England and Wales in 1985. However the reliability of the statistical basis of this assumption is uncertain, and much greater research into individual school costs would be needed before any figure could be suggested as desirable with any degree of confidence. Perhaps the final words on costs should be

left to Sabulao and Hickrod (72) who say in the first paragraph of their paper, "...[the optimum school size] has been almost as elusive to researchers as the Holy Grail was to King Arthur's Knights" and they conclude "Optimum size, it seems is a veritable Pandora's Box and once opened it may take a host of skilled researchers a very long time indeed to close the lid".(73)

If calculation of costs is difficult, measurement of output is even more complex. Butel and Atkinson (74) describe this as "the Achilles heel of economies of education", yet until a satisfactory approach to measuring output is found there appears limited value in paying excessive attention to costs.

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## CHAPTER 3

### EFFECT OF SIZE ON PUPILS' ATTAINMENT

#### 3.1 Introduction

When one considers the importance attached by many parents, teachers, employers and politicians to educational standards, and the continuing debate over secondary school size, it is both disappointing and surprising that there appears to have been very little research undertaken into the possible relationship between achievement and school size. Undoubtedly a major reason is that measurement of achievement is not easy.

Success (or failure) rates at GCE "O" and "A" level examinations provide some interesting, and potentially, valuable results, but they only apply to a relatively small proportion of secondary school pupils. In addition there is no guarantee that data supplied by individual schools and local education authorities is comparable. For example we cannot be sure that common policies are adopted with regard to "double entry" or "resit" candidates, or to sixteen year olds who are not entered for external examinations at the theoretical end of their courses.

There are other measures of success, but these, including for example "staying on rates" to sixth form or higher education, are also open to statistical scepticism. Whatever measure is taken, there are many writers who would

agree with Wyatt and Gay (1) who say "academic achievement is often taken as the yardstick, whereas in practice a whole range of cognitive and affective outcomes ought to be measured if a true picture of institutional effect is going to be achieved". They also maintain that it is important to consider the long term effect of any educational process, (2) but the longer the time span between pupils leaving school and the measurement of success or otherwise, the more difficult the exercise becomes.

Bowles (3) also argues that "scholastic achievement is not the only determinant of school output ..... the output of schools is multidimensional". Rutter et al (4) however, maintain that schools are primarily designed to meet educational objectives, and it would be quite inappropriate to see their goal mainly in terms of job or income levels. In contrast Blaug (5) assumes that the sole aim of the educational system is to maximise the expected net lifetime earnings of students.

Relatively few publications dealing with secondary school size refer to academic achievement. More research appears to have been carried out on the influence of class size and a section of this chapter is devoted to this topic.

### 3.2 Inconclusive studies

Fogelman's article in "Big and Beautiful" (6) refers

to a number of research studies on school size and attainment. Two studies were carried out in Manchester by Warburton (7) and Ainsworth and Butten (8), when most secondary schools were still selective. Both found that attainment was higher in larger schools, although this was not statistically significant when inter relationships among school variables were taken into account.

Husen's study of Mathematics (9) achievement among thirteen year olds in ten countries found that pupils in the largest schools obtained the highest average mathematics scores. This was also true for pupils in their final year of secondary education in comprehensive schools, but for pupils in selective schools those in the 700 to 1,100 pupil size range scored better than those in the 1,100+ category. There were some noticeable differences in the results; in Scotland thirteen year olds in the smallest comprehensive schools did best, whilst in England there was no relationship between attainment and size of school.

In Monks (ed) (10), Evison summarises the results of the attainment survey conducted for the NFER during 1967/8.

Three tests were used at first and fourth year levels: an "intelligence test", an English reading test and a graded Arithmetic/Mathematics test. For the first-year sixth form pupils a test providing a measure of general scholastic aptitude was used. The results were presented in various

ways, attempting to assess the influence of factors such as age-range, type of school, geographical location on pupils attainment. Table 3.1 below summarises the findings.

Table 3.1 Attainment test scores and size of school

Size of School	First Year		Fourth Year		Sixth Year	
	Mean	No. of Schools	Mean	No. of Schools	Mean	No. of Schools
Up to 600	73.5	13	103.4	10	55.7	13
601-1200	73.4	22	96.3	20	50.8	20
1201 and over	72.7	10	97.2	10	49.3	10
All Schools	73.9	45	98.3	40	51.9	43

Source: T.G.Monks (ed) Comprehensive Education in Action Slough National Foundation for Educational Research 1970 Table 4.12 p112

The above table shows that although pupils in small schools scored higher on average, size was not significantly associated with test scores for any of the age-groups. When the schools are divided into those with 600 or less pupils and over 600, however, the results for the fourth and sixth years just reach significance.

Ross et al (11) are among a number of writers who refer to the NFER tests. They comment on the fact that boys in small schools tended to make most progress followed by those in large schools, whilst girls made most in medium sized schools. It is not surprising that they concluded that, as far as attainment is concerned, size is not important.

Brown (12) analysed the fifth form examination results of 37 schools in Sheffield, one of the first local education authorities to go wholly comprehensive. The schools in her sample ranged in size from 505 to 2,188 pupils, with fifth forms ranging from 64 to 369. (13)

Although there was significant correlation between the number of passes and two variables, the number of graduate teachers and the size of the sixth form, the size of the school was not among the variables which were correlated with the number of passes at the 1% level of significance. (The variables which were significant numbered six; absentee rate, percentage of children receiving free school meals, number of entries per pupil, headmasters' assessment of ability on intake, parents' socio-economic group and the percentage of graduate teachers.) (14)

A useful, if somewhat dated, survey was carried out by Lynn (15) in 1957. His results, summarised in tables 3.2 and 3.3 below, indicate that pupils in smaller schools tend to perform worse in GCE examinations. However it should be noted that Lynn's sample did not contain any schools which would be considered large in the 1980's. Although the paper does not give actual sizes of schools it is unlikely that any of the schools studied would have had

Table 3.2 "A" level (London) results by size of school

Boys Schools

No. of candidates	0-13	14 -20	21 -30	31 -40	41 -50	51 -60	Correlation between size and attainment
No. of schools	5	5	7	5	4	5	
Distinctions/candidate	0.18	0.24	0.24	0.23	0.43	0.28	0.50 *
Passes/candidate	1.47	1.93	1.70	1.76	1.96	1.95	0.22
Failures/candidate	0.91	1.05	0.99	1.08	0.75	0.87	-0.28

Girls Schools

No. of candidates	0-5	6-10	11 -20	21 -30	31 -42		Correlation between size and attainment
No. of schools	4	8	13	5	4		
Distinctions/candidate	0	0.10	0.08	0.12	0.18		0.50 *
Passes/candidate	1.50	1.47	1.56	1.58	1.99		0.23
Failures/candidate	0.82	0.97	0.71	0.68	0.56		-0.47

\* = significant at 5% level

Source: R.Lynn The relation between educational attainment and school size. British Journal of Sociology (x) no 2 June 1959 taken from tables IV and V, p 132.

more than 800 pupils on roll.

Table 3.3 "O" Level results in maintained grammar schools taking London Board (1957)

Boys Schools

Streams	2	3	4
Schools	4	22	2
Passing English Language (%)	55.9	51.8	56.2
Passing French (%)	43.2	49.9	56.7
Passing Mathematics (%)	55.2	62.0	70.7

Girls Schools

Streams	2	3	4
Schools	10	21	2
Passing English Language (%)	54.8	68.5	88.4
Passing French (%)	51.0	62.9	66.9
Passing Mathematics (%)	64.0	47.8	62.2

Source: R. Lynn The Relation between educational attainment and school size. British Journal of Sociology (X) No.2 June 1959 taken from tables VI and VII, p 133

For the "O" level results a chi-squared test is significant for both boys' and girls' schools taking French and Mathematics. Lynn also found significant correlation between the mean number of open university awards per 100 boys and school size. (16)

He concludes that as large schools do not attract better teachers or more intelligent pupils, they must be more efficient than smaller schools by virtue of their size. He suggests that this may be because larger schools provide a more stimulating and competitive atmosphere. (17)

Lynn does not define "better" teachers. If one accepts experienced, more highly qualified or more specialised as possible definitions, his views do not appear to be supported by the following evidence from

Riew's study of Wisconsin high schools, (18) certainly for schools larger than 1,000 or so pupils.

Table 3.4 School size and academic background of teachers

Average daily intake	% of teachers with master's degrees	Average years taught	Average courses per teacher
143-200	18	7	3.8
201-300	15	6	2.9
301-400	19	6	2.5
401-500	19	7	2.3
501-600	24	8	1.9
601-700	23	7	1.7
701-900	22	7	1.8
901-1100	34	7	1.6
1101-1600	37	12	1.6
1601-2400	55	11	1.6

Source: John Riew Economies of Scale in High School Operations Review of Economics and Statistics (48) No.3 1966 taken from table 1 p 282.

### 3.3 The Department of Education and Science and Local Education Authorities

Although the GCE examining boards show differences between various types of school when publishing summaries of results, they have not made any comparison between schools in different size categories. Neither does the Department of Education and Science in the 32 tables in its survey of school leavers (19) or its annual survey of schools (20); indeed the DES publishes surprisingly little material which mentions the issue of school size. There is no reference in "Better Schools" (21) to the relationship, if any, between school size and educational attainment.

Durham County Council were not able to detect any

significant relationship between school size and academic achievement expressed in terms of "O" level and CSE results. In a letter, (22) the Deputy Director of Education commented that because there are so many variable factors which affect achievement, it is virtually impossible to identify any single causative factor. However it was noticed that comprehensive schools created from grammar schools tended to achieve better than those created from modern schools.

In the early 1970's there was much discussion in Essex about the development of secondary schools in Clacton on Sea, a town experiencing a high rate of growth of population, especially of young people. In deciding whether to expand the two existing comprehensive schools, eventually reaching 1,500 pupils, or to establish a third school, all three having a roll of 1,000 or so, "it would be an exaggeration to state that the academic performance of school leavers was taken into account in making decisions about the number of comprehensive schools to be developed in the town" (23). No research was conducted in Sunderland into the influence of size on attainment (24) and I am not aware of any LEA in which such work has been done.

Sheffield's reorganisation plans (25) did not take into account any possible relationship between school size

and academic performance. Indeed whilst recognising the importance of public examinations and the central role they play in secondary education, the authority does not regard examination results as being a measure of the quality of education offered by individual schools. The authority "shares the view", expressed by many in the education service that there is a danger in over emphasising the importance of public examinations". (26)

Results obtained from data supplied by Sheffield City Council (27) suggest that there is close association between year group (and presumably school) size and success rate in GCE examinations.

Table 3.5 Relationship between pass rates and year group size for Sheffield schools, 1984

Examination	Variables	Correlation
"A" level	(Subject entries (Pass rate (%))	+0.530 highly significant
	(No. of 17+ pupils (Pass rate (%))	+0.485 highly significant
"O" level	(No. of 15+ pupils (Passes/pupil)	+0.350 significant

Source: Sheffield City Council. New Schools and Colleges. Proposals for the Reorganisation of Post-Primary Education, 1985. Calculations based on results for individual schools in Annex 3, 1984 Summary.

However there is insufficient data on other variables (cf Brown (28)) and the correlation could be spurious. Socio-economic backgrounds are likely to be relevant, and it is unlikely to be co-incidental that three out of the four schools with the "best" success rates take

their pupils from the more prosperous areas to the west of the city.

I also looked at the "O" level failure rate using the same data from Sheffield. The correlation coefficient between the number of 15+ pupils and the average number of "U's or absents" was +0.275; just below the value required for significance. Interpretation of this result, as with all the others, requires great care.

Results published in the prospectuses of 10 Cambridge area schools could not readily be compared in the same way as for Sheffield, but a member of the Education Department Staff said it was unlikely that there would be any significant relationship between school size and success rates. He did comment, however, that in 1986 the highest success rates in GCE "O" level examinations were in the smallest school in the Cambridge area, with the largest coming second. (29)

The only statistics published by the Department of Education and Science which relate attainment and school size appear to be contained in the statistical bulletin "School Standards and Spending". (30)

Attainment, as defined below, is associated with 15 socio-economic variables. Correlation coefficients between

average school size and attainment measures were as follows:

Table 3.6 Relationship between average school year size and attainment measures

No. of pupils obtaining	R <sup>2</sup> x100	Correlation
1 or more "A" passes	2	-ve
5 or more "O" passes (+)	3	-ve
1 or more "O" passes (+)	3	-ve
6 or more graded results (*)	1	+ve
2 or fewer graded results (*)	0	0
No graded results (*)	0	0
+ "O" level grade A-C, CSE grade 1		
* "O" level grade A-E, CSE grades 1-5		

Source: Department of Education and Science, Statistical Bulletin 13/84 "School Standards and Spending" Table A.

None of the above measures of correlation is significant, and indeed, taken together, they suggest less degree of association than between attainment and any of the other variables. The correlations between attainment and socio-economic variables are much higher, and statistically significant, the highest values being obtained for socio-economic groups, poor housing, unemployment, families receiving supplementary benefit and one parent families.

Most other studies of academic performance relate attainment to other variables, for example selective or comprehensive schools, single sex or co-educational, independent or maintained, but rarely, if at all mention school size. Two major studies, Barker and Gump (31) and

Steedman (32) do not consider the relationship at all, whilst Halsall (33) says the evidence is conflicting. She says the verdict must be "not proven" although there is the suspicion that larger schools tend to produce somewhat better results, (if one takes larger to mean 400 to 500 pupils or more.) As very few British secondary schools are less than that size, it might be more appropriate to say that pupils in very small schools tend to do less well, a view she supports with evidence from the United States.

Brimer et al (34) include "number of pupils on the register" as one of 49 independent school variables, but the size of the school does not appear as a significant factor when analysing performance in a number of subjects at "O" and "A" level. Rutter et al (35) found no significant differences in fifth form examination results, according to whether schools are 3 to 5 form entry, 6fe or 7 to 12fe in their study of 12 London comprehensive schools. Nor did they observe any noticeable difference between single and split site schools. (36)

Miles made no direct reference to school size in his study of influences on "A" level results, but implied that the large school was preferable by regarding 50 pupils as the smallest size for a sixth form, even though "schools with sixth forms below 40 are, of course, known to function with apparent effectiveness". (37)

David (38) claims that opponents of comprehensive reorganisation used school size as an ostensibly scientific method of presenting otherwise crude opposition to a political change. However, she says, the research conducted on comprehensive schools and their development did not show the invariant relationship desired. "Indeed even on the key variable, academic attainment, there is no evidence that large size is detrimental." When a variety of other effects are introduced, the contradictions are enormous.

Marks, Cox and Pomian-Srzednicki, in a detailed study of examination results of more than 2,000 schools, make no reference to school size in their tables or analysis, but do say, having established that many pupils in comprehensive schools do less well "the reasons for the apparent under-achievement of so many pupils in comprehensive schools may be partly inherent in that type of school, eg large size and a bewildering diversity of objectives all needing to be pursued in a single school". (39)

They advocate the creation of schools specialising in languages, music, mathematics etc, claiming "such specialised schools could be more manageable in size than many comprehensives". (40)

Whilst these specialist schools would almost certainly benefit their pupils in terms of achievement, it is questionable whether they would gain in overall educational experience. The numbers of pupils involved would probably be so small that the effect on numbers in comprehensive schools would be negligible.

Fogelman (41) quotes the results of the National Child Development Study in which, for the analysis of the effect of school size, schools were categorised as below 750, 751 to 1,250 and 1,251 plus. The study showed weak associations between schools size and attainments at 16 years in both reading and maths, consisting of slight decreases in test scores with increasing size. When extraneous variables were taken into account these associations virtually disappeared, and the conclusion was that differences in school size were not reflected in differences in attainments.

Adams (42) quotes a study published in New Zealand by Chambers, who reported that the size of a school tended to have either no relationship with school achievement or a slightly negative one, and that the relationship with selected affective outcomes (unspecified) was also negative. The latter two studies are of interest because they go against the general trend in suggesting that the

standard of attainment might actually fall, however slightly, with increasing size.

#### 3.4 Class size and attainment

Fogelman is just one observer who has been surprised to find that smaller classes do not have the predicted effect of improving standards of achievement. "Inspection of new data revealed the usual, and seemingly paradoxical associations with class size (ie in favour of larger classes). Our analysis of variance showed test scores to be still associated with larger classes, to an extent about as large as the socialising effect, for both reading and maths. This frequently revealed finding is, of course, the opposite of that expected. Our conjecture is that the result is very largely an artefact of teachers' placement of children with poor attainments in smaller classes". (43)

This paradox that larger classes may lead to better performance is strengthened later in the same paper where it is reported that parental satisfaction increases, as far as comprehensive schools are concerned, with the size of English classes. (44)

Fitz-Gibbon, in a study of ten comprehensive schools, found different relationships between results in "A" level English and Mathematics examinations taken in

1983, 1984 and 1985. In 1983 and 1984 pupils in large classes did better in English (45) but in 1985 the correlation was not significant. (46) In Mathematics there was a very slight trend for pupils in large classes to do less well but the correlation was small. (47) Schools had put forward a number of reasons to explain differing results, including characteristics of particular candidates and teachers, and changes of examination board, but when statistical relationships were found in the data they often only account for a small fraction of the variation seen in results. (48)

School size was not one of the variables considered by Fitz-Gibbon when assessing the influences on "A" level performance, on the grounds that class size was related to the number of sixth form students, which in turn was related to the size of the school. (49) Whilst this is true for popular subjects at "A" level, such as English and Mathematics, it may not be true for all subjects throughout the school. Indeed it has been argued that one advantage of the larger school is that this allows for smaller classes to operate without placing too great a strain on the remainder of the school. Grubb (50), for example, says that the large school is able to provide for smaller remedial classes and withdrawal units.

Simpson (51) says that many variables affect

performance and that although both size of school and class size have been linked to attainment the association is spurious. He quotes a number of studies which suggest that the generally held belief that smaller classes lead to higher attainment is not supported by empirical evidence. If small classes usually exist in remedial departments or in specialist groups (eg Music or "A" level Further Mathematics), comparison with larger classes is difficult, if not meaningless. My own impression is that small classes appear throughout the age, ability and subject ranges, and care must be taken to identify the reason for smallness of class before attempting any analysis of performance.

In commenting on the problems faced in trying to assess the 'productivity of educational systems' Blaug comments that one explanation of the demand for smaller classes is that they "increase the satisfaction of teachers, students and parents, even if no significant increase in students' attainment results." (52) It may be, he says, that the well being of teachers and students indirectly improves their achievement.

Cuttance (53) states that pressure for smaller classes comes from teachers' unions, though he does not elaborate as to why teachers prefer smaller classes. It

could be that smaller classes are less likely to present discipline problems, or that they foster better teacher pupil relationships. Alternatively, it may be the case that small classes are favoured because they involve less marking of work!

### 3.5 Claims that schools have little influence on attainment

Rutter (54) says that although there is strong circumstantial evidence that schools can and do have important effects on pupils' attainments, recent studies show that resources and plant available to schools did not show any systematic relationship with pupils levels of achievement. Findings show that school size generally does not seem to constitute a variable that is strongly associated with outcome, although a few studies have shown a minor advantage for pupils in smaller schools.

The conclusions of Walberg and Lane (55) are in agreement with Rutter's. They say that expenditure on education, including the chief determinants, teachers salaries and class sizes, have highly inconsistent and statistically insignificant record of promoting educational achievement.

Coleman (56) found that per pupil expenditure, the numbers of library books and other facilities showed very little relation to achievement, if social factors were held

constant, and that the effect of a student's peers on his own achievement level is more important than any other school influence. Bowles and Levin (57) criticised this report on the grounds of inappropriate statistical techniques but Coleman refuted this argument. In a subsequent article Coleman (58) accuses Bowles and Levin of being anxious to preserve their original assumption of a simple relation between economic inputs to a school and achievement outputs. In none of the three papers is school size mentioned as an input variable.

In commenting on the complex relationship between average costs and academic performance, Bee and Dolton (59) say that a large or cost effective school need not be conducive to good examination results. Indeed other characteristics of the school, such as the competitive ambition and drive of heads and staff, the push from aspiring parents or the conducive atmosphere of academic competition may all be factors in a school's academic success. Such factors are unquantifiable.

Burkhead, Fox and Holland (60) did not consider school size to be a sufficiently important input variable and they, too, found that variations in test scores were almost wholly conditioned by factors external to the school system, such as family income and character of the neighbourhood. Fogelman does not mention school size in

his comparison of examination results between different types of school.

### 3.6 Conclusion

At best the evidence as to whether or not school size has any significant influence on academic performance is unclear; at times it is contradictory. There is disagreement even as to the effect of a wide variety of school-based variables on the output of a school and also as to the desirability of regarding academic achievement as a proper indicator of a school's effectiveness.

On balance the studies undertaken suggest that pupils do better in larger schools, but it may be more accurate to say that pupils in very small schools tend to do less well. This tentative second conclusion is certainly contrary to popular belief, and the links between schools size and class size are not necessarily strong. All writers agree, however, that simple measures of association between attainment and school size must be regarded with extreme caution. Other variables must be taken into consideration, and it is certain that a wide variety of socio-economic factors exert more influence on achievement than school size.

Before one can be confident in asserting that school size has little bearing on attainment there is a need for

further research, using a wider range of measures than external examination results, and covering as many children as possible. Furthermore every effort should be made to eliminate the influence on attainment of all factors other than size. This will prove to be difficult, and could even be impossible. Even then it seems likely that the result will be, to quote Halsall again "not proven" and that, in itself, would be an important finding. I suspect, however, that whatever the results of such a survey might be, the advocates of large or small schools will claim that their preferred size does have a beneficial influence on the attainment of its pupils.

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## CHAPTER 4

### SCHOOL SIZE AND THE CURRICULUM

#### 4.1 Introduction

There are many ways of defining the curriculum of a school; for purposes of this study the topic is covered in two sections, the formal or academic curriculum and the so called "hidden curriculum". In this chapter I refer mainly to subjects taught during normal timetabled lessons, chiefly in classrooms of one type or another, whilst in Chapters 6 and 5 I will deal with the extra curricular life of the school and its pastoral and disciplinary organisation. In practice, of course, whilst it is difficult to separate the two elements, the distinction can be made and often a school is seen to be attempting to reconcile apparently conflicting objectives. This thesis has been written during the time immediately before the introduction of the General Certificate of Secondary Education, but much of the material studied refers to the examinations which were replaced by GCSE. Any difficulties I experienced because of this would obviously be supported by the Director of Education for Durham who says "An added problem arises because of the introduction of a new pattern of external examinations. This could not have come at a worse time during a period of rapidly falling rolls and a severe economic squeeze." (1).

In 1978 Her Majesty's Inspectorate commented (2)

"Given the large measure of self determination which schools enjoy, they appear remarkably similar in their broad characteristics". This was a comment chiefly on the timetabled curriculum, or the formal studies of the pupils.

In this chapter I will summarise reviews of curricular provision with particular reference to the influence of size on secondary schools. In particular, attention will be focused on the breadth of the curriculum, ie the number of subjects taught to, or available to, children. Other important curricular areas, such as streaming, mixed ability teaching, the "common core" are only considered where it is felt that a school's size exercises influence on the school's ability to organise teaching in a particular way. For example if there is only one set in a particular subject, it must either be taught as a mixed ability class or, as is often the case with Latin and some single subject sciences, only the most able (or weakest) children are encouraged to follow that particular course.

Better Schools (3) sets out principles for the guidance of curricular provision for pupils aged 11 to 16. The need is to present to each pupil a "broad, balanced, relevant and differentiated curriculum", covering the main subject areas for the first three years, and a similarly broad curriculum in years four and five, but allowing some choice of subjects.

This requires the provision of differentiated work of the appropriate level for children of all ability levels, teaching groups which are likely to be educationally stimulating and the preservation of subjects in years 4 and 5 for which there is relatively little demand. It is also essential that teachers teach subjects in which they are qualified and have expertise, and that they have adequate non contact time.

Most schools, of whatever type and size, do offer, as "Better Schools" recommends, a very similar programme in the first two years, (11 to 13) and often first three years of secondary education. (4) The emphasis is on breadth and providing a broadly similar curriculum for the majority of pupils. In theory the objective is to reduce the element of premature specialisation, but even before the end of the third year, at which time most option choices are made, some pupils are having to drop important subjects. This detracts from their general education and, at the same time, precludes them from some courses or careers when they leave school.

In years four and five most pupils are required to follow a common (to the school) or "core" curriculum which usually consists of English (as one or two subjects), Mathematics, Religious Studies (a legal requirement although an increasing number of schools do not provide

this subject for all children), physical education and/or games. In addition they usually study four or five options from perhaps twenty or more. (As is discussed later, (13) it is difficult to quantify the exact number of distinct subjects, for many subjects may appear under different titles for different ability levels).

The usual number of option blocks allows a staggering number of theoretical possibilities. For example a choice of five options from thirteen offers 1,297 different combinations, five from twenty offers 15,504. In practice there is much less freedom of choice because of a blocking arrangement, and some combinations will inevitably be impossible. For example, at my present school Latin and Art cannot both be taken in forms 4 and 5, and only one subject from Music, Spanish and German. Similar problems are, of course, experienced in all schools irrespective of size. Most, if not all schools have to make a compromise between conflicting choices.

Choice is expensive, for the more options which are available the more its resources, teaching and ancillary staff, space and equipment, are stretched. Average class sizes for many option subjects are usually much smaller than for English and Mathematics, and there is pressure on headteachers to reduce the provision of minority subjects on economic grounds; this pressure is even more acute

during the current period of falling rolls and expenditure cuts.

In this chapter I attempt to summarise official policy towards school size and curricular provision, followed by a review of writings on the subject. It is surprising that relatively few books and articles on the curriculum of the secondary school make any reference to the desired size of the school, being more concerned with subject content, methods of teaching, streaming and overall philosophy. As is the case with other topics studied in the preparation of this thesis, writers tend to fall into one of three categories; those for the small school, those against and those who believe that school size is largely irrelevant. Most appear to be writing from the point of advocating their particular opinion, rather than studying the evidence and then drawing conclusions. Finally I include observations, drawn chiefly from school prospectuses and from my own professional experience.

#### 4.2 The Department of Education and Science and Local Education Authorities

The attitude of the government to the size of secondary schools has been somewhat inconsistent, though at each stage there has been an attempt to relate guidelines on size to the provision of a suitable curriculum. In 1947 a government circular (5) suggested 1,600 pupils as a desirable size, whilst in 1955 it was considered necessary

to have between 1,500 and 2,000 pupil in order to support a viable sixth form. (6)

The larger figure was rarely achieved, and ten years later Circular 10/65 (7) was published favouring the establishment of 11 to 18 schools with a minimum of six forms. The objective of guaranteeing a viable sixth form remained two years later. In 1967, Hertfordshire's reorganisation plan was accepted, despite the fact that all 11 to 18 schools were to be 5 form entry, and there were some inconsistent rulings by the Department of Education and Science. (8)

A report by Her Majesty's Inspectorate in 1979 (9) suggested that the range of subjects offered in large schools is not significantly greater than in small. They noted that the average number of subjects offered to fourth year pupils was 24 whereas there were at least 300 (10fe) in that year group and 19 in schools with under 4 forms of entry. They observed that overall school size, measured by numbers in the fourth year, seemed to have little effect on the number of optional subjects. This observation was qualified by saying that the range of subjects was restricted in very small schools, especially in the provision of modern and classical languages, because these schools could not afford to provide for the very few pupils who requested these courses.

By 1981, at a time when the problem of falling rolls was becoming a major issue, Circular 2/81 (10) stated that 11-16 schools with less than five forms of entry were finding it difficult to offer a curriculum of appropriate range and to provide sufficient teaching groups.

"Better Schools" (11), published in 1985 states that "in the interests of good education each school should, as far as possible, be kept large enough to justify sufficient teachers to provide all pupils with a curriculum which is broad, balanced, relevant and differentiated".

The department goes on to suggest that 11 to 16 comprehensive schools with fewer than six classes in each year are unlikely to offer a good curriculum without disproportionately generous staffing. It also recommends that schools should be large enough to maintain a Sixth Form of at least 150 pupils in order to provide an adequate range of "A" level and other courses.(12)

The Liberal Party (13), without making any specific reference to the ideal size of schools, said that breadth of the curriculum was an important prerequisite of a good school.

All local education authorities have been faced with

the problem of falling rolls. The responses of two, Durham and Sheffield are summarised below. From wider reading it is probably safe to assume that other authorities have acted similarly, although some are more keen than others to retain small secondary schools, some of which are selective.

In 1981 Durham County Council's Education Committee decided that the minimum size of 11 to 16 schools should be 900 pupils (6 fe) on the grounds that "once schools fall below 900 pupils they experience growing difficulties in offering a balanced curriculum to the full ability range of their pupils. The aim [of the reorganisation plans], therefore, is to safeguard the curriculum and educational opportunities for children by making the size of schools, as far as possible, above six forms of entry. (14) Without this "educational damage (cf Briault and Smith) (15) will result."

The county council was also concerned that low participation rates were leading to very small sixth forms, which would mean that schools would be unable to provide a sufficiently broad curriculum. (16) It was decided, therefore, in 1982 to concentrate all post 16 education in Sixth Form or Tertiary Colleges, where numbers would be large enough to offer a satisfactory range of "A" level and other courses. (17)

The 1985 report of the Director of Education to the Building and Resources Sub Committee (18) emphasised yet again that "one of the problems created by falling rolls will be that the curriculum will be under stress". The creation of suitable option groups in the fourth and fifth years would, it was claimed, become increasingly difficult, and some subjects would inevitably disappear, because in staff time they were too expensive to run. The report goes on to suggest that "small schools will be hit worse than larger. Many teachers teach subjects which are secondary to their own specialities, but there are limits to which this can be taken".(19)

Sheffield's plans for secondary reorganisation were based on the observation that many schools were becoming too small to provide a broad curriculum. The number of pupils in Sheffield sixth forms was expected to fall by over 50 percent between 1982 and 1993. According to the education committee "this means that if nothing is done, schools will be able to offer only a narrow range of "A" level subjects and many classes will become too small to give a good education to their pupils".(20)

Detailed forecasts for 1985/6 to 1991/2 based on the 34 existing school catchment areas showed that by 1991/2 there would be four schools with fewer than 400 pupils and

only 12 would have more than the desirable number of forms considered desirable (5 forms of entry for 11 to 16 schools and 6 for 12 to 16 schools). (21) Forecasts of post 16 numbers indicated that, based on current participation rates, the average size of school sixth forms would be approximately 60 by 1991/2, with 12 schools likely to have fewer than 35 post 16 students and only 6 over 100. (22)

#### 4.3 Arguments in support of large schools

Wilcox and Garforth (23) refer to a survey made by Sheffield City Education Department of 37 schools in the city between 1975 and 1976. This showed that there was a general trend for the largest schools to offer more subjects, although the relationship was by no means perfect. The range of subjects offered for external examinations in the fifth year was from 17 to 38, with one sixth of schools offering fewer than 21 and a similar proportion more than 32.

The results of this survey are summarised in Table 4.1 below: The table does appear to show that larger schools are able to offer a wider range of courses, but if the smallest schools (those with fewer than 150 pupils per year group, or less than 5 forms of entry) the difference is not so noticeable.

Table 4.1 Subjects offered for external examinations in Sheffield Schools 1975-76

Year Group Size	No. of Schools	Mean number of subjects examined			
		GCE "O" Level	CSE	16+	Total
<100	2	7.0	14.5	1.5	23.0
100-149	8	12.6	18.9	1.5	33.0
150-199	9	13.7	20.9	1.2	35.8
200-249	3	13.7	22.0	2.3	38.0
250-299	9	15.9	22.6	1.9	40.4
300-349	4	17.0	27.0	1.3	47.3
350-399	2	19.5	24.5	1.5	45.5

Source: Secondary Heads Association. Big and Beautiful 1979. Compiled from table on p13

A separate survey of sixth form courses provided similar, and slightly more significant results. Neither survey, however, mentioned the numbers of pupils taking each course, or whether somewhat artificial distinctions were made between courses (for example treating French and European Studies (French), or Mathematics and Arithmetic as being separate subjects. (24)

The pamphlet also refers to a later study of the third form curriculum in 33 Sheffield schools in 1978. Statistical analysis indicated a lack of significant association between school size and curriculum pattern. (25)

The section concludes "The nature of the association (between school size and breadth of curriculum) is unlikely to be a simple one, and qualitative inspection of the data suggests that school size, the social nature of the catchment area and curriculum pattern may well interact. This is an area where further research may be

fruitful". (26)

In a further section of the booklet Sayer (27) continues discussion of the relationship between school size and curriculum needs. He suggests that up to the age of thirteen all children should follow a similar curriculum which will enable all concerned (teachers, parents and pupils) to assess their individual strengths and weaknesses. At this stage size of school is unimportant. (28)

However, beyond the age of thirteen the situation changes; the "time of diagnosis" is virtually over with individual needs and aptitudes becoming clearer. At this stage pupils should be provided with a worthwhile and attractive programme of study, and this must include a variety of levels and approaches within each subject area. Such provision is possible in smaller schools but, argues the author, only with more generous and expensive staffing and resources. The large school is better able to provide the shared experiences pupils need. This does, of course, impose upon the schools a requirement for personal attention and guidance, for many pupils and their parents may be confused by a surfeit of options. (29)

An 11 to 16 or 12 to 16 school requires the same flexibility and range of opportunities as an 11 to 18 or 12

to 18 institution, but the author suggests that the presence of a sixth form in terms of overall numbers is marginal. However, he does stress "that a large sixth form brings with it the same strengths and opportunities that a large school can offer the 13 to 16 population; that the larger the school the more viable its sixth form; even if sixth form education is centralized, that large schools would still be required to give a grounding in the full range of subjects." (30)

Finally, the author claims the advantage of the large school for pupils who are handicapped, either physically, emotionally or intellectually. The large school, because it is likely to have more pupils sharing specific needs, should be capable of providing a strong specialist resource centre to support work with these children. (31)

Pedley's (32) section on the curriculum of the comprehensive school does not mention school size, being chiefly concerned with changes in examination structure and subject classification. However, he does discuss "the problem of size" as the first of his four basic issues when reviewing comprehensive education in the mid 1970's. (33)

He gives as a reason for the establishment of large comprehensive schools the fact that, initially at least,

they would have to be four times as large as the average grammar school sixth form. Also a comprehensive school would need to offer a wider range of courses, thus needing to be bigger than the average grammar school sixth.(34)

He says that some small schools can offer a pretty full programme of up to 18 "A" subjects, but 10 to 15 is much more common. A choice of 12 is not unreasonable for most members of a traditional Grammar School Sixth Form but this is not broad enough for those whose interests and needs are wider. When a small school does extend its sixth form curriculum it is inevitable that many classes will consist of only one or two pupils and that some pupils, at different stages of their work, will have to be taught together.

Pedley disagrees with Halsall's claim (35) that, in order to retain small 11 to 18 schools it is acceptable to have "A" level classes of two or three pupils (offsetting the economic objections by increasing the sizes of younger classes). He quotes statements made by Her Majesty's Inspectorate and the then Secretary of State for Education, Mrs Shirley Williams in favour of larger classes.(36). He also gives the Department of Education and Science view, current in 1975, that the minimum size of an "open" sixth form should be 140 students, and if it is to be both economical and efficient this would require an average

school roll of 1,815. (37)

A number of other writers support the view that the larger school is to be preferred, because it is more likely to be able to provide a sufficiently wide curriculum than the small school. Indeed Briault and Smith (38) argue for planning for schools as large as possible. David (39) refers to the Spens Report (40) which suggests that a school of at least 800 pupils would be necessary to achieve effective streams and sixth forms "which render economically possible a considerable variety of courses". The Crowther Report (41) is quoted by Armstrong (42) in claiming that "a further great strength lies in the range of options that a large institution can offer to the fifteen year olds. There is, or should be, something for nearly everybody".

Grubb (43) believes that the larger unit has far more to offer both pupils and staff. He maintains that the larger school, whilst having its problems, including those of timetabling, is able to offer a wider range of options to its pupils, and offers greater opportunity for curriculum development. Larger schools are also more likely to allow for the establishment of remedial and withdrawal units.

A more questionable benefit advocated by Grubb is

that in the large school teachers have a wider range of pupils in terms of ability and age.(44) Whilst this is undoubtedly true it is not necessarily advantageous; indeed there are many teachers who believe that this diversification does not allow optimum use of their specialised skill and experience.

Durham (45), states that Beacon School (2,200 pupils) is able to offer 20 "A" level subjects in any combination although, like Grubb, he does admit that this presents a timetabling headache.

Smith (46) quotes Ross (47) who states that a wider curriculum and greater variety of activities are possible in larger schools, but a clear difference is only noticeable at extremes of size. He criticizes Halsall (48), who does not accept a great advantage in the area of subject coverage, both on grounds of inappropriate analysis and incorrect conclusion.

#### 4.4 The need to maintain a viable Sixth Form

For many educationalists, at least until the principle of Sixth Form or Tertiary Colleges became more popular, the major argument in favour of the large comprehensive school was the need to provide a sufficiently varied Sixth Form curriculum. Benn (49) states that in the 1960's and 1970's any comprehensive sixth form had to be

the same size as that of a grammar school "to be accepted by ministry mandarins", which is why both Conservative and Labour education ministers had been insisting for years that 2,000 pupils was a reasonable size for a school. By 1964 dissatisfaction among comprehensive reformers with such large schools led to proposals for alternative forms of organisation. These essentially boiled down to two; either a break in the middle of secondary school or at 16. Despite the fact that these proposed reforms reduced school size significantly, all were discouraged.

Rhodes Boyson (50) is one influential writer who maintains that in order to be successful a comprehensive school should be large, probably at least 1,400 pupils. This figure is based on the recommendations of a 1968 ILEA report (51) which states that a sixth form should have a minimum of 90 to 100 pupils taking two or three "A" level subjects, from at least ten or twelve offered and taught in "economic teaching groups". (52) Whilst Boyson accepts that in some favoured towns with high staying on rates a smaller school might be viable, in towns with bad housing or a history of deprivation schools would have to be larger, perhaps approaching 2,000. He argues against accepting the views of those who would have all through comprehensives of less than 1,000 pupils on the grounds "that this would court eventual failure" or "uneconomic" sixth form classes, whilst breaking schools by horizontal divisions or

transfers at 13, 14 or 16 destroys the unity of school and leads to a further decline in educational standards.

Boyson argues that if there is no sixth form in a comprehensive school, such a school will not attract the most able teachers, which would lower educational standards. (53) In the mid 1980's, as more and more comprehensive schools are losing their sixth forms this argument does not appear to find much support amongst educational administrators.

Other writers stress the importance of maintaining a viable sixth form, thus necessitating a large school. Fisher (54) believed there would be a need for even larger schools, suggesting that non selective schools would have to have about 2,500 pupils to support an "A" level Sixth Form of 180. Armstrong (55) also claims that the need to maintain a large sixth form means a large school, suggesting that 1,400 is probably adequate, whilst James (56) maintains that it is impossible to provide a proper sixth form curriculum inside a small comprehensive school. Students on the Postgraduate Certificate of Education course of Edinburgh University in 1972 were told that a school needed to be around 1,200 pupils in order to be able to provide sixth form courses in subjects such as Music, German and Classics. (57)

Dean (58) also argues in favour of creating tertiary colleges, especially where existing schools and colleges are small or where there are significant numbers of non A-level students. She says that with the increased number and range of courses available to students over the age of 16, many smaller establishments experience difficulty in finding sufficient students to ensure viable groups. There is also the need for a much more flexible curriculum, covering both academic and vocational courses, and only the largest institutions are likely to be able to provide this satisfactorily.

The research of Ross et al (59) also suggests that larger schools are able to offer significantly more subjects at "A" level.

Table 4.2 Subjects studied at "A" level between 1968 and 1970

School	No. of pupils	No. of "A" level subjects
A	270	12
B	520	18
C	600	15
D	654	12
E	799	15
F	850	16
G	910	19
P	1120	20
H	1192	19
I	1573	21
J	1835	20

Source: Ross J M, Bunton W J , Evison P, Robertson T S. A Critical Appraisal of Comprehensive Education Slough, National Foundation for Educational Research 1972. Obtained from Table 8.4 p82

Spearman's coefficient of rank correlation between size of school and number of "A" level subjects taught is 0.85, which is highly significant at the 5 percent level. However, nothing is said about the size of "A" level teaching groups.

Ross et al conclude by saying that larger schools are more able to offer a wide variety of sixth form options and more non examination courses, (61) although they also comment that it no longer appears necessary to have at least 1,500 pupils in order to maintain a viable sixth form.

Taylor (62) states that a large school, even up to 2,000 pupils is needed to ensure a "sixth form of reasonable size". Even in these schools, he says, it can be difficult to offer a wide variety of "A" level subjects, and to maintain large enough sixth form groups when the academic ability of a particular year is low.

#### 4.5 The problem of falling rolls

The problems posed by falling school rolls are discussed in more detail in Chapter 8. However most of the surveys undertaken in the 1980's have been written with falling rolls an underlying theme. At this stage two studies will be mentioned which can be said to summarise the fears felt by many that falling rolls will lead to a

narrower (and by implication "less beneficial") curriculum.

Briault and Smith (63), writing on the issue of falling rolls, refer to "educational damage", particularly in the area of curriculum provision and size and composition of teaching groups. (see chapter 8) They argue in favour of retaining large schools, accepting that this will involve merging or closing smaller institutions.

Mann (64) quotes an OECD study of schools in sparsely populated areas of Europe which shows how costly it is for small schools to offer the same curriculum as large schools. For example a six form entry school can provide a given curriculum with a pupil teacher ratio of 18.8 to 1 whilst a three form entry school would require a ratio of 16.4 to 1. Alternatively two three form entry schools would require 7.2 more teachers than one with six forms of entry. Where small schools are maintained this usually means cutting minority subjects, squeezing careers education and general studies, enlarging science and technical subject sets and changing the curriculum to match the existing staff.

#### 4.6 Arguments in support of small schools

Halsall claims that the small school is not necessarily at a disadvantage from the point of curricular provision in a number of studies and articles, and she

argues that the advantages in overcoming administrative and disciplinary problems outweigh any drawbacks of the large school. In a somewhat dated study of small schools (65) she observed that, in general, they were able to provide a sound basic curriculum which, by and large, prepared intelligent children for university and other courses in a wide range of subjects. If it is possible to provide an adequate curriculum for academically gifted children in small grammar schools, it should be equally feasible to do so, she says, for all children in a small comprehensive school. In a theoretical timetabling exercise she suggests that a three form entry school can provide a viable curriculum, even though there was an absence of technical subjects. There were other constraints in the small school, especially in the provision of a second modern language, music and practical subjects. (66)

In her major work on comprehensive education (67) she argues that these constraints are not necessarily as serious as it is claimed they are in Circular 10/65 and elsewhere. With a complex option system in the fourth and fifth years it should be possible to provide 10 "A" level subjects in a three form entry school, and 18 with four forms of entry. If, as she maintains, 80 percent of student choices centre on 10 subjects and 97 percent on 17, a four form entry school is certainly viable. A three form entry, and even a two form entry school, can be viable at

least to the fifth form, the viability depending on factors such as staffing ratios, average class sizes and the employment of part time teachers. She also suggests (68) that the viability of small schools is increased if there are other schools nearby, thus making it possible for some students, especially in the Sixth Form, to take courses at neighbouring schools. Armstrong (69) also suggests that consortia of small schools might enable them to provide sufficiently wide curricula for their students. He believes schools with as few as 300 students could combine into consortia of 3,000 pupils. Whilst this may appear sound in theory, the provision of courses on a linked or consortium basis does present considerable timetabling difficulties. By blocking linked subjects into sessions common to two or more schools this greatly reduces the degree of flexibility possible in constructing the timetable for the remainder of the school).

In "The Comprehensive School" (70) Halsall puts forward the case for the smaller comprehensive school, making four suggestions as to how the constraints may be overcome. Some of these suggestions, especially a) and b) are generally against the views expressed by the majority of writers.

a) less teacher specialisation

By staffing schools with teachers capable of teaching three subjects rather than one would reduce the

necessary size of schools by at least half and probably more. (Halsall does not say how realistic she considers this proposal, but see also the reference to Wisbech Grammar School later in this section)

b) no specialisation before 16

As well as reducing the number of teachers needed in a school of given size, Halsall says there may well be other reasons for making the curriculum completely general in view of the need for a good broad education.

c) making junior (11/12 to 15/16) and senior (15/16 to 18/19) sections to all schools.

This could be successful, providing the curriculum and syllabus of junior and senior sections are well co-ordinated. Also Halsall believes the establishment of an 11 to 16 school would form the base for an intermediate institution between school and higher education.

Whilst this is true in some cases, such an arrangement must lead to the creation of a split site school, with all its attendant drawbacks.

d) special arrangements for the teaching of 'minority' or 'fringe' subjects.

This would involve abandoning traditional methods of teaching being employed in schools and having these subjects taught by, for example, correspondence and television courses with the provision of regular tutorials.

This would reduce the number of teachers required and, therefore, the size of the school.

Northumberland County Council propose to introduce a range of courses for 16 to 18 year old students by promoting learning through supported self study. This is an attempt to preserve and extend the post 16 curriculum during a period of falling rolls, and when many sixth form classes are of undesirably small size.

The county council has chosen not to establish Sixth Form or Tertiary Colleges, preferring to retain sixth forms in some 13 to 18 schools, and attempting to retain local centres of learning in a geographically extended county. (71) An "A" level course would include printed literature, computer and video learning material and practical resources for laboratory work in the local environment. This self study will be supported by a tutorial system. (72)

In addition to maintaining sixth forms and providing a wide, possibly increasing, range of courses for 16 to 18 year olds, it is anticipated that, after receipts of various grants, there will be a saving of £156,000 on teaching staff in 1989-90. (73)

This development is in line with the observation of

Pedley(74) who suggested that developments such as non streaming, team teaching, language laboratories, programmed learning and correspondence courses made really small comprehensives a more viable proposition than they used to be. (However this suggestion is omitted from the third edition (1978) of Pedley's work on comprehensive schools.)

Davies (75) agrees with Halsall in stating that smaller schools are able to keep up with their larger neighbours, at least in terms of the numbers of subjects offered. However, this will involve some classes being undesirably large in order to accommodate less popular subjects such as Latin and Music. Davies also shows how a 3 form entry school can "keep pace" with a 6 form entry school in providing 12 "A" level subjects instead of 13 (the omission being German), (76) but he argues that the case against the small sixth form is more concerned with the frustration of students whose experience is limited by the size of classes than it is by economics. (77) Also the smaller school is likely to provide less opportunity for keen and critical discussion, and teachers are less likely to stay in a school if they find themselves having to teach well outside their specialisms and to all ability levels.

Barker (78) examined the ways in which a rural education authority (Westmorland) attempted to deal with the problem of small schools, each with a wide catchment

area and so widely separated in hilly country that contact with each other, and with colleges of further education, was not easy. She studied three 11 to 18 schools with 467, 370 and 712 pupils on roll, numbers in the sixth form being 30, 44 and 88 respectively. The smallest school in particular experienced difficulty in attempting to provide a balanced curriculum with adequate choice, whilst the largest school was able to overcome these problems.

All three schools offered traditional "A" level subjects, although there were limitations in the provision of economics, modern languages, technical and craft subjects. "A" level class sizes were usually small, often only one, two or three pupils, and whilst entry was comparable with larger schools in other areas, there were problems in maintaining a satisfactory pace, especially for the more able student in mixed ability classes in the smaller schools.

At Wisbech Grammar School (four form entry with a fluctuating sixth form averaging 120 in size) 17 subjects were offered at "O" level in form 5 with a further five being available as sixth form options. 18 subjects were taken at "A" level in 1986 with class sizes ranging from one to 22 (79). The most serious omissions from the curriculum were Geology and commercial subjects, and virtually the only reason that students who intended

studying beyond 16 left the school was to attend the local further education college, which had an outstanding Art faculty, attracting students from a very wide area. Many teachers at the school taught "O" and "A" level classes in two and even three subjects, but there was no evidence to suggest that this led to poor results. This latter point is in line with Raymond's observation that the percentage of teachers teaching in two or more fields (and the inadequacy of library facilities)" did not prove as important as might have been expected". (80)

A consequence of this was that most teachers, including senior staff, taught 35 periods out of 40 and a number of classes, usually but not always small, were taught outside the normal timetabled periods.

#### 4.7 The core curriculum

The proposed introduction of a common core curriculum could reduce the advantages of the larger schools in terms of the range of subjects offered. Over 75 percent of the lesson time of fourth and fifth year pupils will be devoted to the foundation subjects listed in table 4.3. Only 15 to 25 percent (or between 6 and 10 lessons in a 40 period week) would be devoted to other subjects, including additional foreign languages, business and commercial subjects, classics or home economics.

Table 4.3 Proposed 'foundation' curriculum for 14 to 16 year old pupils

Subject	% of time
English	10
Mathematics	10
Science	10-20
Technology	10
Modern Foreign Languages	10
History/Geography	10
Art/Music/Drama/Design	10
Physical Education	5

Source: Department of Education and Science and Welsh Office, The National Curriculum 5-16: a consultation document, HMSO 1987, p7.

This would almost inevitably lead to a narrowing of the curriculum. The consultation document does not refer to school size.

#### 4.8 Very small schools

Surveys of education in the United States often refer to secondary (high) schools which are considerably smaller than are normally found in Britain. Few schools in this country have fewer than 300 pupils (only 2 form entry if 11 to 16). It is worthwhile to take a brief look at three small independent schools, the first run on traditional lines, the other two with fewer than 100 pupils each, in a less conventional way.

St. James School, Grimsby (81) is an independent co educational school with about 200 pupils on roll between the ages of 11 and 18. The first year is divided into two mixed ability streams, with differentiation of streams on

ability in years two and three. In forms four and five pupils take four compulsory subjects plus a choice of four options from 17. This appears to be a much narrower range than even the smallest school in my survey of the Cambridge area schools, though there were a number of subjects available in each of the usual classifications; science, languages (only French and Latin), humanities, creative arts and practical subjects. There were some opportunities for students to follow unusual (sic) courses at the nearby College of Technology. Some of the classes in "A" level courses numbered less than four students and there was some teaching of Upper and Lower Sixth pupils simultaneously.

It was possible to offer a reasonably varied curriculum with the employment of a high proportion of part time teachers (fifteen full time and thirteen part time), a solution with which Halsall would agree. However, the laboratory and technical facilities were barely adequate, especially for Sixth Form work, and there was a general impression that the school was experiencing some difficulty in competing on academic terms with larger schools. This, perhaps, was the inevitable price to be paid for the non academic benefits of being educated in "the atmosphere of a large family unit which is characteristic of the school, and is deliberately fostered". (82)

Hodgetts (83) is Head of Hartland School, Devon

which has fewer than 50 pupils. On the surface this small school is able to offer a wide range of subjects both academic and practical, as well as sporting and cultural facilities. Latin, Woodwork and Mechanics were included in the school's curriculum, subjects which are not always available to pupils with perhaps 1,000 on roll. Little is said in Hodgett's article of the competence or experience of teachers or activity leaders, almost always employed on a part time basis, and often parents or members of the local community with particular interests or talents.

For example Hodgetts himself teaches Physics, yet he had never previously taught science, and only did a small amount at school. His interest was aroused "when I read about the problems of sub-atomic physics". Hodgetts describes himself as "co learning" with a group of six who will be taking examinations in two years time.(84) This seems less than ideal, but in practice many teachers in more conventional schools often find themselves in a similar situation when taking a course for the first time. The reasons for the founding of Hartland School are stated elsewhere. It is too early to assess the success of the school in terms of curricular provision and academic achievement.

Gainsborough Lodge School, Frinton on Sea, was established in 1980 to provide a "traditional education"

for girls to the age of sixteen. Numbers were always below 60 pupils and it was never possible to provide a sufficiently wide curriculum, especially on the science side. Arrangements were made for fourth and fifth year girls to study science at a college some miles away but the situation was far from satisfactory. Whilst in some other ways the school was successful, especially in cultural activities, its problems in broadening the curriculum to provide a realistic alternative to other schools led to the closure of the school within seven years. (85)

It would appear that the above three schools are fairly typical of many outside the maintained sector. Each placed considerable importance on the non curricular advantages of the small school and all three made positive attempts to provide a sufficiently broad and balanced curriculum for their pupils. The overriding impression, however, is that in terms of curricular provision they were perhaps less than adequate, with the smaller two schools in particular, struggling to be effective.

#### 4.7 Inconclusive studies

Robertson in Monks et al (86) devotes a chapter of the study to the school curriculum, stating that the two most important influences on the timetabled curriculum are the school's size and its origin, "size because of the limitations it imposes or the freedom it provides; origins

through its relationships to the ability of the pupil intake and the traditions and policies of the school and its staff". (87)

It is interesting that Robertson attaches such importance to the influence of a school's origin. It appears that relatively few writers do so and yet, from my own experience of teaching during a period of transition in secondary education, the status and practices of a school prior to comprehensive reorganisation have had a lasting influence on the organisation and work of a school.

The larger schools in the NFER survey tended to group children in broad ability bands which corresponded to the streams of the smaller schools, the proportions of children in each category being roughly the same.

In introducing his lengthy section on the Sixth Form curriculum (88) Robertson states that absolute figures of numbers of pupils are irrelevant if little or nothing is known about their educational standards. In some schools membership of the Sixth Form is restricted to those who have obtained a minimum number of "O" level passes, usually four or five, whilst in other schools all 16+ students are classed as members of the Sixth Form, irrespective of their academic background and the level of courses they are following. Because of this it is not easy to draw

conclusions, although data extracted from table 3.9, 3.10 and 3.11(89) suggests that whilst the larger schools were able to provide more "A" level courses, the influence of size was not as great as one might expect.

Table 4.4 Pupils and Courses in First Year Sixth in Four Contrasting Sixth Forms

School Code	Pupils in First Year Sixth	No. of "A" Level Subjects	% of Lower Sixth taking "A" Levels
361	11	11	100
147	69	14	28
248	72	16	92
273	91	17	54

Source: Monks TG (ed) Comprehensive Education in Action, Slough, National For Educational Research 1980  
 Obtained from tables 3.9, 3.10 & 3.11 (pp88 & 89)

The "A" level subjects not offered by either of the two schools with the fewest "A" level candidates were Technical Drawing, Woodwork, Metalwork and German, whilst only the school with the largest Sixth Form (248, which had a much larger Upper Sixth than 273) offered Latin and Russian. These observations appear to be in line with general expectations, yet in contrast the only two schools offering "A" level Music were the smaller two.

Robertson also compares the fourth year curricula of two contrasting schools; one a two form entry school (presumably around 60-70 pupils in the year group), the

other with eight forms and 240 pupils. (93) It is not possible to make an exact comparison but the following table suggests that pupils in the larger school had a much wider choice of curriculum.

Table 4.5 Comparison of option choices between a large and a small comprehensive school

School	371-2 Stream entry		273-240 pupils in form 4	
	A Stream	B Stream	A & B Band	C Band
Compulsory Subjects	5	7	5	6
Options	4 from 10	3 from 5	5 from 23	5 from 17

Source: T G Monks (ed) Comprehensive Education in Action Slough, National Foundation for Educational Research 1970. Obtained from tables 3.4 & 3.5 (pp78 & 79)

In addition the larger school was able to provide differing ability sets in most of the more popular subjects.

However, the availability of such a wide variety of courses does not imply that all pupils have in practice such freedom of choice. Indeed Robertson quotes the example of a school only slightly smaller than school 273, having 220 pupils faced with 2,250 theoretical subject combinations. In fact the 220 pupils selected only 124 distinct combinations, no one combination being chosen by more than 14 pupils. (91)

Robertson's conclusion is that "Size also

illustrates the conflict of needs. In a small school it is difficult to provide the wealth of courses, studied at different levels to suit the needs of all pupils, which can be organized in a larger school. On the other hand, in the large school special measures have to be taken to cater for the welfare of pupils who may be lost in the supposedly impersonal environment".(92)

This conflict occurs throughout the study of the influence of size on the performance of a school and the problem raised in the final sentence of the above extract from Monks et al will be studied in Chapter 5.

The study by Barker and Gump (93) of thirteen high schools in Kansas included analysis of the relationship between school size and the number of "academic activities" (roughly equivalent to subjects offered). Using data from tables 4.1 (p42) and 4.8 (p60) the following table is obtained.

Barker and Gump list 34 academic activities (subjects) taught within the schools, although in Britain the same subject content would be classified under fewer headings.(97) For example the following five activities listed by Barker and Gump: General Mathematics, Probability and Statistics, Algebra, Geometry and Trigonometry would be regarded as Mathematics in this country, with perhaps only

Probability and Statistics being placed in a separate category.

Table 4.6 Size of school and subjects offered in Kansas High Schools

School	Pupils	Academic activities
Otan	35	13
Dorset	45	12
Wacker	83	14
Malden	92	12
Meadow	115	15
Midwest	117	13
Vernon	151	14
Haven	221	19
Eakins	339	20
Booth	438	23
Univ. City	945	23
Shereton	1923	27
Capital City	2287	30

Source: Barker R G and Gump P. V, Big School, Small School, Stanford, Stanford University Press, 1964.  
Obtained from table 4.1 (p42) and 4.8 (p60)

Barker and Gump list 34 academic activities (subjects) taught within the schools, although in Britain the same subject content would be classified under fewer headings. (94) For example the following five activities listed by Barker and Gump: General Mathematics, Probability and Statistics, Algebra, Geometry and Trigonometry would be regarded as Mathematics in this country, with perhaps only Probability and Statistics being placed in a separate category.

Barker and Gump's findings confirm the general impression that the largest schools offer most subjects. They found that the smaller schools were deficient in

respect to specialised Mathematics, specialised social and behavioural sciences, foreign languages (none of the schools with fewer than 151 students offered Spanish, French or German) and specialised business classes. (95)

However their observation that "the largest school had 65 times as many students, 8 times as many academic behaviour settings and 2.3 times as many kinds of academic activity" is of limited value if we attempt to compare their results with those of British schools. If we take the five schools with between 221 and 1923 students inclusive, (ie excluding schools of a size unlikely to be found in the United Kingdom), the contrast is not so great.

In common with other writers Barker and Gump suggest that the measurement of educational data is far from objective "The extent to which school size was related to the richness of offerings depended upon the measure of richness employed". (96)

They conclude that "the large schools had twice as many cytosettings as the smallest schools, in general the smaller schools managed to sustain a large proportion of the types of offerings provided by the largest schools", and suggest that the effect of size on schools is somewhat illusory. (97)

#### 4.10 Survey of the curricula of some Cambridge schools

Table 4.6 provides some illustrative information about curriculum provision in the ten Cambridge area schools referred to in Chapter 3. (98) Because of differing styles of presentation and subject descriptions, it was not possible to make a detailed comparison between provision in years one to three and so my analysis is limited to external examination courses.

A general survey of the ten prospectuses did not suggest that marked differences in curriculum provision could be related to size. All the schools had 'a common core curriculum' in year three. In forms four and five all pupils followed courses in English and a Mathematics subject with a choice of options.

All schools stated that they made provision for children with learning difficulties with, as far as could be ascertained from lists of teachers, an identifiable specialist in remedial education. The general trend, irrespective of school size, was either that slow learners were taken out of certain classes, commonly French, to be given additional help in basic Mathematics or English (including reading), or that they were taught for most academic subjects in small classes whilst being integrated with the remainder of their year group for activities such as P.E., games, music and art.

Table 4.7 Curriculum data for ten schools in the Cambridge area

School	A	B	C	D	E	F	G	H	I	J
No. of pupils in 5th form	281	253	217	198	173	163	129	128	122	111
Subjects at O/CSE/16+ examination	44	44	40	49	42	40	43	35	38	38
No. of practical subjects	6	7	7	6	8	8	8	8	7	7
Commercial course	*	*	*	*	*					*
Third foreign language	*		*							
Latin	*	*		*			*			

Source: School prospectuses

Notes: Schools B and C were 11-18 age range all others 11-16.  
 Practical subjects included; Art, Home Economics, Motor Vehicle studies, Technical Drawing, Metalwork and Woodwork and related subjects.  
 All ten schools offered French and German.

One would not expect any reference to be made in a school prospectus of the implications of remedial provision, but it appears inevitable that extra help can only be given by increasing class size for the remainder of the school, or increasing teachers' contact time and it must be easier to do this in the larger school.

Column 3 of table 4.6 shows the number of subjects for which schools entered candidates at "O", CSE or 16+

examinations. Whilst there does appear to be significant correlation between the size of the fifth year and the number of subjects taken (Spearman's coefficient of rank correlation  $=+0.75$ , significant at the 5% level) care must be taken on three grounds.

Firstly the range of subjects offered, 35 to 49, is proportionally much narrower than the numbers of pupils, 111 to 281. No account is taken of possible "double entries" in certain subjects, and in some schools weaker candidates in, for example Mathematics, are entered for Arithmetic (classified as a separate subject) whilst in others they are not. (In the mid 1970's I studied the list of subjects examined by the East Anglian Examinations Board at CSE; 142 different Mathematics syllabuses were listed, including as many as five by one school who, presumably were also entering pupils for at least one Mathematical subject at "0" or 16+ level).

Finally care must be taken in interpreting the data on practical and technical subjects offered, but clearly there is no apparent relationship between school size and the number of subjects offered. In fact the smaller five schools offered have a mean of 7.6 subjects, compared with that of 6.8 for the larger five. It would appear that the larger schools are more likely to offer commercial courses, a third foreign language (Spanish in each case) and Latin.

#### 4.11 Conclusion

The overall impression is that larger schools are, on the whole, more able to provide a wider variety of subject choices for their pupils than smaller establishments, although if one discounts the very small and unrepresentative secondary school, this advantage is not as great as might be imagined.

Department of Education and Science statistics would appear to confirm that, as schools increase in size, they are able to offer more subjects throughout the secondary age range. (Tables 4.8 and 4.9) However table 4.8 suggests there is little difference in the number of subjects offered between schools in the 601 to 900 and 901 to 1,200 ranges. In terms of 'A' level provision for sixth form students the difference is more marked, confirming the views summarized in section 4.4. An HMI report (99) notes the "clear relationship" between sixth form size and the number of 'A' level subjects. The Inspectorate suggest that schools with small sixth forms can only provide the range of 'A' level subjects by means of economies in staffing elsewhere in the school, or by reducing non examination work in the sixth form. Neither of these solutions is regarded as being appropriate.

Table 4.8 Range of numbers of separate subjects studied by size of school in maintained secondary schools (11-18 comprehensives) in England

Size of School	Year Groups					
	1	2	3	4	5	6
1-600	7-20	7-20	10-25	13-26	15-27	9-27
601-900	11-20	11-21	14-24	17-28	17-30	14-28
901-1200	11-19	11-21	14-26	19-32	19-31	14-28
1200+	11-20	11-22	14-25	19-32	19-34	17-30

Source: Department of Education and Science Statistical Bulletin 10/87. The 1984 Secondary School Staffing Survey. Data on the curriculum in Maintained Secondary Schools in England, 1987. Table 2.

Table 4.9 Size of sixth form and number of 'A' level subjects offered.

Size of Sixth Form	'A' level subjects offered	
	Mean	Range
1-51	12.3	1-18
51-100	13.1	10-19
101-150	14.8	11-19
151-200	16.5	13-22
201-250	16.1	14-20
251-300	20.3	17-23
301+	21.0	21

Source: Department of Education and Science, Secondary Schools: an appraisal by HMI. HMSO 1988. Table 13, p 43.

It is impossible not to agree with the above observation, though Elizabeth Halsall leads those who would suggest that small schools can compete in terms of breadth of curriculum, especially if some imaginative steps are taken to overcome difficulties presented by lack of size. (100) As is suggested in table 4.10 it is only in the provision of relatively minority subjects that the small schools are at a serious disadvantage.

Table 4.10 Percentage of schools with named subjects being studied in maintained secondary schools in England

'A' level Subjects	Size of Sixth Form	
	25 to 99	100+
English	97	100
Mathematics	92	100
Biology	89	100
History	89	100
Geography	88	99
French	82	98
Economics	49	84
German	44	82
Religious Education	29	68
Drama	28	79
Music	27	79
Spanish	12	28
Classical Languages	8	33
Business Studies	4	14

Source: Department of Education and Science Statistical Bulletin 10/87. The 1984 Secondary School Staffing Survey: Data on the Curriculum in Maintained Secondary Schools in England, 1987.

If we accept, on the basis of available evidence, that the larger school is able to provide a wider curriculum the question must then be raised as to whether the number of subjects available to all pupils, and the number of options available to older students are the yardsticks by which the quality of a school's curriculum should be judged. Very little is said of the overall standard of education, and opinions differ as to the desirability of mixed ability teaching groups, ideal class sizes and the employment of teachers who are capable of teaching more than one subject to older pupils. Indeed

many curriculum studies tend to assume that it is desirable to provide courses in as many subjects as possible.

However it may be that the curriculum of a school can be unnecessarily broad, and that it is unreasonable to expect fourteen year old children to make a sensible choice of, for example five from fifteen option choices which will not close as many doors as will be opened. It is probably with this in mind that the prospectus of Melbourn School, Cambridgeshire, states "our curriculum is organised on two assumptions; that the same general structure should be common to all children, and that for each child a balanced education should be offered throughout his school career. For this reason there is only a limited choice in the examination years". (101)

The need to provide a wide range of subjects outside a "common core" does not appear to have come under sufficiently close scrutiny. Many "minority" or new subjects introduced at school can be taken up at university or elsewhere without previous study. For example it is possible to follow degree courses at many universities in the following subjects (which is by no means a comprehensive list) without having previously studied them to Advanced Level: History of Art, Economics and related subjects such as Accountancy and Commerce, Greek and some modern languages, Computing Science, Geology, Law and Religious Studies or Theology. (102)

For school leavers who are not going to proceed to full time further or higher education the advantages of a wide variety of choices in forms 4 and 5 are far from certain. Employers are often little concerned with the subjects studied at school by potential employees, firstly because their intakes are likely to be from a large number of schools, and because they have to begin their training and induction courses "from scratch" in order to find common ground. Also many believe that the knowledge and skills obtained when studying a subject at school is of limited value in a working environment. Employers are more likely to be concerned with personal characteristics and the overall academic achievement of applicants than with their ability in specific subjects. For example banking, all branches of the legal profession, local and national government service, nursing, surveying and many other professions do not specify which subjects are taught in schools of all types and sizes.

The two preceding paragraphs should not be taken as advocating a narrow common curriculum. A sound case can be put forward for the provision of most subjects taught in schools, but as is often the case, a compromise needs to be found. If it is felt that a wide range of options for all pupils is the most important priority, then there is a good case for establishing or preserving large schools.

However, the need to offer a large number of courses, which inevitably leads to early specialisation on the part of pupils, must be seen against some of the drawbacks of the large school. The case, on curricular grounds, against the very small school, is fairly clear; within the range which covers most British secondary schools, for example 600 to 1,600 pupils, the arguments are less conclusive. Perhaps the final word should be left to Davies who, whilst accepting that small schools are able to keep up with their neighbours in terms of the numbers of subjects offered, says that students in small schools experience frustration. "From (the child's) standpoint, whether he is in a 3fe school or a 15fe school, there is not much to choose between one kind of frustration and another. Better for him if we keep reasonably to the middle of the road" (103).

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## CHAPTER 5

### PASTORAL ORGANISATION, BEHAVIOUR, TRUANCY AND ABSENTEEISM

#### 5.1 Introduction

It would be both wrong and unfair to suggest that little thought had been given to the pattern of pastoral care, until the 1950's and 1960's when comprehensive reorganisation led to the increased size of schools. However the growth of schools did mean that fresh consideration had to be given to pastoral organisation, for what had been possible in schools of up to 500 or 600 pupils, ie that the head and staff knew all the pupils, became out of the question. With the growth of the large school new types of organisation, featuring some delegation of responsibility, became inevitable.

Essentially all large schools, and many smaller ones, are subdivided on either horizontal or vertical lines. The horizontal division usually involves forms grouped together into year groups or "schools", the latter composed of two or three year groups. Sometimes both levels are employed simultaneously. A vertical system is based upon houses, which contain pupils of all ages under the guidance of tutors, with housemasters or housemistresses being ultimately responsible. Whichever system is employed the usual principle is that the form teacher or tutor is the member of staff who should be

consulted first by pupils, colleagues or parents. The nature or severity of the situation may involve referral to a pastoral specialist and/or more senior teachers.

In this chapter there are two major questions to be answered. Firstly how is the organisation of pastoral care influenced by the size of the school, and secondly to what extent is size related to standards of well being and behaviour of the pupils?

It is even more difficult to make objective comparisons between standards of behaviour than it is to compare levels of attainment or depth of curricular provision. Therefore much of this chapter will be based on subjective opinions, with relatively little supporting empirical evidence.

Behavioural problems can be classified under two main headings; absenteeism and truancy on the one hand, and secondly those involving theft, damage to property, violence and other "anti social behaviour". As well as dealing with these problems, pastoral care is also concerned with ensuring that all children feel secure and well integrated into the community. It almost goes without saying that it is usually the children who are not secure and integrated who are likely to be more often in breach of school discipline.

It ought to be relatively easy to quantify absenteeism and truancy, for school registers should provide an accurate record of attendance, and a properly maintained follow up procedure should detect most cases of unauthorised absence. The results are not as accurate as they may be because many teachers are not particularly conscientious in maintaining registers, and some parents are unco-operative in ensuring that their children attend school regularly, and in supplying honest explanations when they are absent.

As far as general standards of behaviour are concerned it becomes almost impossible to make objective comparison between schools. Each school sets its own rules and what may be a misdemeanour in one school, for example not wearing uniform or leaving the school premises at lunchtime, may be perfectly acceptable elsewhere. Very few studies attempt to give numerical values to behavioural standards. It is also equally difficult to measure "happiness" or "satisfaction" in schools and therefore comparison is again more or less impossible.

Many parents and politicians are concerned about the size of comprehensive schools, believing that standards of behaviour decline as the number of pupils increases. This is particularly noticeable amongst parents of children who

are about to leave their relatively small primary schools to enter secondary school, where as well as there being more children, the age range is greater. Until very recently few parents of secondary school children had attended schools which are large by today's standards, and this inevitably colours their judgement. The case against the large school on behavioural grounds is often put forward by supporters of selective education, and is regularly stated in the press, radio and television.

Many books and articles have been written on pastoral care in secondary schools, but few make direct reference to the issue of size. Most tend to deal with principles of pastoral care and it is usually in sections on organisation or system that references to size are found. Those works which do specifically refer to size tend to be more general studies of secondary education, and it is in these publications that most of the statistical information quoted in this chapter is to be found. Since most of this data deals with absenteeism this topic has been largely covered in a separate section (1), but it is impossible to separate absenteeism from anti-social behaviour for, sadly, it is very often the same children who are involved in both categories.

## 5.2 The need for a clearly defined pastoral system

Nash (2) agrees with Halsall (3) in stating that

smaller units are invaluable, suggesting the need for two levels of pastoral care; a first tier of form teachers and tutors, together with a higher tier, which could be in the position of head of house/year or housemaster/mistress. He continues to say that the success of the organisation, irrespective of its type, depends upon the amount of contact time between the pupils and their teachers.(4)

Moore (5) stresses the need for care to be taken in organising the pastoral system of a school "To a considerable degree the educational and guidance objectives a school is able to achieve are constrained by major environmental factors, such as the size of the pupil population, the range of pupil abilities and the catchment area which the school serves".

He states that the very large population also calls for special vigilance against the risks of the individual pupil becoming isolated. Care is needed to convey a sense of security and a feeling, not only of belonging to the school, but also that someone on the staff is prepared to bother about him or her as a person. This is additionally important if the home background and support are poor.

King (6) claims there is no evidence that satisfaction with pastoral care is lower in large schools. He suggests this may be due to greater structuring of the

pastoral system in such schools, although he did find that one very large school relying on form teachers only did fare significantly worse than those with more structured pastoral systems.

King continues to say that the organisation of the pastoral care system using tutorial groups is also clearly related to the size of the school. The fear that pupils in large schools could feel lost gives rise to structural innovations which break the school into smaller units such as houses and tutorial groups, whose purpose is to act as centres of identification and interaction.

Robertson (7) noted that in small schools with relatively stable staffing the heads had chosen experienced teachers to take the first forms. In large schools, however, other arrangements were frequently made, and a clearly defined chain of responsibility for pupil welfare usually existed. He is one of a number of writers who observe that in large schools a house/year/school system of organisation enabled the advantages of the small school to be retained.

Rhodes Boyson (8), a proponent of the large school, writing in the early days of Highbury Grove School, claimed that the middle sized school (500 to 1,000 pupils) was undesirable as it lacked the intimacy of the small school

and the variety of the large. He stressed that it was important for each boy to be well known by a member of staff, and established an organisation in which each boy was, he claimed, secure in both the academic departments and his house. Houses were run on vertical lines with housemasters having complete pastoral care, being likened by Boyson to similar roles in public schools or Oxbridge colleges.

Best et al (9), on similar lines, suggest that pastoral care must be delegated to senior colleagues who, it may be supposed, will become like mini headmasters in relation to the pupils, and to those who tutor the pupils in their sections of the school. In the early days of comprehensives, they say, many people were concerned about the issue of anonymity and ruthlessness that large unselective schools might engender in their charges. They maintain that these fears were unfounded, and that the pastoral structures which did emerge were held to have produced not only a different kind of institution, but one which was "infinitely more ambitious, more detailed and more caring. In support of this they quote Haigh (10), who says that pastoral care has to be effected by formal systems rather than by the working of blind chance and sentiment.

Barnes (11) says that one possible definition of a

large school is one which makes structured arrangements for the pastoral care of its pupils. This is, he says, because the traditional approach of relying upon form teachers, supported by the head and deputy head, is an inadequate method of ensuring that all pupils are known in sufficient depth "for the school properly to discharge its duty to guide, encourage and foster the mental, moral and physical development of each individual in its care".(12)

Barnes suggests that the large comprehensive school provides an opportunity for the extension of teacher specialization. With a larger staff it becomes possible to appoint teachers whose interests and strengths lie primarily in the pastoral field. This pastoral system of the large comprehensives is a positive improvement on the arrangements of older and smaller schools in terms of organisation, expertise and defined objectives.(13)

Barnes is critical of the opponents of large schools for their unsubstantiated prejudices, but some of his arguments are questionable to say the least. He maintains, for example, that whilst larger schools have more alienated teenagers on roll, this may be fewer in proportion to their size (cf Durham (14)). Large schools are better able to develop specialist provision for these children, including withdrawal or adjustment units and counsellors, and are more likely to be able to help them, and prevent them from

adversely affecting others.

Barnes maintains that young teachers are more likely to benefit from training in pastoral care in large schools, and that teachers in these schools are convinced that they can provide quite as effectively for the care of the individual as in smaller schools. Moreover, he claims "this belief is now based upon social experience rather than theoretical expectation". (15)

On both points I find it difficult to agree with Barnes. It is a failing common to all schools in which I have taught, large and small, that training in pastoral care has been almost non-existent, and teachers with whom I have worked are almost unanimously of the opinion that pastoral care is more effective in the smaller school.

Neither Baxter (16) nor Jennings (17) refer to the size of schools in their chapters on school discipline, though both were heads of large comprehensive schools (1,300 and 1,900 pupils respectively). Both stress the need for a clearly defined formal pastoral system, as well as the provision of a curriculum which is appropriate for all pupils. On similar lines, the prospectus of Colbayns High School, (18) outlining its pastoral organisation, stresses that in a large (1,400 pupils at its maximum size) and complex (split site) school, it is essential in the

interest of everyone, especially the pupils, that clear lines of communication should be established.

In Best et al (19) there are a number of references to the need to provide a structured approach to pastoral care. Hughes (20) quotes "The Educational System of England and Wales 1974-5" in saying that this was brought about by the reorganisation of the secondary system and the development of larger comprehensive schools.

Best , Jarvis and Ribbin say that the growth of pastoral care structure is explained "as a response on the part of those who organise and administer education to the growing awareness of the non-academic needs of the children on the one hand, and the proliferation of choices and potential problems confronting children in large modern schools on the other".(21)

They claim that increasing the size of schools is a factor which led to the reinterpretation of pastoral care as "a consciously evolved device for managing a potentially explosive situation which enables the teacher to remain in control".(22)

Milner (23) writes that the majority of secondary schools operate a variety of combined teaching and pastoral care systems, which appear to be selected for

administrative expediency, in an attempt to reduce the impersonality of the large school by breaking down the size of the group with which staff and children identify.

Taylor (24) quotes Halmos (25) who says that the large size of groups alone can be felt as overpowering, especially if little or no attempt is made to compensate for size and impersonality, by contriving an environment where the individual can feel wanted, secure, important and of significance to others.

### 5.3 Absenteeism and truancy

Eaton's study of absenteeism (26) does not include school size amongst the eight variables with which he attempted to relate persistent truancy. In a lengthy study of factors affecting truancy amongst pupils in years 3, 4 and 5 in two South Wales comprehensive schools, Reid (27) suggests many possible causes for persistent absenteeism, some associated with social and family backgrounds. The school based influences may be summarised as lack of academic progress, bullying and other social problems, alleged teacher pupil conflict and inadequate pastoral care, and "inability to comply with school rules". There is no mention of school size. Cooper's study of persistent school absenteeism (28) deals mainly with family background and personal characteristics of persistent non attenders. Again school size is not mentioned.

Likewise the National Child Development Study, which formed the basis of the article by Fogelman et al (29), found that truancy was weakly, if at all, associated with school size. The relationship between eight school variables and teachers' reports of truancy was tested. No significant association was observed between truancy and the following:- use of corporal punishment, ability grouping schemes, pupil teacher ratio, single sex or co-educational status and school size. Some significance, but neither marked nor consistent, was found in the relationship between truancy and three variables :- rate of teacher turnover, insistence on school uniform and the frequency of parent-teacher meetings.

Galloway, Martin and Willcox (30) quote Galloway (31) who states that "neither persistent absence or exclusion were related in any systematic way to school size".

Galloway found that the majority of absences were due to illness or other unavoidable cause, though he quotes the Plowden Report (32) which stated that primary teachers believed that at least 4 percent of children absent at any time should have been at school. He continues to say that the highest percentages of absence and unjustified absence occur among adolescents aged 15 years. (33)

Galloway comments that very few studies have been carried out on persistent absenteeism (34) and refers to Jones' study (35), which suggested that large (and by implication impersonal) comprehensive schools are popularly supposed to have greater absentee problems than smaller (and by implication more personal) secondary schools. There is, continues Galloway, a powerful and political lobby which maintains that these larger schools have greater discipline problems. He tests the hypothesis that comprehensive schools with the highest absentee rates and the highest proportion of pupils suspended for unacceptable behaviour will be in large schools, in depressed areas, whilst the reverse will be true for small schools in socially privileged areas.

Galloway observed (36) that there was slight negative correlation between persistent absenteeism and school size, a result which is somewhat unexpected. Even more surprising, although he found positive correlation between absenteeism and exclusion this was not significant.

The variable which was most closely associated with absenteeism was the percentage of children receiving free school meals. Galloway also found that there was no difference in absence or exclusion rates between schools which were formerly selective or modern, (37) contrary to Steedman's findings. (38) His research is quoted by Smith

(39) in casting doubt on Halsall's views that large schools are more likely to have serious absence problems (40).

Surprisingly Barker and Gump do not investigate the relationship between school size and truancy or absenteeism, but in their introductory chapter they quote a number of studies of different types of organisation which lead to the general conclusion that persons in smaller groups and other social organisational and ecological units are absent less often. (41)

Reynolds et al (42) are quoted by Berg et al (43) in saying that persistent differences in school attendance are not attributable to school size, intake or administrative characteristics.

Although frequent reference was made in evidence to the Pack Committee (44) that the size of schools contributed to truancy and indiscipline, the committee found a lack of conclusive evidence in support of any particular size as suggested in Table 5.1 below.

In schools of all sizes truancy increased significantly for both sexes the more senior the class.

Table 5.1 Distribution of unexplained absence by size of school

Size of School	% of pupils with some unexplained absence	% of pupils with 30 or more unexplained absences
- 399	11.1	1.7
400 - 799	14.0	1.0
800 - 1199	16.8	2.7
1200+	15.2	1.8

Source: The Pack Report  
Truancy and Indiscipline in Schools in Scotland  
 Scottish Education Department HMSO 1977,  
 extracted from Table 7, page 23

The committee was concerned about school size, "We can do little more constructive in the circumstances than confess our unease about the potential of large scale institutions to generate large problems (though we have evidence to suggest that they tend to solve them by large scale effort)" and they recommend that the best sizes of schools deserves further study. (45)

Reynolds and Murgatroyd in their study of absenteeism in South Wales (46) would suggest that the size of school, as well as the age of the buildings, were the most important school based variables associated with attendance rates.

Table 5.2 shows the relationship between school size, delinquency rate, defined as the percentage of pupils who make first time offenders and attendance rates.

Table 5.2 The relationship between school size, attendance and delinquency rates

School	No. of pupils	% attendance	% delinquency rate
A	299	79.9	10.5
B	233	78.3	8.6
C	182	84.3	8.3
D	264	77.2	8.1
E	201	89.1	7.4
F	355	81.3	7.2
G	263	87.0	5.2
H	136	88.5	4.5
I	176	83.6	3.8

Variables

Spearman's coefficient of rank correlation

School size and attendance	-0.566	not significant
School size and delinquency rate	+0.466	not significant
Attendance and delinquency rate	-0.517	not significant

Source: D Reynolds and S Murgatroyd

<sup>a</sup>The Sociology of Schooling and the Absent Pupil in Carroll HCM (ed) Absenteeism in South Wales University College of Swansea Faculty of Education 1977

Obtained from tables 3 p58 and 5 p60.

The relationship between school size and attendance and delinquency rates is not statistically significant, and in any case, even the largest of the nine schools included in the survey would be considered small when compared to all schools in the United Kingdom. Also the reference to age of buildings is questionable, for seven of the nine schools were built in a fairly short period immediately before the First World War.

Despite the apparent limitations of their research, Reynolds and Murgatroyd go on to say "certain features of the schools themselves, their size, levels of corporal

punishment, rule norms and internal organisation appear actually to be causing pupil truancy. (47)

The results of this research are also quoted in Reynolds et al (48). The authors admit that their findings are not supported by Galloway (49) and Rutter et al (50), but suggest that there are a number of possible explanations. It may be, they say, that small schools make possible the development of close primary relationships between teachers and pupils, which in turn allow the school to use interpersonal rather than impersonal controls. (51)

Also small schools and the consequent small staffs do not fragment into many different subunits, thus giving a consistency of response to pupils' needs that is impossible in larger units. It maybe, they suggest, that within small schools teachers know their problems better, thus promoting a more therapeutic or caring school ethos. (52)

Terry (53), who is quoted by Kahn et al (54), suggests that absence from school without good cause is likely to be more prevalent in large schools. He claims that maintaining accurate registers is more difficult in large schools. In many schools staff are unable to be certain that if a child is present at morning registration he will still be in school after the first lesson. (55)

At Clacton County High School (1430 pupils in the late 1970's) an attempt was made to overcome this problem by having registers marked three times each day, before morning and afternoon school and at the end of the day. This met with only partial success; it was unpopular because each registration involved at least some members of staff and pupils moving considerable distances between form rooms and specialist teaching rooms. At the end of the day many children were more concerned with catching their bus than 'de-registering'. Truancy during the day was also a problem; even if a teacher saw a pupil squeezing through gaps in the fence between the playing fields and the adjacent local recreation ground, the chances were that he or she would not be recognised.

#### 5.4 Layout

Most writers confine themselves to relating pastoral organisation and behavioural problems to school size in terms of number of pupils, but some also consider the layout of the buildings. Smith (56) comments that "currently there is no strong evidence to indicate that the building plan in and of itself has a major influence on student or teacher interactions".

He continues to say that some results suggest that schools in the medium size range produce the fewest

personal problems and the greatest number of student and teacher integrations. It seems that particular combinations of design and obligation patterns are more critical to communication than size or design alone. "For example in contrast to central plans, extended school layouts contribute to smaller moving masses of students who interact in ways more supportive to the goals of the administration. In addition many very large schools are now characterised by "school within a school" arrangements which foster close relationships within the distinctive elements of the school". (57)

Halsall (58) deals at length with problems created by the layout of buildings, especially in the large school.

She suggests that as far as possible, new schools should be designed to minimise pupil movement, and that in existing schools timetabling, pastoral and curricular planning should also take account of this objective.

As children move through the age range and start following option courses, together with unavoidable movement to and from specialist rooms, this becomes more difficult.

Halsall claims there are two advantages from restricting movement. Firstly, especially but not exclusively for younger children, the less movement and

fewer teachers with whom pupils come into contact the more intensive is the pastoral care, and the more easily the children appear to be socialised. Secondly movement about the school requires children to spend a significant part of the day outside the classroom, and therefore away from learning situations. "The amount of delay over a week is therefore likely to be considerable, and similar delays will also be encountered by the Sixth Form, though probably not to the same extent. Such a waste of time leads to aggravation and bad temper amongst teachers if they are stationed in their own specialist rooms, and to undue fatigue if they have to move about a great deal from room to room. The opportunities for misbehaviour by pupils on long journeys are self evident".(59)

Gordon Smith, former headmaster of Clacton County High School, would undoubtedly agree with Halsall. In a unsuccessful attempt to dissuade Essex County Council from extending the size of his school from 900 to over 1,400 pupils, which involved extending the length of a two storey classroom block, and providing five demountable rooms, he observed that corridors could be made larger to accommodate more children, but you cannot make them wider. In fact the corridors were made narrower because, instead of desks, the children were supplied with metal lockers which stood in the corridors. Smith's views were ignored, and there was a noticeable increase in the incidence of indiscipline,

rudeness and minor injury as pupils moved along crowded corridors and staircases at break times and between lessons.

### 5.5 Split Site Schools

In the 1960's and 1970's a number of large comprehensive schools were created on two (and occasionally more) sites. AMA (60) found that welfare and medical services in split site schools were good, but eleven out of eighteen schools studied reported discipline difficulties. Pupils were unsupervised in transit, left unsupervised for longer periods and became more inattentive and difficult because of double periods. In many subjects, for example modern languages, double periods are clearly unsuitable, and the fact that 'commuting' tends to make an 80 minute lesson effectively only 50 or 60 minutes creates an additional problem of loss of teaching time.

AMA (61) concluded that in general split site schools were undesirable and that they should be replaced by single site or campus schools when possible. An alternative to very large and split site schools would be to make the different sites into independent units or even schools.

The Pack Committee recommended that "a real effort should be made to reduce and eventually eliminate the use

of annexes". (62) They felt this was necessary, even if it meant a redistribution of school rolls. Evidence presented to the committee frequently pointed to the organisational difficulties arising from the dispersal of accommodation, together with the variation in the quality of provision that often entailed, as significant factors in the incidence of truancy and indiscipline.

In contrast to the AMA and Pack reports, however, Rutter et al (63) found that split site schools had fewer behaviour and delinquency problems.

#### 5.6 Problems of the large school

Durham (64) admits that discipline can be a problem. All schools will have their badly behaved children, but in a school as large as Beacon with 2,200 pupils a one percent disruptive element means that you have 22 badly behaved children all reinforcing each other. Garwood Scott et al (65) also observed that as schools increased in size, behavioural problems such as vandalism became worse. Armstrong (66) recognises that there is a problem of establishing and sustaining a firm personal contact with every pupil. However, he accepts this as an inevitable price to pay for the comprehensive system.

Wyatt and Gay (67) quote Miles (68) who comments on the aberating effects of the large school which produces a

high level of unrest amongst pupils. David (69) quotes the Spens Report (70), which suggests that a school of at least 800 pupils is desirable to achieve a sufficiently varied curriculum but continues to say "this size was arguably unacceptable for pastoral care: we believe the majority of pupils gain more from being in smaller schools".

This contrast between the advantages of the large school in terms of academic viability, and the small for pupil happiness, is a recurring theme of this thesis, though it contrasts with the view expressed by Benn and Simon (71), quoted by Ross et al (72), that pupils' perceptions of a school does not diminish with size: They argue that the success of large schools depends upon their pastoral organisation.

Halsall (73) argues that disciplinary control is more difficult in large schools; indeed she claims that the problem can be illustrated mathematically with classroom control being from three to nine times as difficult in a 14 form entry school as in one with only three forms of entry.

Teachers and pupils do not know each other, and there are many more places for pupils to get lost. The problems, she claims, do not exist to the same extent in small schools, and she continues to say that small schools are also less likely to have problems of absenteeism.

Discipline is therefore 'bought' at a greater cost to the teachers, who are required to work harder in large schools. She concludes that "the interaction of the large size of school buildings and the large numbers of children is such as to make negative aspects of pastoral care more difficult, and to increase the burdens of control and supervision". (74)

Garwood Scott, Seldon and Whetstone (75) list among criticisms of falling standard in state schools, problems of vandalism, pupil violence and hostile parents, and say that the more authorities try to change schools by, for example, re-organising them into more and larger comprehensives, the worse the problems became. Hodgetts (76) says that one of the reasons for the establishment of the very small school in Hartland, Devon was that parents were worried, not only by the long journeys to and from school but also that the nearest maintained school, in Bideford was large (1,450 pupils 11 to 18 in 1987) (77) and had a reputation for violence.

Terry (78) suggests that the incidence of truancy increases with the size of the school, and he also maintains that there is a definite relationship between truancy and delinquency, quoting Monroe (79), who says that half the children who play truant from school drift into delinquency. Terry argues that many children become

confused and lost in the complexity of the large secondary school. (80) Pupils are often on the move at the end of each 40 minute session, and are dealt with by a bewildering variety of specialist teachers. He suggests "Children ..... require to have continuous meaningful face to face relationships with others in their daily routine" and that this is difficult to achieve in large schools. (81)

He does not believe that the concept of equal educational opportunity is really being achieved under our present system, rather that it has tended to emphasise the divisions between social classes. Whilst the large comprehensive school provides reasonably well for the needs of the middle class suburb, Terry suggests that it does not provide adequately for children in working class districts in large towns. (82)

Corbishley and Evans say that size was the major pastoral problem when three (unidentified) schools were amalgamated into one. To combat this the head organised a series of "mini-schools" for lower, middle and upper age groups, with the model of pastoral care remaining that of the smallish secondary modern or grammar school. They found that parents distrusted large schools, even though in one school's prospectus size was described as a major asset because of the extra services a large school can offer in terms of care. (83)

Section 2 of this chapter deals with the need for and advantages of a clearly defined and well structured pastoral system. James (84) disagrees with this idea and quotes Devlin (85) who says that as the size of Hugh Myddleton School, Islington, fell from 900 to 400 pupils a relaxed discipline became possible and the staff began to realise the value of a small school in a tough area. "They consider that however hard you apply the house and tutor system to a large comprehensive school, you will never give the children the same sense of belonging that a small neighbourhood school can provide; stability that is often lacking in their home backgrounds". The Head of Science at Hugh Myddleton, commenting on the fact that the school was to close, is quoted as saying "These kids will be lost in a large comprehensive school".

#### 5.7 Suggestions that size has little influence on behaviour and attendance.

A further group of writers suggest that the size of a school has no measurable or direct effect on behaviour. The author of "Sizing up Size" (86) observes that bigger schools tend to be in areas with the biggest concentration of social problems in larger cities, and in deteriorating inner city situations. The situation is also confused because many of these schools were formerly secondary modern schools, which probably had more problems than the smaller grammar schools. He concludes that size may

compound problems, but it does not cause them.

Steedman's work (87) on progress in secondary schools makes no direct reference to school size, but she observed that truancy is more prevalent in comprehensive rather than in grammar or modern schools. Benn and Simon (88) do not relate size of schools to disciplinary problems. In their survey the schools which had the most serious problems were those in large urban areas, but it is not possible to deduce whether or not these schools were large in size. Galloway (89) failed to find any significant difference in exclusion rates between schools which were large and/or in areas of socio-economic hardship and those which were small and/or in socially privileged areas.

Her Majesty's Inspectorate are cautious in their opinions. (90) They suggest that whilst a highly structured pastoral system may not be necessary in a small school, it cannot be assumed that the frequency and closeness of informal contact leads to guaranteed knowledge of, and support for, all pupils. The absence of a pastoral system could reflect the fact that little thought has been given to the nature of pastoral care in the school. They state that much evidence is available to support the notion that a more structured system is essential in larger schools. However a cumbersome organisation may actually inhibit

pastoral care if pupils are deflected from talking to a teacher they know, and instead are encouraged to discuss matters with other teachers dealing specifically with pastoral affairs.

From my own experience of working in a highly structured system I would support the above view. Once a problem, behavioural or concerned with social or family affairs, was taken up in the system, it was easy for the teacher initially involved to appear superfluous. On a number of occasions heads of schools, counsellors, deputy head or the senior mistress would deal with the matter, making it a more formal and prolonged affair. This could actually make matters worse, and certainly did little to improve the status of the form teacher.

In conclusion the Inspectorate maintain that there is no evidence to support the argument that the effectiveness of the pastoral system of large schools is in any way different from that of other schools, or indeed that large schools suffered more from organisational problems. (91)

Rutter et al's (92) findings suggest there is no significant relationship between school size and three behaviour outcomes, as shown in table 5.3 below.

Table 5.3 Correlation between school size and behavioural outcomes

	Mean Rank (*)		
	<6fe	6fe	7 to 12fe
Attendance	7.8	5.7	6.0
Behaviour	6.5	5.0	7.4
Delinquency	7.5	3.7	4.8

\* The lower the rank the better the performance

Source: M. Rutter et al. Fifteen Thousand Hours  
Open Books 1979 Extracted from table 6.2a, p100

This study is particularly useful, because it is one of very few which attempted to measure behaviour of pupils instead of relying on purely subjective opinions.

'Behaviour' was marked on a 25 item scale containing both self-report and observational measures, including lateness, missing lessons, violence and damage to property.

Delinquency figures were based on the percentage of pupils officially cautioned or found guilty of an offence in a juvenile court on at least one occasion. The main attendance measure was based on recorded attendances by fifth year pupils during two particular weeks.

Rutter et al also tested the effect of "split-site" schools by reclassifying each site as a small school but this did not produce any significant change. They conclude "It may well be that the size of a school does have an impact on its character and style, but at least within our sample small schools were neither more nor less likely to have favourable outcomes, however measured". (93)

## 5.8 Conclusion

When one considers the volume of criticism, informed or otherwise, of the large school on grounds of standards of care and behaviour it is surprising that many writers on pastoral care make little direct reference to school size. Coulton (94) and Newby (95) are two writers who do not mention school size in their articles on attitudes to school and pastoral care respectively. A possible reason, of course, is that they do not consider size to be a major problem or influence.

Supporters of small schools put forward the advantages of the family atmosphere where most teachers know most pupils, and that established relationships mean higher standards of behaviour, and greater chances of identifying and dealing with miscreants.

However, advocates of the large school say that the more formal structure of these schools means that more thought has to be given to pastoral care and this will lead to greater efficiency, better record keeping and so on. Instead of pastoral care being an informal and almost incidental part of a teacher's role, it becomes more specific and allows for the employment of pastoral specialists.

The evidence is, therefore, contradictory. On

balance it would seem that the incidence of misbehaviour and truancy is slightly higher in larger schools, but this is neither consistent nor significant. Small school supporters claim advantages, whilst their critics say either that size has no significant effect, or that the more structured organisation of the large school is better for both pupils and teachers.

What are more important than school characteristics, including size, are social and family circumstances. There may be some school-based factors which affect standards of care and behaviour, including rate of staff turnover, personal characteristics of the head and senior staff, and the level of support from the local education authority. Some of the worst problems arise in large inner city areas, with acute social difficulties, but others, especially of absenteeism in rural and farming areas, are prevalent where formal education has not always been a high priority. Of all the factors influencing behaviour and attendance the most important are those which could be considered "home based".

## Chapter 5 Footnotes

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## CHAPTER 6

### PROVISION OF, AND PARTICIPATION IN, EXTRA-CURRICULAR ACTIVITIES

#### 6.1 Introduction

In most British schools a considerable amount of time is spent on what are loosely termed 'extra curricular activities'. To some extent these activities are an extension of work undertaken in the timetabled lessons, such as Games, Music, Art and Drama, but others can be completely distinct, for example Community Service and outdoor activities such as camping and fishing.

Many teachers devote a great deal of time and energy to these activities on two grounds; firstly because they are interested in a particular sport or hobby, and running a school team or club is an ideal way of maintaining their involvement, and secondly because they believe that participation in extra curricular activities helps to develop the sense of the school as a community, and fosters improved relationships between pupils and staff.

It is with this second point that we are concerned in this chapter. Some of the relevant material has already been covered in earlier chapters, dealing with costs and

provision of facilities and equipment, and there is also overlap with the chapter on formal academic subjects (ch.4). Until recently relatively little has been said or written about this aspect of a teacher's work, the subject only having come to the fore as some teachers reduced their commitment to 'out of school' activities as part of their campaign for higher salaries in the mid 1980's.

Publications dealing with sport, drama or practical skills rarely refer to school size; those in which reference is made in this chapter are more general works on secondary education. The fact that few refer to the relationship, if any, between school size and participation is particularly surprising, for one of the factors which led me to choose the influence of size as the topic for my thesis was an admittedly subjective opinion that there is more of a community spirit in small schools. This was reflected in levels of participation in teams and clubs, as well as in support for other pupils in attendances at school plays and concerts.

## 6.2 Advantages of large schools

Sayer (1) emphasises in rather general terms the advantages of the large school in being able to provide a wide range of extra curricular activities, giving examples of sports teams, camps and educational journeys. He believes that it is important for each child to have the

opportunity to learn to play a musical instrument, and that a large school is more likely to be able to provide instruments which are beyond the pockets of most parents. Sayer appears to imply that more encouragement is likely to be given in the large school, but he does not substantiate this view. Nor does he make any reference to level of participation by pupils.

Benn and Simon (2) are enthusiastic about the wide range of extra curricular activities which can be provided by comprehensive schools, suggesting that their size enables them to enlarge the range of their facilities, equipment and instruction. No reference is made to participation levels.

Rogers (3) suggests that a school is regarded as being too small when there are too few children and teachers to provide an adequate level of stimulation, and to be able to organise specific activities such as a football team, school play or orchestra.

Oglesby (4), appears to welcome the advantages of the large school, but does admit there are problems in organising and administering PE programmes in a large school, which he defines as having over 2,000 pupils.

### 6.3 Disadvantages of very small schools in sports

The very small schools are at a disadvantage in the provision of opportunities for pupils to take part in team sports such as soccer, cricket and rugby, where sides consist of at least eleven players. Whilst in a two form entry co-educational school it is theoretically possible to raise two teams to play matches against each other, it has to be recognised that many children will have neither skill nor interest, and the games will have limited merit.

Selecting school teams becomes difficult. Whereas the small school may benefit from having a low absolute number of troublemakers (cf Durham (5)), it suffers from having only a few good games players to form the nucleus of a good team. From my own experience of playing in and coaching teams it is often the case that the smallest schools (fewer than four form entry) are those which suffer the heaviest and most frequent defeats. Whilst not wishing to subscribe to the view that winning should be the main objective in sport, children do need the encouragement of at least some success to maintain their morale and enthusiasm.

In the smallest schools it becomes impossible to provide some team sports. This can be compensated for by encouraging participation in a few 'small team' games (for example netball and basketball) or individual sports such

as golf, squash and tennis. However the costs of providing facilities are high and may be prohibitive unless use can be made of shared or publicly owned facilities.

The National Association of Head Teachers (6) state that changing patterns in physical education place greater demands on staff, and that this can be a significant factor in smaller schools which have fewer specialist teachers to call on. They suggest that the problems of obtaining the required range of activities, particularly in minor activities, can only be met by greater use of part time or peripatetic teachers (cf Halsall on curriculum).(7)

#### 6.4 Suggestion that small schools are not necessarily at a disadvantage

Supporters of the large school argue that by virtue of its size, and the opportunities to benefit from economies of scale, the bigger the school the more extra curricular activities can be offered to its pupils. There is little disagreement with this view, although Halsall (8), referring to Barker and Gump (9), maintains that even the smallest schools are able to provide the most popular activities, and that it is only in the provision of clubs and societies which are of interest to only a relatively small number of pupils that the larger schools are able to do better.

Hendry and Marr (10), in their survey of 32 Scottish

schools, found no significant differences between urban and rural schools, or between larger and smaller schools in terms of purpose built facilities such as gymnasia, games halls, swimming pools and playing fields.

Barker (11) commented on the advantages of smaller schools in the provision of extra curricular activities. Referring to small schools in Westmorland, she observed that the clubs and societies were wide and varied in their nature and that they were largely well attended. The support of parents and the neighbourhood was reflected in the provision of, for example, minibuses and swimming pools, which were also used by the local community. Transport could be a problem, but many activities took place at lunchtime, and Barker found, as most teachers do, that the majority of pupils were able to stay after school if they really wanted to.

#### 6.5 Advantages of small schools in establishing a sense of community.

There is inevitably some overlap here with pastoral matters covered more fully in Chapter 5. Participation in extra curricular activities helps to develop a community spirit, especially where groups of children are involved, as in team games, drama and music productions and other clubs and societies. Dooley (12) comments that teachers in large schools began to detect that pupils frequently lacked a sense of belonging. James (13) agrees, saying that the

large school makes it harder to achieve a community life which is the mark of a good English school. The Friends' Schools are all small, the largest having only 450 pupils. This means that new pupils will soon fit names to faces, and that "..... most of the staff and senior pupils can know everyone, and this (as every teacher is aware) is essential if a large institution is to become a community" (14).

Robert (15) identifies the size of school as a 'separation' factor, a feature which acts against staff working closely and effectively together. He says that parents and professional educators would probably agree that a smaller school has a better chance to develop a pleasant and effective learning environment than a larger one. Students recognise and interact more with teachers.

Wyatt and Gay (16) stress the value of teachers knowing their students and the importance of unity. To this extent the nature of key buildings is a factor, whether or not it is possible for pupils to eat, study and worship together. Very few large schools are able to accommodate all pupils at the same time for assembly or meals - indeed some schools need to have three assemblies and meals tend to be eaten on a cafeteria system. The difficulty in arranging a pattern of assemblies in large schools is perhaps one reason why many schools have

abandoned any realistic attempt to conform with the provisions of the 1944 Education Act. This must inevitably lead to a weakening of any sense of unity amongst staff and pupils.

#### 6.6 Participation levels

Barker and Gump (17) found that in the USA pupils in larger schools took less part in voluntary extra curricular activities, though they did suggest that this might be due, at least in part to the locations of the schools. They conclude that there is "clear evidence of greater participation in school activities by small school students in all the public records available to us. The differences were so great as to suggest not only were they statistically significant, but that they pointed to a different way of student life in large and small schools".

They also suggest, and are quoted in Ross et al (18), that smaller schools are more likely to achieve integration of pupils of different social class and ability, though they recognise that this could be affected by the type and flexibility of the organisation as well as its size.

This conclusion is in accord with the views expressed by Wyatt and Gay (19) and in Coleman (20) who is quoted by David (21), although Coleman (22) also states

that participation levels decrease as the distance between home and school increases (cf Barker (23) and Ross et al (24). Ross et al found that, in smaller schools a higher percentage of pupils was likely to be involved in school matches.

The Assistant Masters' Association (25) found that participation in extra curricular activities was a serious casualty of the split-site school. Many schools were already facing problems of apathy and difficulty of communication, but these became greater in the split-site school. An increasing number of activities take place in the lunchtime, but if this time is needed for 'commuting' other things cannot take place. Such activities as did exist took place on a sectionalised rather than school base.

#### 6.7 Evidence that size has little effect

King (26) maintained that the size of a school does not directly relate to the level of involvement shown by its pupils, pointing out that the larger schools are able to provide a wider range of subjects, games and other activities.

It is surprising that there is no reference in Reid's lengthy chapter on 'Voluntary Extra Curricular Activities' in Monks (ed) (27) to the possible relationship between

size and provision of, or participation, in activities. Indeed the only mention of size in the chapter is a comment that in general smaller schools tend to organise activities on a whole school basis, whilst in larger schools sections, for example houses, were used as the organisational unit. According to the authors the factors affecting participation rates are the contribution made by the teaching staff and parental support. After school and weekend employment, membership of activities unconnected with school and unsympathetic parents are likely to deter at least some pupils.

Ross et al (28) found that there was no relationship between school size and fourth year pupils' perceptions of their schools. They found that although larger schools had more and better facilities, for example two gymnasias, and that these were more likely to be used by outside bodies they had fewer facilities per pupil. Also despite the fact that the larger comprehensive schools provided a wider range of courses for their older pupils and had better (specialist?) P.E teachers, the smaller schools were more successful in running extra curricular programmes. Children in country areas were more keen to take part in activities than urban children, despite potential transport problems. It appeared that only in the provision of minority activities that the smaller schools were at a definite disadvantage.

Glasgow (29), in a wide ranging article of sport in and out of school, concentrating in particular on low levels of participation, does not refer to school size, nor does Crutchley (30) in his article on physical education programmes in secondary schools.

As far as drama and music in school are concerned opportunities are similarly limited, but this need not be such a disadvantage as in sport. There are many plays for small casts which are ideal for small schools but which may not be chosen by teachers in large schools who feel the need to involve a large number of pupils. Some children may be given the opportunity to act who would be overlooked in a large school. In music there may not be the opportunity to play in a reasonably sized orchestra, but pupils will be able to perform in small ensembles and even on their own. (However as was stated in Chapter 2 small schools may experience difficulty in providing some musical instruments).

#### 6.8 Conclusion

At best the evidence is somewhat inconclusive. Although Her Majesty's Inspectorate make a number of references to school size, there is no reference to the issue in their section on extra curricular activities (31). Large schools are able to provide a greater variety of

extra curricular activities, and economies of scale enable them to purchase more equipment. This is particularly important when less money is available to schools. However, with the exception of the smallest schools, most of the more popular activities are available in all establishments. To a degree the provision of a particular activity may be determined by the interests of the staff rather than its size; some small schools run successful volleyball teams and Scottish dancing classes simply because they happen to have teachers who are suitably interested and qualified.

On balance it appears that levels of participation are greater in small schools. To some extent this is inevitable; in a small school children are more likely to be persuaded to take part in a house team or play in order "make up the numbers", whilst in a larger school those on the fringe may never get the chance. Probably more important are the other school and social factors, as mentioned by Reid in Monks et al (31) (Section 9.6).

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## CHAPTER 7

### TEACHERS AND SCHOOL SIZE

#### 7.1 Introduction

Although teachers have been consulted on many aspects of education in recent years relatively little discussion appears to have taken place on the issue of size, except in the context of falling rolls. This aspect will be discussed in Chapter 8. To a considerable extent matters which could be related to the influence of size on teachers are considered elsewhere, especially in the chapters on costs and the curriculum. This chapter is concerned mainly with the influence of size on teachers' professional development and career structure, and in the final sections on whether working conditions are more or less favourable in large schools.

As in other areas of this study, writers fall mainly into three broad categories; those who support the large school because of the increased opportunities for professional development, those who favour the smaller school on the grounds that they are less stressful places in which to work, and those who maintain that size in itself is of little consequence or that the counter arguments cancel each other out.

## 7.2 Arguments in support of large schools

The arguments in favour of the large school from the teachers' point of view are very similar to those affecting pupils, ie that in the larger school there are greater opportunities for teachers to develop their own interests and specialisms. In the larger school teachers have the opportunity to teach a wider variety of pupils and are less likely to be called on to teach outside their main subjects, although it is questionable whether either or both of these objectives are universally popular. Certainly I have always welcomed the opportunity to teach Mathematics, and occasionally other subjects, in addition to my major discipline, Economics. Also, whilst the large school reduces the likelihood of mixed ability teaching, there are some members of the profession who advocate little or no setting or streaming as a matter of principle.

Kirkby concludes her brief article in "Big and Beautiful" (1) by claiming that "the larger school, appropriately organised, provides staff with wide professional experience and a sense of security and identity, arising from their particular function in the school, together with the diversity and facilities of the large community".

She questions whether it is really the case that pupils and staff benefit from knowing each other well, and suggests that teachers derive more benefit from the greater specialisation and wider experience offered by the large school. Kirby maintains that more help is likely to be given to the inexperienced teacher, whilst promotion prospects are better with opportunities for staff to specialise in areas which interest them. She claims that although the large school can be a more testing community in some ways, (without suggesting what these might be), it can be more flexible and supportive.

In a note on Kirkby's article, Lambert (2) complains that the Burnham points scale placed teachers in large schools at a disadvantage in terms of salaries. He quotes the example of a large education authority in which schools in groups 9 and 10 (between 470 and 900 pupils) had one teacher on Senior Teacher scale or above for every 165 to 175 pupils, whilst in schools in groups 12 and 13 (between 1,179 and 1,581 pupils) the figure was one for 291-323 pupils. He appears to disagree with the widely held view that promotion prospects are better for teachers in large schools, and maintains that a Head of Department could be on the same salary scale whether there are three or ten teachers in the department. The salary problems are counter-balanced to some extent by the extra stimulus and greater opportunities for development within a large

staff. (3)

The counter argument to Lambert's salary complaint is that the Burnham points system was weighted against the small school, which was at a disadvantage in its ability to pay salaries on higher scales. For example schools below group 9 could only employ one Deputy Head, with no assistant teacher above Scale III, whilst only schools in groups 10 and above could appoint teachers to Senior Teacher level. (4) Very few 11 to 16 schools come into this category.

This could, and did, mean that smaller schools were unable to employ many specialist teachers. It has been argued that this diminished career opportunities, and it was suggested that small schools could not attract good teachers or that good teachers would not stay long, thus creating instability in the schools.

The suggestion that smaller schools may have a detrimentally high level of staff turnover has been put forward, but it is interesting to note that the average length of service at Alston High School, Cumbria, the smallest 11 to 18 school in England was 14 years for full time staff and 7 years for part time. (5) This does not suggest excessive turnover.

Grubb (6) maintains that teachers in large schools have a wider variety of pupils to teach, a more broadly defined pastoral role and better opportunities for internal promotion. He also believes that the large school has more to offer both pupils and staff.

### 7.3 Influence of size on promotion prospects

With the expansion of schools in the 1960's and 1970's came increased promotion opportunities. It was noted in The History of Stocksbridge School (7) that, as numbers increased, established staff gained promotion within the school. At Clacton County High School Heads of Economics and Geography were promoted to Scale IV as the size of the school increased and more posts became available. However, when the holders of these posts were replaced, during the early stages of contraction, their successors were only appointed on Scale III. (8) More detailed reference to the effect of falling rolls on career and promotion prospects is made in Chapter 8.

The Pack Committee (9) noted that in large schools there was a greater proportion of staff in promoted posts and that these teachers have a much wider function to perform than was first envisaged. This should involve promoted staff playing a prominent part in formulating and implementing the school policy. Pedley (10) made a similar observation, but also commented that in the large schools

teachers outside the "magic circle" of deputies, heads of houses and department heads have little direct say in policy. In the large school, says Pedley, junior teachers have limited chance of success when attempting to put forward their points of view.

#### 7.4 Arguments in support of small schools

The arguments in favour of the smaller school can be summarised under the generalising claim that it is a more pleasant place in which to work. The evidence is by no means conclusive, though if one were to accept that discipline is less of a problem in the smaller school it would appear to follow that working in such a school is less demanding.

Although Her Majesty's Inspectorate (11) found no indication of a relationship between school size and average teaching load, Bates (12) observed that teachers in large schools, in general worked longer hours.

However Bates did find that one area in which the small school appeared to involve more work was timetabling.

In eight of the schools included in the survey the timetables were not completed before the end of the summer term. Seven of these were small, and the authors suggest that in small schools Heads and Deputies responsible for the timetable have insufficient time during the term

because of their other responsibilities. (13)

Table 7.1 Average number of hours per week spent on various activities estimated by classroom teachers in different types of school.

Size of School	Activity (time in hrs)		
	Class Instruction	Pupil Welfare	Total Working Time
Up to 750	18.5	2.3	41.4
751 - 1,250	17.9	2.6	43.0
1,251 or more	17.3	3.2	45.5

Source: T. G. Monks ed, Comprehensive Education in Action, Slough, National Foundation for Educational Research 1970, table A2.3, p183

Durham (14) noted that teachers in large schools suffered the effects of size more than pupils whilst Nash (15) observed that the lack of role definition could be a problem. James (16) quotes Devlin (17) who commented that as numbers in the school fell, discipline became more relaxed and teachers came to realize the value of a small school in a tough area.

Best et al (18) suggest that in large schools a major problem was that of the siting of the staffroom. Often distances are too great for ease of travelling, and at break there may be no time to get a coffee or chat with other colleagues. In some schools this can be overcome by having two or more separate staffrooms, but then there is less mixing and communication.

Roberts (19) states that few teachers who work in

large elementary schools (say 1,600 to 2,000 students) either know or care about each other. As far as professional involvement is concerned, he says, there is little opportunity for "sustained and productive personal contact". In high schools, which are larger than elementary schools, alienation and estrangement among staff members is even more pronounced.

Robert's views on American schools would undoubtedly find support in Britain, especially amongst those who regard the school as a family community and teachers belonging to a team. However those who are committed to the larger school would argue that in commercial or industrial organisations employing 80 or more workers, the need for a collective esprit de corps is neither possible nor desirable. And, of course, in a very small organisation personality clashes and rivalries may actually become more acute.

#### 7.5 Relationship between school size and stress amongst teachers

An anonymous writer in The Times Educational Supplement (20) writes bitterly of "The Sheer Size of the Thing", which resulted from the merging of three schools of under 450 pupils each into "an unwieldy affair" of 1,500 (then) approaching 2,000. Among the major problems faced by teachers, he lists the size of the building, the fact that of necessity breaks in the common room, when it is reached,

have become the only opportunities for "talking shop", and also that staff and pupils are no longer known to each other.

The effects on the teaching staff are, he claims, both psychological and physical. Once teachers lose their sense of individuality they become nonentities and "esprit de corps" no longer exists. The physical problems are even more serious with "nervous and bodily exhaustion . . . . ., the relentless accumulation of stress. He looks forward to an early retirement, as far as possible from the "crowded impersonal city", the symbol of the cumbersome comprehensive.

Not surprisingly Halsall (21) claims advantages for teachers working in smaller schools. She refers at length to studies by Carver and Sugrovanni (22) and Gentry and Kenny (23), who found that size of school was inversely related to the openness of the institution, where features of an open climate included a head with high consideration for staff, high degree of motivation and commitment. Halsall suggests that stress and low morale are more likely to occur in a large school, a factor being the misunderstandings which, although inevitable in all organisations, have been shown to occur more frequently between people on different hierarchial levels : and as schools increase in size the number of levels

increases. (24) She also maintains, though admitting that her conclusion is tentative, that large schools and split site schools put additional pressure on teachers. (25) Among the problems of split site schools mentioned by Her Majesty's Inspectorate (26) are excessive commuting by teachers. This is exhausting, wasteful of time and results in teachers having insufficient opportunity to meet.

Hodgetts (27) places considerable importance on stress and maintains that size of the school is a significant stress creating factor. He claims that many of the heads and teachers with whom he has come into contact suffer from, stress, either directly, they themselves being highly stressed, or indirectly, because they are working with colleagues who are. He believes "stress feeds itself".

Among the recommendations of Dunham (28) for reducing stress amongst teachers, is fixing the maximum size of a school at 1,000 pupils and also reducing class sizes. His views concur with the findings of a survey of teachers, carried out by MORI for The Times Educational Supplement in 1977. 86 percent of all teachers questioned (the biggest proportion in favour of any particular opinion) agreed with the statement "There should not be more than 1,000 pupils in a secondary school". (29)

Kyriacou (30) and (31) refers to a number of studies of factors linked with stress amongst teachers but in two separate lists of the "top ten" reasons he does not suggest one cause of stress which could be related to school size. He emphasises (32) by implication the need for organisational and administrative arrangement stress will minimise those sources of them which are within the school's control (cf the need to implement a proper system for the pastoral care of pupils referred to in Chapter 5). He appears surprised to find that pupils' poor attitude to their studies, and too heavy a workload were generally found to be the main sources of stress.

Payne and Furnham (33) conducted detailed research of fourteen secondary schools in Barbados. 35 factors causing stress were listed, none of which could be directly related to school size. Coldicott (34) suggested that the organisation of a school could be a cause of stress amongst teachers, but he makes no reference to size.

Parkes (35), writing on causes of stress among head teachers, suggests that a possible topic for future research is investigating whether stress is related to the size, nature and organisational structure of a school. In a subsequent letter, she states that two surveys among head teachers and students lead to the conclusion that school size does not appear to be a significant determinant of

perceived stress. (36) Farrell (37) refers to a number of "stresses" delineated by Kyriacou and Sutcliffe (38), but none of these can be related directly to school size, with the possible exception of "dashing between classes". (39)

## 7.6 Conclusion

None of the major teachers' unions have commissioned research into their members' views on size and this would suggest that the issue is relatively unimportant. The National Union of Teachers did not respond to Department of Education and Science documents containing reference to the need for a certain number of pupils in order for a school to be considered viable. In a letter (40), Gifford says "We do not wish to take the view that [the] interests [of members of the Union] might best be served in schools of any particular size. The Assistant Masters' report on Teachers Workload (41) had particular implications for the size of classes, but did not refer to the total intake of the school. Certainly the available evidence is inconclusive and, as Ross et al (42) suggest, "Size does not determine teachers' perceptions of their schools".

Informal discussions I have had with teachers who have experience of schools of differing size would suggest that their views are determined by other factors, notably the personality and style of the head, the catchment area and the implementation of local and national policies.

Even on the question of falling rolls teachers' views vary, partly because the situation differs over the country.

Teachers' views on size of secondary schools are unlikely to be sought in the foreseeable future. On the one hand it is probable that there will be fewer very small or very large secondary schools, and most 11 to 16 establishments will be in the range 700 to 1,100 pupils. Re-organisation measures dealing with falling rolls are already being implemented, with the primary considerations being those of finance and the curriculum. Perhaps, if and when some stability is restored, there may be a case for further research, but even then the opportunities for making radical changes, as far as the size of schools is concerned, would appear to be limited.

## Chapter 7 Footnotes

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CHAPTER 8  
FALLING ROLLS

B.1 Introduction

Demographic changes inevitably present problems to all who are involved in planning the provision of public services, notably health, welfare and education. Since the first official census in 1801, and indeed before then, there has been interrupted growth of the population of the United Kingdom. This in itself has created many difficulties, but generally problems of expansion are not entirely unwelcome as they invariably lead, directly and indirectly, to greater employment, not only in the services themselves but also in jobs dealing with buildings, supplying equipment and so on.

For most of the first thirty years after the second world war numbers of pupils in schools grew rapidly, leading to the formation of some large schools and the creation of many additional posts throughout the entire education sector. However the rather unexpected decline in the birth rate from the late 1960's led to a marked fall in the numbers of children who will be passing through the various stages of schooling until well into the 1990's. This decline has not been spread evenly throughout the country. For example, between 1979 and 1985 the numbers of

pupils attending maintained secondary schools fell by approximately 11 per cent in the North and North West of England but only by 1.5 per cent in East Anglia (1). In some local educational authorities there have been considerable differences between schools only short distances apart. The areas which have lost most pupils have been the large towns and those which have suffered from the decline of one or more of the older labour-intensive industries. For example Croydon expected to experience a fall of 43% in secondary school numbers between 1981 and 1986, (2) Sheffield over 40% between the late 1970's and early 1990's (3) and Manchester 29% between 1982 and 1991 (by this latter date requiring barely 56% of the 1982 capacity). (4)

The unevenness of the decline can be illustrated by the 22 schools in the survey by Briault and Smith (5). The decline in rolls of 21 of the schools between 1976/77 and 1979/80 varied between 47.0% and 8.6% whilst one school actually grew by 3.8%.

Table 8.1 shows the effects on schools of the decline in pupil numbers between 1979 and 1986.

Table 8.1 Numbers in Maintained Secondary Schools (excluding Middle Schools) 1979-86

	Schools (No.)	Pupils ( '000)	Teachers ( '000)	PTR	Mean Roll
1979	4074	3606	219	16.5	885
1980	4044	3599	219	16.4	889
1981	4010	3571	218	16.4	890
1982	3963	3523	215	16.4	888
1983	3905	3487	214	16.3	890
1984	3797	3392	212	16.0	893
1985	3745	3287	206	16.0	877
1986	3663	3164	201	15.8	863

Source: Department of Education and Science Statistics of Education. Schools HMSO 1986

Table 8.2 United Kingdom Population ( '000) by age range, 1972-1986 mid year estimates

Year	Age Range				
	Under 1	1-4	5-9	10-14	15-19
1972	734	3119	4087	3753	3379
1973	689	3051	4078	3853	3423
1974	638	2939	4029	3955	3478
1975	613	2810	3942	4039	3576
1976	585	2642	3895	4071	3682
1977	559	2492	3801	4091	3783
1978	567	2371	3691	4071	3883
1979	617	2309	3536	4022	3994
1980	639	2317	3386	3941	4087
1981	634	2372	3196	3889	4129
1982	620	2443	3032	3791	4154
1983	624	2496	2923	3680	4130
1984	623	2510	2915	3528	4050
1985	648	2501	2960	3388	3965
1986	655	2528	3024	3214	3962
Population lowest in	1977	1979	1984	*	*

\* Population in these age ranges still falling in 1986.

Source: Office of Population Censuses and Surveys. Population Trends 48, HMSO, 1987, taken from Table 7, p62

Matters became more complicated however, for in 1977 the number of births in the country began to rise again

and by the mid 1980's primary school numbers were increasing. Again this is not uniform throughout the country. Table 8.2 shows clearly that numbers of children of pre-secondary age are now above their minimum values of the 1970's and it is anticipated that secondary numbers will begin to rise again from 1992.

## 8.2 Influence on the curriculum

A dominant feature of educational discussion in the 1980's has been proposals by local education authorities to close or merge secondary schools because of falling rolls. The overriding consideration appears to be the provision of a sufficiently broad and balanced curriculum within available financial resources.

Briault and Smith, who believe that the curriculum should be the main concern when discussing problems created by falling rolls, says that the [inevitable] trend towards fewer 'A' level subjects being offered and fewer 'A' level students being taught produces problems for schools and their pupils. They stress the disadvantages of smallness for pupils up to age 16.

- (1) a more restricted curriculum for fourth and fifth year pupils.
- (2) inevitability of mixed ability groups.
- (3) mixed or restricted objective groups for public

examinations.

(4) greater difficulty in deploying staff in such a way that teachers are used to best advantage, and yet still ensuring that the curriculum is covered. (6)

Ball (7) refers at length to Briault. He suggests that reductions in staffing brought about by falling rolls, and leading to redeployment and redundancies, will have adverse consequences for curricular provision. In particular peripheral (presumably minority) subjects will come under pressure. Also, he claims, children from low income families may suffer disproportionately as a result of charges being made for activities such as swimming and music.

Dennison (8) writes on similar lines, adding that as rolls decline, probably accompanied by a deteriorating PTR, all the curricular advantages of expansion become the disadvantages of contraction. If, for example, a school's roll falls from 800 to 780, the school is likely to lose one full time teacher and this has effects on the whole staff. If the PTR is not to be increased the most likely consequence is that there will be limitations in the options system in forms four, five and six. As rolls continue to fall, and more teachers leave without replacement, some curricular areas may be directly threatened, particularly minority subjects such as

Classics, German or Economics. If numbers fall by 25 per cent (say from 800 to 600) all activities and curricular areas come under threat. (9) The problem becomes particularly serious if pupils following courses for public examinations are left without a specialist teacher when a member of staff, who leaves in mid course, is not replaced. The course must be completed, often with inexperienced or 'make weight' teachers. Anticipating this problem is likely to lead to certain minority subjects not being offered to pupils.

Bailey (10), making reference to the West German system, suggests there is a case for agreeing upon an essential, curricular framework, which would reduce the adverse effects of random staff losses in schools. Dennison (11) studied the approaches of Leeds and West Glamorgan to the adoption of a core curriculum, but concluded that the real attractiveness of the common core from an economic standpoint only becomes apparent as schools decline. "Even with less children and fewer staff, if all pupils study the same group of subjects, class sizes can be retained and teachers employed effectively". (12)

Hugill (13) quotes the Secretary of State for Education, Kenneth Baker, who says that the case for rationalisation is educational, not accounting. The size of schools is a key factor in their ability to deliver the

right sort of curriculum.

### 9.3 Effects on teachers and their reactions

The consequences of falling rolls for teachers have generally been unwelcome. Ball (14) summarises most, observing that cuts in staffing levels have led to loss of promotion prospects, less non contact-time, fewer inservice training opportunities and less ancillary help. Tuffnell (15) mentions similar problems, adding that when staff leave teachers often have thrust upon them the extra burden of being required to teach age and ability ranges to which they have not been accustomed.

Dennison (16) adds the view that, with the size of a school's staff inevitably dependant upon the number of pupils, the first priority for teachers would appear to be maximum roll size. He also refers to the fact that when rolls are falling "career prospects are in decline and there is every possibility that morale will follow in the same direction". (17) He argues the case for "staff development activities" to bolster staff motivation, essential features being the establishment of a suitable climate and the counselling of staff to maximise their own development. (18) Ball (19) links falling rolls with effects on staff morale, and claims that women teachers are particularly hard done by. A first recourse in an effort to meet reduced staffing allocation is the cutting of

part-time posts and this affects women disproportionately.

Thomas (20) suggests that contracting school size reduces the need for specialists, who must either develop new skills or relearn old ones. Bailey (21) stresses that staff updating and retraining will have to be tackled more systematically than ever before, and that every teacher will require some form of professional help. He also suggests that a more formalised and deliberate approach to appointment and promotion procedures is needed, with particular attention being paid to job descriptions. (22)

Dennison (23) writes at length about the problem of redeployment which, he says, is almost certainly unique to contraction. Redeployment is always a difficult exercise because it inevitably involves disruption, not only to the teachers directly concerned, but to pupils and other staff.

Teachers moved against their will may lack commitment, and schools may be obliged by authorities to accept redeployed teachers when they would have preferred to advertise particular posts more widely.

He also maintains that redeployment is more than the relatively simple mechanical exercise of deploying the expensive resource of teacher time in the most productive ways. Teachers are not homogeneous factors of production,

and therefore if one is obliged to change job, perhaps working in a new curricular area or teaching another age range, he or she will need advice, encouragement, management and counselling.

Ball (24) is critical of Briault's attitude to redeployment on the grounds that a purely logistical approach may have adverse effects on the motivation, self esteem and commitment of teachers.

Bailey (25) suggests that redeployment between schools can be unacceptably expensive in country areas where schools are widely spaced and Burgess comments that "in the light of financial restrictions, falling rolls, teacher redeployment and the amalgamation of comprehensive schools, local education authorities may increase their control over the action and activities of head-teachers."

(26)

Tuffnell (27) observes that if a head knows his school is scheduled for closure it is unlikely he will be able to provide the necessary dynamism required to maintain standards in their schools. The adverse effects on the head of the prospects of closure are likely to be destructive to the life of the school.

Matthew and Tong (28) comment that Deputy Heads in

many schools felt that the combined effects of contraction and (parental) choice would result in a downward spiral for them in terms of prospects and job satisfaction.

#### 8.4 Problems for the management of schools

It is generally recognised that the falling roll situation presents problems which are unique for all who are involved in secondary education, especially as contraction followed so swiftly after a period of expansion. Thomas (29) suggests that the problem of management in contracting schools may differ so greatly from the management of expansion that there will be a need for special inservice training arrangements.

Briault and Smith (30) advocates the case for long term planning and suggest that there is a need for close control of annual intakes to each school. In this context they say there is no case for reducing the size of a large school in order to sustain a less 'sought after' school elsewhere. They also suggest that if the rate of decline in pupil numbers is below the national average change will take place without great difficulty or damage to the curriculum. However, if the fall in birth rate is compounded by net migratory population loss, and if the area is served by schools of differing size, there is a need for a dynamic approach.

Dennison suggests that the problem is more severe in urban rather than rural areas. He maintains that "it is probably impossible to overstate the importance of the personal dimension" (31) and continues that whilst it is relatively easy for administrators, who are responsible for a complete package of arrangements, to ignore the overwhelming priority given by individuals to the likely consequences for themselves and their families, in preference to the total scheme of which they are a part. (32)

Dennison also claims that local education authorities are more concerned with surplus places than with absolute sizes of school. The Department of Education and Science suggested (33) that premises related costs, which were about one quarter of costs in 1980, would increase by 50 per cent if the roll of a school fell from 750 to 500 pupils, whilst the 1986 Consultative Document states that it has been calculated that it costs £170 a year to retain a surplus secondary place. The Consultative Document does recognise that removal of surplus places entails upheaval for teachers and pupils as well as capital and possible transport costs, but argues that "investment appraisal of rationalisation options will often show a good rate of return". (34)

Dennison suggests there are two complementary

strategies for every school with a declining roll problem. One is to aim to do the job of satisfying the needs of the fewer statutory age range pupils more effectively; the other is to search for opportunities and situations in which the combination of staff skills and school facilities can be used to meet new educational challenges. (35)

Neither approach is without problems; the first requires teachers to continue doing the same job without the added incentive of rapid promotion which existed previously, whilst the second imposes new demands on teachers if the school expands into different areas with some teachers, for example, having problems in adjusting to the presence in their classes of adults or returning ex-pupils.

#### 8.5 Reorganisation plans of local education authorities

Each local education authority, at least in theory, has been free to make its own arrangements to deal with falling rolls. In practice, however, their autonomy was limited because all proposals have to be approved by the Secretary of State. Fierce opposition was mounted by opponents of each plan, the most vociferous objections being directed at proposals to close particular schools whose rolls were becoming too small. In Manchester there was "the usual tension" between those who wished for small schools to be retained and those who saw the need for

schools to be "large enough to generate the range of specialisms needed for a comprehensive education" (36)

The detailed arrangements are beyond the scope of this thesis, and inevitably the situation differs widely between authorities. The overriding principle in all reorganisation proposals appears to be the provision of a sufficiently broad and balanced curriculum. The unfortunate coincidence that falling rolls have been experienced during a period of financial restraint has meant that the closure (or merging) of some schools, especially the smallest has been inevitable. This has led to the loss of jobs and/or status with early retirement being offered to many teachers.

Weeks suggests that amalgamation could have beneficial effects in the reappraisal of school government, organisation and curriculum and the opportunities for a new head teacher to "inspire the new establishment to better things". (37) On the other hand, he recognises that amalgamations inevitably lead to some bitterness and recriminations, which will not bode well for the new school. (38)

#### 8.6 Effect on Sixth Form provision

In many authorities there has been a tendency to concentrate on 11 to 16 education in schools with post 16

year olds studying in sixth form or tertiary colleges. This is justified on the grounds, that the provision of 'minority' 'A' level courses becomes more cost effective and very small sixth form classes in 11 to 18 schools are avoided. Also colleges are more likely to run vocational courses for students who do not require a largely academic curriculum. It is interesting to note, however, that Coventry is going against the general trend by placing all 16 to 19 year olds in existing 11 to 18 community schools with special vocational courses being provided within the 14 to 19 age range. (39)

Weeks (40) views the creation of 11 to 16 schools as probably the worst effect of falling rolls and maintains the case for 11/12 to 18/19 schools is as strong as ever, on the grounds that truncated and divided schools reduce the flexibility to pursue a wide range of educational objectives. I would agree strongly with Weeks on this point, for I believe that the 11 to 18 school has a great deal to offer teachers and sixth form students. However I do have reservations about his suggestion that the problem could be overcome by more use of consortium arrangements.

### 8.7 Arguments for and against retaining small schools

Many of the arguments in favour of retaining small schools have been mentioned in earlier chapters. As in any commercial enterprise when there is a fall in demand for a

good or service there, is almost inevitably a degree of rationalisation where (usually) smaller and less cost effective units are closed or merged.

Most teachers' representatives would argue that falling rolls should allow class sizes and pupil teacher ratios in secondary schools to be reduced whilst maintaining spending level. Smithies (NAS/UWT) is quoted in Lister (41) "We believe that there is certainly value in small schools, provided that their size is compatible". Both the NAHT and AMMA were opposed to Briault's suggestion that reorganisation could lead, at least temporarily, to the formation of split site schools. (42)

Briault and Smith (43) state that if there are disadvantages in creating or maintaining large schools they do not appear to reflect parents' wishes. He does not believe, however, that these drawbacks are anything like as great as those associated with the small or shrinking school. They argue for planning for as few large schools as possible; there should be a range between optimum and maximum size. (44) Lister (45) agrees with Briault's recommendation that authorities should plan for the smallest reasonable number of secondary schools and the largest size of schools. Wherever possible schools should be merged rather than closing some individual institutions.

Briault and Smith also say that maintaining small schools involves the diversion of disproportionate resources to these schools during a period (late 1970's) when financial constraints were increasing.

"Every dwindling and half empty school, bolstered for survival by extra resources, diminishes provision which might otherwise be used to reinforce success". (46)

They do not claim that small schools are necessarily poor schools, simply that arising from their size, they have greater difficulties and disadvantages in meeting all the educational needs of all their pupils. (47)

### 8.8 Conclusion

The falling roll situation creates something of a paradox. As Dennison says, "The real worry of falling rolls is, that to a casual observer, fewer children present fewer problems, and therefore more opportunities to assess curricular and other issues". (48)

The reverse is true and falling rolls involve the raising of pressures and demands upon teachers. Ball dramatically claims that falling rolls constitute "constitutional trauma" (49) for teachers, and to a certain extent pupils. He suggests that they impose massive and profound constraints upon the process of becoming a

comprehensive school".

As has already been mentioned, teachers' unions hoped for an improvement in class sizes and pupil teacher ratios but the government appears unsympathetic. The Conservative Party manifesto for the 1983 General Election claimed, "This country is now spending more per child than ever before, allowing for price rises. As a result the average number of children per teacher is the lowest ever". (50)

It is difficult to see how many of the problems arising from falling rolls could have been avoided. The falling birth rate and population movements have led to a situation where, if there were no closures, some schools would have become undesirably and inefficiently small. Reorganisation plans, which have involved closures and mergers inevitably have unwelcome consequences for at least some teachers, pupils and parents. The fact that contraction followed so closely after a period of expansion only exacerbated the problem. Wyatt and Gay's observation is perceptive. "Perhaps those planning school reductions might bear in mind that in resourcing diminishing institutions it is rarely a matter of turning the clock back to the older patterns, even if the number on the roll appear to be the same". (51)

Relatively little new light appears to have been thrown on the issue of the ideal size for a secondary school. The 1986 Consultation Document recognises that "there are many small schools in which good teachers have done much to overcome the limitations of size" (52), but still maintains that schools should not fall below six form entry or that sixth forms in comprehensive schools should have fewer than 150 students. (53) "Schools below these sizes should not be retained if the educational and financial arguments for their closure are clear." (54) This suggests that there has been little change in official policy since the period of expansion more than twenty years ago and the issuing of Circular 10/65. (55)

However, a recent Audit Commission report claims attention to the fact that nearly half the schools are too small "to deliver a satisfactory curriculum economically and that 76 per cent of sixth forms are below the threshold. (56)

The commission notes that there will be 900,000 surplus secondary places by 1991 and the removal of one third would save £60 million in non-teaching costs alone. (57) They also maintain that, because more schools are falling below the desired minimum size "the best answer from an educational or economic point of view would be to amalgamate or close schools in an area or to reorganise age

ranges. (58)

In 1984 the Commission had maintained that the costs of failing to rationalise secondary school capacity were not merely economic. Indeed, it was stated that all proposals to close secondary schools were made not on economic grounds at all, but on educational ones: "...there comes a time when LEA's cannot afford to provide teachers to support a reasonably broad curriculum in small schools". (59)

. Information in tables 1.2 (p 17) and 8.1 (p 207) suggests that during the period of falling rolls there has been a tendency towards a narrower range of school sizes. For example the number of very large (over 1500) schools fell by 41 per cent between 1975 and 1986 whilst the number of very small (below 400) fell by 62 per cent. The average size of secondary schools varied remarkably little. Between 1979 and 1984 the average fluctuated in the range 885 to 893, falling only slightly to 863 by 1986.

Although 47 per cent of schools in 1988 had between 600 and 1000 pupils, compared with 39 per cent in 1975 and only 22 per cent in 1965 there is still considerable variation. Perhaps the most significant effect of falling rolls, at least as far as politicians and administrators

are concerned is the reduction in the numbers of very large and very small schools, without suggesting a precise optimum size. For teachers and pupils, however, the consequences have been more traumatic at the personal level, and it is impossible to generalise on the changes which have taken place since the late 1970's.

## Chapter 8 Footnotes

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6. Eric Briault and Frances Smith, op cit, Part 2, pp386-387.
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12. ibid, p17.
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18. ibid, p51.
19. Stephen Ball, op cit, p238.
20. Hywel Thomas, Teachers in Decline? The Quality Consequences of Changing Rolls. Educational Management and Administration (12) no.1, Spring 1984, p11.
21. Patrick Bailey, op cit, p26.
22. ibid, pp26-27.
23. W.F. Dennison, Doing Better for Fewer, op cit, p55.
24. Stephen Ball, op cit, p236.
25. Patrick Bailey, op cit, p24.
26. Robert G. Burgess, "Headship: Freedom or Constraint" in Stephen Ball (ed), Comprehensive Schooling A Reader op cit, p219.
27. Gordon Tuffnell, op cit, p23.
28. Richard Matthew and Simon Tong. The Role of the Deputy Head in the Comprehensive School. (Ward Lock Educational, 1982) p214.
29. Hywell Thomas, op cit, p11.
30. Eric Briault and Frances Smith, op cit, part 1, pp236-7.
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## CHAPTER 9

### SUMMARY

#### 9.1 Introduction

An attempt has been made in the previous eight chapters to summarise and evaluate writing on the issue of school size. The early stages of my research were frustrating in so far as it seemed that very few publications dealt specifically with the question of secondary school size. However, many books and articles do refer to the issue, directly or indirectly. Two major problems were encountered; the period of time covered, and a shortage of quantifiable evidence.

The earliest work studied, (Lynn (1)), was written thirty years before the most recent publications. In the late 1950's, through to the 1970's, the major issue in secondary education was that of comprehensive re-organisation. Schools were mainly selective, and by today's standards, small. In recent years attention has been switched to the problems of falling rolls, educational standards, and more recently, changes in the curriculum and the development of GCSE. Much of the literature is concerned with contemporary educational developments, and size has tended to be a secondary issue. Often the question of size has been brought into arguments, probably most frequently in the debate over comprehensive

re-organisation. Supporters of grammar schools frequently used the size factor when the real issues were their fears over falling standards, or the threatened disappearance of an old established school.

The second difficulty has been that many writers had very definite views on the question of size. Some, for example Halsall, and the Americans Barker and Gump, favour small schools, whilst others, including Rhodes Boyson and Briault and Smith, are perhaps even more forthright in their support of larger institutions. Others, particularly David, believe that size is not a serious issue when assessing the influences on a school. Very few writers support their views with evidence which would be regarded as conclusive in other branches of science.

Therefore there does appear little on which all writers appear to concur. There is general agreement that very small schools have serious financial drawbacks and also that it is difficult to measure the inputs and outputs of the educational process with any real precision. Perhaps this second point should not be considered surprising, for writers draw on experience from widely differing backgrounds. All conclusions are inevitably subjective and many write as though they are presenting the case for a particular size of school.

## 9.2 Influence of size on organisation of schools

Whilst there is considerable disagreement about many issues affected by school size, there is little argument with the notion that as size increases the organisation of the school becomes more complex.

Williams suggests that one of the reasons for education ministers adopting a de facto limit of about 1,500 pupils was that the attributes that went to make a good teacher would be the attributes needed to be a good headteacher in a medium sized school, "but when a school has 2,000 pupils or more it doesn't need a good teacher, it needs a manager and that is altogether a different thing. (2)

James (3) says that the prime difficulty of a large school is communication. In a small school much of what happens can be settled by instant word of mouth, but large size requires formal meetings and much documentation. He comments that "this can make, for instance, the organisation of an afternoon excursion a formidable operation", and continues to state that anyone with experience of management or administration knows that the problem of running large organisations are intrinsically different from, and more complex than, those of small ones.

Richards (4) makes a similar observation, pointing out that conventional systems of management worked when the Head and deputies were in direct daily contact with every member of staff. Once a staff grows beyond 40 a system of checks and balances has to be instituted. If there are 100 members of staff there will be many committees, many conflicting interests, and a very rigorous system of management becomes essential.

Midgley (5) wonders how it is possible to retain a sense of intimacy and community in a large, split site school of over 1,500 pupils, and asks how such a complex organisation should be managed. The answer, he says, is that the school must be run like a business organisation. Teachers are expected to be efficient in operating a centrally laid down system, and guidelines cover almost every aspect of the schools' life. "The school is run like ICI, and while the systems may be perfect they do not allow for human frailty" (sic)

Grubb (6) suggests that some of the large school's problems are due to poor management and administration. Writing at the time of comprehensive reorganisation, (1974) he argues that large schools need to be run on different lines from grammar and modern schools, which were considerably smaller.

### 9.3 Claims that size has little influence on schools

Paisey (7) does not entirely agree with views expressed in the previous section. Whilst recognising that the size of a school in part determines the organisational system, he suggests that the nature is open to different interpretations. He concurs with Taylor (8) in saying that the size of the school is commonly a topic of concern, and is often thought to be a "critical variable in terms of engaging the 'whole person' in the work of the organisation" (9). However it is not necessarily true that large places are bad places in which to work; small schools can also be bad! "Control, integration, flexibility and freedom from stress in an effective organisation are the common objectives of all organizations, irrespective of size." (10) Paisey maintains that it is too simplistic to assume that the amount of 'management activity' increases with size. A small school may be highly complex and require more organising than a large school.(11)

A major difficulty in trying to assess the relationship between an "input" variable, for example school size, and any outcome, for example attainment or standards of behaviour, is that it is impossible to isolate size from all other variables, as might be possible in other branches of scientific research. Goldstein (12) refers to this problem, taking as an example attempts to determine whether small schools result in pupils attaining

higher scores in Mathematics tests. He says that the schools would have to differ only in size, so that any subsequent differences could be attributed to that factor more. This, of course, is not possible " In real life, typically, we cannot randomly assign children to schools, nor ensure that schools differ on only a single factor, such as size, and we have to search for alternative approaches" (13)

Heath does not mention size in an article replying to criticism of comprehensive organisation, based mainly on performance in external examinations. In the language of statistics he claims that "the school is more often a dependent rather than an independent variable".(14)

Murphy (15) comments on studies of school influence and observes that Coleman (16) and Rutter (17) disagree. The former suggests that schools may have little influence in their pupils' development, whilst Rutter says this is not so. Jencks would appear to side with Coleman, estimating that school based factors explain perhaps only 2 per cent of the variation in attainment between pupils. He states firmly that "the character of a school's output depends largely on a single output, namely the character of its entering children. Everything else the school budget, its policies, the characteristics of the teachers ... is either secondary or completely irrelevant" (18). Reynolds (19),

who quotes Jencks, concludes "School differences in other words, make no difference". Woodhall (20) regards Jencks' conclusion as pessimistic.

Murphy goes on to suggest that the debate on school effectiveness is on subjective lines. "The question of whether schools have an effect on their pupils turns not on evidence but on what is preferred as evidence". (21)

Blaug (22) maintains that we face a "pervasive ignorance" between school inputs and outputs (as conventionally measured by achievement scores) and that "we cannot specify the educational production function or even begin to distinguish unambiguously between parameters and variables. He is mainly concerned with educational systems and planning rather than with individual schools, though he does refer to class size.

Wyatt and Gay (23) conclude that size should not be seen as an independent variable, maintaining that the linear relationship "small is good, therefore large is bad" is too simplistic and inadequate. They suggest that the notion of "best size" should be carefully examined every time it is used. They do not regard this as inconsistent with their earlier observation that "... [available evidence] suggests that smaller institutions are ... more beneficial to students, although the reasons for this are

not clear" (24)

Contributors to "Big and Beautiful" believe that school size is not very important. Fogelman (25) states that there is consistent and clear evidence to support the claim that "whilst less tangible aspects of school life may well be of importance, they are independent of the school's size, which does not matter in itself". Wilcox and Garforth (26) agree, stating that school size alone is unlikely to be a "dominant and unequivocal influence" on the performance of a school. They claim that the attempt to identify a statistically significant relationship between a criteria measure and a single variable will probably prove fruitless. "The pursuit of single overarching variables with high predictive power is likely to prove a chimera" (cf David (27)). Wilcox and Garforth appear to agree with Murphy when they conclude that the presumed effects of single variables, such as school size, are not immutable, but are capable of transformation by human ingenuity. (28)

Adams (29) refers to the 'widely held' belief that small must mean 'good', but believes there is little evidence to support this view "The great school size controversy seems to have become a non event". He suggests that correlation between school size and other variables may be spurious.

Benn and Simon (30) do not wish to give the impression that the size of a school is unimportant. They observe that schools of 1,000 can provide three or four times as many opportunities as a school of 500. However they conclude that "the success of the comprehensive school - in so many size ranges - is proof of the fact that the factor of size cannot be allowed to be the overriding factor, when so many other factors are obviously just as crucial in determining a comprehensive school's success". David (31) is forthright in her views, despite the weight of evidence which suggests that an optimum size of school can be found to achieve all purposes whether contradictory or not. She believes that "it is impossible to aggregate the effects and draw such simplistic conclusions".

Murnane (32) disagrees. In a slightly contradictory paper he states that in early studies physical facilities did place a prominent role in school effectiveness research but that they were not systematically related to student achievement. However, he goes on to say that physical facilities, class size and instructional strategies can be seen as secondary resources that affect student learning through their influence on the behaviour of teachers and students. (33) He concludes that there is compelling evidence that schooling does make a difference in determining the cognitive skills of children. Consequently

the search for strategies to make schooling more effective is a worthwhile quest. (34)

#### 9.4 Parents' views on size

Relatively little material appears to have been published on the views of pupils and their parents, though perhaps parents have become more vociferous on the issues of falling rolls and financial cutbacks. Parental choice and influence is a key feature of the provisions of the 1984 Education Act, but there is little evidence to suggest that parents attach much importance to the size of their children's schools. Fiske (35) says that size is neither an issue nor a significant factor in choice of school. In a survey of 26 Manchester schools, five of the eight which were significantly over-subscribed had over 1,000 pupils. However he does comment that size is occasionally mentioned as a reason for requests to transfer, if a child has not settled happily in a particular school.

Fogelman (36) observed that in the NCD study parents were asked whether they were satisfied with their children's education. Responses of parents whose children attended selective schools were unrelated to size, though for comprehensive schools the proportion favouring smaller schools was slightly larger. He suggests that, as this was not linked to any objective criteria, it might be a reflection of media opinion. In the collected papers from

the NCD study (37) he adds that parental satisfaction does not seem strongly related to factors which are usually the subject of much debate, including school size, pupil teacher ratio, streaming and class size. The most important factors appear to be the level of the child's performance and the type of school they attend, though there seems to be a fair proportion of parents who are satisfied with their children's education, even if they appear to be doing badly.

In their study of Sheffield schools, Wilcox and Garforth (38) found no significant correlation between school size and the number of parents wishing to transfer to a school outside their catchment area. Size was very rarely mentioned as a reason for wishing to go to another school.

Taylor (39) is non-committal about school size, though in his section on bilateral and campus schools he notes that many parents and teachers see the large numbers involved as a great disadvantage. Later he claims that the greatest cause for public concern has always been about size. Many parents are anxious that the youngest children, in particular, will find the size and complexity overwhelming. (40)

The "Readers Digest"/MORI survey (41) of parents'

attitudes to the way their children are educated in state secondary schools did not refer to school size. However, in response to a letter, Michele Corrado, Senior Research Executive of MORI gave the following information, obtained from the survey, but not published. (42)

Table 9.1 Parents' views on the size of their children's secondary schools

Q. And would you say your children's secondary schools are too large, too small or about the right size?

A.	% of parents
Too large	29
About right	58
Too small	5
Don't know	8

Size of sample 304

Source: Michele Corrado, Senior Research Executive Market and Opinion Research International. Letter 2 November, 1987. Unpublished answer to question in survey undertaken for "Readers' Digest".

In response to another question on discipline, results suggested that of parents who were generally satisfied with discipline, 67 per cent described their children's school size as "about right", whilst only 26 per cent said schools were "too small". (43)

#### 9.5 Studies which do not mention school size

A number of publications do not make any reference to school size, implying that the issue is not considered important. For example the DES Statistics of School

leavers (44) does not refer to size in a publication of almost 40 tables, whilst there is also no reference in their 40 page booklet on recent (1978) initiatives covering all aspects of education.(45)

Although the Chartered Institute of Public Finance and Accountancy (46) suggest that small schools may experience difficulty in maintaining a broad curriculum, they do not include school size as being an influential factor in their Input/Output analysis of the education system. Indeed school size is not included amongst the 16 "performance indicators" for secondary education.(47) There is no mention of school size in Williams' (48) chapter on education, nor is there in the survey by Aitkin and Langford (49) of several recent large scale British studies of school effectiveness.

#### 9.6 The works of Elizabeth Halsall, Barker and Gump

Of all writers on the issue of school size in Great Britain, Elizabeth Halsall has probably written in greatest depth, whilst Barker and Gump's (50) work is the most detailed study of American schools. Some years have elapsed since their works were published, but their findings are still largely relevant.

Halsall's major work 'The Comprehensive School' (51). published during the period of secondary reorganisation,

(1973) deals with a wide range of inter-related issues. She is a consistent advocate of the small school, though admitting its potential academic and curricular defects. The large school's problems are, she maintains, those of pastoral care, movement and communication. Both groups of difficulties can be overcome, though Halsall suggests that those of the larger school will require complex and expensive solutions. (52) Inevitably teachers will need to work harder and will be subject to greater stress. (53)

She suggests that, on educational grounds, the ideal size should be between 400 and 1,000 pupils, whilst if administrative and cost factors are taken into account the desirable range increases to between 800 and 1,200. (54) This figure is rather lower than suggested by writers referred to earlier. Combining the three criteria the optimum range is narrowed to between 800 and 1,000 pupils, or five to six forms of entry. Six forms of entry is the very lowest figure for what has generally been regarded as acceptable by the (55) Department of Education and Science in Circular 10/65 and 'Better Schools'. (56)

Even if such a size were to be regarded as the norm, it is unlikely that many more than a quarter of schools will be in that range (See table 1.1 page 16). The uneven geographical distribution of the population is such that in many cases the 'natural' catchment areas will contain fewer

or more children than the desired figure. There is no evidence to suggest that artificial solutions such as "bussing" are justifiable, and in any case demographic changes may result in numerically satisfactory arrangements being short-lived.

Barker and Gump studied schools in a very different system and, it is difficult to relate parts of their findings to British experience. Also much of their research appears to deal with sociological rather than educational issues. Little is said about financial matters or the relationship, if any, between size and levels of attainment. However, where their paths do coincide they are in broad agreement with Halsall in that the larger the institution the lower the degree of participation by students. (57) Indeed schools can grow to such a size that "more of the students become less needed and [even] redundant." (58)

They do not mention an ideal size for a school, admitting that then current (1964) research did not enable them to reach a conclusion. They do suggest, in common with other writers, that more research is needed into the relations between "school size, school settings and student participation" (59)

## 9.7 Conclusion

The influence of size on the performance of schools is probably most relevant when discussing the related issues of finance and curriculum. Very small schools do appear to be at a disadvantage in both these areas for, almost inevitably, they lack sufficient funds to employ specialist teachers, provide well equipped facilities and offer a sufficiently wide range of academic and extra curricular courses. These disadvantages are, however, often offset by the willingness of teachers to adapt and improvise, with considerable success.

. If the smallest schools, of which there are very few, are discounted, the influence of size is less noticeable. The various studies referred to in Chapter 2 tend to suggest that economies of scale do exist, but there does not appear to be a common optimum size on purely financial grounds. Some evidence would lead to the conclusion that the most cost effective size is between 1,000 and 1,200 pupils whilst other studies favour over 1,600. Schools of this larger size are rarely found in Britain. Whichever optimum figure is taken there is a generally accepted view that diseconomies of scale also exist, but the evidence is not conclusive and some writers are not convinced.

Curriculum provision is inevitably linked to

financial considerations, though the latest DES consultation document on the curriculum (60) makes no reference to finance or school size. Again the very small schools tend to be at a disadvantage. Their teachers and pupils would not necessarily agree, believing that they can compensate for their inability to offer a very broad range of subjects. One is left with the conclusion that, unless class sizes of a reasonable size may be achieved without combining age groups in the same class (for example Lower and Upper Sixth Advanced level groups) or arranging teaching on a mixed ability basis, the pupils will be at a disadvantage. There are teachers who favour mixed ability teaching on grounds totally unconnected with school size; I am not one of them.

Once a certain size (say 4 form entry) is reached, there is relatively little to choose between schools of 600 to 1,200 (or even more) pupils in terms of curriculum provision. The majority of pupils are able to choose from a sufficiently wide range of subjects, though in some circumstances only in the largest schools are subjects such as second languages, classics, music and commerce as widely available as one would wish.

Children themselves do not appear to regard the size of their school as an important issue. This is not particularly surprising, for only a small percentage will

have experience of schools of differing size. Participation levels in school activities, standards of behaviour and attendance may be slightly better in smaller schools. However, results are not statistically significant, and it is likely that any correlation between size and these outcomes is spurious. Social and family backgrounds appear to have more influence. The 'family' atmosphere of the smaller school, whilst being welcomed by many children and teachers, may lack the benefits of the more formal organisation of larger establishments. Perhaps Houlton (61) assesses children's priorities correctly, when commenting on the effect of the growth of Stocksbridge School on school meal provision. "Curriculum, discipline, homework shrink into unimportance when set alongside the quality of potatoes or the warmth of the custard".

Levels of attainment, too, do not appear to be greatly influenced by size, especially if the smallest schools are discounted. Some of the schools with the best academic records are very large, whilst other large schools have poor results. The evidence suggests that intake and family backgrounds are the most important determinants of performance. It seems inevitable that teaching standards must also be important, though some of the studies referred to earlier in this chapter suggest that teachers have less influence than might have been expected.

Although many individual teachers hold definite views on the influence of size on the schools in which they work, there does not seem to be a general consensus. Indeed the issue only really came to the fore when it became apparent that falling rolls would lead to reduced promotion prospects. Even here the central problem appears to be that fewer children inevitably mean fewer teaching posts, especially at senior levels, are available. Reorganisation brought about by falling rolls has had little direct effect on school sizes, except that many of the very small schools have been closed or combined, whilst at the opposite end of the spectrum there are fewer very large establishments.

My teaching experience over 19 years has been in schools ranging from 435 to 1,500 pupils, though only rarely were numbers in any one school constant, due to periods of expansion or contraction. There is no doubt that much of the material studied was influenced by the changing conditions which were prevalent at the time of writing.

When I commenced my research in 1985 I had been working for four terms in a small school. My immediate past experience had been in two large comprehensives of over 1,400 children. Both were in the early stages of

contraction at the time I left. As a teacher I felt happier in the small school. Despite its limitations I certainly felt that, as my children approached secondary age, they would benefit from the less impersonal atmosphere of a school much smaller than 1,400 pupils. Three years later I hold the same views, though it cannot be overstated that these are purely subjective. Had we lived and worked in different catchment areas, my experiences and opinions might have been very different.

Indeed there are many teachers and parents who are enthusiastic supporters of the large school. The writers of the literature studied have views on the influence of size which cover the full range of possibilities - from those such as Hodgetts who enthuse over the work of schools of under 100 pupils to those who maintain that at least 1,500 are needed to enable the school to offer a full range of educational opportunities. Also, there are those who believe that size does have a considerable influence, whether for better or worse. Others concluded that it is virtually impossible to quantify the effect of size. Yet another body of opinion maintains that size does not have any significant effect on the overall performance of a school.

My overall impression is that the last group are probably, and surprisingly, nearer the truth, despite my

own preference for the small school. Furthermore I believe it is very unlikely that researchers will ever be able to reach definite conclusions in the way in which others have established that smoking is detrimental to health, or that the wearing of car seat belts reduced the number and severity of injuries sustained in road accidents. It is impossible to isolate size from all the other influences on the performance of a secondary school, and therefore the argument must be inconclusive. My initial reaction, when it was becoming apparent that this would be the probable outcome, was one of disappointment for I had expected to reach more definite conclusions. However, on reflection, the lack of consensus amongst writers on the issue of school size makes any other verdict unattainable. Schumacher wrote "Small is Beautiful"(63) and the 'Secondary Heads Association published "Big and Beautiful". It is perhaps permissible to quote Hungerford in the novel "Molly Bawn" that "beauty is in the eye of the beholder". Within the range of size covered by the vast majority of British secondary schools (ie about 600 to 1,200 pupils), the number of pupils has relatively little influence on the academic and personal development of its pupils.

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Netherhall School, Cambridge

Penistone Grammar School, Barnsley

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